# Marvin R. Dunn Poster Session



**Marvin R. Dunn, MD**

The ACGME lost a beloved colleague and friend with the death of Dr. Marvin R. Dunn on July 30, 2003. Dr. Dunn, 71, was the ACGME's director of Review Committee activities, as well as a nationally-renowned figure in the medical community.

In 1998, the ACGME was fortunate to have Dr. Dunn join its staff. He brought vast experience, deep wisdom, an unfailing sense of humor and the capacity to see goodness in each of us. His concern for residents was unfailing. He was the country's best resident advocate. He is greatly missed.

As the ACGME developed its duty hours standards and moved to a competency-based method of evaluating residents, Dr. Dunn always kept the impact on the resident at the forefront.

He had a deep respect for the role of the Review Committees in strengthening the formation of residents, and kept the Review Committees and the ACGME on task to improve the quality of life for residents.

Colleagues and friends across the country contacted the ACGME with their own memories of Dr. Dunn. In their letters of condolence, he was remembered over and over again with phrases such as "a true advocate for excellence in medical education," "the most wonderful combination of wisdom and humor," "wise counsel and gentle style," and "truly one of the good people."

During his distinguished career, Dr. Dunn, a native of Lubbock, Texas, and a board-certified pathologist, held a series of prominent positions. Before joining the ACGME, he served as the AMA's director of graduate medical education. Earlier in his career he served as vice president for health sciences and dean of the University of South Florida College of Medicine, dean of the University of Texas Medical School at San Antonio, acting dean and associate dean for academic affairs at the University of California at San Diego School of Medicine, and deputy director of the National Institutes of Health Bureau of Health Manpower.

Dr. Dunn was intimately involved in the ACGME's poster sessions from their inception, as both a judge and councilor. He took great delight in the innovative presentations that encompassed all areas of graduate medical education, and enthusiastically watched the development of best practices related to the competencies and duty hours requirements. The ACGME is honored to name this poster session in his memory.

# Abstracts

## Poster# 1: Using Quality Improvement Principles to Prepare of the 10-Year Site Visit

**Team:** Dean Seehusen, MD, MPH, Walter Moore, MD, Augusta University

**Background**
The ACGME has placed significant emphasis on quality improvement (QI). Not only are all residents and fellows expect to become knowledgeable about QI principles and practices, GME programs are expected to utilize the plan, do, study, act (PDSA) methodology to continuously improve their educational practices. The ACGME has reported that many GME programs struggle with teaching and conducting QI projects and initial CLER findings suggest that only modest improvement in QI training has occurred. In August 2018, our institution was notified that the internal medicine programs would undergo its first 10-year ACGME site visit. Because it was the first such visit, MCG had no existing model to ensure the programs were ready for the visit. The GME Office, under the Designated Institutional Official's supervision, decided to conduct mock site visits for all 10 programs.

**Objectives**
To utilize QI principles to prepare for the 10-year site visit while simultaneously modeling the QI approach to the institution's GME programs.

**Methods**
This initiative was treated as an institution-level QI project utilizing the PDSA cycle. A model for a mock site visit was created based on information gathered from the ACGME website, the existing literature on 10-year reviews, and the collective experience of personnel in the GME Office. Objectives were determined and a timeline was created. The initial mock site visits were conducted using the model developed. After each visit, the mock team provided feedback to the program listing strengths, weaknesses, potential areas for improvement and general recommendations. Three rounds of PDSA were conducted throughout the completion of all 10 mock site visits. Anonymous electronic surveys, field notes taken on the fly, and expert advice all contributed to improvement of the model during each cycle. A final PDSA cycle was conducted after the actual ACGME visit.

**Results/Outcomes/Improvements**
The final product was a systematically conducted mock site visit model that typically last 3.5-4 hours. In that amount of time, program adherence to ACGME guidelines was evaluated, areas for improvement were identified and discussed, and programs were given an opportunity to practice answering questions for site visitors. Each program that went through a mock site visit received a written report that summarized the visit. The most important part of the reports were the suggestions for improvement. Satisfaction with the process was 100% as measured through anonymous electronic surveys. The ACGME 10-year site visit occurred in January 2019. During the actual site visit, program directors reported feeling prepared and confident. All respondents reported feeling more confident during the visit and felt the mock site visits had prepared them well. No unexpected concerns were raised by the ACGME site visitors.

**Significance/Implications/Relevance**
The GME Office decided to address an institutional challenge using the PDSA cycle. This initiative not only resulted in a satisfying and successful outcome but modeled QI principles to programs. The programs now have a better understanding of the PDSA model and how to effectively utilize it themselves. Programs are encouraged to actively follow this example as they improve their education environments, curricula, and administrative processes.

# Abstracts

## Poster# 2: An Assessment of the Program Coordinators Career Satisfaction and Support through Graduate Medical Education

**Team:** Adriana Garcia, Michelle Denney, University of Utah

### Background
The University of Utah Graduate Medical Education (GME) office has sponsored a Program Coordinator and Manager Advocacy Committee (PCMAC) since 2013. The PCMAC began with two goals, first, to provide mentorship and training and second, to address the high turnover rate of program coordinators. Beginning in 2014, the PCMAC has conducted an annual assessment of program coordinators through a yearly survey. The survey has enabled us to track job satisfaction, burnout, departmental support, and has been the main source of goal setting for the committee. Based on the survey, our goals for the last four years were to improve career satisfaction, retention and coordinator morale.

### Objectives
We hope to continue using the PCMAC to implement ways to easily share information and processes, continue to educate recommendations and career paths, and to share our progress with interested institutions.

### Methods
The PCMAC is a vital tool in improving morale, best practices, and communication with the GME office. The committee consists of five residency and three fellowship coordinators/managers, and three GME staff members. The committee meets monthly to determine and prioritize problems, outline collaborative solutions, and create recommendations for Program Directors and Administrators.
Some of our accomplishments include: Educating program coordinators and management on the GME career path developed by the committee using the institution's human resource job descriptions, along with salary recommendations. Establishing an annual Program Coordinator retreat, incorporating career development training. Holding monthly meetings that include GME Policies and Procedures, and PCMAC-led professional development. Self-Study and APE presentations, based on Program Directors & Program Coordinators collaboration.

### Results/Outcomes/Improvements
When we compare the annual survey results, we can see the committee has made great progress with career satisfaction and support. Because of our education efforts, a significant number of coordinators have had their jobs reclassified to meet the PCMAC and GME recommended job titles and salary range. In two years from 2016 to 2018, the number of those dissatisfied with their pay dropped from 43.5% to 27.59%. The number of those satisfied with their pay rose from 43.5% to 65.5%. We have also seen a great increase in the coordinators/managers promoted from hourly to salary employees. In 2016 we had 39% hourly and 61% salaried coordinators, in 2018 the numbers changed to 14% hourly and an impressive 86% salaried. Opportunities for professional development also increased. In 2016, 50% of program coordinators received support to attend one national meeting, in 2018 the number increased to 55.17%.

### Significance/Implications/Relevance
Annual assessments are the key to monitor and maintain changes for our program coordinators, the GME and our institution. Our continued monitoring has enabled coordinators to have a voice. This has helped build a community among coordinators, improve career satisfaction, and enable us to educate management and program directors through statistical information. The successful collaboration between the GME and the PCMAC can be implemented at any institution looking to decrease turnover and improve job satisfaction for coordinators.

# Abstracts

## Poster# 3: Illuminating quality metrics' utility in Graduate Medical Education to link learning with patient care outcomes

**Team:** Michael Kanter, MD, Lindsay Mazotti, MD, Jung G Kim, PhD, MPH, Kaiser Permanente Bernard J. Tyson School of Medicine, Kathryn McDonald, PhD, MM, Johns Hopkins Schools of Medicine and Nursing, Eric Holmboe, MD, MACP, FRCP, Accreditation Council for Graduate Medical Education

### Background
The value of quality measures in Graduate Medical Education (GME) remain elusive despite calls for better linkage of resident competencies with patient outcomes. GME trainees significantly contribute to healthcare systems, but their care quality remains understudied. Publicly-reported quality measures are used widely by payers, health systems, and the public to assess physicians and their system- level performance, yet these measures' role in GME is not well understood. In tandem, while competency-based medical education (CBME) prepares residents for unsupervised practice, current CBME assessments depend on faculty-based judgments and high-stakes licensing exams that inadequately assess all core competences effectively and equitably. Hence residents lack adequate feedback on providing high quality care and improving systems-level performance.

### Objectives
This study explores the feasibility and reliability with publicly reported ambulatory care quality data to assess resident competency and the quality of care provided to patients.

### Methods
We examined Healthcare Effectiveness Data and Information Set (HEDIS) measures between 2014-2018 for 566 residents in 8 Accreditation Council for GME (ACGME)-accredited Family Medicine and Internal Medicine programs across Kaiser Permanente Southern California (KPSCAL). Residents' patient census were obtained for HEDIS measures under the National Committee for Quality Assurance (NCQA) domains of Effectiveness of Care and Utilization. HEDIS measure rates are defined as criteria met (numerator) over all eligible patients for that measure assigned to a resident (denominator). Mean and distribution of rates were compared over each postgraduate year (PGY), and against the program's medical center and national NCQA performance. The reliability of available HEDIS rates for each resident and program were also assessed. We calculated patient sample sizes to achieve reliable levels per psychometric standards. Differences between required sample sizes versus actual patient counts were calculated by estimating the intra-unit correlation reliability from mean resident rates minus required sample sizes.

### Results/Outcomes/Improvements
Available HEDIS measures varied widely at the individual resident level (12.7% to 97.2%) and program-level (75.0% to 100.0%). The mean (SD) number of patients meeting HEDIS criteria for residents ranged from 1.7 (1.1) to 52.9 (44.9) patients, with differences noted across programs. Distribution of residents' rates generally narrowed across training years, with outliers reported for all PGY levels. When comparing the most available HEDIS measure, Colorectal Cancer Screening rates, physicians and the majority of PGY3s outperformed the mean for national NCQA Commercial Plans. Reliability alpha estimates and the minimum number of required patients depended on whether we analyzed at the resident or program-level. For residents, the minimum number of patients were met by approximately one-half of the 12 HEDIS measures. For measures with the largest deficiencies in patient sample sizes, most were related to intermediate patient outcomes, including providing comprehensive diabetic care and controlling high blood pressure. At the program-level, reliability estimates at 0.7 alpha were met by all the HEDIS measures, with the exception of HbA1c testing.

### Significance/Implications/Relevance
Assessing GME performance on publicly-reported quality measures demonstrated utility and reliability. Analyzing quality data garners learning and improvement to expand routine assessment methods, and for programs across U.S. health plans to understand their health system's performance.

# Abstracts

## Poster# 4: Discordance Between Competency-Based Assessment Using a Global Versus Reductionist Approach in the Transition to Residency

**Team:** Holly Caretta-Weyer, MD, Stanford University School of Medicine

### Background
The advent of competency-based medical education has led to concerns regarding reductionism in the assessment of clinical competence. This apprehension stems from a frequently utilized, often fractionated, "bottom-up" approach using the assessment of isolated competencies to build a full picture of clinical competence. This approach may oversimplify a cognitive and behavioral process that is more than the sum of its parts. In contrast, others argue that the framework of entrusbable professional activities (EPAs) complements the construct of competencies, as EPAs describe a unit of work. This represents a "top-down", global, holistic approach to assessment as it requires the integration of multiple competencies in order to perform the various activities of a physician but is viewed as a greater whole.

### Objectives
We sought to discern whether the assessment of separate competencies to build a picture of clinical competence is equivalent to the global assessment of EPAs, which require the integration of multiple competencies with special attention to the undercurrent of the construct of trustworthiness.

### Methods
We designed a simulation-based workshop implemented as part of our medical school's Transitions to Residency Course to discern whether the assessment of separate competencies to build a picture of clinical competence is equivalent to the global assessment of EPAs. Each student was assessed using individual competencies mapped to the Core EPAs, a modified supervision scale, and two global statements regarding entrustment and readiness for residency. These assessments were then compared to aggregate workplace-based assessment data on the various individual competencies from the core clerkships as rated by trained assessors and subsequently mapped to each EPA. The assessments from the course were also compared to one another.

### Results/Outcomes/Improvements
Assessment data obtained during the Transitions to Residency course using the individual competencies derived from the AAMC Core EPA toolkits were highly correlated with the assessment of individual competencies obtained from ratings by qualified assessors in the workplace as part of the core clerkships. However, these individual competency-based assessments did not correlate with holistic, EPA-based global supervision scale ratings, entrustment decisions, or perceived readiness for residency.

### Significance/Implications/Relevance
The global assessment of EPAs and the judgement of entrustment appears to be a separate process from aggregating the assessment of individual competencies for raters. This likely reflects variations in the approach to global assessment when compared to the assessment of individual competencies. This also may demonstrate the need to consider the underlying construct of trustworthiness in addition to the learner's ability to perform the activities of a physician essential to succeeding in residency during the assessment process.

# Abstracts

## Poster# 5: Clinical Reasoning Remediation for the Graduate Medical Learner in Need

**Team:** Andrew Parsons, MD, MPH, Karen Warburton, MD, University of Virginia School of Medicine

**Background**
It is common for graduate medical learners to struggle with clinical performance during training (1-5). Poor clinical reasoning, insufficient medical knowledge, and inefficient use of time are the most common deficiencies requiring remediation (1-7). Assessment of clinical reasoning skills is difficult in standard clinical training situations where evaluation often focuses on factual information, and direct observation is limited. Furthermore, no standard protocol exists for learners in need of clinical reasoning remediation.

**Objectives**
To identify the prevalence of clinical reasoning deficits among struggling trainees and determine whether these are amenable to intervention.

**Methods**
At our institution, graduate medical learners not meeting appropriate milestones, or who request help with performance, are referred to COACH (Committee on Achieving Competence Through Help). A remediation specialist performs a standardized assessment and identifies clinical performance deficits in the following areas: medical knowledge, clinical reasoning, organization/efficiency, professionalism, and communication. Those with a primary or secondary clinical reasoning deficit are referred to a novel clinical reasoning remediation program, and an individualized remediation plan is created. Weekly one-on-one, case-based sessions begin with a targeted assessment to further delineate the clinical reasoning deficit: hypothesis generation, data collection, problem representation, illness script knowledge and organization, or appropriate manipulation of the differential diagnosis. Sessions open with a review of key clinical reasoning terms and cognitive error with debiasing strategies. Learners work through segmented clinical reasoning exercises to promote metacognition and deliberate practice. The coach employs frequent 'stops' to determine the reasoning behind the learner's decisions.

**Results/Outcomes/Improvements**
Over a three year period, COACH assessed 57 out of a total of 820 (7%) graduate medical learners. Learners were referred from 13 different departments. Clinical reasoning was identified as a primary or secondary deficit in 19/57 (33%) of learners. 16/19 of these learners underwent clinical reasoning remediation, and targeted assessment of these learners revealed deficits in the following domains: hypothesis generation (12/16), data gathering (7/16), problem representation (14/16), illness script knowledge and organization (5/16), and appropriate manipulation of the differential diagnosis (6/16). All learners benefited from remediation focused on co-selection (comparison of diagnostic possibilities from chief complaint to plan generation, with constant modification as new information is revealed) and reducing cognitive load using schema. After implementation of the individualized remediation plans, learners were independently reassessed by their Clinical Competency Committee. The majority of learners improved their performance based on clinical evaluations. 74% (14/19) of learners struggling with clinical reasoning are currently in good standing in their respective programs.

**Significance/Implications/Relevance**
This unique program, utilizing global assessment and targeted clinical reasoning remediation, allows for identification of specific clinical reasoning deficits and individualized instruction to effectively address deficiencies.

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# Abstracts

## Poster# 6: The Value of GME as Articulated by our Sponsoring Organizations' Leaders

**Team:** Deborah Simpson, PhD, Thomas Hansen, MD, Jacob Bidwell, MD, Mary Joyce Turner, MJ, AdvocateAuroraHealth

### Background
Our newly merged organization collectively sponsors over 650 residents and fellows in our accredited programs. Sponsoring GME programs require a significant investment from multiple parts of the organization – ranging from the executive, C-Suite and hospital leaders to those responsible for human resource, legal, finance, licensure, quality, safety and patient experience. As GME leaders, we sought a way to expand our connections with our healthcare system leaders, to improve our ability to communicate the value to our organizations, and ultimately advocate for resources. We began this process by meeting individually with system leaders to obtain perceptions regarding the value of GME to this new organization and what they wish others would value about our GME programs.

### Objectives
1.To (re)establish collegial relationships between our system and GME leaders in a newly merged organization.
2.To obtain system leaders' perceptions regarding the value of GME to our system.
3.To obtain system leaders' perceptions regarding gaps in knowledge regarding the value of GME programs to our system.

### Methods
The DIOs of our sponsoring organization (we have maintained our separation as two sponsoring organization) and two Directors in Academic Affairs, each with extensive GME experience, met to identify key system leaders. We developed a brief semi-structured interview format with only a few brief questions to minimize interview length seeking <20 minutes maximum. Two questions will be the focus on this analysis focus: (1) When you need to advocate for the value of our GME programs, what do you highlight? and (2) What do you wish others would value about our GME Programs? Each author was assigned to a key system leader and through personal contact (eg, e-mail, phone call, F2F) explained that we were interested in their perceptions re: the value of GME to our organization and asked if they would be willing to meet with us. A field notes worksheet was created for interviewers to record the key findings. Field notes were then noted by respondent's leadership role (e.g., president, C-Suite, hospital president, finance/legal, HR) along with their responses to each question. Responses were then coded and categorized using standard qualitative methodology to identify cross-cutting themes.

### Results/Outcomes/Improvements
All leaders contacted agreed to be interviewed, 20 interviews were completed and analyzed. Respondents roles include: CEO and medical group/market leaders, hospital CEOs/presidents, and other leaders in finance, legal, quality, pt experience & safety. The top 3 areas they highlight when advocating for GME are: 1) its cost-effectiveness as a pipeline for physician recruitment, 2) the prestige/reputation associated with being an organization that trains future physicians, and 3) sustaining our culture of continuous learning. As a legal/finance leader stated "GME adds to our culture of learning…. I don't know how good organizations could do it without educational programs." The top area they wished others valued about our GME programs was GME's contribution to a culture of continuous learning, an essential element for a high reliability organization. A typical comment: (Residents create a) "healthy tension in the organization. Organizations are built to just 'do,' not to create questions/reflect… It wouldn't happen without education programs." This was followed by workforce pipeline and our community & professional responsibility to educate future physicians.

### Significance/Implications/Relevance
The leaders of our merged organizations provided key perspectives on the value of GME to our organization. The recruitment pipeline is a common talking point for GME, while our value to the organization's reputation, our critical role in promoting learning within our organization and GME as a community and professional responsibility provide new areas for GME to explore. We plan to define metrics, gather data and share those findings locally and nationally to enhance our value to the organization.

## Poster# 7: Evaluation and Implementation of IGNITE (Improving GME Nursing Interprofessional Team Experiences)

**Team:** Vineet Arora, MD, MAPP, Debra Albert, MSN, MBA, RN, Allison Norenberg, MSc, Ajanta Patel, MD MPH, Greg Horner, MA, Alesia Coe, DNP, RN, Stephenie Blossomgame, MSN, Kelli Yukon, MSN, Becky FitzSimons, MBA, RN, Jackie Bassett, MBA, Amanda O'Rourke, MBA, Jose Guerra, Stephen Weber, MD, Anita Blanchard, MD, UChicago Medicine; Halina Brukner, MD, University of Chicago Pritzker School of Medicine

**Background**
Numerous health professions organizations recommend implementation of interprofessional clinical learning environments to improve both staff engagement, education and patient outcomes.  Achieving this vision can be challenging in the majority of graduate medical education programs that do not have access to robust allied health professional schools or in hospitals that are running at 100% capacity preventing full implementation of geographic admitting or cohorting of patients.

**Objectives**
This innovation aimed to engage residents, nurses, & other staff in institutional performance improvement through creating unit-based teams composed of resident-nurse champions who work to identify and implement practice changes to improve care and learning.

**Methods**
IGNITE is a partnership between GME, Nursing, Operational Excellence and Clinical Excellence.  Residents who have promoted interprofessional practice in routine care are selected by nurses and endorsed by their program directors to serve as champions alongside nursing managers for the unit and 2 bedside nurses.  Unit-based teams meet monthly with leadership coaches who teach both principles of high-performance teams as well as fundamentals of quality improvement using existing institutional tools.  Teams are asked are coached to create and implement an improvement plan that is aligned with institutional goals and use existing institutional data and analytics support (Tableau Scorecard) to monitor their progress.  To evaluate the impact of IGNITE, we worked with People Strategy to create a heat map of Press Ganey clinician engagement data by matching physicians to nursing units and examining the year over year differences in items related to teamwork and team communication comparing IGNITE units and non-IGNITE units.  We also examined length of stay in IGNITE units vs non-IGNITE units.

**Results/Outcomes/Improvements**
With funding from ACGME Pursuing Excellence and the Macy Foundation, IGNITE has been spread to 9 service lines (general medicine, surgery, pediatrics, mother-baby, neurology, orthopedics, oncology, ENT, and urology) and has engaged over 50 residents and nurses. Unit-based team interventions focused on improving interprofessional collaboration through formalizing multi-disciplinary rounds (medicine, oncology), having the nurse join attending rounds (pediatrics), to implementing a system for nurses and residents to touch base about discharge delays and pending discharges (obstetrics, surgery). Press Ganey data from the 2017-2018 year showed that all IGNITE units (6 were operational at time of data) had year over year improvements (of 10 floor units that experienced improvements in composite teamwork and communication score). Using the 3 months before and after each project launch, the 5 adult inpatient IGNITE units saw a reduction in mean LOS ranging from -0.15 days to -1.16 days, which equates to an estimated cost savings of nearly 3 million dollars per quarter assuming average hospital stay cost at UCM per case. We are currently evaluating program impact via validated ICCAS scale.

**Significance/Implications/Relevance**
Engaging residents in institutional performance improvement through creating unit-based teams composed of resident-nurse champions can not only improve clinician perceptions of teamwork and communication, but also reduce length of stay with resulting cost savings.

# Abstracts

## Poster# 8: Program Director and Associate Program Director Behaviors Associated With Resident Burnout and Satisfaction: the Mayo Clinic Residency Program Leadership Survey

**Team:** Lotte Dyrbye, MD, MHPE, Colin West, Andrea Leep Hunderfund, Susan Moeschler, Brianna Vaa, Richard Winters, Eric Dozois, Mayo Clinic

**Background**
Burnout is common among residents. Studies in physicians, nurses, and other workers have reported relationships between immediate supervisor behaviors and employee burnout and job satisfaction. A better understanding of residency program leadership team behaviors and how they relate to burnout and satisfaction among residents could inform future well-being interventions.

**Objectives**
To explore the relationship between residency team leadership behaviors and resident burnout and satisfaction.

**Methods**
In February 2019, we surveyed all residents across 77 graduate medical education training programs at Mayo Clinic's multiple sites. Survey items measured program director and associate program director behaviors (using a residency program leadership score), burnout, program satisfaction, and organization satisfaction. We performed multivariable logistic regression to evaluate relationships between these variables at the individual resident (adjusting for age, sex, year of training, program location, and specialty) and program levels (including only programs with at least 5 respondents).

**Results/Outcomes/Improvements**
Of 1146 residents surveyed, 762 (66.5%) responded. At the individual resident level, higher residency program leadership scores were associated with lower emotional exhaustion and depersonalization and higher overall satisfaction with the residency program and the organization (all $p < 0.001$). In adjusted logistic regression models, each one-point higher leadership score was associated with a 9% lower odds of burnout, 20% higher odds of program satisfaction, and 19% higher odds of satisfaction with the organization (all $p < 0.001$). At the residency program level, higher mean leadership scores were associated with a lower rate of burnout ($r = -0.35$, $p = 0.03$) and higher program and organization satisfaction ($r = 0.74$ and $0.67$ respectively, both $p < 0.001$).

**Significance/Implications/Relevance**
Leadership behaviors of residency program leadership teams relate to burnout and satisfaction of residents. Additional studies are needed to determine if leadership training results in improved resident well-being and satisfaction.

# Abstracts

## Poster# 9: The Transition to Residency Risk Index (TRRI): Proactive Identification and Intervention for New Residents at Risk for Difficult Adjustment or Isolation

**Team:** Adriana Dyurich, PhD, Woodson "Scott" Jones, MD, Jon Courand, MD, Long School of Medicine - UT Health San Antonio

### Background

The transition to residency can be challenging and extremely stressful. Undesirable match results, leaving support networks, and physical or mental health concerns serve to exacerbate the challenges of residency training. Not surprisingly the highest percentage of resident deaths from suicide (35%) happen within the first three month of training. Additionally, medicine is identified as one of the loneliest professions, impairing performance, health, and well-being. Isolation is linked to burnout, depression, and suicide. Over 40% of physicians experiencing burnout report "isolating themselves" as a primary method of coping, creating a vicious cycle.

### Objectives

The Transition to Residency Risk Index (TRRI) was created as a tool for self-awareness in recognition of the need to better facilitate the transition from medical school to residency with a focus on addressing depression, burnout and suicide during the first months of residency. By incorporating the TRRI into New-Resident Orientation, program leadership can identify residents more at risk for a difficult adjustment and isolation, and tailor resources to offer support.

### Methods

The TRRI is a two-category, nine-item instrument that takes less than 10 minutes to complete. Category 1 addresses risk issues directly related to the residency match process such as matching into a lower ranked program or leaving one's support network. Category 2 relates to the trainee's family and health history. The Content Validity Ratio (CVR) was calculated using Lawshe's methodology. Ten national experts responded to the survey to determine if each TRRI item added value to the studied concept. One question was eliminated after the analysis. Concurrently, the original version of the TRRI was administered to incoming residents. Residents voluntarily shared their risk level with the Program Directors (1,2, or 3) but not their specific answers to the questions.

### Results/Outcomes/Improvements

Seven residency programs agreed to pilot the TRRI. Fifty-five residents were offered the TRRI during their orientation. The residents were provided instructions and given time to complete and turn back to the program director or their designee. Twelve residents chose not to respond. Forty-three (78%) calculated their risk level, of those eight scored in Level 3 (19%, Highest Risk), 14 were Level 2 (32%, Mid-range risk), and 21 were Level 1 (49%, low risk). Over half of the respondents scored as mid-range or highest risk, all of who received additional support from their programs, including augmented check ins by phone or in person by program leadership, early assignments of peer mentors or enhanced community building events. Four of the individuals who scored in the highest risk group immediately accessed local Behavioral Health resources.

### Significance/Implications/Relevance

The results from the TRRI pilot suggest that it serves as an effective tool for identifying incoming residents facing difficult transitions into their residency program. Over half of all residents who completed the questionnaire, self-identified in a moderate to high risk level. Through personal reflection and self-reporting of risk factors, residents are empowered to develop help-seeking behaviors and ultimate responsibility for their well-being. Sharing these risk levels with program leadership allows focused intervention to individuals and to their larger programs.

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# Abstracts

## Poster# 10: An Evaluation of Factors Contributing to Faculty Wellness in the Department of Pediatrics

**Team:** Sarah Rhoads, MD, Brown University; Llyod Feit, MD, Mohammed Faizan, MD, Shuba Kamath, MD, Alison Riese, MD, Albert Ross, MD, Kathy Mason, MD, Hasbro Children's Hospital

### Background
Physician wellness is a topic of increasing research, as a response to compelling data describing the widespread prevalence of physician burnout and its financial, academic, and social impact. Initiatives to improve and sustain wellness are necessary to retain our work force and ensure safe, effective, and compassionate care for patients. Foundational research has identified three domains of physician well-being, efficiency of practice, a culture of wellness, and personal resilience. While personal resilience is an individual characteristic, workplace culture and practice efficiency are organizational characteristics. To date, published research on resilience and wellness focuses mainly on trainees.  We sought to assess which of these domains were most important to academic faculty physicians.

### Objectives
We assessed attitudes and priorities of faculty physicians in the Department of Pediatrics at a single academic medical center, aiming to identify factors that support or undermine professional wellness, and which interventions were priorities for improving job satisfaction.

### Methods
This study was approved by our institutional IRB. We designed, piloted and refined a survey gauging physician attitudes and priorities regarding workplace wellness. The survey was distributed via email to all faculty physicians employed within the Department of Pediatrics using RedCap™. A visual analog scale was used to rate statements on a scale from "very strongly disagree" to "very strongly agree". Other questions requested a "one word" or narrative response. Participants were asked to prioritize allocation of resources to one of the three established domains of physician well being. Results were analyzed using Excel™ software for quantitative and descriptive statistics. Qualitative responses were analyzed for content and theme.

### Results/Outcomes/Improvements
Survey response rate was 74% (n=84/113).  Respondents represented all faculty tracks, ranks, gender identities, and range of practice duration (0->25y years). Using the 100 point visual analog scale, there was greater agreement with "I am treated with dignity and respect," (mean 68.3) and "I am recognized and thanked by my colleagues/team." (mean 74.7) and a trend toward more negative responses to statements "I feel that ...compensation is appropriate for my efforts",(mean 43.9)  "I am recognized and thanked by my leaders and administration" (mean 47.3) and "Physician wellness is a priority." (mean 37.1).  Faculty overwhelmingly identified "time," "EMR " and "overworked" as the greatest impediment to their workplace wellness. Respondents commonly reported "community," "colleagues," or "patients," as important factors contributing to workplace wellness. Nearly three quarters of faculty (73%) chose to prioritize resources towards improving efficiency of practice. Within this domain, faculty identified "additional ancillary staff" and "EMR improvements" as most important priorities.

### Significance/Implications/Relevance
This needs assessment reveals potential areas for prioritization of resources in order to best support Pediatric faculty wellness. Overall, Pediatric faculty strongly preferred interventions to improve efficiency of practice over those that improve the culture of wellness or personal resilience, although respondents felt all three were important. While improving personal resilience has become a hallmark of 'wellness' in the medical field, this data indicates that such programs do not align with physician needs and priorities.

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# Abstracts

## Poster# 11: Impact of an Opt-Out Counseling Program for First-Year Resident Physicians

**Team:** Sarah Rhoads, MD, Brown University; Christopher Terry, MD, Thomas Jefferson University; Kathryn DeCarli, MD, Frederick Schiffman, MD, Dominick Tammaro, MD, Rhode Island Hospital; Suzanne McLaughlin, MD, Brown University

### Background
Physician wellness has become a priority in response to the higher rates of depression and suicide in physicians compared to the general population, increased prevalence of depression and burnout among resident physicians compared to age-matched non-physician controls, and the negative impact of burnout manifest as decreased patient satisfaction and increased medical errors. Yet studies suggest physicians avoid seeking mental health care due to perceived stigma and professional consequences.

### Objectives
We theorized that an opt-out approach to offering counseling services would identify barriers to counseling visits and lower perceived stigma of care-seeking behaviors. In addition, we sought to improve the perception of programmatic support for mental well-being and set a precedent for self-care behaviors while in residency.

### Methods
The Medicine-Pediatrics (MP) residency program at Brown University piloted an opt-out therapy program for first-year resident physicians. All eligible residents were scheduled for a cost-free 1-hour counseling session during work hours. Counselors were identified as non-affiliated with our health system, in-network with our coverage and recommended by prior resident self-reported experiences. If an individual chose not to attend, they could cancel the appointment with no penalty, there was no direct follow-up by the program. Interns were surveyed at least thirty days after their scheduled session regarding their experience and perceptions. Results were compared with the previous year's intern class, who had received a list of possible counselors in the context of orientation materials.  The program and follow-up survey were then expanded to the Internal Medicine (IM) residency program based on positive feedback from the initial pilot.

### Results/Outcomes/Improvements
All four MP residents and 42 of 48 IM residents agreed to scheduling, while three did not attend.  All responding MP interns reported a positive experience with the session, expressed a better understanding of available resources and greater perceived program support for mental well-being when compared to residents the preceding year. 34 of 48 IM residents completed post-surveys, and reported the session was helpful (75%) or somewhat helpful (12.5%). 77% reported the pilot changed their perception of available program supports, and 53% reported the pilot changed their perception of possible stigma associated with housestaff seeking counseling.  Qualitative responses explicitly supported these summary results.

### Significance/Implications/Relevance
This pilot program resulted in overwhelmingly positive feedback from residents in both the Medicine-Pediatrics and Internal Medicine residencies, prompting extension to the Pediatrics residency at our institution. This initiative may be one step towards improving resident wellness and perceptions of seeking mental health support during residency. While further assessment is needed to establish the longer-term consequences for resident burnout and depression rates, the initial feedback has been highly encouraging. We believe this program may serve as a useful tool to improve physician wellness throughout training and promote more dialogue amongst physicians regarding their own mental health.

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# Abstracts

## Poster# 12: When residents have kids

**Team:** Anna Liggett, MD, Anders Voss, DO, Joanne Schwartzberg, MD, Nick Yaghmour, MPP, Paul Rockey, MD, DeWitt Baldwin, Jr., MD, Accreditation Council for Graduate Medical Education; June McKoy, Northwestern University

### Background
Women outnumbered men in US medical schools for the first time in 2017. Optimal ages for healthy childbearing coincide with residency training. Being pregnant and having children during GME presents personal and professional challenges to both trainees and their partners.  Parents in residencies confront long hours, rigorous schedules, financial burdens, emotional stress, physical fatigue, and performance anxiety as well as competing roles as parents and trainees. These challenges appear to influence the timing of residents starting families.
Robust data from four years of annual surveys of resident physicians reveal the ages and levels of training when residents (or their partners) are having children. Our data show how specialty choices may play a role in residents' decisions to have children (or vice versa).

### Objectives
To examine the demographics of physician residents who have children at home and/or are pregnant at each age, level of training and specialty.

### Methods
More than 60,000 anonymous surveys spanning four years, on resident well-being captured age, specialty, gender, resident or partner being pregnant and/or having children at home. We also compared our data to the demographics of pregnancy in the general population.

### Results/Outcomes/Improvements
We analyzed trainees, ages 26 to 40 years old.  Only 1.6% of 26 year old female residents were pregnant, increasing to an average of 7% for ages 31-34, and then declining.  For 26-year-old males, 2.4% had pregnant partners and the pregnancy rate of partners increased to an average of 11% for ages 31-34, and then declined. The number of residents with children at home increased progressively from PGY1 through fellowship years. When starting residencies, 13% of females and 19% of males already had children at home. For fellows, 35% of females and 47% of males had children at home.
Notable differences appeared among specialties. In general surgery, 3% of female residents were pregnant and 24.5% of residents reported children at home. In diagnostic radiology, 8% of female residents were pregnant and 34.6% had children at home.
Our results comport with US population studies that show most women who pursue education at the master's level or above defer childbirth into their 30s.

### Significance/Implications/Relevance
Little information exists to guide medical students and resident physicians about the feasibility of having a family during their clinical training. Starting a family during residency may compete with or may actually compliment the demands of clinical learning.  Combining pregnancy and parenting may be more challenging in some specialties.  Alerting medical students to these concerns may influence their career choices.
Program directors, employers, accreditors and certifying boards must face the reality that half of their clinical trainees are now women, and must consider how their specialties should adapt to this fact. Program directors and sponsors should make their programs more family friendly.  For example, the ACGME recently required residency sponsors to provide safe places for lactating mothers to nurse and/or pump and safely and hygienically store breast milk.  We also hope this body of research assists current efforts to change parental leave and funding policies.

# Abstracts

## Poster# 13: Impact of Pregnancy and Parenthood on Residents and Fellows

**Team:** Anders Voss, DO, Anna Liggett, MD, Joanne Schwartzberg, MD, Nick Yaghmour, MPP, Paul Rockey, MD, DeWitt Baldwin, Jr., MD, Accreditation Council for Graduate Medical Education

### Background
Upon completing the mandatory annual ACGME survey, residents and fellows are given the option to complete an additional anonymous survey. The 2013 survey generated multiple negative open-ended comments on pregnancy and parenthood during residency. This led to adding structured questions on these topics for years 2014 through 2017.

### Objectives
Herein, we report how residents experiencing parenthood and or pregnancy during residency compare with their peers on measures of satisfaction, health and well-being.

### Methods
Optional surveys offered in 2014-2017 to all residents and fellows of ACGME accredited programs included pregnancy status of residents or their partner and if they had children at home. Also, included were measures of depression (PHQ-2), residency rating, engagement, exhaustion, sleep, energy, and number of days over a two-week period with excessive time pressure and not enough time to think and reflect.
Responding residents and fellows were stratified by gender and each gender was divided into four groups: "not pregnant & not parent" (NP/NP), "pregnant & not parent" (P/NP), "not pregnant & parent" (NP/P), and "pregnant & parent" (P/P). The resulting eight groups were then compared.

### Results/Outcomes/Improvements
Over 52,340 resident and fellow responses were included in the survey. The resultant groups were composed of 17,435 male and 19,277 female NP/NPs, 1,106 male and 855 female P/NPs, 7,031 male and 5,075 female NP/Ps, and 1,066 male and 495 female P/Ps.
Residents and fellows who were not currently pregnant or parents screened the highest for depression (male 12.36% and female 12.54%), were the least likely to report being in excellent health (male 31.43% and female 24.88%), reported the most days feeling exhausted (male 7.87 and female 8.40), and most days with sleep disturbances (male 3.47 and female 4.38).
Residents who were pregnant or whose partner was pregnant were less likely to screen positive for depression (male 8.68% and female 6.59%), most likely to report being in excellent health (male 35.84% and female 33.92%), and report the fewest number of days feeling exhausted (male 7.46 and female 7.91).
Female residents averaged one extra day of sleep disturbances over a two week period than males, 3.97 vs 3.01 respectively. Pregnant/parent females and males with a pregnant partner and no children had the fewest days with sleep disturbances, 3.60 and 2.82 respectively.

### Significance/Implications/Relevance
Despite the frequently discussed challenges and stigma that exist, male and female residents who are either pregnant and/or have children at home appear to be doing better when compared to their non-pregnant and/or non-parent counterparts. Having an added role or purpose as father or mother may be protective against the feelings of failure one inevitably experiences in residency. These findings should help to further decrease discrimination against pregnancy and parenthood during medical training. The evident benefit pregnancy and parenthood has on residents should lead programs to promote and prepare for childbearing and childrearing as a healthy and positive experience during medical training.

# Abstracts

## Poster# 14: Sustaining the Flame: Harnessing the Principles of Change Management to Create Lasting Impact from Resident Wellbeing Projects

**Team:** Jeff Dewey, MD, Amanda Xi, MD, MSE, Amy Beane, Kimberly Son, Donald Brady, MD, Dinchen Jardine, MD, ACGME Back to Bedside Working and Advisory Group; Kristy Rialon, Texas Children's Hospital/Baylor College of Medicine; Jessica Bienstock, Johns Hopkins University School of Medicine; Timothy Brigham, MDiv, PhD, Accreditation Council for Graduate Medical Education

### Background
The body of published interventions in graduate medical trainee well-being continues to grow at an astounding rate.  Concern regarding the utility of these studies remains, in part, due to limited generalizability.  This is an unavoidable limitation given the unique features of any given program, institution and specialty.  As such, interventions related to well-being should focus on local sustainability rather than generalizability, yet sustainability plans are not well-emphasized in currently published interventions.  Further training is needed in this crucial aspect of change management to ensure that individual programs can permanently integrate initially successful interventions into their culture.

### Objectives
To create, implement and evaluate a curriculum that improves knowledge and application of sustainability practices as they relate to well-being interventions in medical training.

### Methods
The authors work closely with the inaugural recipient class of the ACGME Back to Bedside (B2B) grants.  A working group within the B2B Working and Advisory group developed a practical curriculum in sustainable change tailored to grant recipient projects, drawing from principles of previously published change management literature in the realms of business and organizational psychology.  The curriculum meets participants where they are along their pathway to project completion and includes a programmed series of brief didactics reinforced by skill application exercises using the participants' own projects. The main theme of the program revolves around a vision created by participants at a previous event in which they described their ideal project outcomes at the one-, two- and five-year marks.  The eight-hour curriculum was delivered to the Back to Bedside cycle one awardees at the 2019 ACGME Annual Education Conference, and data were collected immediately to assess utility as well as at the six-week mark post-intervention to assess change in behavior.

### Results/Outcomes/Improvements
Immediate post-session data was very promising: 98% found the experience overall good or excellent, and 96% deemed it well or mostly well-organized.  91% said they would use what they learned daily or often.  No major modifications to the program were suggested by the groups.  All individual components of the curriculum were recommended for future versions by a large majority of participants (range 87-100%).  Approximately one third of attendees completed the six-week follow up survey, 74% of whom have used the practices taught and provided specific examples of such.

### Significance/Implications/Relevance
Locally developed interventions will be crucial to addressing the well-being of graduate medical trainees.  Active sustainability planning is equally crucial, as effective initiatives cannot be allowed to die off due simply to unavoidable trainee turnover.  To our knowledge, this is the first curriculum to provide change management skills to change agents in GME well-being.  We will continue to revise and offer this curriculum for future leaders in this arena, with the goal of making it more widely available.

# Abstracts

## Poster# 15: History of the Council of Review Committee Residents

**Team:** Amanda Xi, MD, MSE, ACGME Back to Bedside Working and Advisory Group; Kristy Rialon, Texas Children's Hospital/Baylor College of Medicine

### Background
The Council of Review Committee Residents (CRCR) is the Accreditation Council for Graduate Medical Education's (ACGME) resident council, consisting of members from the Review Committees, Board of Directors, CLER, and Osteopathic Principles Committee. The Council informs and advises the Board of Directors on a variety of issues related to graduate medical education (GME) by: bringing resident issues and perspectives to the ACGME Board and its Review Committees, contributing a unique voice on important issues in GME and activities undertaken by the ACGME, and, increasing ACGME/CRCR visibility through interactions with other residents, fellows, and liaison groups. Although residents have been part of the ACGME for over three decades and have taken an active role in the organization through contributions on review committees, task forces, and initiatives, the history of the Council has not been documented and presented in the past.

### Objectives
Through a review of ACGME Annual Reports, Annual Education Conference (AEC) presentations, and prior Journal of Graduate Medical Education (JGME) publications, we recount the history of the CRCR. This project's objectives are to:
- Discuss the origins of the CRCR, including its members
- Identify initiatives championed by the CRCR
- Describe scholarly activity of the Council, including AEC presentations and JGME publications
- Increase awareness of ACGME residents' role in the organization and impact on the GME community

### Methods
Online sources including the ACGME Annual Reports, AEC Brochures, and JGME were used to search for CRCR members, initiatives, publications, and activities. The ACGME Annual Reports were reviewed dating back to the first resident representative in order to collect CRCR member alumni and record the Council's evolution from a Task Force to its current state as an active component of the organization. Each resource was reviewed and CRCR activities recorded.

### Results/Outcomes/Improvements
The Annual Report was reviewed for resident members dating back to 1989. In 1999, an ACGME bylaw change added a resident representative to every review committee and formed a Resident Task Force, which met annually. Over the last two decades, the Resident Task Force has evolved into an active Council. CRCR alumni are leading medical organizations, assuming roles in GME, and returned to the ACGME as staff, leadership, or Directors. In the last five years, the Council has led seven AEC presentations, and written thirteen JGME publications. Vital issues related to resident well-being were discussed first at the CRCR and have evolved into a task force and formation of the Back to Bedside initiative, a competitive funding opportunity for resident- and/or fellow-led teams to innovate and find meaning in their work. Inconsistent parental leave policies led the Council to inform the ACGME to convene a task force partnered with the American Board of Medical Specialties (ABMS).

### Significance/Implications/Relevance
As concluded in the 2016 JGME News and Views article written by CRCR members - "Current Attitudes Toward the ACGME and Its Role: Perspectives of a National Multi-Specialty Panel of Residents and Fellows" - the perception of the ACGME is discordant between residents at-large and CRCR members. By establishing our Council's history and dissemination of the CRCR's past and current initiatives, we hope to inform the public of the active resident voice within the ACGME. This project will form the basis for communication with Council alumni, at-large resident outreach, and elucidate growth opportunities for the CRCR.

# Abstracts

## Poster# 16: CHILD ABUSE CURRICULUM FOR ANESTHESIOLOGY RESIDENTS

**Team:** Anita Akbar Ali, MD, Anna Marie Onisei, MD, Dyann Daley, MD, Arkansas Children's Hospital; Michael Anders, PhD, University of Arkansas for Medical Sciences

### Background
Child abuse is one of the nation's gravest concerns. In United States, each year, 676,000 children are victims of child maltreatment with an estimated national rate of 2.36 deaths per 100,000 children.[1] Arkansas is among the worst states, with an estimated rate of 13.8 child victims per 100 children, nearly seven times the national rate.[1] These children require multiple visits to hospitals for abuse related injuries but surprisingly it often takes up to three visits for a health care professional to identify an abused child.[4,5] Failure to identify child abuse indicates an enormous gap in knowledge about suspecting, identifying, and reporting child abuse among health care professionals.[2-4] Only 41% of the pediatric medicine residency programs and very few emergency and family medicine residency programs have a formal child abuse rotation.[2,3] Child abuse curriculum for anesthesiology is unreported, however, anesthesiologist frequently encounter children with abuse in perioperative period which can play a crucial role in identifying child maltreatment. The purpose of this project is to implement and evaluate an innovative child abuse curriculum for anesthesiology residents.

### Objectives
The purpose of this pioneering educational project is to implement and evaluate an innovative child abuse curriculum, featuring simulation and problem-based learning, for anesthesiology residents. We aim to increase identification and reporting of child abuse by anesthesiology residents by improving knowledge, confidence and commitment.

### Methods
The curriculum comprises four training sessions per year. These sessions include pre and post training questionnaire, two simulation scenarios (one preoperative and one intraoperative), and a problem-based learning activity. The curriculum is developed by content experts including pediatrician from a child abuse team, pediatric anesthesiologist, office of education development, and simulation specialists. All sessions are pilot-tested with anesthesiology faculty members as learners. The questionnaires assess change in knowledge, attitude, confidence, and commitment. The simulation scenario utilizes standardized patients who are trained according to the case needs by the content experts. Each simulation includes a pre-simulation briefing and post-simulation debriefing by a trained and experienced simulation staff proficient in facilitative debriefing. All debriefing sessions are video-taped and transcribed to later use the Framework Method for data analysis. After developing a matrix of data elements, coded data is clustered into categories and categories grouped into themes. Themes are detailed into analytic memos, to provide insight into the residents' perspectives.

### Results/Outcomes/Improvements
(a) Compared to pre-training, post-training improvement in knowledge is increased (Kirkpatrick level II educational outcome)
(b) Compared to pre-training, an increase in the following Kirkpatrick level II educational outcomes post-training:
(i)Confidence in ability and commitment to recognize child abuse
(ii) Confidence in ability and commitment to talk to parents about suspected child abuse
(iii)Confidence in ability and commitment to reporting suspected child abuse
(iv) Positive attitude about the role recognizing and reporting potential child abuse

### Significance/Implications/Relevance
The training will instill anesthesiology residents at the University of Arkansas for Medical Sciences with improved knowledge, attitude, and confidence to establish their commitment to implement and further disseminate what they learned in their future practice. Future extensions of this project will address similar objectives in high risk specialties that are more likely to encounter patients with child abuse related injuries such as orthopedics and neurosurgery. Other care provides such as nursing students, physician assistants and patient care technicians will also be included. Further, in collaboration with the Arkansas Commission on Child Abuse, Rape and Domestic Violence, we will seek to disseminate this training to health care professionals across the state. This

project is novel. No other anesthesiology residency program in the nation has a formal training curriculum on child maltreatment.

1.Child maltreatment. National Data Archive on child abuse and neglect report, U.S department of health and human services. 2016. 2.Starling SP et al. Child abuse training and knowledge: a national survey of emergency medicine, family medicine, and pediatric residents and program directors. Pediatrics, 2009 Apr,123(4): e595-602. 3.Narayan AP et al. Pediatric residency training in child abuse and neglect in the United States. Pediatrics. 2006 Jun,117(6):2215-21. 4.Pietro Ferrara et al. The impact of an educational program on recognition, treatment and report of child abuse. Ital J Pediatr 2017, 43: 72.  5.Wright RJ et al. Response to child abuse in the pediatric emergency department: need for continued education. Pediatr Emerg care. 1999 Dec, 15(6):376-82  6.Ward MG et al. Child protection: a neglected area of pediatric residency training. Child abuse negl. 2004 Oct, 28(10):1113-22.

# Abstracts

## Poster# 17: Lessons Learned: Baylor Scott and White Healthcare's Approach to a Successful Dual CLER Visit

**Team:** Dee'D Ferman, Peggy Peters, MEd, Christian Cable, MD, MHPE, Baylor Scott & White Medical Center - Temple

### Background
Baylor Scott & White Health (BSWH) has participated in two previous CLER visits (2013 and 2017) and were selected to participate in the ACGME pilot project Operative and Procedural Subprotocol (OPS).  As part of this project, the CLER visit included simultaneous, focused site visits in clinical/inpatient service and in operative/procedural service.  We had twenty-one days to notify involved personnel, create schedules, secure facilities, and gather required paperwork.  With over 100 schedules involved, we strived to coordinate and present an organized visit.

### Objectives
Our objective is to share our approach of our last CLER visit preparation.  We found that by appointing a project manager and delegating tasks to the various committee leaders kept the process organized and less stressful than in the past.

### Methods
Our structured committees, Graduate Medical Education Committee (GMEC), Program Director's Council (PD Council), and Clinical Learning Environment Resident Council (CLER Council) leadership were engaged along with Graduate Medical Education staff to create a plan of dissemination about the event and to filter in necessary information for the site visit.  The different committees informed their respective groups about the CLER visit, what was expected, and identified volunteers to attend the scheduled site meetings.  A project manager was appointed to help identify and assign tasks and track progress.  The DIO notified and coordinated senior leadership's participation. The CLER Council organized resident participation and the GMEC Committee identified faculty to participate.  GME staff supported the logistics.  All information was relayed through the project manager, who threaded updates and deadlines to the participating committees and uploaded documentation to ACGME.  We had personnel stationed at the meeting room doors to monitor entrances and exits, made sure all needs of the visitors were met, including scrubs and lockers, and had Information Services on standby for any issues.

### Results/Outcomes/Improvements
The ACGME CLER team visited more than 20 clinical locations and observed 5 resident/fellow change-of-shift hand-offs.  In total, 39 residents/fellows, 28 faculty members, 26 program directors, and 23 nurses/executive leaders participated in interviews or were involved in walking rounds.  There were 5 no-shows or late arrivals, only 4% of the invited population.

### Significance/Implications/Relevance
Our interprofessional approach to the OPS ensured a successful CLER visit. This was our first CLER visit where surveyors were allowed access in the operating rooms.  Because our GME team had structured committees in place, we were able to leverage the right people at the right time.  Delegating to the committee chairs helped keep the teams updated in real-time. Threading data through a project manager ensured deadlines were met and the visit ran smoothly. Being a part of the OPS pilot provided a micro-look at our learning environment from all perspectives, not just the clinical.

# Abstracts

## Poster# 18: Teaming to advocate for rural healthcare education across the micro to macro continuum

**Team:** Ashley Dennis, PhD, Heidi Duncan, MD, Jennifer Carmody, Dianna Linder, PhD, Virginia Mohl, MD, PhD, Billings Clinic

**Background**
Access to healthcare providers is a geopolitical issue that causes healthcare disparities for rural communities. Many of the strategies that the World Health Organization recommends to increase the number of healthcare professionals in rural communities are educational in nature (1). However, across the micro (e.g., Critical Access Hospital (CAH) to macro (e.g., policy makers in Washington) continuum, there can be limited awareness and disjointed knowledge gaps that are essential to address in successfully implementing many of these strategies.

**Objectives**
This poster aims to highlight two strategies recently implemented to bridge such gaps. The first focuses on engaging the C-Suite of rural hospitals in healthcare education through the development of a Rural Healthcare Education Conference. The second focuses on teaming healthcare policy experts, educators, and politicians (e.g., Montana Sen. Jon Tester) across multiple organizations to successfully advocate for a federal program rule change that allows Medicare to reimburse for the time medical residents spend training at critical access hospitals.

**Methods**
Rural Healthcare Education Conference: In July 2018, we decided to develop a Rural Healthcare Education Conference. To enhance engagement, we followed a multidimensional approach: 1) sought advice from key regional healthcare education leaders, 2) set up an open call for proposals, and 3) asked key leaders in our C-Suite to give feedback on the conference focus.
Medicare Reimbursement: Our healthcare policy advocates have been working with Montana Senator Tester's office and the Montana GME Council to reverse the CMS ruling on the counting of rural resident rotations to CAHs. Last Fall, Senator Tester tried a different tactic and contacted CMS Director Verma directly to reconsider the CMS position. We followed up the Senator's letter with a letter of our own.

**Results/Outcomes/Improvements**
Rural Healthcare Education Conference: The following aims for the conference were developed: 1) highlight regional educational programs/models that work, and 2) support dissemination of scholarly work. In reviewing the conference agenda, our C-Suite leaders felt the conference was relevant to rural hospital CEOs and other key leaders in our region. They promoted the conference and aligned a regularly scheduled meeting with the conference date so that C-Suite leaders could attend. Ultimately, a fifth of the conference attendees (n = 11) were individuals with senior administrative roles in a region covering approximately 80,000 square miles. Although a small conference, the feedback we received was overwhelmingly positive. Leaders had an opportunity to connect with key regional, national, and international healthcare educators, learn about best educational practices, and consider how education could address important issues such as recruitment and retention.
Medicare Reimbursement: One year later, Director Verma has directly responded to our letters, and CMS has reversed its position on counting residents at CAHs.

**Significance/Implications/Relevance**
Addressing rural healthcare disparities through education takes a team of individuals and organizations across the micro to macro continuum. Developing strategies to connect these individuals and organizations is essential to address the geopolitical complexities that surround rural healthcare education.

1. World Health Organization (2010). Increasing access to health workers in remote and rural areas through improved retention: Global policy recommendations. Geneva, WHO Press.

## Poster# 19: Assessing the Natural History of Burnout Over the Course of an Academic Year

**Team:** Benjamin Yarsky, Katelynn Axtmann, MS, Boston Children's Hospital; Diane Stafford, MD, Stanford University School of Medicine; Jamie Lee Palaganas, MD, Weill Cornell Medicine

**Background**
Burnout is a well-documented issue among medical trainees and has been linked to poor overall well-being and impact the quality of patient care. Several studies have assessed resident burnout, though a thorough review of post-residency trainees (fellows) has not been extensively studied. In this study, we seek to understand the natural history of burnout across a large fellowship trainee population at a large tertiary care children's hospital in order to understand trends in burnout amongst housestaff prior to rolling out large scale trainee initiatives.

**Objectives**
This study aims to identify burnout at various time points across the academic year to understand natural fluctuations that may occur due to work demands, fatigue and seasonal factors. This data will serve as an important baseline to more correctly identify the impact of interventions in the following years.

**Methods**
All trainees in a fellowship or combined residency/fellowship program were identified (n=335). Through REDCap, we gathered brief demographic data and burnout assessment via the Maslach Burnout Inventory human services version, the gold standard tool. The survey was piloted in March 2018 followed by 3 surveys over the next academic year in October, February, and June to capture different phases of the academic year. Burnout was defined as a score in the 'high' range based on normative data for any of the 3 domains, emotional exhaustion (EE), depersonalization (DP) and personal achievement (PA). Results were analyzed using a correlated pairs t-test.

**Results/Outcomes/Improvements**
The response rate was between 32-42%. Respondents were 62% female, with a median age of 30-34 and a median PGY of 5. Our areas of burnout as compared to the national average [Dyrbye 2014]: EE (32.9% BCH, 44.4% nationally), DP (28.5%, 50.7%), PA (28.5%, 48.5%), and Burnout in at least 1 of these categories (45.5%, 60.3%). As the academic year progressed, we saw increasing rates of burnout (40.4% in October, an average of 45.7% in February/March, and 50.0% by June). An inverse relationship between PGY and Burnout Rate was also identified, PGY 3-4 fellows had the highest average burnout rate (56.1%), followed by PGY 5 fellows (45.7%), and PGY 6+ fellows (38.5%).

**Significance/Implications/Relevance**
Our study demonstrated lower rates of burnout across all of our clinical fellows compared to previously published studies of resident burnout. While burnout rates worsened as the academic year went on, we inversely saw that burnout rates improved overall with increasing years of training. This may be due to increasing autonomy, better work-life integration or finding meaning in work as training is nearing its end. Importantly, a similar trend is noted in other studies with improving rates of burnout with increased duration of practice. Future work will assess the impact of initiatives compared to the identified fluctuations. Limitations of the current study include a low response rate which may contribute to response bias and a large array of fellowship programs with variable responsibilities and work hours. Further studies help to better understand the factors that contribute to higher burnout and variation across the academic year.

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# Abstracts

## Poster# 20: Developing a Performance Profile

**Team:** Melanie Haydu, Saba A. Hasan, MD, FACP, Capital Health Regional Medical Center

**Background**
ACGME describes the Clinical Competency Committee's (CCC) purpose as "reviews all resident evaluations semi-annually, prepares and ensures the reporting of Milestone evaluations…and advises the Program Director regarding resident progress, including promotion, remediation, and dismissal." (CCC Guidebook, 2nd ed., pg. 2)
We are a 39-resident categorical program in a community setting. Each resident is individually discussed in weekly CCC meetings held during the months of September-December and March-June each academic year. Discussing each resident in detail has led us to come up with innovative ways to identify not just high performing residents but more importantly residents in need of focused attention by the Program for successful completion of training.

**Objectives**
Our Program developed a fillable and color-coded 22-reporting milestone-based "Performance Profile" document for the CCC to review during the semi-annual evaluation process for each resident. The document reflects residents' learning trajectory by ratings received on milestones at the time of past reviews, providing objective visual data which drives required level of attention to the gaps in learners attainment of competence.

**Methods**
After semi-annual CCC reviews of resident progress, milestone ratings are entered into the "Performance Profile" document. It reflects milestone ratings at three levels: Green (exceeds expectations for level of training), Yellow (meets), and Red (below). The document has six columns for each eval's rating for each Milestone. Expectations for meeting 'exceeds' and 'meets' expectations become more rigorous as the resident progresses through training.
Residents falling below Program expectations are identified early with the CCC process, but what gets the CCC and learners' attention is the color ratings on the "Performance Profile" document. Early recognition with the utilization of this tool provides opportunity to develop learner-focused action plans in collaboration with faculty advisors. The Performance Profile is placed in the resident's file and updated after each CCC meeting. Following CCC, the PD meets with each resident individually to discuss recommendations of CCC. Residents regularly falling below expectations are placed on a milestone-specific timeline for improvement via action plan identified by CCC, with regular check-ins with their advisor for reporting progress.

**Results/Outcomes/Improvements**
Using the newly-developed "Performance Profile" document has assisted the CCC in subtle identification and early provision of support for residents with opportunities in their performance. With implementation and appropriate utilization of this tool by CCC, the Program has noted improvement in overall performance of the residents. Residents whose performance might have been inadvertently missed in the past are highlighted on this visual color-coded document. The Program further utilizes the document based on an internally-developed criteria to rate the resident at the time of their semi-annual milestone data submission to ACGME.
Since the implementation of the Performance Profile in 2016, our Program has seen an improved 3-year rolling Board Pass Rate (78% in 2015, 97% in 2018) and improved resident satisfaction with the feedback loop from the CCC, promoting learners to take ownership of their training.

**Significance/Implications/Relevance**
Quickly identifying struggling residents using the ACGME milestones with the help of the "Performance Profile" allows our Program to assist residents in identifying and refining their areas of improvement before bad habits are formed and subtle delinquencies in performance are missed. It also helps the Program to guide residents through challenging times with the goal of graduating a competent, board-eligible physician.

# Abstracts

## Poster# 21: Assessing the needs and needed support for residents and fellows who are breastfeeding

**Team:** Amanda Murchison, MD, Emily Wilhelm MSEd, Donald Kees, MD, Virginia Tech Carilion School of Medicine/ Carilion Clinic

### Background
In 2019 the Accreditation Counsel for Graduate Medical Education (ACGME) published new common program requirements. Starting in July 2020, all residency and fellowship programs must provide clean and private facilities for lactation that have refrigeration capabilities, with proximity appropriate for safe patient care.

### Objectives
The objective of this project was to better understand the resources needed and barriers faced by residents and fellows who choose to breastfeed with an ultimate goal of determining the best ways to support these medical trainees.

### Methods
In August of 2019, Virginia Tech Carilion – Carilion Clinic sent a 21-question survey to all current and former residents and fellows who took a maternity leave in the past seven years. Participants were excluded if they did not have a baby during training or if they never tried to breast milk feed.

### Results/Outcomes/Improvements
Thirty-nine trainees were surveyed, thirty-two responded and five respondents were excluded. 52% reported that they were still providing their baby breastmilk at 6 months of life and 11% at 12 months. 67% reported stopping breastfeeding sooner than they would have liked. The most common place residents sited to pump breast milk was a call room (56%) while the least common place was a designated lactation room (22%). Respondents sited privacy and a computer as the most important considerations for a lactation space. Medical trainees required 20 to 30 minutes to pump breast milk each session and during an 8-12 hour shift most trainees reported pumping two (37%) or three (33%) times. Most residents and fellows preferred to provide their own portable electric pump, but 30% expressed an interest in access to a stationary pump. A personal cooler was most commonly used for milk storage (48%), however, most would prefer a shared refrigerator, either close to their work space (37%) or in a lactation room (33%). The number one sited barrier to breast milk feeding after returning to work was "not enough time" followed by "inability to leave patient care responsibilities".

### Significance/Implications/Relevance
As institutions work over the next year to become compliant with the ACGME requirements for lactation spaces for residents and fellows it is important to consider the needs and priorities established by breastfeeding trainees. In this survey residents and fellows commented that helpful resources for trainees starting a maternity leave would include locations of lactation compatible rooms and helpful hints from others who have successfully breastfed during medical training. Ultimately the goal is the provide our residents and fellows with the support and resources they need for successful continuation of breastfeeding.

# Abstracts

## Poster# 22: Addressing physician shortage in medically underserved areas through a rural residency program collaboration

**Team:** Douglas Nolan, DO, Cherokee Nation Health System; Natasha Bray, DO, Oklahoma State University Center for Health Sciences

### Background

Oklahoma faces a severe physician shortage that is expected to exceed 800 primary care physicians by 2025. The deficit of primary care physicians is greater in the rural versus urban Oklahoma communities.  In Cherokee County, home of Cherokee Nation headquarters and W.W. Hastings Hospital, this shortage has directly affected patients in that they experience longer wait times to receive office based primary care or are required to travel outside of the area. This results in a greater health, financial, and environmental burden.

Though rural populations such as those within CNHS's jurisdiction would be well-served by additional primary care physicians, recruiting physicians to rural communities is challenging.  According to data from the American Medical Association Physician Masterfile, a large percentage of residency graduates will practice within 100 miles of their residency program. This leaves a smaller percentage that will consider relocating to rural areas to practice, as the majority of residency programs are located within metropolitan areas.

### Objectives

This study reports recent data from a rural family medicine residency program in a tribal healthcare system and physician retention in medically underserved areas/populations (MUA/Ps).

### Methods

Northeastern Health System (NHS) in Tahlequah, Oklahoma in partnership with Oklahoma State University College of Osteopathic Medicine and Cherokee Nation Health established a Family Medicine residency in 2007. Tahlequah, Oklahoma has an Index of Medically Underservice Score of 54.3 and a Health Professions Shortage Area (HPSA) score of 19.  While this program was originally accredited by the American Osteopathic Association, the program received ACGME accreditation via the Single Accreditation System 2019. The residency program curriculum was designed to provide quality patient care in the context of rural, family and community health in both an in-patient and ambulatory care environment.  Resident continuity clinic occurred at W.W. Hastings, a Cherokee Nation Health facility, allowing residents to develop cultural competence in caring for Native American patients.  The program integrates the residents into the community through various outreach opportunities such as pre-participation physicals at local schools, sideline physician care for sporting events, and community health fairs.  The residents view themselves as part of, not separate from, the community.

### Results/Outcomes/Improvements

As of June 2019, the residency program has graduated 26 family physicians.  88% (23/26) of the physicians are practicing in MUA/P with 46% (12 of 26) working in either Tribal Healthcare systems or Indian Health Services (IHS).  According to American (AAMC), 23.1% of physicians who completed training between 2008 and 2017 are practicing in medically underserved communities.   Of the graduates working within the Tribal Healthcare/IHS system, ten physicians work for the Cherokee nation, one physician for the Creek Nation, and one physician for the IHS facility in Claremore, Oklahoma.

### Significance/Implications/Relevance

Training residents in a rural community and tribal healthcare system produces culturally sensitive, caring, competent Family Practice Physicians that will elect to practice in rural or medically underserved areas.  This represents an important strategy to address the health and healthcare disparities and inequities that affect our medically underserved areas and populations.

# Abstracts

## Poster# 23: Oh the Possibilities: Introducing a New Set of Developmental Competencies for Medical Education Faculty

**Team:** Monica DeMasi, MD, FAAFP, Samaritan Health Services; Kathryn Andolsek, MD, MPH, Duke University School of Medicine; Tina Kenyon, NH Dartmouth; Brian Johnson, MD, Contra Costa; Bharat Gopal, MD, MPH, Samaritan Health Services; Jessica Servey MD, MHPE, Uniformed Services University of the Health Sciences; Christine Savi, PhD, TCU & UNTHSC School of Medicine,

### Background

The transition to competency based medical education in the US included implementation of a standardized set of Milestones for residents and fellows, and Entrustable Professional Activities for medical students. However, there is currently no consensus regarding a similar structure for faculty. After conducting a thorough literature search and multiple step needs assessment, a team of Family Medicine educators collaboratively designed a modular, developmental set of competencies and behaviors for faculty. This tool is created to assist faculty, program directors and department chairs with faculty and departmental growth, with an awareness of the interdisciplinary and inter-professional nature of medical education.

### Objectives

The goal of this study was to gather comprehensive data regarding the content, applicability and dissemination of the draft faculty competencies and behaviors, and vet the draft with broader participation from the field.

### Methods

A participating author submitted the study protocol to the Institutional Review Board and received an exemption prior to beginning the study. The study method was a modified Delphi qualitative research process. An electronic survey tool was used for accessibility and to ensure confidentiality of responses. The development team invited inter-professional Family Medicine faculty in both medical student and residency education to review and comment on the draft faculty competencies and behaviors. The data assisted with further refinement of the draft and respondents' detailed feedback will be used to facilitate implementation and dissemination.

### Results/Outcomes/Improvements

Participants uniformly believed faculty competencies fill a gap within medical education as a developmental tool for faculty, program directors and department chairs. A core group of interdisciplinary Family Medicine educators developed the faculty competencies draft. Thus, it was important to vet the content with broader participation to confirm the content is clear, relevant, developmental, and widely applicable. The demographic data ensured inclusion of representatives from a variety of program sizes, geographic locations, faculty disciplines (e.g. medicine, behavioral health, pharmacy, etc.) within Family Medicine, and longevity (from new to very experienced).The study feedback allowed the development team to clarify language, refine the core set of competencies and behaviors, address potential barriers, and identify effective methods for dissemination. The result is a streamlined, concise and relevant set of faculty competencies and behaviors to be shared at conferences and in the literature. After dissemination, further study will provide data on outcomes and impact on facilitating development for individual faculty, programs and departments.

### Significance/Implications/Relevance

The development team plans to widely disseminate the faculty competencies through conference presentations and publications within the discipline of Family Medicine. The development team will also create a tool kit of assessment instruments and teaching resources to enhance the utility of the competencies. Ideally, the lessons learned through implementation in Family Medicine will lead other disciplines (e.g. Internal Medicine, Pediatrics, etc.) to consider similar implementation.

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educators." Academic Medicine 86.10 (2011): 1211-1220.34.4) Walsh, A., et al. "Fundamental teaching activities in family medicine: a framework for faculty development." Mississauga, ON: College of Family Physicians of Canada (2015).

# Abstracts

## Poster# 24: Utilizing Program-Specific ERAS Data to Determine Opportunities for Improvement in Resident Diversity Recruitment

**Team:** Farah Kudrath, MD, MPH, Maria Aaron, MD, Emory School of Medicine

### Background
The ACGME promotes healthcare workforce diversity by requiring residency training programs to "focus on mission-driven, ongoing, systematic recruitment and retention of a diverse and inclusive workforce of residents". Mission-driven recruitment should include a "shift in focus from a national perspective to a regional or local perspective on underrepresentation" in order to address the needs of their patient population. For example, though the US population is 13% African American, at Grady Memorial Hospital in Atlanta, GA, 76% of admitted patients are African American. To better serve our patients, Emory University School of Medicine (EUSOM) Graduate Medical Education has prioritized recruitment of African American, Hispanic, and female residency applicants.

### Objectives
In 2018, EUSOM GME required our residency programs to use applicant tracking features already available in the Electronic Residency Application Service (ERAS) to indicate when a candidate was selected for interview, if they were interviewed, and if they were matched. Our goal was to use this data to create program-specific reports on the applicant demographics of the 2019 Match, compare Emory applicants to AAMC data on the national pool of applicants to that specialty, and provide targeted guidance to program directors on how to improve diversity recruitment.

### Methods
After the 2019 Match, we pulled ERAS demographic data for each residency program to determine the total number of applicants to each specialty by race/ethnicity and gender, who from each group was invited to interview, who was actually interviewed, and who was ultimately matched to the program. Understandably, there will be variation from year to year, so to provide context we also used internal GME data to determine the race/ethnicity and gender composition of current residents in each program. We analyzed the collected data and found program-specific areas of opportunity. These reports were distributed to program directors to inform their recruitment decisions prior to the 2020 Match.

### Results/Outcomes/Improvements
Emory Program Directors are now equipped with targeted interventions based on their 2019 data. For example: If less than 50% of the national pool of African American applicants submitted an application to Emory, programs were advised to develop strategies to improve baseline interest by having a presence at events like the SNMA national conference. If the percent of female applicants who accept interview invitations was lower than the overall acceptance rate, programs were encouraged to send out interview invitations to females earlier in the application season so that potential candidates were not lost to cost barriers or interview fatigue. Programs that have had difficulty in diversity recruitment were connected with data from programs that have done well in order for program directors to share ideas and strategies.

### Significance/Implications/Relevance
Successful recruitment of diverse and representative residents requires data that is specific to the needs of each training program. The applicant tracking features within ERAS can be used to provide targeted guidance to program directors who would otherwise not know where to intervene. We recommend other academic medical centers use ERAS to collect data to guide their diversity and inclusion efforts.

https://www.aamc.org/initiatives/urm/

# Abstracts

## Poster# 25: Basic Training: A Curriculum for OR Readiness for New Anesthesiology Residents

**Team:** Tanisha Robinson, MD, Geisinger Health System

### Background
In July, new clinical anesthesiology residents (CA-1s) begin orientation, participating as members of the anesthesia care team. They are usually paired with either an upper level anesthesiology resident or an attending during cases. At the end of orientation, they are unpaired. The need for CA-1 residents to identify and initiate baseline treatment for intraoperative complications impacts patients and families, faculty and surgeons, operating room staff, hospital systems, and the residents. A failure to do can lead to an increase in morbidity and mortality.

### Objectives
An intraoperative anesthetic complications curriculum was developed as a measurable and objective way of preparing and determining if CA-1 residents were able to identify and initiate proper management during intraoperative complications by the end of orientation.

### Methods
In 2018, faculty were surveyed regarding their confidence in the CA-1s ability to recognize and initiate treatment for the following intraoperative complications: low end tidal carbon dioxide, hypoxemia, high peak inspiratory pressure, hypotension, ST- segment changes, machine failure, and ACLS. The answer choices were "Unsure", "Not confident", "Somewhat confident", and "Very confident". "Unsure" and "Not Confident" were categorized as negative responses while "Somewhat confident" and "Very confident" were positive. Three simulation cases evaluating complications were developed: 1) Pipeline oxygen failure & anaphylaxis 2) blocked endotracheal tube & ST-segment depression 3) malignant hyperthermia & vfib arrest. A critical actions checklist was created and reviewed by staff. Current residents (control group) completed simulation and their performance scored. In July, the new CA-1s completed baseline simulation, and attended six intraoperative complications lectures. Simulations were repeated until every resident performed all critical actions. In September 2019, the results of the curriculum were presented to faculty and a repeat faculty survey administered.

### Results/Outcomes/Improvements
For case one, CA-1s averaged 2.7 out of 14 critical tasks completed versus 4.4 for the control group. In case two, CA-1s averaged 4.5 out of 17 versus 7.3. For case three, CA-1s averaged 5.8 out of 14 versus 7.2. Vfib arrest was tested an average of 2.4 times by the CA-1s before all critical tasks were complete. Anaphylaxis and pipeline oxygen failure was tested an average of 2.4 times. Malignant hyperthermia was tested an average of 2.8 times. ST-segment changes was tested an average of 3.4 times. Before the curriculum, the majority of attendings had a positive response to only 4 out of 7 complications. It improved to 7 out of 7 after curriculum implementation. The resident's confidence to identify and manage the tested complications was surveyed before and after the curriculum using a 5-point Likert scale with 1 being "not confident" and 5 being "very confident". The new CA-1s confidence to identify and manage the six intraoperative complications increased from 2.5 to 4.5 on the Likert scale.

### Significance/Implications/Relevance
No member of the control group completed all the critical tasks in any scenario. In many cases, complications were not identified, or treatment was incorrect. A measurable and objective way to evaluate a resident's response to intraoperative complications promotes patient safety and impacts patients, families, staff and the hospital system. This curriculum helps to attain milestones in the areas of management of peri-anesthetic complications and crisis management during early residency training.

# Abstracts

## Poster# 26: An Ambassador Program to Enhance Learner's Wellbeing

**Team:** Amishi Khara, Patricia Heinle, Michelle Thompson, MD, Geisinger Medical Center

### Background
Geisinger, located in rural Pennsylvania, has a diverse multi-cultural population of employees. Each year Geisinger welcomes a new cohort of learners from diverse backgrounds.  Upon arrival, the learners are immersed into their programs and studies.  To further foster resident wellbeing, a deliberate effort should be made to connect learners with others of similar backgrounds, beliefs, lifestyles and interests. There has been an increased focus on wellness in didactic curriculum, thus an initiative to raise awareness and connect our learners could enhance cross-cultural experiences. An Ambassador Program can be a compassionate answer to connect and aid in learner's wellbeing.

### Objectives
As the Graduate Medical Education (GME) community continues to embark on a journey to highlight the imperative of learner wellness, Geisinger's GME management is looking to increase sensitivity and raise awareness regarding our diverse learners. By implementing an Ambassador program, we hope to ease the transition of multi-cultural learners to the institution and the community. When individuals feel valued, they reciprocate loyalty to the organization which can lead to better performance.

### Methods
In order to assess the need for an Ambassador program at Geisinger, we created an online anonymous survey that was sent to all the Residents and Fellows through the GME office, as well as to all the Program Administrators.  The survey aimed to gather their experiences and thoughts about having an Ambassador Program. The learners answered questions about their desire to connect with people of similar background, beliefs and lifestyles, and about individuals or agencies who helped them during their move to the area. In addition, they indicated whether they would be interested in becoming an ambassador themselves for future trainees. The Program Administrators were surveyed to identify what initiatives exist to help their learners adjust and integrate.

### Results/Outcomes/Improvements
Completed responses were received from 115 learners and 14 Program Administrators. Out of the 115 learners 61.74% said that having an ambassador would have helped them with their transition to Geisinger. 84.35% indicated that a co-resident/fellow and 38.26% responded that their chief resident were the primary resource to help them acclimate to the hospital and the area. 86.09% agreed that having someone with similar values, background or interest would have eased their transition to the area. 53.04% would be willing to be an ambassador and 50.43% would like to be part of a committee to connect learners.
Of the Program Administrators who answered, 85.71% said that their program does not do anything to help integrate/adjust learners to the area, but many had great ideas to share and would love to get involved. Following the survey, 100% of the Program Administrators agreed to implement the Ambassador Program to further enhance learner's wellbeing.

### Significance/Implications/Relevance
It is anticipated that an increased focus on cultural awareness and connecting learners through a GME Ambassador Program would result in an increased wellness, and the culturally diverse learner would feel more part of the organization and connected to the community.  It is anticipated there would also be an indirect yet equally important positive impact on the learner's family satisfaction and willingness to stay in the region following training.

# Abstracts

## Poster# 27: Increasing Resident Engagement in Patient Safety by collaboration with Patient Safety Office and incorporating teaching on Medico-legal liability

**Team:** John Pamula MD, FACP, Sheela Prabhu, MD, Guthrie - Robert Packer Hospital

**Background**
CLER ( Clinical Learning Environment Review) of ACGME advocates learners to be an integral part of the Sponsoring Institute's safety culture. The goal of Faculty in GME ( Graduate Medical Education) is to motivate, engage and inspire the Residents to participate in Patient Safety. Partnership with Patient Safety office is critical to learners' experience and engagement. The altruistic motives of every Resident can be augmented by the closure of feedback loop by Patient Safety Office, when they show the results of RCA2 ( Root Cause Analyses and Action) to the Residents. This is highly motivational to the learners when they see that their interventions can make a difference in  patients' lives.
A significantly underutilized resource which can inspire Residents is the Legal department. They have a wealth of material which can educate the Residents about medico-legal issues and the ramification of adverse events in day-to-day practice. Legal department has not traditionally been involved in teaching Residents about patient safety, however every adverse event has a medico-legal teaching point which can be reinforced by the theory of protection motivation and self efficacy.

**Objectives**
Increasing Resident Engagement in Patient Safety in an Internal Medicine Residency program in a community teaching Hospital by:
1) corroboration with Patient safety office
2) incorporating teaching on Medico-legal liability

**Methods**
1) Residents are taught the basic skills of patient safety from IHI ( Institute of Healthcare Improvement) modules. They also apply evidence-based patient safety principles to the practicum by presenting cases from their practice in monthly group learning sessions which are multi-disciplinary.
2) Residents are taught to recognize and to report adverse events through an intranet electronic  system ( RL solutions)
3) The Patient safety office periodically meets with the Residents to close the feedback loop to make the filings of RL solution  meaningful by inviting them to participate in RCA2 or to provide them the results of RCA2.
4) Involvement of Legal department is done through a dedicated Faculty by obtaining legal opinion of potential medico-legal teaching points, and presenting in the monthly learning sessions.
5) Hospital Lawyer presents  Resident-relevant issues  on Patient safety and medico-legal liability in medical practice in Grand rounds, Clinical competency forums and in the Residents group learning sessions.

**Results/Outcomes/Improvements**
1) IHI modules – 100% completion
2) 100% Residents presented cases in group learning sessions
3) ACGME Survey results for Patient Safety/Teamwork showed steady improvement indicating Residents' engagement
2017 - 96.2%
2018 - 98%
2019 – 99.3%
4) Patient Safety event reporting by Residents to RL Solutions increased:
2017-2018 – 87/ year
2018-2019 – 111/year

**Significance/Implications/Relevance**
Collaboration between GME, Patient Safety Office and Legal department can be very fruitful in inspiring Resident experience in Patient Safety. Dedicated Faculty leader/ CLER leader can liaison between the departments to fill the knowledge gaps and build the structure according to the needs of the Residency

program. Consistent implementation of safety practices will foster a culture of patient safety. This will not only promulgate high-quality patient-care but will transform the Residents into safety-conscious clinicians.

Theory of protection motivation invokes a threat appraisal followed by a coping mechanism by self efficacy. It is applied successfully to healthcare areas like cancer prevention, adherence to medical-treatment regimens, maintaining healthy life styles etc. Applying it to motivate Resident engagement for Patient safety is a worthy cause.

# Abstracts

## Poster# 28: Usefulness of the Annual Program Evaluation in Preparing for an ACGME Self-Study

**Team:** Emilie Leveque, Mitchell Goldman, MD, Matthew Kuhar, MD, Indiana University School of Medicine

### Background
Programs need to be able to show the ACGME that they are continually reviewing themselves by conducting an Annual Program Evaluation (APE), which is a critical component of preparation for ACGME Self-Study. Indiana University School of Medicine has created an institutional process that accurately documents this year-to-year self-review and program improvement. All four areas of the APE are included, and programs must complete a SWOT diagram to help determine opportunities and weaknesses. Program improvement projects are chosen based on the SWOT analysis, and progress is documented via an A3. Each accredited program is required to complete this annual process, which is now in its fifth year.

### Objectives
Thorough documentation of the program review and improvement plan can demonstrate completion of a mandatory yearly review, feedback from program directors is necessary to confirm that this is a useful tool. This study aims to determine if program directors perceive that using IUSM's process for documenting APE and program improvement prepared them for initiating their self-study.

### Methods
In fall 2019, the IUSM GME Office surveyed program directors who have already had to submit a Self-Study Summary to the ACGME to gauge how helpful they believe IUSM's APE process was to their ability to start the self-study. Respondents to the survey were asked to provide yes or no responses to questions such as "Did the APE Summary help you identify the opportunities and/or threats you listed in the self-study summary submitted to the ACGME?" The survey also sought feedback on general changes that would make the APE process more efficient.

### Results/Outcomes/Improvements
Thirteen IUSM departments have had to begin their self-studies by completing the ACGME Self-Study Summary. The IUSM GME Office surveyed all program directors who have had to begin this process (51 program directors) to determine if IUSM's APE process has been a useful tool when beginning the self-study. Of the 22 program directors who responded, 91% report that the APE helped them identify opportunities, and 82% believe it helped them identify threats that were then reported on the ACGME Self-Study Summary. A further 77% believe that APE questions regarding non-direct patient care requirements (for example, continuous quality improvement, faculty development) helped them develop processes to meet those requirements. In regards to documenting the mandatory annual program improvement project, 77% of program directors believe that completing an A3 helped them describe improvements made to their training programs.

### Significance/Implications/Relevance
IUSM's APE and A3 process is viewed by most program directors as beneficial to their preparations for the ACGME Self-Study. Feedback suggests program directors find the process to be time-consuming, but they are relieved to have this work done and rely on it for responses to the Self-Study Summary.

## Poster# 29: Use of QR Codes to Improve Faculty Evaluations and Feedback for Neonatal Fellows

**Team:** Deb Parsons, Sara Kane, DO, Elizabeth Wetzel, MD, Jason Niehaus, MD, Indiana University School of Medicine

### Background
The American College of Graduate Medical Education (ACGME) requires that trainees be evaluated regularly, and the ACGME requires the program's Clinical Competency Committee (CCC) to formally review evaluations twice a year. Because there is no standard evaluation process across fellowships, individual programs design an evaluation process to encompass the 21 milestones. Due to an email-based evaluation system used at our institution, fellows were not given real time feedback along with their evaluations. There was also no direct formalized evaluation tool for many aspects of their neonatal training.

### Objectives
1. Create a more streamlined way for fellows to obtain real time feedback in multiple settings implementing the use of Quick Reader (QR) codes
2. Increase number of completed evaluations for fellows
3. Increase number of the individual milestones represented by evaluations
4. Improve satisfaction of evaluation system for faculty members

### Methods
In January 2019, we instituted a QR-based evaluation system to evaluate fellows on different aspects of their neonatology training. To help facilitate inclusion of all milestones, we added 15 new evaluations to the ones that were part of the former system. With the exception of the end of rotation evaluation, all other evaluations are 5 questions or fewer, allowing them to be completed quickly. Fellows were given QR codes that faculty could scan immediately after an encounter to complete an evaluation via a REDCap database. We compared the number of evaluations completed prior to and after implementation, and reviewed representation of the milestones in the previous and new systems. Faculty members were surveyed before and after implementation of the new evaluation method to assess satisfaction levels with evaluation process.

### Results/Outcomes/Improvements
From 2008-2018, fellows had an average of 10.6 evaluations completed in each six-month period, and an average of 3.9 milestones per fellow were not represented by evaluations when reviewed at the CCC. After six months of the new system, fellows have an average of 25.1 evaluations completed, and all milestones were represented by evaluations. In the new system, 19 of the 21 milestones are represented in >2 evaluations, and the majority have increased substantially in representation. When surveying faculty members, 77% felt that the new system was easier to evaluate, 77% felt that the new system took less time to complete an evaluation, 95% felt as though the evaluations were just as good or better as the old system, and 83% preferred the new system of evaluations.

### Significance/Implications/Relevance
The QR code promotes real-time, face-to-face feedback. The 15 novel evaluations allow for greater opportunity for milestones to be assessed during faculty/fellow interactions. The greater representation of milestones at the CCC meetings allow the committee to focus on constructive feedback and areas of improvement for each fellow. Faculty members believe the new evaluation system produces evaluations that are easier to complete and are preferable to the old system.

# Abstracts

## Poster# 30: Biomathematical modeling predicts fatigue risk in general surgery residents

**Team:** Lindsay Schwartz, PhD, Jaime Devine, PhD, Institutes for Behavior Resources; Steven Hursh, PhD, Institutes for Behavior Resources, Johns Hopkins University School of Medicine; Elizabeth Mosher, MA, MedStar Institutes for Innovation; Sarah Schumacher, Georgetown University School of Medicine; Lisa Boyle, MD, Georgetown University School of Medicine, MedStar Georgetown University Hospital; Jonathan Davis, MD, Georgetown University School of Medicine; Mark Smith, MD, MedStar Institutes for Innovation; Shimae Fitzgibbons, MD, Georgetown University School of Medicine, MedStar Georgetown University Hospital

### Background
Fatigue and its effects on performance have long been a concern in medicine. Long duty hours, overnight shifts, and rotating shift patterns all contribute to reduced sleep opportunity, sleep loss, circadian misalignment and ultimately, fatigue. Despite the current duty-hour restrictions, there is evidence that their effect on physician well being and patient safety is limited. An alternative method of managing fatigue and improving performance is the use of biomathematical fatigue modeling in shift-scheduling.

### Objectives
The goal of this study was to measure and describe existing sleep patterns in general surgery residents and optimize sleep prediction using biomathematical fatigue modeling to help estimate future performance and fatigue risk.

### Methods
24 residents based at a large, multi-hospital, general surgery residency program wore wrist actigraph devices for 8 weeks and completed subjective sleep assessments. Sleep data and shift schedules for each resident were then input into the Sleep, Activity, Fatigue and Task Effectiveness Model to assess predicted cognitive performance. This biomathematical model has been successfully employed in industries such as the US Military and the airline industry, among others. Performance was compared to an "effectiveness" level of 77, which is equivalent to a BAC of 0.05g/dL. Sleep debt, measured as a "reservoir" level, was assessed at 75 – an eight-hour sleep debt.

### Results/Outcomes/Improvements
On average residents slept twice each day, with a total average sleep time of 5 hours and 45 minutes. Residents napped on shift 20% of their workdays, with naps averaging 1 hour and 42 minutes. Sleep duration during shifts or across the entire day was not related to shift length. Modeling results showed that as shift lengths increased, effectiveness scores decreased, and the time spent below criterion (77) increased. Shift lengths under 16 hours had significantly higher effectiveness scores and lower % below criterion than shifts longer than 16 hrs. Additionally, an analysis of the percentage of shifts with low scores showed that 7.39% of shifts were below the effectiveness criterion and 35.3% of shifts were below the reservoir criterion. The default shiftwork model predicted sleep very well, the average percent difference between estimated and actual sleep per half hour was only 0.63%, a difference which was decreased to 0.54% with further adjustment of model parameters. Performance predictions from actual sleep and the adjusted model were significantly correlated (p<.0001).

### Significance/Implications/Relevance
Despite adherence to national standards limiting resident work hours, current surgical resident sleep patterns and shift schedules create levels of fatigue that can place them at risk of medical errors, depression, driving accidents, and burnout. It does not appear that residents compensate for long work hours by increasing sleep duration. Strategies for mitigating fatigue include those that react to fatigue (i.e., napping) and those that attempt to prevent it. While duty-hour regulations limit work hours in order to prevent fatigue, biomathematical modeling can assist in minimizing fatigue risk and maximizing performance. This pilot study shows that a biomathematical fatigue model is capable of predicting resident physician sleep patterns and accurately predict performance when creating shift schedules. This objective approach provides an important tool with the potential to help educators in creating shift schedules that maintain physician preparedness and minimize fatigue risk.

# Abstracts

## Poster# 31: Polypharmacy and Chronic Opioid Use Among New Patients Presenting to a Hand Surgery Clinic

**Team:** Ghazi Rayan, MD, Natasha Lewis, MD, Margaret Porembski, MD, Stacia Shipman, DO, Chelsey Gilbertson, DO, MBA, Shannon Thompson, MBA, NTEGRIS Health

**Background**
The use of multiple medications, often termed polypharmacy, is recognized as an increasing serious problem in the current healthcare system. The issue of multiple medication use, especially by elderly patients, is complicated and weighs the risks of polypharmacy with the potential benefits of the medications' therapeutic effects. Opioids were involved in 47,600 overdose deaths in 2017, leading the U.S. Department of Health and Human Services to declare the opioid crisis a public health emergency.  Polypharmacy and chronic opioid use are especially concerning because of the potential for drug interactions that might increase the respiratory depressant effects of opioids.  Although there have been previous studies looking at specifically benzodiazepine use and concomitant chronic opioid use, there has been very limited research investigating chronic opioid use in the setting of polypharmacy.

**Objectives**
To determine the prevalence of polypharmacy in new patients presenting to a hand surgery clinic and to further observe which of these patients are also chronic opioid users.  We additionally aim to compare rates of polypharmacy and chronic opioid use between older and younger age groups.

**Methods**
We performed a retrospective chart review of patients age > 18 presenting for a first visit at an outpatient hand clinic for upper extremity complaints during December 2013 to December 2018.  Data was collected on all patients including age, gender, and all prescription and non-prescription medications taken at the time of the visit.  Descriptive statistics using odds ratios with 95% confidence intervals (CI) were calculated.  We sought associations between various findings using Fisher's exact test for categorical variables. Comparison of proportions were calculated using the N-1 chi-squared analysis.

**Results/Outcomes/Improvements**
500 patient charts were included in the initial analysis database.  The prevalence of polypharmacy was found to be 218/500 or 43.5% (95% CI 39.2-48.1).   Of the 218 patients who met criteria for polypharmacy, the average patient age was 58 (range 23-98).  We further determined the prevalence of chronic opioid use in this group was 63/218 or 28.8% (95% CI 22.9-35.3).  More patients in the age>50 group were found to exhibit polypharmacy than in the younger group (86.4% vs. 53.1%, p<0.0001, odds ratio [OR] 5.53, 95% CI 2.70-11.58).  The age >50 group was found to take a significantly higher number of overall medications when compared to the younger group (8.8 vs. 5.5, mean difference 3.3, p<0.0001).  There were no differences between the two groups in regards to chronic opioid use (OR 0.85, 95% CI 0.43-1.71, p=0.63), or any current opioid usage documented on their first visit (27.9% vs. 35.9%, difference 8%, p=0.24).

**Significance/Implications/Relevance**
This study demonstrates a high prevalence of polypharmacy among new patients presenting to a hand surgery clinic, especially in patients older than fifty.  Of the patients exhibiting polypharmacy, almost one-third were also chronic opioid users.  Our findings highlight the importance of a thorough review of patients' medications due to the potential for dangerous drug interactions, particularly if general anesthesia is planned.

# Abstracts

## Poster# 32: RISE up: Building Resiliency for End-of-Life Care Providers

**Team:** Charlene Raman, Kevin Hsu, MD, Stacey DaSilva, MD, Vanessa Chan, DO, Kuo-Wei Lee, MD, Jeegar Rana, DO, Valerie Zamudio, MD, Kaiser Permanente Los Angeles Medical Center; Andre Cipta, MD, Emily Graham, MSW, Tracy Lynch, MSW, Jeffrey Mariano, MD, Susan Wang, MD, Kaiser Permanente West Los Angeles Medical Center

### Background
Physician burnout, defined by emotional exhaustion, depersonalization and low personal accomplishment, is an underrecognized phenomenon that begins early in training. Compared with non-medical peers, medical students initially report equivalent or better wellness scores, but their sense of well-being declines throughout medical training. With more than half (54.4% in 2014) of U.S. physicians suffering from burnout, it is not surprising that 20% sought to reduce clinical hours and 2% planned to leave practice. Burnout in palliative medicine is high, with 62% of American Academy of Hospice and Palliative Medicine clinicians reporting symptoms in 2015. Concerns about resilience in the physician workforce have led to an increased commitment to well-being in medical training. Balint groups are a tool found to reduce primary care burnout and create a safe space for reflection to enhance the clinician-patient relationship. However, they do not teach physicians how to navigate chronic environmental pressures nor intrapersonal characteristics that lead to burnout. Various pilot programs exist that demonstrate efficacy in developing skills to improve resiliency.

### Objectives
iRISE (Initiative for Resiliency, Introspection, Self-Care, and Empathy) is a novel pilot curriculum that provides an opportunity for Kaiser Permanente Geriatric Medicine and Palliative Medicine fellows to process difficult cases and learn skills to optimize wellness, resiliency and clinician empathy. iRISE provides a longitudinal, year-long curriculum which incorporates both Balint groups and skill-set training to enhance self-care and compassion.

### Methods
Palliative social workers, who are soul-centered facilitators, deliver the iRISE curriculum to Geriatric Medicine and Palliative Medicine fellows. These monthly iRISE sessions are comprised of two components, each designated one and a half hours.. First, learners develop 10 skills to enhance empathy and resilience through didactics and practical application. This skill-set utilizes spiritual psychology, which joins spirituality, defined as non-religious exploration of meaning in one's life, with everyday experiences in an effort to foster a more peaceful and content state of being. The second portion consists of Balint groups, where fellows deeply examine emotional clinical cases. To measure the efficacy of the iRISE curriculum, fellows complete the Maslach Burnout Inventory Human Services Survey for Medical Personnel (MBI-HSS MP) before and after curriculum completion. MBI-HSS MP is tailored for health professionals and addresses the three main components of burnout and empathy. The results will be statistically analyzed, with comparison to ACGME Well-Being surveys, to determine if there is a significant impact on our fellows' well-being during this academic year.

### Results/Outcomes/Improvements
By integrating lifelong, self-care skills to improve resiliency, well-being and empathy, our hope is that the iRISE curriculum will be an innovative and effective method to prevent physician burnout. In the future, this data can be compared to Accreditation Council for Graduate Medical Education(ACGME) Well-Being surveys.

### Significance/Implications/Relevance
iRISE is a novel learning modality that aims to equip physicians with the skill-set necessary to RISE above the emotional stressors inherent in the field of geriatric and palliative medicine. This curriculum will empower all members in the fields to lead from within and integrate a patient-centered approach with physician well-being, resulting in whole-person care for all. Due to its interdisciplinary approach, iRISE can be expanded to include other medical learners and health professionals and serve as an adjunct to enhance mentorship.

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# Abstracts

## Poster# 33: Linking Systems-Based Practice to Patient Outcomes: Residency Dashboards in a Learning Health System

**Team:** Lindsay Mazotti, MD, Nardine Riegels, MD, Kaiser Permanente School of Medicine Kaiser Permanente East Bay; Danny Sam, MD, Kaiser Permanente School of Medicine, Kaiser Permanente Santa Clara; Jung Kim, PhD, MPH, Kaiser Permanente School of Medicine, UC Berkeley School of Public Health; Hernan Oscco, MHA, Connie Li, MPH, Kaiser Permanente East Bay

**Background**
Longstanding calls have failed to equip learners in Graduate Medical Education (GME) with skills in Systems-Based Practice (SBP) and Practice-Based Learning and Improvement, and knowledge in Health Systems Science (HSS). These parallel the National Academy of Medicine's call to develop learning health systems (LHS) in which "science, informatics, incentives, and culture are aligned for continuous improvement and innovation." However, bridging medical education and health care delivery systems remain elusive, leaving education leaders to rely upon sparse and subjective measures of competency and an inability to adequately train GME learners as systems transformative physicians.

**Objectives**
We will describe how Kaiser Permanente supports trainees in our GME programs to function within a LHS and improve patient and health systems-level outcomes. Goals of this project include:
1. Aligning our GME programs with key health delivery system attributes to improve health system performance
2. Tracking trainee and program level progress in Accreditation Council for Graduate Medical Education (ACGME) core competencies
3. Aligning the health system to support accreditation self-studies and the Clinical Learning Environment Review (CLER)
4. Utilization of dashboard to identify health inequities and to improve care disparities

**Methods**
KP institutional education leaders selected a pilot residency program in Internal Medicine using National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS)* performance for an outpatient dashboard. The dashboard's conceptual design allows the tracking of physician performance in order to compare residents against peers, identify program level performance, and benchmark against faculty performance.   Through a series of meetings with stakeholders representing quality improvement, financial, and educators,
data was extracted from an integrated regional database sourced from our electronic health record. To implement the dashboard, programmers used Tableau™ software, to develop an interactive data visualization that residents, programs and health systems could utilize to monitor resident progress and to align with quality goals for their patient panels.  Institutional leaders and residency program leadership then engaged in continuous quality improvement (CQI) to refine analytic models and the dashboard interface to improve functionality and usability.

**Results/Outcomes/Improvements**
Incorporating health systems-level and quality measures for assessing and improving in the ACGME and American Board of Medical Specialties (ABMS) competencies in SBP and Practice-Based Learning and Improvement was feasible. Our dashboard incorporated commonly used publicly reported physician performance such as the National Committee for Quality Assurance (NCQA) Healthcare Effectiveness Data and Information Set (HEDIS) to create a more comprehensive and integrated framework for tracking performance of an individual resident, a residency program, and a health system.

**Significance/Implications/Relevance**
Future directions of the dashboard include care experience data, inpatient data and inclusion of other residency programs in our institution and our region.  We will continue to explore how existing platforms in our health care system such as learning management systems and other organizational-wide visualization software can improve the timeliness and accessibility of dashboards. Improving resident competence via co-designed

dashboards may help program directors and designated institutions officers (DIOs) better align for ACGME accreditation self-studies and Clinical Learning Environment Review (CLER).  Residents and health systems may also utilize such data to identify and close care disparities for the patients they serve.

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# Abstracts

## Poster# 34: Comparison of Cost and Outcomes of Single- versus Multi-Panel Resident Selection Interviews

**Team:** Jill Cheng Sim Lee, MD, MSc, MRCOG, MRCP, Joella Xiao Hong Ang, MD, MMed, MRCOG, MRCS, Felicia Yiqian Ang, Manisha Mathur, MD, MS, FRCOG, KK Women's and Children's Hospital, Singapore

### Background
Resident selection needs to be reproducible, robust and appropriate enough to withstand scrutiny. Objective quantification and measurement of desired values in a way acceptable to candidates and the selection panel requires much time, thought, effort and energy. In an attempt to achieve this, the SingHealth Obstetrics and Gynecology Residency Program has evolved its selection process from a single panel interview in 2011 to a 7-station selection exercise involving multiple individual and small group interviews, simulated skills stations and multisource-feedback review in 2017.

### Objectives
This study aims to estimate the financial cost of resident selection using a traditional single-panel interview compared with a multiple station selection exercise.

### Methods
The human and logistical cost of organizing the single-panel and multi-panel interviews were retrospectively calculated, adjusting for national inflation.  Resident interview ranking outcomes for the 2011 and 2017 cohorts were measured by obtaining end-of-year performance ranking, competency and in-training examination (CREOG) scores at the end of Years 1 and 2 of residency training from the residency program database.

### Results/Outcomes/Improvements
The total cost of the single panel interview interviewing 25 candidates run over 4 hours involving 10 faculty and 2 administrators in a single meeting room was S\$ 27,457.11 (US\$ 19,880.78) adjusting for effect of annual inflation in 2017. The total cost of a the 7-station interview interviewing 25 candidates for 10 hours over a period of 2 days involving 14 faculty and 5 administrators was S\$ 92,103.30 (US\$ 66,688.94). The latter interview involved 7 meeting rooms, a pelvic model simulator and a laparoscopic simulator.

There were no differences in resident cohort ranking (Year 1 $z=-0.59$, $p=0.552$, Year 2 $z=-0.52$, $p=0.603$), competency grade (Year 1 $z=1.74$, $p=0.082$, Year 2 $z=0.25$, $p=0.802$) or in-training examination (CREOG) scores (Year 1 $z=-0.80$, $p=0.424$, Year 2 $z=1.79$, $p=0.074$) when correlated with selection interview ranking for the two separate selection methods.

### Significance/Implications/Relevance
The multi-panel selection method cost 3.35 times more than the single-panel interview. This study shows that resident selection methods do not appear to affect resident performance despite additional spending, time and effort. Residency programs need to consciously select reliable and lean methods of resident selection to avoid waste of precious resources which may be used to greater effect in other areas of postgraduate education.
The SingHealth Obstetrics and Gynecology Residency Program has since reduced its selection exercise to a 2-panel interview. Resident performance outcomes for the 2-panel interview are currently being studied.

## Poster# 35: Meaning in Medicine: Narrative Exploration

**Team:** Martie Parsley, PhD, Amy Yin, Loma Linda University Health

### Background
Narrative medicine is experiencing a surge in medical education to study and practice various learning goals and outcomes. One can find an assemblage of literature on patients' meaning of illness, narratives by patients and families, and the importance of narrative in enhancing patient-physician relationships. 1,2,3,4,5 According to Charon, considered the originator of Narrative Medicine, narrative is effective in "bridging the divides that separate physicians from patients," and present a more holistic way of treating disease. Spiegel and Spencer denote that narrative writing may also deter emotional burnout, which led to our consideration of tapping into narrative as a technique to build or fortify resilience in stressful times for residents, such as transitioning to a new training program.

### Objectives
We were interested in focusing specifically on the use of narrative for self-growth and reflection for residents. Our aim was to provide a learning experience where our residents could find, through themselves, inspiration and commitment as a physician through prompted writing and discussion.

### Methods
The project involved the production of approximately 100 submissions submitted by 28 residents/fellows as they transitioned into their new program. Participants were instructed to submit narratives under 4 categories. These categories were established through a review of the literature on the use of narratives in medical education: Patient/Physician Relationships (Charon, nd), Professional Identity (Miller, Balmer, Hermann, Graham, and Charon, 2014), Communication (King and Hoppe, 2013), and Emotion (Finset, 2010). Our aim included analysis of what issues residents identified as important so residents could choose one emphasis from 3 – 4 under each category.
Faculty experienced in narrative writing reviewed the submissions, and on the first day of orientation the themes, content, and experiences were discussed in assigned resident/fellow groups.
One week after orientation all participants were surveyed project specifics, their level of self-awareness as a physician, and their initial assessment of the LLUH training program they were entering.

### Results/Outcomes/Improvements
Preliminary findings indicate that the issues most frequently chosen by residents to focus on were 1) The most meaningful patient encounter (47%),  2) The 10 most satisfying things about doctoring (40%), 3) A situation in which you failed to communicate with patient or family (39%), and 4) A patient, colleague, teacher, or situation that made you angry (48%). The majority of submissions focused on how that experience contributed to their resilience in and commitment to becoming a better doctor.  Most participants were positive about this experience though they had not received formal training in narrative writing. They did view further training as potentially contributing to their effectiveness as a physician. Most felt as though this experience led to self-awareness in their personal identification as well as self-growth as a physician. Some indicated that this experience resulted in an increase in their initial perceptions of the training program they were entering.

### Significance/Implications/Relevance
Cursory findings have encouraged an expansion of this study. Possible directions include longitudinal research of trainees throughout medical school and residency and research focusing on narrative writing as process. Future studies will include tracking possible changes in the meaning of medicine throughout residency training.

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# Abstracts

## Poster# 36: Perceived Preparedness and Knowledge of Residents Measured Before and After a Resident Training in Domestic/Intimate Partner Violence

**Team:** Mariah Burnell, DO,  Veronica Takov, DO, Kegan Rummel, DO, Shannon McMann, DO, Pamela Royston PhD, Amrita Pawar, Mclaren Macomb, Grace Brannan, PhD, Grace Brannan LLC

### Background
Intimate partner violence (IPV) can take different forms and can be physical, emotional, sexual, psychological or economic. In the United States, it is estimated that 1 in 4 women and 1 in 9 men are current victims of IPV. However, these numbers are believed to be higher since IPV victims are likely to underreport.
Physicians are in a unique setting to help identify IPV and provide critical assistance to victims. Yet, physician knowledge, comfort, baseline screening and ability to manage IPV patients are lacking.

### Objectives
The primary objective of this retrospective Quality Improvement study is to determine postgraduate year one residents' perceived preparedness and knowledge regarding intimate partner violence before, immediately after, and one year after completing an IPV educational program.

### Methods
This was a programmatic improvement project using Continuous Quality Improvement (CQI) principle. Matched pre- and post- perceived preparedness and knowledge responses of all participating residents at McLaren Macomb who completed IPV training between 2015 and 2017 were analyzed. A well-studied and established validated tool, Physician Readiness to Manage Intimate Partner Violence Survey, was used to assess changes. Repeated measures ANOVA was performed. Bonferroni post hoc test was performed as a mean separation test. Statistical significance was set at $p \leq 0.05$. SPSS v25 statistical program was used to analyze the data.

### Results/Outcomes/Improvements
Twenty residents completed the survey. Mean scores for 12 individual perceived preparedness statements and for the total were calculated. Immediate post mean scores were statistically significantly ($p=0.0001$) higher compared to pre-training scores. Immediate post- and one year post- test mean scores were not statistically significantly different except in the case of the following statements: Help an IPV victim assess his/her danger of lethality ($p=0.048$) and Conduct a safety assessment for the victim's children ($p=0.012$).
Mean scores for 16 individual perceived knowledge statements and for the total were calculated. Immediate post- mean scores were statistically significantly ($p=0.0001$) higher compared to pre-training scores. Immediate post- and one year post- test mean scores were not statistically significantly different except in the case of one year post statistically significant decreases in the total mean score ($p=0.044$) and the following statements: Your role in detecting IPV ($p=0.036$), Determining danger for a patient experiencing IPV ($p=0.025$) and Developing a safety plan with an IPV victim ($p=0.002$).

### Significance/Implications/Relevance
The results of this study demonstrate the overall effectiveness of the intimate partner violence educational program. Immediate post- and one year post- test mean scores were statistically significantly higher than the pre-training test scores in all categories. In addition, the scores, except for a few which will be emphasized in future trainings, did not change one year post indicating stability. This educational program achieved our goal of improving domestic violence screening and recognition and has better equipped our PGY-1's with the necessary skills they can apply to their residency practices and beyond. We anticipate this will result in increased recognition of victims in our community and the ability to provide outreach and helpful resources for those in need.

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# Abstracts

## Poster# 37: Music in Medicine: The use of music to foster rapport between providers and patients

**Team:** Kwon Soo Kim, MD, Shobhanna Chaudhari MD, Nora Bergasa MD, NYMC Metropolitan Hospital Center

### Background
Helping and serving people in need is my motivation and goal as a physician. Throughout my residency, witnessing patients achieve their optimal health has been both rewarding and inspiring. However, I have observed many patients who, despite their health improvement, seem to require extra support socially and emotionally.
Acknowledgment of the impact of music in health is not new, and research has shown that music affects different body systems in measurable ways. As a former professional musician and violinist I have been wanting to combine my love for music and medicine somehow. I was finally able to achieve this in August 2019, with the launch of Music in Medicine.

### Objectives
The goal of this project was to bring joy to patients, support them emotionally, improve their mood, relieve their anxiety, and build stronger rapport between patients and health care providers.

### Methods
Each Friday, a group of residents and attending physicians conducted 20-minute rounds in each Medicine floor, distributing ice cream and providing short live music sessions in each patient's room.

### Results/Outcomes/Improvements
Since this project started, we have noticed dramatic changes in patients and were surprised at how potent the effect of music was. For example, we had a patient with dementia who had never been cooperative with the medical staff and was noted to decline the ice cream for weeks. However, when we approached her with music, she stood up from the bed, began to dance, and chose to have ice cream for the first time. As per the primary team, this was the first time she smiled during her extended hospitalization. The nurse in charge of the patient stated, "I can't believe what I am seeing now. This is the first time I see her smiling and can't believe she is dancing! We appreciate what you guys are doing!" Another example is of a patient (formerly a saxophonist), who recently had a tracheostomy tube placed. This patient was struggling with depression because he was not able to play his instrument anymore. When we entered his room playing "Autumn Leaves," he started making gestures like he was playing his saxophone while the music was ongoing. Joy and excitement were radiating from his face during the entirety of the music session.

### Significance/Implications/Relevance
We believe that our project successfully improved rapport between doctors and patients and led to a decrease in anxiety among patients awaiting surgery, biopsy results, and nursing home placements. Music not only made patients happy, but also improved the overall the workplace atmosphere and teamwork. Although our project had no specific therapeutic goal, we definitely achieved more than what we hoped for.
Doctors, by definition, are qualified practitioners of medicine. We focus on patients' health improvement by treating their diseases with medicine and surgery. However, it's important to provide holistic care, which takes into account every aspect of a person's wellbeing, including emotional support. Encouraging this approach among providers will improve patient care in every way.

# Abstracts

## Poster# 38: Junior Doctors Running Outpatient Clinics After A 24-Hour Shift: Effects On Patient Satisfaction And Prescription Errors

**Team:** Si Qi Tan, MD, Ministry of Health Holdings Singapore; Chee Yang Chin, MD, MSc, National Heart Centre Singapore; Swee Leng Kui, Singapore Health Services

**Background**
It is intuitive to think that sleep deprivation adversely impacts the performance of doctors and hence the care of patients. A Nature article published in 1997 famously likened psychomotor performance after 24 hours' sustained wakefulness to that observed at a blood alcohol concentration twice the proscribed level of intoxication in many countries. The literature on how sleep deprivation affects junior doctors however is mixed, with insufficient focus on patient outcomes.

**Objectives**
The aim of this study was to assess if patient outcomes in an outpatient clinic setting were adversely affected when they consulted a post-call registrar versus a non-post-call registrar.

**Methods**
This was a prospective, quantitative study adopting a post-positivist approach, set in a large teaching hospital. Between November 2013 and February 2014, patients from all clinics run by a registrar following a continuous 24-hour shift (post-call) were recruited to the study group. Patients from non-post-call clinics run by these registrars on a different day were recruited as controls.
Outcome measures were patient satisfaction, assessed via a validated 5-item 4-point Likert scale questionnaire, and prescribing error rate, defined as the number of errors over the total number of orders. Between-group differences for each outcome were statistically analysed using the chi-squared test.

**Results/Outcomes/Improvements**
103 of 106 (97%) patients in 9 post-call clinics and 93 of 105 (90%) patients in 9 non-post-call clinics consented to participate. The questionnaire completion rate was 99% in both groups. 536 prescriptions were ordered in the study group, and 526 in the control group.
Overall, the percentage of top-box responses (indicating greatest satisfaction) was higher in the study group as compared to the control group (79.3% vs 62.4%, $p<0.001$). The percentage of top-box responses for each individual item was higher in the study group.
There was no significant difference in prescribing error rates between groups (1.31% vs 2.28%, $p=0.23$).

**Significance/Implications/Relevance**
The null hypothesis of this study was not rejected. Although unexpected, these findings importantly provide objective evidence that patients may safely see a post-call registrar in clinic. Any impairment due to physical or mental fatigue could be mitigated by an adaptive conscious effort by the doctor to be more conscientious when tired.
The findings of this study are important for patient safety as they show that outcomes, as measured by patient satisfaction and prescribing error rates, are not detrimentally affected when patients see a post-call registrar in clinic as compared to a non-post-call registrar.
Although this study adds to the available literature, the impact of fatigue and sleep deprivation on doctors' clinical performance remains poorly understood. Larger and longer term studies on patient outcomes are necessary. Qualitative studies of junior doctors' feelings when post-call may shed light on the complex interaction of emotional factors that may compensate for phy

# Abstracts

## Poster# 39: One Lecture and One Card: An Efficient Intervention to Promote Proper Use of VTE Prophylaxis by Medical Residents

**Team:** Junfeng Xue, MD, PhD, Ping Lu, MD, PhD, Huihui Liu, MD, PhD, Chunjie Li, MD, PhD, Daniela Levi, MD, Montefiore Mount Vernon Hospital

### Background
Hospitalized medical and surgical patients have a higher risk of venous thromboembolism (VTE), which includes both pulmonary embolism (PE) and deep vein thrombosis (DVT). VTE rate can be as high as 80% in hospitalized patients whereas PE is one of the leading causes of hospital death. Because VTE is preventable, prophylaxis is deemed a major measure of quality of care. The suboptimal adherence to prophylaxis guidelines is mainly due to physicians' unfamiliarity with the complex recommendations. In teaching hospitals, the residents are responsible for prescribing VTE prophylaxis. We initiated a prospective study to explore educational interventions to facilitate and improve resident compliance with the current guidelines as part of the process improvement measures. In 2018, we showed that didactic lectures are effective, however, periodical refreshing lectures are required in order to promote sustainability.

### Objectives
We hypothesized that by providing instructions through a pocket reference card, we could enhance residents' mastery of the guidelines and reduce the number of repetitive refreshing lectures. The goal is to identify a time-efficient process to achieve optimal VTE prophylaxis.

### Methods
A concise reference pocket card was created based on review and simplification of major VTE prophylaxis guidelines. A comprehensive lecture was given at the beginning of the academic year. We used Plan-Do-Check-Act (PDCA) cycle to study the effects of this new initiative. We reviewed the electronic charts within 24 hours of each new admission to monitor prophylaxis rate. Totally 1280 patients admitted from July to September in 2018 and in 2019 were included. We monitored the electronic orders, documentation and the consistency between the two. Then, we compared the results with the 2018 method where lecturing was utilized. We also created and distributed a survey questionnaire regarding the effectiveness of the VTE card among all the residents (24/24) in order to obtain feedback.

### Results/Outcomes/Improvements
The DVT pocket card is a time and cost-effective way for VTE prophylaxis training. One month after the lecture and the distribution of the card, correct VTE prophylaxis rate improved from 82% of the preceding month to 88%. The effect was long-lasting: without further intervention, the correct rate reached 92% in the next month. This result contrasts with the 2018 lecture-based method where monthly refreshing lectures were needed to maintain a similar compliance rate.
The current intervention was scheduled at the beginning of the academic year and targeted the new interns, which contributed to the improved performance: 11% rate improvement (from 71% in July, 2018 to 82% in July, 2019). The 2018 VTE prevention initiative did not coincide with the start of the academic year.
Lastly, as part of the PDCA method, a survey regarding the card effectiveness was carried out. 100% (24/24) residents thought the card was helpful and 54% (13/24) of the residents confirmed that they used it weekly.

### Significance/Implications/Relevance
Physicians in training are familiar with the shortcomings of applying guidelines at a larger scale. They can design and implement process improvements that allow sustainability. Compared to traditional lecture-based intervention, the one lecture one card strategy developed by residents is easily adopted by most residency programs.

# Abstracts

## Poster# 40: Sustained long term reduction in reporting error by means of a structured e-learning module in treadmill stress testing

**Team:** Chee Yang Chin MD, MSc, National Heart Centre Singapore; Swee Leng Kui, Singapore Health Services

### Background
Treadmill stress test reporting in many institutions is performed by a junior doctor prior to subsequent vetting by a specialist, sometimes over a week later. Inaccurate provisional reporting could therefore potentially lead to delays in treatment and impact on patient safety.

Well-designed e-learning modules can significantly facilitate teaching and learning, and improve healthcare resource management. In October 2013, we introduced a comprehensive treadmill stress test e-learning module comprising formative quizzes and slide presentations for all junior doctors rotating through our Cardiology department. The reporting error rate, defined as the percentage of provisional junior doctor reports requiring subsequent modification by a specialist, was reviewed 3 months before and after implementation. There was a statistically significant 2.8% reduction in error rate after implementation.

Whether this e-learning module could lead to sustained long term effects was unknown.

### Objectives
We sought to investigate if our e-learning module on treadmill stress reporting could lead to a sustained, long term reduction in erroneous reporting by junior doctors.

### Methods
In October 2013, we introduced a comprehensive TMX e-learning module comprising formative quizzes and slide presentations for all junior doctors. In order to assess the long term effect of this module, we reviewed all treadmill stress test reports between January 2011 and December 2018.

Treadmill stress tests were reported as either negative, inconclusive or positive. An error was defined as a provisional report which was ultimately modified by a specialist during final reporting.

The overall error rate was compared before ("pre") and after ("post") October 2013. Additionally, false negative and false positive reporting rates were calculated and compared between pre and post groups.

### Results/Outcomes/Improvements
A total of 14,055 and 56,561 TMX reports were reviewed in the pre and post groups, respectively. Compared to the pre group, there was a lower overall error rate in the post group (17.1% vs 12.3%, $p<0.001$).

Amongst reports provisionally reported as negative, there was a lower error rate in the post group vs the pre group (16.8% vs 12.2%, $p<0.001$). In other words, there was a significant reduction in false negative reporting rates.

Amongst reports provisionally reported as positive, there was no difference in error rate between post vs pre groups (16.8% vs 16.5%, $p=0.916$). In other words, there was no difference in false positive reporting rates.

### Significance/Implications/Relevance
The standardization of junior doctor training in treadmill stress test reporting through our online e-learning module led to a statistically significant 4.8% reduction in erroneous reporting over a sustained period of 5 years from its implementation.

The reduction in error rate amongst provisionally negative reports can be interpreted as a reduction in junior doctor false negative reporting, which is important for patient safety as it reduces delay in treatment. Improvements to the module targeted at reducing junior doctor false positive reporting could potentially save unnecessary healthcare costs by reducing over-treatment of patients.

# Abstracts

## Poster# 41: Teaching Quality, Leadership and Advocacy in Residency

**Team:** Keasha Guerrier, MD, Tochi Iroku-Malize, MD, MPH, MBA, Barbara Keber, Northwell Health

**Background**
Health systems require collaboration and partnership between physicians and other leaders within organizations. However, the skills required to be a physician leader are not intuitively groomed within the realm of medical education. This recognition is now evident by educational regulatory bodies. In 2007 the Residency Review Committee for Family Medicine approved a new requirement for training in leadership during family medicine residency (1).Medical schools have developed curriculum that address physician leadership competencies.  According to Wisenthal et al, "as providers are increasingly expected to  be accountable for producing quality outcomes, there will be an increasing demand for physician leadership in a variety of capacities" (3).  In addition, physicians need to parlay their leadership skills towards successful advocacy for their patients and their profession.
To address the need for physician education in leadership skills as well as quality and advocacy, the Family Medicine Department at the Donald & Barbara Zucker School of Medicine at Hofstra/Northwell created a quality, leadership and advocacy (QLA) elective and track.

**Objectives**
1. Define the competencies in quality, leadership and advocacy that can be used to develop a curriculum in family medicine training.
2. List the available resources for creating a QLA elective or track at their site.
3. Apply lessons learned to overcome obstacles to developing a QLA elective or track.

**Methods**
Utilizing the resources of the Insititute of Healthcare Improvement (IHI), American Association for Physician Leadership (AAPL), Society of Teachers of Family Medicine (SFTM) as well as other local, regional and national opportunities, an elective and track was created which afforded residents the opportunity to gain the skill set of future physician leaders.
The program required faculty familiar with the subject to be the "track director" who worked on the individual educational plan (IEP) and also the basic format of
(a) didactics, (b) journal club, (c) experience, (d) mentoring, (e) exposure to society organization, (f) project and (g) presentation.
Elective time for PGY2 & PGY3 residents were combined and then used as dedicated tracks
12  weeks of elective over two years (14 wks over 3 yrs for one program), Divide curriculum into 2 week blocks, Combination of didactics and live experiences, Application process (must be in good standing at home program), Run via the system department of family medicine to ensure consistency and equity
Evaluation Method:
•Quantitative – milestone based rotation evaluation – # participants – # QLA roles
•Qualitative

**Results/Outcomes/Improvements**
Milestone evaluations were as follows:
Milestone Based Evaluation
•Patient Care
–PC1 level 5, PC2 level 4,  PC3 level 5
•Medical Knowledge
–MK2 level 5
•SBP
–SBP1 level 5, SBP2 level 4&5, SBP3 level 4&5, SBP4 level 5
•PBLI
–PBLI2 level 4&5, PBLI3 level 5
•Professionalism

–Prof1 level5, Prof2 level5, Prof3 level5
•Communication
–C2 level5, C3 level 4&5
Over 35 residents who have done the QLA training with over 1/3rd getting QLA roles post graduation.
Graduates of the residency programs that participated in the QLA elective/tracks had the following careers post-residency:
Director, Center of Sports Medicine, NYIT
Leadership Fellow, Northwell Health (x2)
New Physician Board Member, NYSAFP (x2)
Faculty, GC FMRP (x2)
Medical Director, Amb Practice, California
President Resident Chapter, NYSAFP*
Leader, Resident Fellow Forum, NWH (>1600 members)*
Qualitative data from the participants and faculty were overwhelmingly positive.

**Significance/Implications/Relevance**
The implications of this project that began in June 2013 is that graduate medical education has a role in teaching future physicians about quality, leadership and advocacy (not mutually exclusive) as there is a need for physicians who are conversant in the three skills.
What needs to be in place when committing to this project is
1)Right faculty, right residents
2)Time commitment for evaluation
3)Secure financial commitment
4)Advantage to having external certificates early on – greater buy-in
from administration
Once committed to this education - we create a greater pool of physicians who may be able to help facilitate an improvement in our health care system here in the United States.

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# Abstracts

## Poster# 42: Impact on Residents from Teaching Medical Ethics

**Team:** Cindy Schmidt, PhD, Kansas City University of Medicine and Biosciences; Nauman Ashraf, MD, Ozark Center; Kristine Stevens, EdD, Kansas City University of Medicine and Biosciences

### Background
Physicians teach in a plethora of settings, from the obvious bedside, grand rounds, and case conference settings to the Rotary Club, local health fair, and Parent Teacher Association meetings.1-3 More formally, many physicians and residents also teach in undergraduate medical education.4-6 How do residents learn to teach and grow into their professional role as teachers? How do such early teaching experiences influence them?

### Objectives
This study describes results from a focus group interview with psychiatric residents who taught a small group medical student curriculum on medical ethics. It explores their perceptions of how this teaching experience impacted their growing professionalism and sense of meaning in teaching.

### Methods
After completing their ethics teaching, four PGY-3 psychiatric residents engaged in a one-hour focus group interview. Using a pre-determined interview guide, the facilitator asked residents what they enjoyed and found challenging about their teaching, as well as what they found meaningful about teaching medical ethics. The interview was audiotaped, transcribed, and reviewed for accuracy by the interviewer. The authors conducted a qualitative analysis using grounded theory to discover emergent themes and any underlying connections. We used an iterative process with the constant comparison method of defining, re-defining, and subsequently re-classifying, comments made during the focus group interview.

### Results/Outcomes/Improvements
A core theme from the focus group centered around being "green" to medicine. From a Learner Characteristics perspective, residents heard their medical students talk about the ethical issues, especially those components relating to patient diversity, in ways that surprised and, at times, offended them. On the other hand, from a Facilitator Characteristics perspective, residents described their own insecurities and limited experience with teaching as undesirable qualities in themselves. The residents' own "green-ness" to teaching may have primed them to be extra sensitive to feedback cues from the students about how they were doing with their teaching. Being newer to teaching, they may have been less adept at facilitating a group conversation and managing attentional lapses in students, and the students may have responded to this by taking additional freedoms with their attention, strengthening an unfortunate feedback loop. Even with such challenges related to being new teachers, however, residents described benefits from teaching that enhanced their own self-growth, reminded them about the importance of medical ethics, and provided them with an opportunity to be altruistic.

### Significance/Implications/Relevance
Formal teaching experiences, as is that with teaching ethics to undergraduate medical students, provide an opportunity for residents to discover their abilities and insecurities in the classroom, to derive meaning and growth from their altruism, and to renew their commitment to their varied professional roles.

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# Abstracts

## Poster# 43: Formative vs. Summative Assessment, a retrospective study to evaluate the Impact on performance outcome of Family Medicine residents in Qatar.

**Team:** Muna Aseel Taher, Mohamed Hashim, Primary Health Care Corporation; Youssef Nauf, MBBS, West Bay Health & Training Centre

### Background
As part of the continuous effort to improve, and after obtaining ACGME-I accreditation in 2013, Family Medicine Residency Program in Qatar has replaced Summative Assessment method, SA (a tool to measure the achievement of preset learning goals) with the six ACGME-I-competence-based Formative Assessment method, FA (a tool for providing more structured and continuous feedback).

### Objectives
To evaluate the change in Family Medicine residents' performance, career satisfaction, and teaching involvement following the implementation of the ACGME-I Competency-Based Formative Assessment system (CBFA) compared to the previously used Summative Assessment system (SA).

### Methods
Data was collected for all residents who completed the third and fourth year of residency in group 1, 2012 & 2013 (pre- ACGME-I accreditation group, PGY3-G1/PGY4-G1) and group 2, 2015 & 2016 (post- ACGME-I accreditation group, PGY3-G2/PGY4-G2).
Quantitative data was collected from residents' performance portfolios including scores from In-Training exams, departmental MCQ exam, and OSCE.
Qualitative data was collected by conducting a survey and face to face interviews.
The collected data for both groups were analyzed to determine the residents' outcomes including their performance, careers-satisfaction, and teaching-involvement.

### Results/Outcomes/Improvements
A-Residents' Portfolio Results:
1- In-Training exam Mean Score,
PGY3-G1-(2012) = 317.8 (MIAS = 476)
PGY3-G2-(2015) = 478 (MIAS = 460)
PGY4-G1-(2013) = 420 (MIAS = 454)
PGY4-G2-(2016) = 525 (MIAS = 456)
2- MCQ exam Mean Score,
PGY3-G1-(2012) = 60
PGY3-G2-(2015) = 65
3-OSCE Mean Score,
PGY4-G1-(2013) = 68
PGY4-G2-(2016) = 79
B-Residents' Survey and Interview Results:
1-Career Satisfaction,
PGY4-G1-(2013) = 77%
PGY4-G2-(2016) = 100%

2-Teaching-Involvement,
PGY4-G1-(2013) = 0%
PGY4-G2-(2016) = 60%
Key: PGY = Post Graduate Year
G1 = Group1 = PGY3-G1/PGY4-G1 (one-year Pre-accreditation and one-year Post-accreditation)

G2 = Group2 = PGY3-G2/PGY4-G2 (Post-accreditation)
MIAS = Mean International Average Score for American Board of Family Medicine In-Training Exam.

MCQs = Multiple Choice Questions Exam.
OSCE = Objective Structured Clinical Exam.
Above In-Training exam international average passing scores of G2 were so prominent in both years explaining the large influence of the FA, which was also very clear within G1 (pre and post) implementation (transitional-period) despite below-average international scores in both years.

**Significance/Implications/Relevance**
Improvement in performance scores, as well as the career-satisfaction level and teaching participation in G2 compared to G1 suggests the implementation of ACGME-I CBFA has helped in improving residents' learning-process including behavior and ways of thinking.
This will definitely lead to a more comprehensive and well-structured residents training program that can be the benchmark for the recently introduced Milestone Based System. Therefore, it is highly recommended to continue using ACGME-I CBFA that is associated with more competent and career-satisfied graduates who are interested in teaching. Milestone Based System is a new challenge for future implementation.

# Abstracts

## Poster# 44: Changing the landscape of remediation: The creation and implementation of an institution-wide performance enhancement program

**Team:** Tiffany Murano, MD, Neil Kothari, MD, Machteld Hillen, MD, Michal Gajewski, DO, Anastasia Kunac, MD, Daniel Matassa, MD, Lisa Pompeo, MD, Michael Anana, MD, Rutgers New Jersey Medical School.

### Background
The process of remediation is a daunting endeavor for both residency leadership and trainees due to several factors including time, resources, variation in process and terms, and negative stigma surrounding the process.

### Objectives
Our goal was to transform the remediation process by creating a system-wide program that collates tools/resources from all departments, utilizing faculty as mentors for trainees outside of their department, and rebranding remediation as the Housestaff Performance Enhancement Program (HPEP).

### Methods
Education leadership across 7 specialties formed a GME subcommittee that created a uniform process for residents who have deficiencies in professionalism and interpersonal communication skills. A formal process for a departmental Performance Improvement Program (PIP) and an institutional HPEP were developed based on a consensus of triggers/behaviors classified as minor, moderate, or major. Utilizing published literature, an HPEP "best practice" toolkit was created. Trainees were enrolled in HPEP by their program director if the PIP was unsuccessful or if a trainee exhibited 1 or more major triggers. All trainees enrolled in the HPEP were required to visit the institution's wellness center in order to screen for external contributing factors and offer assistance. Surveys were sent to the PD, faculty mentor, and trainee 1-month and 6-months after HPEP participation. The confidentiality of the trainees' enrollment was maintained.

### Results/Outcomes/Improvements
In a 1-year period, nine trainees were enrolled in the HPEP—5 completed and 4 remain enrolled. Feedback from the 5 trainees was positive. Comments from trainees included: "great program" and "…helpful to my growth as a physician." PD's noted that having trainees hear the same message from faculty outside of their department was helpful and that framing the HPEP as an opportunity for the trainees to improve made the process seem less punitive to them. The main challenge encountered by faculty mentors and trainees was finding time to meet. Six-month PD surveys report no relapses in unprofessional behaviors.

### Significance/Implications/Relevance
Utilization of an institution-wide standardized process of performance improvement with the removal of negative stereotyping is a unique approach to remediation. Initial feedback is promising, and future enrollment and outcome data are necessary to completely assess the utility of the program. The HPEP is a process that may be adopted by other academic institutions in the future and may potentially order to transform the way medical educators and trainees view the remediation process.

# Abstracts

## Poster# 45: The Shark Tank Approach:  An Event to Improve Research Projects in a Community-Based Residency Program

**Team:** Jesse Kellar, MD, Saint Agnes Medical Center; Jereme Long, DO, Spectrum Health Lakeland

### Background
The Accreditation Council for Graduate Medical Education requires all residents to participate in scholarly activity[1]. Residency programs that successfully produce research often include the use of statisticians, research directors, research curriculum, protected time, information technology support, as well as research-based pay incentives[2]. However, not all residency programs have these resources at their disposal.
Common barriers to research include but are not limited to: Lack of research peers, research mentorship, and research not being valued by the department[3].  In addition, community hospitals may lack nonclinical research faculty, research assistants to collect data, faculty with training in research, and sufficient patient volumes to conduct high-quality studies.  These obstacles do not make research impossible, but they do make projects more challenging to complete, particularly within smaller community-based programs.

### Objectives
Our goal was to develop research ideas which will have a higher likelihood of successful completion in community-based program with limited resources. We reasoned that the barriers to successful research can be potentially minimized if there is:  a) increased collaboration among researchers, and b) a practical study design. Here we report a novel method to increase the collective assessment of research projects in a community-based residency that will create stronger, more feasible research studies.

### Methods
We created a novel process patterned after the TV show "Shark Tank" to develop quality research projects. Residents selected a research project from a list of pre-approved research proposals created by the faculty. In collaboration with a faculty mentor, the research idea was expanded to include an initial research proposal, with a hypothesis, method, preliminary data, and references.
During the "Shark Tank" event, residents presented their proposals to the core faculty who served as the "Sharks." The Sharks provided real-time input to assess feasibility, ease of obtaining data, and ways to avoid potential barriers.  Most importantly, at the end of the discussion, the residents were given recommendations as to the next steps.  Afterwards, all who were present took a qualitative-based survey to obtain information regarding the event's effectiveness, limitations, and areas to improve. Survey participants included twenty-one participants: six faculty and fifteen residents, five of the fifteen being the research-proposing residents.

### Results/Outcomes/Improvements
Survey data illustrated the majority of participants found the event to be helpful (20 of 21, 95%) and wanted it to be an annual event (20 of 21, 95%). A collection of individual survey responses can be seen in Table 1. The two most important areas of improvement were time limits for Sharks' responses and the addition of a written summary of Shark feedback on each research project.
Of the five residents who presented research project ideas, three (60%) found the event slightly modified their initial project in some way, one (20%) made no major modifications, and one (20%) resident completely abandoned the project altogether.
After the Shark Tank event, residents were instructed to meet with their faculty mentors to discuss the feedback and work on the next steps.  For those whose projects were discontinued, these residents were encouraged to collaborate on an already-approved project.

### Significance/Implications/Relevance
This event refined the research proposal process by implementing a unique collaborative peer review.  In the future, we will track the success rate of accepted research for publication or presentation in order to evaluate overall effectiveness.  This program could be emulated in other community-based programs seeking to increase collaboration in the research proposal process.

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# Abstracts

## Poster# 46: Creating Resident Patient Safety Team Leaders through a Simulation-based Interprofessional Root Cause Analysis (RCA) Course

**Team:** Renée I. Matos, MD, MPH, Ashley Parham, MSN, RN, Maria Molina, MD, Sylvia Ringmacher, Robin Francis, MSN, James Aden, PhD, Timothy L. Switaj, MD, MBA, MHA, Matthew Kemm, MD, Chad McGrath, RN, Sarah Schall, MD, Michelle Valdez, MA, Brooke Army Medical Center

### Background
Medical errors impact healthcare safety, quality, costs, and physician well-being. Resident patient safety practices persist for years after graduation, supporting the need for a robust curriculum. The ACGME Common Program Requirements require residents to participate in real or simulated interprofessional patient safety activities, such as RCAs.  Due to the relatively low number of RCAs in comparison with our 600 residents, most residents will not have the opportunity to participate. Clinical team members, including residents, often lack confidence and knowledge about RCAs, including relevance, institutional framework, and process for developing strong corrective action plans. Our educational program sought to expose residents to the RCA process through interprofessional teamwork using the RCA2 framework to develop future patient safety leaders.

### Objectives
To develop an interprofessional simulation-based course to improve the knowledge and confidence of residents, faculty, and other healthcare team members in the RCA process. Our secondary objective was to improve the strength of corrective action plans for our institutional RCAs.

### Methods
A flipped classroom approach was used whereby 70 voluntary participants, including 29 residents/fellows from 18 GME programs and 20 faculty members, completed 5-hours of pre-course content followed by a survey to assess baseline knowledge, confidence, and previous RCA experience. Course elements included: didactics and a facilitator-led simulated RCA with small groups that conducted mock interviews and developed causal factors and corrective action plans. Pre- and post-surveys were compared. Statistical significance was evaluated for matched pairs and between groups using the Wilcoxon Signed Rank Test. Strength of corrective action plans were compared before (2016-2018) and after the course (Jan-Sep 2019) using the VA Action Hierarchy.

### Results/Outcomes/Improvements
We analyzed survey results from 69 of 70 course participants (42% resident/fellow, 29% faculty, 15% nursing, and 14% other).  Eighteen percent of participants had previous RCA training.  Confidence in participating in an RCA among GME residents and faculty increased after the course (34% to 97%, p<0.0001).  Confidence conducting RCA interviews increased from 59% to 95%, p<0.0001. Confidence in leading an RCA increased from 19% to 85%, p<0.0001.   Post course feedback on most useful/relevant aspects of course included 77% small group practice, 62% didactics/lectures, and 45% pre-course reading material. Common themes from participants included the strength of the simulated small group experience, which allowed for experiential learning, reinforcement, and the development of critical thinking skills needed to focus on systems improvement. Post course, 14 institutional RCAs have occurred with 57% (8 of 14) including a course graduate team member and the number of intermediate or strong corrective action plans increased from 56% to 68%, p=0.1193.

### Significance/Implications/Relevance
Our interprofessional course successfully created 70 RCA-trained leaders representing half of our institutional GME programs, which resulted in improved knowledge and confidence participating in and leading a RCA. Course graduates have participated in RCAs, and the course trended towards an association with stronger corrective action plans, but was not statistically significant. Course feedback was overwhelmingly positive, with plans for a second iteration and discussions of exporting to other institutions.

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# Abstracts

## Poster# 47: Using the Army's After Action Review to Maintain Momentum after an ACGME CLER Site Visit

**Team:** Michelle Valdez, MA, Reneé Matos, MD, MPH, Sarah Bowe, Sarah Schall, Crystal Forman, San Antonio Uniformed Services Health Education Conso

### Background
ACGME Clinical Learning Environment Review (CLER) site visits require significant preparation, but momentum frequently dwindles without debrief while awaiting the report. The US Army's After-Action Review (AAR) is designed to assess performance and collect lessons learned with successful applications across many fields. The CLER program encourages GME and hospitals to collaboratively improve the clinical learning environment to promote safe quality healthcare. It brings together GME leadership, faculty, trainees, institutional leaders, and patient safety/quality staff. During the visit, energy builds as groups share current and desired initiatives, but the absence of a structured debrief can temporize momentum.

### Objectives
To develop a modified AAR to capture CLER participant feedback, lessons learned, and track future improvements. Our secondary objective was to capitalize on the momentum from the CLER visit and implement needed changes immediately in advance of the report.

### Methods
We designed CLER AAR feedback forms for small group participants to complete after site visitor meetings with 6 focus areas: Visitor observations and feedback, Strengths, Areas for improvement, Lessons Learned, Logistics strengths/areas for improvement, and Recommendations. A convenience sample of faculty and program directors from the larger groups completed surveys to highlight strengths, weaknesses, recommended corrective actions, and other concerns. Resident tour guides completed similar feedback forms. The CLER visit planning team met following the visit to compile and summarize all comments. We assigned action items to subcommittees for incorporation into SMART goals. Upon receipt of the CLER report, additional items identified during the site visit were incorporated into the final action items list.

### Results/Outcomes/Improvements
We collected 23 AAR feedback forms, including one from every resident tour guide and 2-3 responses from each group/meeting that were compiled and organized by group. Noted strengths included initiatives in the area of wellbeing, quality improvement and patient safety. Areas for improvement included: methods to measure and quantify burnout, lack of healthcare disparities research, obtaining patient-specific metrics for trainees, development of a hospital patient safety and process improvement strategic plan, better integration between quality and safety leaders throughout the hospital, and concerns from the staff regarding organizational change within the health system. We developed 24 action items in response to the feedback and areas for improvement and distributed them amongst our Graduate Medical Education Subcommittees. Within the Quality Improvement and Patient Safety (QIPS) Subcommittee, we developed 4 Working Groups co-chaired by a faculty member and a resident to address the 14 action items within QIPS, of which 12 items were in progress prior to receipt of the CLER report. The final CLER report did not yield any additional action items not previously identified.

### Significance/Implications/Relevance
Utilizing the Army AAR framework, we elicited immediate feedback from CLER visit participants to support continuous process improvement and activate change within our system without waiting for the final report. This technique is simple and can easily be replicated across institutions interested in continued collaboration and dialogue for improvement of the clinical learning environment.

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# Abstracts

## Poster# 48: Best Time of Seeding Leaders: Leadership Development for Chief Resident

**Team:** Sami AlHaider, MD, MSc, MBA, Sarah Alharbi, Feras Alduraibi, Ghadah Alhammad, Albandari Altaweel, Saudi Commission For Health Specialties

### Background
Health care system represent a very complex field as people's (quality of) life intersects with high-stake standards, and exponential growth of costs. Leadership among health professionals is widely recognized as a vital influential factor in health care system. Leadership development has been traditionally the target for senior staff, however investment in junior staff and postgraduate trainees is very rewarding. Saudi Commission For Health Specialties (SCFHS) is a national regulatory body for postgraduate health training, that recently has introduced a leadership development initiative for chief residents.

### Objectives
To outline the SCFHS experience in the establishment of leadership development program for chief residents.

### Methods
Multiple interactive and forecasting panel discussions were conducted to come up a clear vision and targeted objectives for the program. The plan was set to: policy development, active role of chief residents, annual chief residents leadership summit, and annual competitive residents quality improvement projects award.

### Results/Outcomes/Improvements
Policy supporting and outlining residents' rights in representation and voting were developed and approved by legislative body in SCFHS. Chief resident appointment, job description, representation in all training committees, voting right were among the policy items. The annual leadership summit for chief residents were conducted twice (2018-2019), where more than 100 chief residents were sponsored to attend the event. The summit program covered the following themes: Leading yourself, Leading with others, Leading Change. Residents quality improvement project award were conducted twice with prominent increase in participation rate over the second year. Projects included chief residents initiatives to enhance learning and academia in their program via several methods including group learning, using social media and technology to enhance learning, patient safety and public education programs.

### Significance/Implications/Relevance
Leadership development for chief residents worth a systematic and national endorsement. Postgraduate training represent an excellent momentum to seed leadership traits among residents. This is expected to result not only in positive impact on training outcomes but also to solve the struggle of leadership in health care system.

# Abstracts

## Poster# 49: Accreditation System Reform at the Saudi Commission for Health Specialties (SCFHS), the Case for Change Management

**Team:** Hussain AlHussain, MD, FRCPC, MMGMT, CPHQ, Saleh AlGhamdi, Hind AlShammry, Sara AlMalki, Saudi Commission for Health Specialties

### Background
The SCFHS Accreditation Function is in charge of accrediting all Healthcare Institutions at Saudi Arabia for delivering Postgraduate Training for all Healthcare Disciplines. The Accreditation System is aimed to be aligned to achieve the SCFHS's Vision, which is derived from Saudi Arabia's Vision 2030. In order to achieve that, we need to develop comprehensive Accreditation Bylaws, Executive Policies, Procedures, Process Maps, Key Performance Indicators, Committees' Formation Mechanism (and define the scope and function of each committee), Structured Surveyors Training/Development, Maintenance of Accreditation Mechanism, Standards Development and Review Process. The Accreditation Standards need to emphasize on Training Governance, Supervision, Environment, Trainees' Well Being, Patient Safety and Quality Improvement Principles. To capture all the necessary changes, Digital Transformation is required to link all components of the Accreditation System.

### Objectives
This report is aimed to address the Change Management aspect required to facilitate this Reform. Due to the complexity and magnitude of the Change required which involves Internal and External Partners, Change Management represents the Key Success Factor. Change involves the Accreditation System, Process and Technology. Those affected directly by the Change are the SCFHS Accreditation Staff, Surveyors, Sponsoring Institutions, Program Directors, Trainers and Trainees. Thus, the tools utilized to address the Change Management aspect of this reform, need to ensure that the Leadership/Sponsorship and Project Management are assessed as well. Literature has shown that the projects are more likely to meet its Objectives (6X), Schedule (5X) and Budget (2X) through an Effective Change Management.

### Methods
The following tools are required to address the Change Management aspect of the SCFHS Accreditation System Reform: Prosci Project Change Triangle (PCT) Assessment, Risk Assessment Grid, Change Impact Assessment, Change Management Competency Assessment, Leadership Effectiveness Assessment and Assessment of the Anticipated Points of Resistance. Mitigation Tactics for the Anticipated Resistance will be addressed utilizing ADKAR's Methodology and a Resistance Management Model. Developing a Comprehensive Communication, Leadership and Sponsorship Plan is required for an Effective Change Management.

### Results/Outcomes/Improvements
The Accreditation System Reform at its launch was scored 29/30 when it comes to the Leadership, Sponsorship and Project Management aspects, and scored 16/30 when it comes to the Change Management utilizing Prosci's PCT Assessment. It is ranked at a Medium Risk utilizing the Risk Assessment Grid as the Change Characteristics are large and disruptive due to the complexity of the project, significant change required in the System and Technology, as well as involving multiple stakeholders representing Internal and External Partners, which is balanced by the fact that the SCFHS is a change-ready Organization. The Change Impact is the highest (4.4) for the Accreditation Staff. Change Management Competency Assessment Chart was developed for the SCFHS Leadership. ADKAR's five building blocks for Successful Change which include Awareness, Desire, Knowledge, Ability and Reinforcement have been assessed for the Accreditation System Reform which identified that the Awareness of the Training Team represents the most significant barrier to Change, while Reinforcement targeted towards Program Directors and Accreditation Surveyors represents the most significant facilitator for Change.

### Significance/Implications/Relevance
The SCFHS Accreditation System Reform is a Complex Comprehensive Journey, requiring Engagement and Commitment of all Internal and External Partners, where Change Management is a Key Success Factor. Active and Visible Leadership Participation, Direct Communication and Coalition Building represent the most significant factors for an Effective Change Management. Awareness and Reinforcement of the Change by the Training

Team, Program Directors and the Accreditation Surveyors will assist at facilitating the Change. The SCFHS Accreditation Administrative Staff represent the group that are at the highest Degree of Impact by this Change, thus, their support is required to enable an Effective and Successful Change and Project Management.

# Abstracts

## Poster# 50: Implementation Of Key Performance Indicators To Benchmark, Maintain And Improve The Quality Of Post Graduate Medical Training: The Training Quality Assurance Initiative By Saudi Commission For Health Specialties

**Team:** Basim Alsaywid, MD, Abdulrahman Housawi, Amal Al Amoudi, Saudi Commission For Health Specialties

### Background

The Kingdom of Saudi Arabia is undergoing a major transformation in response to a revolutionary vision of 2030, given that healthcare reform is one of the top priorities. The Saudi Commission for Health Specialities (SCFHS) has recently developed a strategic plan that focuses on expanding training programs capacity to comprehend the increasing demand for country's healthcare workforce, to provide comprehensive quality assurance and control to ensure training programs upholds high quality, and to provide advance training programs benchmark against international standards. The SCFHS has launched the Training Quality Assurance Initiative (TQAI) which aims to develop a system for setting quality standards, benchmarks, processes, and improvement guidelines for the postgraduate training programs.

### Objectives

This report presents the determined outcome measures based on the quality indicators to identify what elements needed to be modified, which area needed to be improved and/or what areas might be developed to fulfil the objectives of SCFHS. Hence, the main aim of this report is to evaluate the residency training programs being conducted throughout Saudi Arabia through the core set of preformed KPI. The main objectives are to evaluate the quality of training programs across the nation, assess the degree of achievement of pre-determined KPIs, and to provide baseline data that support decisions for improvement plan.
The main objectives are to evaluate the quality of training programs across the nation, assess the degree of achievement of pre-determined KPIs, and to provide baseline data that support decisions for improvement plan

### Methods

This report is an analytical, cross-sectional study design which represent the quality outcome measures of training programs and services provided by SCFHS in year 2018. The Key Performance Indicator List was created by experts in quality and health profession education at SCFHS. The initial KPI list consisted of 28 KPI but after in-depth review and discussion the committee omitted 5 KPI from the final list and only 23 KPIs were selected. The theoretical framework of those KPIs was based on Kirkpatrick model.There were twenty-three general KPIs created, defined and agreed upon by the Quality Indicators Committee which were intended to provide an objective evidence in measuring the level of performance and its progress. All stakeholders were included in the process of reviewing the 23 agreed upon GHM quality matrix.The sources of data collected for the 23 KPI were numerous, including:
Primary sources: Self-administered, semi-structure, consists of a series of close-ended, validated questionnaire, distributed to program directors and trainees.Secondary Sources: The secondary sources of data were collected from the academic affair department.

### Results/Outcomes/Improvements

There were 716 program directors completed the questionnaire and included in the final analysis. The overall response rate of the program director was 65.3% (716/1097). The responded mainly Saudi nationals (647, 92%) and predominantly males 560 (71.7%) which is becoming more dominating in the northern and southern regions. Only 8.9% of the program directors have some degree or certificates in health profession education. There were 3696 trainees who participated into this self-administered, structured, close-ended and open ended, online survey. The response rate of the trainees through online link survey was 27% (3696/13688). There were 1932 (52.3%) male respondents and the majority of the respondents are of Saudi national, 91.9%.
The overall residents' satisfaction is 69% and table one describes the different domains of satisfactions. The overall PDs satisfaction is calculated at 76%, slightly below our target value, 80%. Burnout rate in residents was 67% and in PD was 58%. There were 38.4% of program directors who received training courses (TOT). Other items of KPI and their results are described in table 2.

### Significance/Implications/Relevance

This is an initiative of SCFHS to assure quality of training, and this study present the phase one data. Some KPI need revisit (definition, calculation, or measurement definition) and Multi-source feedback for each KPI to improve the accuracy of the information. Questionnaire development project was initiated to create a comprehensive, unified scoring system. Setting the target values deemed subjective and requires more objective values.

# Abstracts

## Poster# 51: Perception and attitude among the new senior residents toward senior orientation workshop in ACGME – I, pediatric residency program Qatar

**Team:** Ahmed Eltayeb, MBBS, Hamad Medical Corporation; Mohamed Alhajaji, MD, Alanoud Alansari, MD, Ahmed Alhammadi, MD, Sidra Medicine

### Background
Transitioning into senior resident can be challenge. Prior to undertaking their new responsibilities, residents need an organized skilled preparation to overcome struggles that may appear. Formal training session for the new senior residents is an excellent method to enhance their skills and easiness their new senior resident life.

### Objectives
1- To study the current perception among the newly senior residents regarding receiving formal orientation sessions before starting their duties as senior residents.
2- To explore the essential themes needed to be cover in the orientation sessions to empower the senior residents before starting their seniority.

### Methods
Cross-sectional prospective study conducted among pediatric senior residents at Sidra medicine in Qatar July 2019.
The survey was paper based and the study included the entire new senior residents in the pediatric program. The survey included details of demographics, their perception about training before starting seniority, and the important topics needed in the orientation.

### Results/Outcomes/Improvements
A total of 12 out of 15 new senior residents were involved. 3 were in annual leave. Over all 12 (100%) residents stated, that they did not exposed to a formal training for preparation to seniority. Up on exploring the essential topics for new seniors as per ACGME competency for the senior residents, 50% (6) out of 12 had previous training for verbal and written handover, how to recognize sick patients and how to do effective communication and consultation.
10 (80%) out of 12 stated that they didn't receive formal training in the senior on call rules and duties, teaching skills, effective presentation skills and stress related to lead ship.
Finally, the residents disclose the importance of the following topics in the orientation: teaching skills, how to be a successful leader, presentation skills, effective consultation and communication, how to deal with faculties/juniors, the art of presenting admission in the morning report and how to empower them self with knowledge.

### Significance/Implications/Relevance
The study showed that none of the residents had a formal training orientation program in preparation for their seniority. However, there was multiple courses provided to them during their residency including : verbal and written handover, how to recognize sick patients, and how to do effective communication and consultation.
Conclusion:
Preparing the new senior residents for their new role is a mandate in any residency program. It facilitate the transition of the new senior residents to seniority and their new role. The leaders in the residency program have to help in implementing an organized tools like workshop including all the significant subjects like teaching skills, lead ship skills and how to recognized sick patients to facilitate their new tasks and responsibilities.

Wipf JE, Pinsky LE, Burke W. Turning interns into senior residents: preparing residents for their teaching and leadership roles. Acad Med 1995, 70(7):591-6.

# Abstracts

## Poster# 52: Qualitative analysis of burnout, and Well-being at Saudi Arabia training programs: Saudi Arabia Trainee Wellness initiative (DA'EM)

**Team:** Alomar Saud, MD, Faden Maheer, MD, Alhaidar Sami, MD, Nakshabandi Ziad, MD, Alharbi Sarah, Saudi Commission for Health Specialties

### Background
Burnout, depression, stress-related psychiatric disorders, and suicidality among health care provider trainees of all specialties have become a critical focus for the Saudi Commission for Health Specialties (SCFHS). In 2019, the SCFHS launched a national program focusing on trainees' wellness called DA'EM. Trainee's Wellness and mental health Clinic is among the initiatives of DA'EM.

### Objectives
To understand the background and recognize drivers and mitigating factors of burnout and well-being among trainees who applied for the DA'EM Wellness and mental health Clinic.

### Methods
Semi-Structured qualitative interviews conducted through the DA'EM website targeting trainees who applied for the DA'EM Wellness and mental health Clinic. Trainees were encouraged to access clinic services if they suffer any of the following: Burnout, depression, stress-related psychiatric disorders. Fifteen interviewers, who are licensed psychiatric or psychologist, interviewed the trainees and explained to them the goal of the session, type of support, code of confidentially, and limitation of the DA'EM Wellness and mental health Clinic. Interviews were conducted via face to face or online communication methods based on the candidate's best interest. Thematic analysis used to derive content and meaning from transcribed interviews.⌊SEP⌉

### Results/Outcomes/Improvements
Two hundred and five applied for the service. As out of DA'EM scope of service, 66 requests were rejected. We interviewed 139 participants from February 2019 to September 2019. Four main themes were emerged: 1) lack of academic advising and support,2) burnout and difficulty in adjusting to training requirements, 3) depression, and 4) abusive behavior from program directors and trainers. The first theme (lack of academic advising and support) had two subcategories: 1) lack of trainers' communication and lack of academic advising skills, especially in the case of trainee failing exams, 2) no compliance with SCFHS mentorship policy. For the second theme, several factors were identified: compliance with on-call hours' policy, difficulty in balancing between work and social commitment and lack of needed skills to maintain balance, lack of adaption skill to work stress and burnout, and program director poor communication skills. For the third theme, all cases diagnosed with depression referred to a psychiatric clinic.

### Significance/Implications/Relevance
Our results further characterize burnout among Saudi postgraduate trainees in Health sectors through interviews. The findings of this qualitative study will guide the SCFHS stakeholder to improve the training environment and build national programs to decrease burnout among trainees.

# Abstracts

## Poster# 53: DA'EM: A quality improvement project by The Saudi Commission for Health Specialties towards resident wellbeing

**Team:** Alomar Saud, MD, Faden Maheer, MD, Alhaidar Sami, MD, Nakshabandi Ziad, MD, Alharbi Sarah, Saudi Commission for Health Specialties

**Background**
Postgraduate training is recognized as one of the most challenging stages in the life of health practitioners, making them vulnerable to psychological pressures. This can lead to academic failure, withdrawal, or even some mental health illnesses like anxiety, depression, and burnout. The resulted adverse impact of this goes beyond trainees to affect their institutes, and patient care they provide. The Saudi Commission for Health Specialties (SCFHS) is the national regulatory body for postgraduate training across all health professions in Saudi Arabia. In order to encourage a healthy and safe training environment, SCFHS has launched DA'EM program (Arabic wording for "SUPPORT"). DA'EM is a national project to support trainees from psychological and academic aspects.

**Objectives**
DA'EM project goals are: 1) decrease burnout rate among trainees through cultivating wellbeing concept in training programs, 2) creating policies and guidelines of trainee's wellbeing to be applied in training centers, 3) measuring burnout, depression, and anxiety among trainees in all training programs and the possible predisposing factors, 4) initiate appropriate preventive and/or therapeutic interventions that match the identified etiologies.

**Methods**
In January 2018, DA'EM steering committee started with assembling the expert panel of burnout management and wellness in SCFHS. Following Delphi method, multiple interactive forecasting panel discussions, a comprehensive plan was set for the project. In February 2019, the project started with awareness campaigns targeting trainees, trainers, and stakeholders over four main regions across the country. A national survey targeting all trainees was released to measure the prevalence of burnout and depression. Train of the trainer course was designed for program directors and interested trainers to equip them with the required skills to be the first line of trainees' support. Wellbeing Online-module, wellness policies and guidelines, and a hotline for urgent care were also launched. Wellness and mental health clinics were launched under SCFHS facilities and via an outsourced third party, where confidential access to counseling services was ensured.

**Results/Outcomes/Improvements**
During the awareness campaign to introduce the initiative, feedback was sought through focus groups, and brief surveys were collected about the magnitude, causes, and suggested solutions. The national survey about trainees' burnout was filled by 6500 trainees (45% response rate) and currently undergoing data analysis. In DA'EM Wellness and mental health clinic, 205 trainees used the service. The satisfaction rate exceeded 80% among users of counseling services. Train of the trainer course was recently piloted in a national medical education conference. Wellbeing Online-module, policies and guidelines, and a hotline for urgent care are under development, and services will be available in 2020. Engaging stakeholders, creating a new culture of seeking help among trainees, and the development of councilors were among the major challenges.

**Significance/Implications/Relevance**
DA'EM is a mega, multilevel, national wellbeing improvement project to serve postgraduate trainees in Saudi Arabia. The change achieved was a clear indication of the potential and high impact that can be made by national regulatory organizations in shaping a training environment to improve the training outcomes and ultimately to provide better and safe patient care.

# Abstracts

## Poster# 54: Healthcare transformation in Saudi Arabia: Women empowerment through education

**Team:** Sami Alsolamy, MD, MPH, MBA, Saudi Commission for Health Specialties (SCFHS) & AlFaisal University; Ameera Cluntun, MBBS, Ms-HPEd, Saudi Commission for Health Specialties (SCFHS) & Princess Noura University; Abdulrahman Sabbagh, MBBS, SB-EM, Ms-HPEd(c), Saudi Commission for Health Specialties (SCFHS) & King Fahad Medical City; Mustafa Bodrick, RN, MSc(Nsg), MPH, PhD, FFNM (RCSI), Saudi Commission for Health Specialties (SCFHS) & Johns Hopkins University

### Background
The national vision 2030 in Saudi Arabia embraces transformation of the health care system that is aligned to the empowerment of women. A pertinent consideration was the national 2017 statistic that there were at least 60,000 unemployed Saudi women with a general Bachelor of Science without a professional or occupational qualification. As part of a pragmatic solution, essential postgraduate education programs were designed to refocus this target group into allied health disciplines for direct support of healthcare transformation.

### Objectives
There are three key objectives for the project that include, (i) to describe education as a means of refocusing general science undergraduates into allied health careers, (ii) to prepare unemployed Saudi women for entry into the health sector through 12-month postgraduate programs, and (iii) to coach the learners for the related qualifying license examinations for job eligibility.

### Methods
Access was gained to needs assessments conducted at the ministerial levels related to health and workforce planning, and empowerment of women initiatives, in addition to national consultation with related education, clinical, and technical experts in the field. Data sourced from the national mandates were consulted and the emergent themes from focus groups. The curriculum design used a range of approaches that included (i) content-based curriculum, (ii) process-based curriculum, and (iii) outcomes-based curriculum. This blended curriculum approach shaped the program developmental process that involved planning and design, implementation and delivery, program monitoring, and program improvement. This innovative approach resulted in the development of a combination of education theories and philosophies to guide the transformation process aimed at gainful employment of women.

### Results/Outcomes/Improvements
A conceptual framework emerged to underpin the above blended curriculum approach for the purpose of providing the evidence basis for the applied use of education taxonomies and philosophies, and teaching strategies to justify the curriculum approach. These are, (i) Learner-centered paradigm that involves trainees as active participants in learning process, and embraces activity-based learning to stimulate engagement and innovation, (ii) Transformative learning that activates learners to validate past experiences to reformulate new understanding through cognitive processes and metacognition, and produces a willingness to change through deeper understanding of role significance, (iii) Adult learning principles that embraces learner responsibility in self-concept, experience, readiness to learn, orientation to learning, autonomy, and motivation, and influences self-direction that is goal-focused to fulfil adult life roles, and (iv) Outcomes-focused education that targets results of education process on learner ability for knowledge, skill, attitude, and attributes in occupational/ professional roles, and impacts positively on releasing learner potential into meaningful job roles.

### Significance/Implications/Relevance
The implications of these postgraduate healthcare programs will have a direct influence on enabling the healthcare transformation as Saudi women function in the refocused healthcare roles. This entry into the workforce will directly reduce unemployment as it is tailored to be relevant, effective, impactful, and sustainable in the empowerment of Saudi women for participation in the healthcare sector.

# Abstracts

## Poster# 55: Innovative monitoring approach: Healthcare transformation and education program improvement in Saudi Arabia

**Team:** Sami Alsolamy, MD, MPH, MBA, Saudi Commission for Health Specialties (SCFHS) & AlFaisal University; Ameera Cluntun, MBBS, Ms-HPEd, Saudi Commission for Health Specialties (SCFHS) & Princess Noura University; Mustafa Bodrick, RN, MSc(Nsg), MPH, PhD, FFNM (RCSI), Saudi Commission for Health Specialties (SCFHS) & Johns Hopkins University

### Background
Saudi Arabia is undergoing a transformation of the health care system as part of Vision 2030.  A new Model of Care (MoC) revealed the need for new roles and repurposing existing roles for response to gaps in care delivery.  For this purpose, a range of additional postgraduate programs for the health sector was identified by the Ministry of Health as essential for the country.  Therefore, an innovative approach program monitoring was designed because (i) the programs were new, (ii) multiple new programs are implemented simultaneously at multiple sites on a national level, and (iii) were varying in commencement times and length.

### Objectives
The objectives for the project were, (i) to explore the efficiency and effectiveness of the new education programs, (ii) to gather data on the education elements that are implemented, and (iii) to improve the monitoring approach for enhancement of education outcomes.

### Methods
A coordinated process of methods was engaged that included international benchmarking, encounter groups, consultation with technical, education and leadership experts, focused groups, and a SWOT (strengths, weaknesses, opportunities, and threats) analysis.  A team progression method was established that was comprised of the consultants participating in the varying phases of curriculum design for development of the monitoring approach.

### Results/Outcomes/Improvements
The monitoring approach was designed in phases as (i) before, (ii) during, and (iii) after.  A protocol was created according to the length of programs for the monitoring during programs to ensure that monitoring occurred at least four times within a twelve month cycle regardless of when the programs were commended.  Templates were generated using the universal legend of (i) meets criteria, (ii) partially meets criteria, and (iii) does not meet criteria in relation to the education elements being reviewed in the three phases of the monitoring approach.  The results of this monitoring approach are reported as results with details from the monitoring tools that are planned for each phase.

### Significance/Implications/Relevance
The results of the monitoring approach are embodied in three tools.  In the 'before' phase, the components included the administrative and resource capacities with specifics on the program director, teaching staff, administrative support, physical and technical facilities, collaborating departments and services.  The 'during' phase included components of the 'before' phase to ensure sustainability of achievements, and included the goals and objectives of the curriculum, structure and organization of the program, clinical, academic and professionalism content. Included in the 'during' phase is learner feedback that uses a modified 5-point Likert-type scale with corresponding emojis.   The 'after' phase utilizes the Kirkpatrick (2016) four job-related levels of response that ranges from level one on the learner's reaction to the learning experience to level four on the total results gained at an organizational level from the learning experience and enabled the transformation.

# Abstracts

## Poster# 56: Creating a Bespoke Leadership Development Program for Female Clinicians in Saudi Arabia

**Team:** Sami Yousif, MBBS, Saudi Commission of Health Specialties; Susie Perks-Baker, Healthcare Leadership Academy

### Background
The Kingdom of Saudi Arabia (KSA) has embarked on a multi-sector transformation in pursuit of its Vison 2030 goals. These include the empowerment of women and subsequent increase in gender diversity in the labor market.

Approximately a third of the physician workforce in the Saudi Ministry of Health (MOH) funded health services is now female. Examples of female physician leadership at the highest clinical levels within this unique Islamic cultural landscape, do exist, but there is a considerable gap to close in terms of more equitable gender representation.

The work reported here relates to the design and delivery of the first ever leadership development program exclusively for Saudi women clinical workforce.

### Objectives
The purpose of this project was to create the first ever accredited in-country leadership development program for experienced Saudi female clinicians within a transforming health care system with the following objectives:
1.To conduct a detailed needs assessment of Saudi female clinician's leadership requirements within a transforming health care system.
2.To incorporate program design and delivery techniques that provide a truly innovative, meaningful and culturally bespoke learning experience.
3.To incorporate robust educational delivery and quality control measures.

### Methods
A needs assessment exercise was conducted through focus groups with clinical and executive staff, Individual consultations with Saudi health care staff at multiple levels across the sector, and establishment of a female cultural advisory team – focus groups to cross check cultural acceptability of proposed program content. The program design elements included clarification of selection criteria, an innovative approach predicated on adult learning principles with Transforming Experience Framework (TEF) as the underlying structural framework and the selection of an electronic portal to access to all learning materials. Delivery and quality control measures included a targeted selection of program faculty and evaluators, and the establishment of a rigorous process for program evaluation.

### Results/Outcomes/Improvements
The needs assessment revealed a strong demand for both Technical and Adaptive Leadership skills to be addressed and requirement for a world-class, culturally aware, be-spoke program that incorporates latest leadership thinking alongside powerful development approaches. The program was structured to include a 'Field and forum' approach to participant engagement with 5 modules that run across 7-month time frame. Additionally, the program included Small group organizational role consultations (coaching) at each module, continuous online support and access to learning resources and experiential learning approach to 'in class' sessions supported by relevant theory and cross referenced with desired competencies and learning outcomes. Finally, to institute strong delivery and quality control a rigorous multi- stakeholder evaluation model was developed to include T1 and T2 impact and behavioral change surveys.

### Significance/Implications/Relevance
The creation of this leadership development program contributes to a growing body of literature around women's leadership and an understanding of what specific challenges women face in the world of work and what support they need to achieve their potential. It also contributes to the broader discussions around gender, diversity and inclusion in clinical settings.

# Abstracts

## Poster# 57: The right selection for Healthcare Leadership Education in 2030

**Team:** Syed Arifi, BDS, MPH, Sami Alsolamy, MD, MPH, MBA, Sami Yousef, MBBS, MSc, Saudi Commission for Health Specialties (SCFHS)

### Background
Vision 2030 has enormous reforms & initiatives undertaken throughout all the sectors of the Kingdom of Saudi Arabia. To scale the efficient utilization of resources and improve accountability of Healthcare services, the Health Transformation of Ministry of Health is experiencing the remodeling of its current structure & functions. Studies show that 10% of any population needs to change for a whole population to reach the "tipping point" in shifting their behavior. Therefore, we aimed to target 10% of 240,000 employees of MoH for Leadership development to support this huge transformation effort.

### Objectives
1. Acquire nominations for the Leadership journey in a way that identifies employees with potential to be change agents for transformation.
2. Select 10% of MoH employees for Leadership Development.
3. Ensure nominations from all departments of MoH.

### Methods
Key influencers have a greater impact on the way that any organization thinks and behaves than messages coming from other 'official' channels, 30% to 40% of key influencers typically get "overlooked" because they do not hold formal positions of authority. Knowing these people and involving them early on will lead to greater success in transformation. Influencer is a simple online survey that takes 5 mins to complete and it is a bottom-up nomination approach, supplemented with top-down nomination process. Through the survey, employees were asked to nominate 1-10 colleagues anonymously, who they trust, reach out to for advice, and perceive as current or future leaders. The top down nomination was supplemented to ensure there is nominations from all departments of MoH around the Kingdom. All the 8 Deputyships were asked to nominate 10% of their top positions based on their departmental hierarchy.

### Results/Outcomes/Improvements
Influencer survey (bottom up nominations) helped identify 11,500 Influencers (who received at least 2 nominations) and Top down nomination process identified 12,500 influencers. This 10% of MoH were then given a purely digital Leadership journey through Digital Learning platform (DLP). Moreover, we identified 2 groups of super influencers, 72 influencers with more than 100 nominations and 995 influencers who were nominated in bottom up as well as top down nomination process. These super influencers were provided with additional Leadership and Management trainings for their professional development and were included in the succession planning. We acquired those employees who could influence the Healthcare Transformation across the organization and drive the change in the right direction.

### Significance/Implications/Relevance
MoH was therefore, able to have a complex process of employee selection for Leadership development simplified through this method. There are several methodologies which could be adapted for this purpose. However, this method proved to be significant as it ensured that the selection process was without any favoritism, bias or political influence. Furthermore, it gave an insight to the Leadership on a group of employees who were activated employees/influencers in MoH around the Kingdom. As Leadership trainings are based on behavioral changes, those employees whose motivation and people skills are evident to peers had truly the highest potential to influence change in the organization and in one of the biggest transformation of Healthcare in the world.

# Abstracts

## Poster# 58: 3 Years of Back to Bedside Experience at the Scripps Chula Vista Family Medicine Program

**Team:** Janani Sankara, MD, Raul Trejo, Krystal Jimenez, Miguel Alvarez-Estrada, Kasi Bodiford, Scripps Family Medicine Residency

### Background
As the problem of burnout among primary care physicians is increasingly recognized, the implications for the sustainability of the primary care workforce are becoming more pressing. Residency is a particularly challenging time where many factors can lead to periods of burnout. Although the solutions for minimizing burnout require multilevel strategies across the healthcare system, residency programs have an important role in this effort. Programmatic changes that encourage a focus on the factors that provide meaning in medicine can help balance the factors that drive burnout. With the support of the ACGME Back to Bedside Collaborative, the Scripps Family Medicine Residency Program was able to capitalize on resident and faculty interest in addressing burnout, to develop a multicomponent intervention to promote resident wellness. Now in year 3, the programming has evolved with areas of success and information about areas for improvement.

### Objectives
1. Implement inpatient bedside rounding to promote meaningful patient-physician interactions.
2. Develop and implement a resident-driven curriculum in areas of clinic efficiency and mindfulness to decrease the risk of burnout.

### Methods
An inpatient bedside rounding protocol was developed and implemented in the first year of the program. The protocol was assessed and improved over the 3 years. Written surveys on the inpatient process are collected to evaluate our changes.
A longitudinal, resident-driven outpatient curriculum was developed and implemented. Topics included mindfulness, team-based care, effective use of the electronic health record, administrative efficiency, and patient-physician communication and agenda-setting. A variety of teaching strategies were used including brief lectures, case-based learning, role-playing, and group discussions. Some sessions included support staff such as medical assistants. This year we are collecting a new survey tool on the outpatient process twice annually.
In the first two years of the program we administered the ACGME burnout tool based on the Maslach Burnout Inventory and the Mini-Z survey to assess burnout among residents twice annually. We will continue to administer the Mini-Z tool. This year we have added twice annual resident check-ins to better identify symptoms of burnout and gaps in clinical efficiency skills.

### Results/Outcomes/Improvements
Inpatient: practice transformation from zero consistent team bedside rounds to daily bedside rounding. Qualitative data reflect a culture change, particularly among senior resident perceptions. Previously bedside rounding was considered "time-wasting" and now more likely to be viewed as "valuable."
Outpatient: New data and analysis from our 2019-2020 outpatient skills survey and objective outcome measures, which did not exist in prior rounds will be presented.
Burnout: Annually there are an average of 2 residents per class with higher than average burnout scores. Burnout risk is fluid, fluctuating temporally, and high risk periods often go missed because residents try to "make it through" on their own.

### Significance/Implications/Relevance
Rates of burnout symptoms remain unacceptably high among primary care physicians, and the literature suggests that stress related to the use of electronic health records may play a major role. Residency programs have an important role in helping develop residents' skills in efficient care while promoting opportunities for meaningful relationships between residents and their patients. Our program has addressed these twin goals through a residency-led change in the curriculum that has resulted in sustained improvements in bedside rounding. In addition, support for continuous resident participation in curriculum development has enhanced the teaching of efficiency-based skills and mindfulness activities.

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# Abstracts

## Poster# 59: ELIMINATING PREVENTABLE ERRORS THROUGH STRENGTHENED RESIDENCY SUPERVISORY FRAMEWORK

**Team:** Seow Keong Wong, Jillian Ang Andrada, MD, Samad Bin Asad, MSc, Helen Yeo Siu Hong, BSc, Boon Leng Lim, MMed (Anaes), FAMS, Hak Koon Tan, MBBS, FRCOG, MMed (O&G), MRACOG, FAMS, Singapore Health Services

### Background
Following a Root Cause Analysis conducted by the Sponsoring Institution (SI) patient safety department in 2016, the Graduate Medical Education was tasked to strengthen supervision framework before residents perform procedures without direct supervision and to formalize a process to communicate this information.
For a large SI like SingHealth consisting of 4 hospitals, 5 specialty centers and 9 polyclinics, relying on clinical site systems to verify resident competency to perform procedures is not optimal. This is given the fact that >900 residents may be at different sites at any point in time. As such, it is critical to make information accessible to all members of the care teams regardless of where the residents are rotated.

### Objectives
This study reports on the development of an institutional level repository aimed to ensure residents certification to perform procedures under appropriate level of supervision are communicated to all parties working in SingHealth.

### Methods
The implementation was carried out in 3 phases over 24-months period. The first phase included: (1) development of standard template to collate list of required procedures for completion of training and guidelines on competency certification from 31 programs, (2) development of backend administrative database, (3) migration of information to the institution's Clinical Privileging System (CPS) accessible through intranet where staff can verify competency of individual residents for specific procedures and (4) communication to stakeholders on availability of the resource.
Phase 2 entailed harmonization of naming convention for procedures shared by 2 or more programs to allow option to search on CPS by procedure category. The review was carried out by the Focus Area Subcommittee (FAS) appointed by the Graduate Medical Education Committee.
One year after implementation, the third phase focused on assessment of utilization of the CPS by conducting an internal review with one of the programs to collect qualitative and quantitative feedback through resident survey, walk-around and interviews.

### Results/Outcomes/Improvements
A total of 344 procedures across 28 programs were collected. 308 procedures were unique and 36 were common to 2 or more programs. From the 36 common procedures, 16 procedure nomenclatures were harmonized. Notably, guidelines on competency certification varies across programs in terms of numbers performed before assessment, evaluation forms used and number of evaluations before certification. From the survey conducted for the residents, 92.3% (24 out of 26 respondents) and 100% (9 out of 9 respondents) strongly agreed/agreed that nurses, in site A and site B, respectively, check from the CPS if residents can perform specific procedure without direct supervision. During walk-around and interviews, most program faculty and residents were familiar with the CPS, however, some nurses interviewed still rely on existing systems or familiarity of residents.

### Significance/Implications/Relevance
The development of the central repository for resident procedural competency is part of the SI concerted effort in reinforcing and strengthening patient safety culture through eliminating preventable errors. The next step is to strengthen communication regarding use of the information in the daily workflow of clinical care.
Competency certification especially for common procedures may have to be harmonized across SIs in the future.

# Abstracts

## Poster# 60: A Pilot Study on a Mindfulness Intervention in PGY1s. Does it decrease burnout?

**Team:** Mary A. Noel, MD, MBA, Martin Army Community Hospital; William K. MacNulty, PhD, 1st Special Forces Group (Airborne), Robert C. Oh, MD, MPH, Ben Finch, DO, Elisa Bickett, Karen Lesniak, PhD, MS, Madigan Army Medical Center

**Background**
Physician burnout rates are reported to exceed 50% in the United States, with primary care demonstrating some of the highest burnout rates. Mindfulness, an intervention that has shown improvement in burnout, is defined as awareness that arises through non-judgmentally paying attention, on purpose, in the present moment. Research involving the effect of mindfulness on the prevention of burnout in residents is limited. This study examined effects of mindfulness on attention and factors contributing to burnout in residents representing all primary care specialties.

**Objectives**
To determine if an 8-week mindfulness intervention affects perceived stress, satisfaction with life, and mindful attention over the course of the intern year as compared with the standard wellness curriculum.

**Methods**
Design: Randomized controlled trial.
Setting: Academic military medical center.
Participants: Active duty service members with status as interns (PGY-1) at Madigan Army Medical Center. Participants were recruited from the 2017-2018 intern class. 35 total participants were recruited. 18 were assigned to the intervention and 17 to the control group. Six participants completed the intervention.
Intervention/Instrument: Eight weeks of 90-minute sessions of mindfulness instruction and practice delivered by professional mindfulness instructors. The intervention included guided meditation, Hatha yoga, and 15 minutes of daily at-home practice.
Main and Secondary Outcome measures: Main outcome measures were differences between pre- and post-scores for: Perceived Stress Scale, Satisfaction with Life Scale, and Mindful Attention Awareness Scale. Secondary measurement was level of burnout measured by the Maslach Burnout Inventory.

**Results/Outcomes/Improvements**
Participants in the intervention group showed significant reductions on the Perceived Stress Scale. There was no significant changes to Satisfaction with Life Scale, the Mindful Attention Awareness Scale or the Maslach Burnout Inventory.

**Significance/Implications/Relevance**
This pilot study supports the implementation of a mindfulness-based curriculum for promoting wellness in residency programs. Further studies are warranted to explore the feasibility for ACGME programs.

# Abstracts

## Poster# 61: A Deeper Insight in Wellness: Burnout and Professional Fulfillment Among Medical Trainees and Recognizing Patterns

**Team:** Ann Dohn, MS, Jie Li, PhD, Nancy Ruddy, PhD, Thang "Trey" Huynh-Ngo MBA, Stanford Health Care

### Background
Physician have demanding work obligations that may lead to poor physical and emotional well-being [1]. Residents and fellows undergo rigorous training and uneven work-life balance, often resulting in burnout and career/education dissatisfaction. Therefore, wellness is a core element for a competent, high-performing medical training program. Measuring professional fulfillment and burnout may be included as a critical criterion to evaluate a program's performance.

### Objectives
The objective of this study is: (1) to evaluate the burnout and professional fulfillment of our trainees, (2) to determine where the symptoms of burnout and professional fulfillment are prevalent in PGYs, between fellows and residents, and between 3-year programs and 3+-year programs, and (3) to shed lights on potential interventions on the program and institutional level.

### Methods
In December 2018, all of Stanford Hospital's residents and fellows were asked to voluntarily participate in a survey to evaluate their program's performance and their own well-being. The wellness questions used were validated from a recent and relevant study [1] and covered the domains of burnout and professional fulfillment. The professional fulfillment section consisted of 6 questions and the burnout section comprised 8 questions. Answers were coded on a 5-point scale and ranged from "Rarely" to "Always". Cutoffs for burnout and professional fulfillment were determined from average scores at 2.33 and at 4, respectively. All the questions were quantitative, and the data were analyzed based on resident vs fellowship (fellowships were grouped by department), PGY level, and by the length of whether the residency program were 3 years or 3+ years.

### Results/Outcomes/Improvements
There were 476 (30%) completed wellness responses across 18 departments. Overall, 38% of all responses reported achieving professional fulfillment and 42% reported having burnout. Furthermore, 6% of respondents reported having both burnout and professional fulfillment. Additionally, residency programs reported having higher burnout and lower professional fulfillment compared to fellowship programs. As PGY level increased in both residency and fellowship programs, professional fulfillment gradually increased, whereas burnout inversely decreased. Lastly, 3-year residency programs had higher burnout and lower professional fulfillment compared to 3+-year residency programs. PGY 1, 2, and 3 in 3-year residency programs had higher burnout and lower professional fulfillment compared to their counterparts in 3+-year residency programs. All 3-year residency programs were non-surgical.

### Significance/Implications/Relevance
These wellness data show that not all programs are impacted equally with burnout and lack of career fulfillment. Furthermore, they can be benchmarked for future studies and interventions. These data can be used to help programs recognize their deficiencies and ensure their education quality is maximized.

1.Mickey, Trockel, et al. A Brief Instrument to Assess Both Burnout and Professional Fulfillment in Physicians: Reliability and Validity, Including Correlation with Self-Reported Medical Errors, in a Sample of Resident and Practicing Physicians. Acad Psychiatry, 2018.

# Abstracts

## Poster# 62: Peer Accountability and its Positive Effect on Resident Task Completion

**Team:** Melissa Wheeler, MA, Ashley Sedorovich, MS, Summa Health System

**Background**
Residents have many administrative requirements and tasks that must be completed on a regular basis such as, duty hour and case logging, end of rotation evaluations, and faculty evaluations. These administrative requirements of resident physicians do not end once they complete residency, they develop into different requirements from their practices/hospitals. It is essential that residents learn strategies for time management and develop routines in order to complete all of their requirements in a timely manner. Previous studies have shown the use of a transparent, engaging platform that highlights resident scholarship was associated with increased scholarly productivity(*1). The ability of residents to see a leaderboard in real-time promoted their work and the gamification aspect where the positive peer pressure of friendly competition encouraged positive outcomes (*2). We adapted these findings to create a peer accountability board to track required tasks in an attempt to decrease resident delinquency rate.

**Objectives**
In our Orthopaedic Surgery residency program, there was an overall delinquency rate of 38% on monthly required tasks. The goal of this study was to determine the root causes of their delinquency and implement a solution to improve their completion rate.

**Methods**
The residency education coordinator tracked resident delinquency rates for departmental required tasks for three months. We monitored resident reported case logs, duty hours, end of rotation evaluations and specific program requirements on the Orthobullets PASS (*TM) system, which included end of rotation evaluations, procedure evaluations and required monthly exams. As part of a Lean Six Sigma quality improvement initiative, we brainstormed with the residents potential root causes and used a blind multi-vote to determine that accountability was one of the top reasons for delinquency. Based on this, we implemented a peer accountability board that was displayed in the room where the residents do their daily didactic sessions.

**Results/Outcomes/Improvements**
After three months of utilizing the peer accountability board, the overall delinquency rate significantly decreased to 20% (p < 0.05). Duty hour and case log completion rates also had statistically significant improvement rates. Prior to this study, residents were only provided with our requirements during orientation, with the Residency Coordinator sending e-mails to remind the residents on a monthly basis of their delinquent tasks, escalating to the Program Director if needed. Implementation of the peer accountability board, made the expectations clearly visible with clearly defined consequences for non-performance. Other observed benefits of the peer accountability board included coordinator reported increased job satisfaction, improved communication within the residency, and collaboration among resident teams.

**Significance/Implications/Relevance**
Accountability with clear visual expectations and reminders had a statistical impact on improving resident completion rates. Our next step will be to collect data from graduating residents that were exposed to the peer accountability board to see if they developed routines as a result to keep up with their professional requirements.

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# Abstracts

## Poster# 63: Increasing Faculty Use of Direct Observation Using Brief, Mobile, Work-Place Assessments

**Team:** Katherine Tatar, MD, Michael Oravec, MD, Joel Rayl, MD, David Sweet, MD, Ron Jones, MD, Summa Health System/NEOMED

### Background

Since the introduction of competency-based medical education (CBME), direct observation has become a foundational yet often underutilized element of resident assessment, hindered by requiring raters to complete lengthy, time-consuming, and cumbersome evaluations on every minutia of a trainee's ability (1,2). A needs assessment conducted by our program noted more evaluation fatigue, decreased completed evaluations, and suboptimal data in an era when direct observation and useful feedback are so imperative. Additionally, faculty reported that the absence of an effective mobile platform for completing evaluations had been an additional hindrance to documenting direct observations.

### Objectives

Our goal was to significantly increase the number of direct observations compared to our prior evaluation system. The primary objective was to create an evaluation system that operated via a simplified technological interface on a mobile platform, quickly assessed the entrustable professional activities (EPAs) proximate to a given observation or rotation, and enabled tracking of behaviors yet to be observed for a given trainee.

### Methods

We piloted our intervention in the inpatient service, the outpatient clinic, and the scholarly conferences of our community-based university-affiliated internal medicine residency program. In serial small group sessions, faculty determined which EPAs were applicable to each service and divided the EPAs into subsections, each with ≤6 observable behaviors selected from the curricular milestones. Each behavior was rated on a 1-3 point scale (1-required prompting from attending, 2-required minimal attending involvement, 3-could do without attending). A mobile platform was designed through Google(TM) forms to create an app to quickly record evaluations and leave written feedback on observed behaviors.

We distributed the app at the beginning of the 2019-20 academic year and compared numbers of direct observations per resident from July-September 2019 to the number completed for the same services in July-September 2018. We tracked the overall number of completed evaluations in the program, the proportion of those that were direct observations, and used the Wilcoxon ranked sum test to compare the number of completed direct observation evaluations per resident between these two periods.

### Results/Outcomes/Improvements

From July-September 2018, there were 366 total evaluations completed for the 53 categorical internal medicine residents in our program. Of these, 87 were direct observation evaluations completed for the previously specified services. From July-September 2019, there were 453 total evaluations for the 56 categorical internal medicine residents, with 137 of those being direct observation evaluations, which reflected a 49 percent increase in direct observation evaluations per resident. This increase was statistically significant (p=0.002) as the median number of completed direct observation evaluations per resident in 2019 was 2 (IQR 1-4) compared to the same period in 2018 (median 1, IQR 0-2).

### Significance/Implications/Relevance

In the era of CBME, the direct observations of trainees' behaviors are of tremendous importance. Our program showed that with an easy to use mobile app, we were able to increase our direct observation rate by 49 percent.

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# Abstracts

## Poster# 64: Assessing the Clinical Learning Environment in an institution in UAE: Resident's perspective.

**Team:** Indira Kannan, MD, FRCA,  Thiagarajan Jaiganesh, MS, DNB, FRCS, DCH, FRCEM,PGCHCL, Satish Chandrasekhar Nair, MBBCh, PhD, MBA,ABMQ, ACIP, Yaaqoob Alhammadi, MD, MBA, PhD, Bibi Fatima Ghulam Nabi, MBBS, Amani Obaid Salem Alabdouli, MBBS, Hussein Sheleh, MBBS, Tawam Hospital, Al Ain, United Arab Emirates

**Background**
Accreditation in the United States focuses on the clinical learning environment (CLE) that provides the context for resident learning and professional development. There is limited research on trainee perceptions of the CLE in international settings.

**Objectives**
This study reports data from residents of one sponsoring institution in the United Arab Emirates regarding their perceptions of clinical learning environment.

**Methods**
We surveyed residents at Tawam Hospital, UAE, a sponsoring institution with 142 trainees, on their perspectives in the 6 focal areas of the US Clinical Learning Environment Review (CLER) to gather baseline information. We administered a 26-item questionnaire to residents through an audience response system in November 2018.The residents responded to five options ranging from strongly disagree (1) to  Strongly agree (5)

**Results/Outcomes/Improvements**
Of 100 residents in postgraduate year 2 and above, 72 (72%) responded. The sample size's confidence level was nearing 90% with an acceptable margin of error.The perspective of the majority of respondents was favorable in the areas of reporting patient safety incidents, engaging in quality improvement activities, using a standardized form for care transition, and using professional guidelines for electronic health record documentation. In contrast, only half of the respondents perceived there is honesty in the reporting of duty hours, and only 36% felt the organization supported fatigue management. Other areas for improvement included residents' understanding of the concept of health disparities and activities to address health disparities.

**Significance/Implications/Relevance**
A survey of the 6 CLER focal areas at 1 UAE institution showed the institution is successful in educating and encouraging the participation of residents and fellows in areas of patient safety, health care quality, care transitions, and professionalism. For some dimensions of the CLE, our findings are comparable to national US CLER data, while for others, it highlights the newer GME infrastructure in the UAE, with areas for future growth and improvement.

# Abstracts

## Poster# 65: Plan, Do, Study, Act: Lessons learned from the development and implementation of a novel quality improvement and patient safety curriculum for internal medicine residents

**Team:** Kelly Rowe, MD, Andrew Wickerham, MD, Zachary Daitch, MD, Dharmini Shah Pandya, MD, Elizabeth Leilani Lee, MD, Jamie Garfield, MD, Temple University Hospital

### Background
Quality improvement (QI) and patient safety (PS) are integral components of graduate medical education. The Accreditation Council for Graduate Medical Education recognizes practice based learning and improvement (PBLI) as one of the core competencies of graduate medical education. Residency programs have adopted a wide variety of models to teach and evaluate PBLI. At Temple University Hospital, all residents complete QI projects, but did so without any formal mentorship or didactics.

### Objectives
We developed a three year curriculum to provide internal medicine (IM) residents with a fundamental knowledge of QI/PS and the skills necessary to design and execute their own QI/PS projects. The first year aims to provide residents with a basic understanding of QI/PS using online modules and group discussion. In the second year, residents worked in small works with faculty mentors on QI/PS projects. Finally in the third year, residents led morbidity and mortality conferences and root cause analyses.

### Methods
All IM residents participated in the QI curriculum from June 2018 – October 2019. During the first year, all residents completed the Institute for Healthcare Improvement Open School courses. Second year residents worked in groups to design and execute their own QI/PS projects. Topics were collected during a "Pain-a-Thon," an interactive session lead by QI experts during which residents identified "pain points," areas of frustration and failures within the hospital. Next, residents participated in a "Hack-a-Thon," a collaborative meeting between residents, faculty, and consultants, including administrators and department leads. Residents worked in groups with a faculty mentor to refine pain points into a QI project. Consultants worked with each group, providing insight and direction. Residents worked on projects with faculty and pitched their projects at a "Shark Tank" event to a panel of QI experts. Finally, in the third year residents lead QI/PS didactics, as well as morbidity and mortality conferences and root cause analyses. The impact of this new curriculum was assessed with pre and post electronic surveys sent to all IM residents in June 2018 and June 2019.

### Results/Outcomes/Improvements
Pre surveys were sent to 100 residents with 74 responses (74% participation rate) and post surveys were sent to 98 residents with 31 response (31.6% participation rate). Following intervention, 61.29% of residents reported knowing how to report an adverse event (AE) compared with 38.36% prior to intervention. 41.94% had reported an AE in post-surveys, with only 24.66% reporting an AE in pre-surveys. 77.42% reported knowing where to find educational materials on QI/PS topics in post-surveys, compared to 27.03% in pre-surveys. 54.8% of residents answered that they have the skills necessary to design and plan a QI/PS project post intervention, compared to 26.11% prior to intervention.

### Significance/Implications/Relevance
Following implementation of this novel curriculum, residents self-reported increased knowledge of QI/PS tools and more residents reported having the skills necessary to complete a QI/PS project.

# Abstracts

## Poster# 66: Roundtable Discussions: Intentional Conversations to Build Rapport among Fellows and Strengthen a Program

**Team:** Janet Dettorre, Sherise Rogers, MD, MPH, The Ohio State University Wexner Medical Center

### Background
In 2018, the ACGME formally recognized in its Common Program Requirements that psychological, physical, and emotional well-being are critical in the development of the competent, caring, and resilient physician. The American Medical Association also acknowledges the high level of burnout among physicians, particularly among its trainees. Consequently, The Ohio State University's Hematology and Medical Oncology Fellowship Program set upon the mission of creating a Wellness Initiative to develop an optimal culture of well-being for its fellows. This Initiative has an established committee and offers regularly occurring educational programming for fellows and faculty, but a key emphasis of the Initiative has been "fellows-only" roundtable discussions with the Medical Center Ombuds and Physician Coach.

### Objectives
At the Wellness Initiative's first committee meeting, one of the fellows stated that what the fellows really needed was simply an opportunity to gather and share challenges, frustrations, strategies, and inspirations. The committee wanted to develop camaraderie among the 24 fellows and identify opportunities for program improvements through the roundtables.

### Methods
Instead of "layering on" another activity, the committee built the roundtables into the day and scheduled the meetings at noon, providing lunch. So that each fellow would have opportunity to engage in the discussion, the fellows met in three small groups, on separate dates. The Med Center Ombuds and Coach facilitated each roundtable to ensure a productive conversation, and he challenged fellows with questions about behaviors and organizational elements. He encouraged them to consider small and bolder changes that could impact the program. The facilitator scribed de-identified notes that ultimately were shared with the program directors. The Program measured the effectiveness of the roundtables in November 2018 through a Qualtrics survey. A second survey will be administered on October 31, 2019, to measure the August and October 2019 roundtables. The MBI/AWS was administered for all fellows in January and June 2019, and first-year fellows took the assessment in July 2019.

### Results/Outcomes/Improvements
November 2018 Qualtrics survey results show that 57.14% of the fellows were highly satisfied with the roundtable experience, and 42.86% were satisfied. The survey also shows that 57.15% of fellows learned at least one strategy for dealing with stressful/challenging situations, and 92.86% feel that this experience strengthened camaraderie among their colleagues. The facilitator provided discussion prompts for the 2018 roundtables to engage the fellows. It was from these initial discussions that roundtable topics were determined for 2019. This year's topics focus on "Working with Difficult Attendings" and "The Fellow's Role on a Team." Because of the roundtables, fellows' voices are being heard about knowledge of chemo plans, research mentorship, and role clarification. Additional statistics will soon be gathered from the roundtables presently underway. The MBI/AWS will be distributed to fellows again in January 2020.

### Significance/Implications/Relevance
The committee will continue to measure and analyze the impact and satisfaction regarding the roundtables to foster camaraderie among the fellows and identify opportunities for program improvements. Fellows feel that their voices matter, and that they have peer support and leadership's attention. This is decreasing burnout and improving well-being among the Hem/Onc fellows.

2018 ACGME Common Program Requirements, American Medical Association, Qualtrics roundtable surveys, and MBI/AWS

# Abstracts

## Poster# 67: Reaching Into the Heart of Humanity: Can International Rotations Improve Wellness & Impact Diversity?

**Team:** Mada Helou, MD, Nicholas Pesa, MD, Shelley Ohliger, MD, University Hospitals Cleveland Medical Center; Chad Zender MD, FACS, University of Cincinnati College of Medicine

### Background
Interest in global health among new residents across specialties is well documented (1) and has been linked to better recruitment in many residency training programs (2, 3).  There is a growing body of evidence that global health electives in Anesthesiology have a positive effect not only on ACGME competencies and cultural proficiency, but also on teaching and systems assessment skills(4).  Cited areas of benefit include improved resident ability in identifying educational needs and in giving feedback (4).  However impact of international rotations on resident wellness and perception of diversity in the workplace has not yet to our knowledge been the focus of prior studies. This study is based on senior Anesthesiology and Otolaryngology residents who participated in an international elective in Uganda through one large US-based academic institution between January 2014 and April 2020.

### Objectives
The objective of this retrospective survey is to assess the impact of international rotations on resident wellness and perception of diversity in the workplace.

### Methods
We conducted an online, retrospective survey of senior residents in Anesthesiology and Otolaryngology at one large US-based academic center who participated in an international elective in Uganda between January 2014 and April 2020.  The rotation for Anesthesiology is ACGME approved whereas the Otolaryngology rotation is not and occurs during resident vacation time.  Inclusion criteria included any current or former senior Anesthesiology or Otolaryngology resident who participated in one of these electives in the abovementioned timeframe.  Survey items were developed by author MH based on review of the literature, current ACGME Faculty and Resident Well-Being Surveys (5), the AAMC Diversity Engagement Survey (5), and reports from current residents in the program who completed the elective.  A total of 6 Anesthesiology residents and 18 Otolaryngology residents were identified.  At the present time, 4 Anesthesiology residents and 16 Otolaryngology residents completed the elective.  Two Anesthesiology and 2 Otolaryngology residents are scheduled to complete the rotation in winter of 2020, and data analysis will be complete at that time.

### Results/Outcomes/Improvements
Aggregate preliminary statistical analysis pointed towards three main positive outcomes.  First, residents reported a sense of increased pride in and deeper connection to the meaning of their work.  Second, residents reported increased vitality and desire to go to work while on the rotation.  Third, residents reported feeling slightly more comfortable in cross-cultural situations and are more conscious of this type of diversity and the value it brings.  Final aggregate statistical analysis as well as subgroup analysis (Anesthesiology and Otolaryngology residents) will be available in the winter of 2020 after the winter rotation is completed.

### Significance/Implications/Relevance
Global outreach to developing nations by leading medical centers has the potential to change the world for the better in a meaningful way.  It voices the core values of medicine: compassion, healing via art and science, and love of humanity.  Furthermore, it can positively impact resident wellness and resident perceptions of the importance of diversity.  Future prospective and longitudinal studies will be needed to validate these findings.

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Elective on Anesthesiology Residents as Assessed by a Longitudinal Study.  Journal of Medical Education and Curricular Development. 2019, 6: 1–7.   5.Perfect Compliance: The 2018 Accreditation Council for Graduate Medical Education Well-Being Survey.  Annals of Internal Medicine. 2019, 170 (4): 257-258.   6.Measuring Diversity and Inclusion in Academic Medicine: The Diversity Engagement Survey.  AAMC. https://www.aamc.org/what-we-do/mission-areas/diversity-inclusion/engagement-survey .

# Abstracts

## Poster# 68: Challenges to New Program Coordinator Training: One Institution's Story

**Team:** Robyn Fleming, MAEd, University of Alabama Hospital

**Background**
In 2018, the Graduate Medical Education Office (GMEO) determined a need for a dedicated trainer for program coordinators (PC) and established an Education Coordinator (EC) position. This aligned with the updated Common Program Requirements (CPR) that placed importance on the PC role and the need for professional development (PD). The EC learned specifics of the resident management software (RMS) first then trained with the Accreditation Analyst (AA) to learn accreditation. The EC developed a curriculum for new PCs that spanned 4 sessions – 2 sessions on the RMS and 1 each on the institution's PC Manual and accreditation. The EC met with all new PCs at varying times, based on their schedule.

**Objectives**
The EC's concerns over information retention and training structure prompted a quality improvement (QI) process. Key components included: 1) determining the effectiveness of the training, 2) gauging the importance of having a trainer/point person, and 3) identifying potential barriers to training.

**Methods**
The EC sent a survey to the 11 PCs that completed new PC training in the previous year and received 7 responses. The survey contained 14 questions that could be scored from 1 (lowest) to 10 (highest). Questions included: 1) level of training received at the program level, 2) PCs familiarity with GME deadlines and accreditation topics, 3) the use of the RMS scheduling and evaluation functions, 4) the overall helpfulness of the training, 5) limitations to training, and 6) suggestions for improvement. The EC would use the results from the survey to determine if any changes were needed.

**Results/Outcomes/Improvements**
66% of PCs answered that they had received less than a moderate amount of training from their Program Director (PD) and other department personnel, all responses indicated that a dedicated trainer was very important and rated the helpfulness of training sessions a score of 8. The average score to questions about GME deadlines and accreditation topics was a 5 and questions about use of the RMS received an average score of 7. Barriers to training included a lack of time and other responsibilities, and factors that hindered retention were information overload, the spacing of the training sessions, and working in a constantly-changing environment. In an effort to improve the training, the EC decided to hold 3 initial sessions instead of 4 – 1) RMS overview, 2) GME/ACGME deadlines – using deadlines to teach content, and 3) the importance of sending evaluations and maintaining a schedule with a follow-up session to take place 2 months after the last session. The 3 initial sessions would be held at the same time each week (one session/week) for all new PCs.

**Significance/Implications/Relevance**
Since ACGME places pronounced value on development of PCs, a trainer is an important position in the GMEO. However, challenges, such as PC availability and the vast amount of information to cover, are fully present and threaten the effectiveness of PC training. Having someone who is willing to adapt and modify their approach to best fit the needs of PCs in an ever-changing environment is crucial to this position.

## Poster# 69: Modeling predictive learning growth curves for the Milestone's Project: examining factors impacting systems-based practice competency in primary care Graduate Medical Education

**Team:** Jung Kim, PhD, MPH, UC Berkeley School of Public Health, Kaiser Permanente School of Medicine; Eric Holmboe, MD, MACP, FRCP, Accreditation Council for Graduate Medical Education

### Background
Studies argue that physician professional competency is a function of individual learning plus their organizational environment. Yet little is known about the organizational and environmental factors that influence residents' cumulative learning in Graduate Medical Education (GME) programs.

### Objectives
Factors predicting learning curves in systems-based practice (SBP) for U.S. residents training in Accreditation Count of Graduate Medical Education (ACGME)-accredited primary care programs were examined to construct analytical models for multi-level analyses.

### Methods
Hierarchical linear regression analysis of U.S. accredited-Family Medicine and Internal Medicine using the 2014-17 ACGME Milestones Project's data that measured developmental achievement of Milestones levels (0-5) for specific SBP competencies. We linked 788 programs within 490 sponsoring institutions (SI) (representing 10,540 residents) to the 2016-17 National GME Census, 2016 Centers for Medicare and Medicaid Services Cost Reports, and 2015-16 Area Health Resource File. We constructed predictive growth curve models using Milestones data of residents reported every 6 months for three years. Predictors were categorized using the Mintzberg Organizational framework: 1. Program's internal characteristics, 2. External program factors including SI's characteristics, with environmental factor controls in the program's county.

### Results/Outcomes/Improvements
Overall resident cumulative learning of SBP was 0.47 level increase every 6 months. In adjusted analyses, residents training in internal medicine (.39 (.34 to .43) $p<.001$) and self-identified community-based programs (.06 (.004 to .111) $p<.05$) had higher reported learning curves. Lower curves were observed for programs with greater distance from their SI sites (-.001 (-.0003 to -.0002) $p<.05$) and more hospital beds (-.007 (-.01 to -.002) $p<.001$). Program counties designated as a health professional shortage area were also associated with lower learning curves (-.07 (-.11 to -.02) $p<.01$).

### Significance/Implications/Relevance
Modestly steeper systems-based practice learning curves in ACGME-accredited Family Medicine and Internal Medicine programs were mostly associated with medical specialty and programs described as community-based. Organizational structural factors include geography and environmental conditions also impacted reported learning curves for systems-based practice. Our findings suggest organizational factors play an interdependent role in resident learning and the assessment of their core professional competencies. Using the Milestone Project's data facilitates a unique opportunity to simultaneously examine resident-, program-, and systems-level factors and the cumulative impact of GME training.

# Abstracts

## Poster# 70: The Role of Mindset, Impostorism, and Irrational Beliefs in Resident Wellness: Results from the HCA Nationwide Resident Wellness Study

**Team:** Gregory Guldner, MD, MS, University of California Riverside School of Medicine; Jason Siegel, PhD, Brendon Ellis, MA, Anne Brafford, JD, MA, Claremont Graduate University

### Background
The significant proportion of residents reporting poor levels of well-being has appropriately fueled a call for interventions.  Yet the specific constructs that impact well-being have not been well researched and validated in the resident population.  Mindset (fixed versus growth), impostorism (the belief that one's success is fraudulent) and irrational beliefs (dysfunctional beliefs that contribute to emotional pain and anguish) are among individual variables postulated to relate to well-being in a high-pressure educational environment.  Each of these constructs is amenable to interventions should they have causal relationships to well-being.

### Objectives
Our prior research resulted in a statistically validated model of well-being in which the perception of meaningful work, strong psychological capital (hope, efficacy, resilience, and optimism), social support, and supervisor support for autonomy had significant relationships with depression, burnout, and engagement. In a replication study of our prior research, we sought to determine to what degree mindset, impostorism, and cognitive distortions relate to well-being.

### Methods
As part of a longitudinal nationwide well-being study of HCA residents participants completed previously validated measures of meaningful work (Work & Meaning Inventory), supervisor support for autonomy (PAS-Work Climate Inventory), psychological capital (PCQ), impostorism (Impostorism Scale), mindset (Growth Mindset Scale), and irrational beliefs (Belief Scale).  Outcome measures included burnout (Professional Fulfillment Burnout Subscale), depression (PHQ-9), and engagement (Professional Fulfillment Engagement Subscale).  Structural equation modeling was used to explore the relationships between predictor and outcome variables.

### Results/Outcomes/Improvements
In the first of three waves, completed in July of 2019, 579 residents responded to the survey. In this sample 17% of residents reported depression and 32% met the criteria for burnout. The risk of depression was eight times greater in those residents with burnout (41%) compared to those without burnout (5%).  Meaningful work and supervisor support for autonomy were again strong predictors of all measures of resident well-being in the model ($p<0.01$ to $p<0.001$).  Impostorism and Irrational Beliefs were strong predictors of depression and burnout ($p<0.01$ to $p<0.001$) while irrational beliefs had a moderate association with engagement ($p<0.01$). Impostorism and irrational beliefs better accounted for depression and burnout than psychological capital, which was no longer significant in the structural model after the addition of impostorism and irrational beliefs as predictors. Growth Mindset was not associated with any outcome variable.

### Significance/Implications/Relevance
Elements of our prior model of resident wellness were validated including the importance of the perception of meaningful work and supervisor support for autonomy, both of which are targets for specific interventions to improve well-being. Individual institutions could institute focused programs to improve the perception of meaningful work and to train leaders in various methods of supporting resident autonomy.   If validated in the remaining waves of this longitudinal study impostorism and irrational beliefs would be targets for focused interventions such as those found on the ACGME Website.

# Abstracts

## Poster# 71: Feasibility and Utility of Web-Based Interviews for Otolaryngology Resident Selection

**Team:** Morgan Davis, MD, Aria Jafari, MD, Kayva Crawford, MD, Deborah Watson, MD, FACS, University of California San Diego

**Background**
There has been a recent increase in the number of programs ranked by applicants as well as the number of candidates required to fill Otolaryngology residency positions. Meanwhile, there are persistent financial constraints and substantial overlap of interview dates, thereby reducing exposure between candidates and programs. In order to address these limitations of traditional interviews, web-based interviews (WBI) have emerged as an alternative.

**Objectives**
This study reports our preliminary experience utilizing a WBI model at The University of California, San Diego to improve applicant flexibility and exposure, optimize program resources while minimizing time and expenses associated with Otolaryngology residency interviews.

**Methods**
Senior medical students who interviewed for an Otolaryngology position at The University of California, San Diego for the 2018-2019 application cycle were identified. The majority were offered traditional face to face interviews (FFI) consisting of six to eight 15-minute unstructured meetings with faculty and chief residents. Applicants who had previously participated in a 4-week sub-internship at our program were offered a 10-minute web-based interview (WBI) with six to eight faculty and a chief resident in place of a traditional interview. After completion of interviews, an anonymous survey was distributed to candidate email addresses. No identifying information was collected, and applicants were informed that their participation would not affect the selection process. Descriptive statistics were computed with Microsoft Excel.

**Results/Outcomes/Improvements**
Out of 48 total senior medical students that interviewed for an Otolaryngology residency position at our institution, thirty-four applicants completed the anonymous survey (70.8% response). The majority of respondents estimated the cost of interviewing between $500 and $1000 (60.7% FFI, 83.3% WBI). Most respondents did not have prior experience with WBI (75.0% FFI, 83.3% WBI). For WBI respondents, most reported that the experience "met expectations" (66.7%, overall). Audio and visual quality also most commonly "met expectations" (83.3%, 66.7%, respectively). Although video-conference technology has advanced a great deal in terms of quality and ease-of-use in recent years, we found that there remains opportunity for improvement in terms of eye-contact, flow of conversation, and time constraints. When FFI applicants were asked regarding the likelihood of electing WBI if offered, 17.9% reported that they were "likely," 32.1% "somewhat likely," 35.71% "not likely," and 10.7% "very unlikely" to elect this option. One respondent (3.6%) was "unsure."

**Significance/Implications/Relevance**
In the context of increasing the number of ranks required to match by both applicants and programs, and considerable scheduling conflicts, this study demonstrates that WBI may be a feasible, flexible, cost-saving alternative to FFI in the Otolaryngology residency selection process. Among applicants who participated in FFI, 50% of respondents were "likely" or "somewhat likely" to participate in WBI if offered the option, indicating a substantial interest. We also estimated that WBI offered applicants a cost-savings of $500-$1000, which is considerable in an already financially daunting process. Future studies should be directed toward implementing WBI to the broader applicant pool, assessing the effect of WBI on program and applicant impressions, and identifying any impact on ranking decisions.

# Abstracts

## Poster# 72: Impact of a Mainly App-based Mindfulness Meditation Course of Faculty and Trainee Wellness

**Team:** Lori Weichenthal, MD, Betty Liao, PhD, Jahyeok Ihm, MD, UCSF Fresno

**Background**
More than half of US physicians experience symptoms of burnout. These symptoms can begin in medical school and often continue into residency. Evidence suggests that developing mindfulness practices decreases physician burnout and increases engagement. Whereas in the past most formal mindfulness programs required a large time commitment, more recent studies suggest that briefer mindfulness meditation interventions may also be effective.

**Objectives**
To evaluate the feasibility and impact of an eight-week, mainly App-based mindfulness course on faculty and trainee wellness.

**Methods**
From August 2018-2019,  six eight week mindfulness meditation courses were offered to medical students, residents and faculty at UCSF Fresno.  The course consisted of use of the Headspace App to meditate 3-10 minutes at least four times a week on different topics, access to online supplemental videos, and a mid-course meeting to practice meditation as a group and to discuss challenges and successes with the practice. Participants were recruited utilizing email blasts. Prior to each course, participants were asked anonymously to complete the Professional Quality of Life Scale (ProQOL) which measures burnout (BO), secondary traumatic stress (STS), and compassion satisfaction (CS). Participants were also surveyed at the end of each course with additional qualitative questions on the impact of the course. Analyses of qualitative data were performed using independent samples T-test.

**Results/Outcomes/Improvements**
78 people participated in the course, 54 % who were residents. Comparing pre- and post- surveys, there was improvement in all three aspects of the ProQOL Scale (BO 25.9 versus 22.5, p=0.001, STS 21.8 versus 18.7, p=0.002, CS 36.9 versus 38.7, p=0.088) with BO and STS reaching statistical significance. 74 % stated there were very or extremely likely to continue their own mindfulness practice after the course. Qualitative responses included feeling more relaxed, more aware and present, less overwhelmed, more accepting, less stress and getting better sleep.

**Significance/Implications/Relevance**
A mindfulness meditation course, utilizing mainly an online App is feasible and allows flexibility for participants. Both qualitative and quantitative data suggest positive benefits of the course.

# Abstracts

## Poster# 73: Central Oversight of ACGME Site Visit Preparation Using an Accreditation Specialist Model

**Team:** Mandy Velligan, Nicole Teran, Crystal Cannon, The University of Chicago

### Background
Department of Medicine (DOM) programs are now operating under the New Accreditation System (NAS) and anticipate their 10 year site visit within the next year.  In order to address new common program requirements, provide core program oversight, and enhance education, the DOM created a new role within the department's education enterprise designed to facilitate compliance with ACGME requirements.  These accreditation specialists and affiliated resources have provided our fellowship and residency programs with support during site visit preparation. The goal of these interventions is to maintain continued accreditation without citations.

### Objectives
This study reports the methods, process and outcomes of the resources and support provided to our programs as they prepare for their upcoming site visit.   The structure created allowed for transparency and fostered collaboration among Program Directors, Program Coordinators and Accreditation Specialists.

### Methods
In the fall of 2018, the DOM leadership though its accreditation specialist initiative designed and implemented a process for site-visit preparation.   These interventions include:
a.A Preparation tracking sheet including a timeline
b.Regular timeline reviews with PD's
c.Informational meetings with individual program director
d.Group program director meetings
e.Department of Medicine program coordinators/AS joint meetings
f.A standardized WebADS process across the department
These resources are being implemented over two separate timelines to help structure the workflow in preparation for the site visit.  The first timeline focuses on areas  that need to be completed prior to our 90 notification.  This included assembling our program documentation such as goals and objectives, assessments, policies, etc.  The next timeline (post-90 day notification) allows the team to focus on logistics such as faculty and trainee education and reviewing our data as a whole.
DOM program leadership met weekly with our accreditation specialist team. Accreditation issues and opportunities for improvement were discussed.

### Results/Outcomes/Improvements
The structure we developed allowed us to standardize site-visit processes across programs within the department.  Everyone was aware of the timeline and associated tasks.  Program Coordinators worked closely with the Accreditation Specialists to gather all the required documents.  This department wide framework reduced stress and enhanced compliance with ACGME requirements.
The system is being managed as a learning process.  Information from an initial accreditation site visit and one 10 year site visit, as well as regular feedback from PD's and coordinators, is being used to regularly revise the system.

### Significance/Implications/Relevance
Previously, individual programs were left to manage the site visit process alone.  At the University of Chicago, the DOM leadership has enhanced oversight through the creation of an administrative apparatus which provides additional oversight and support to programs.  Program Coordinators are working in partnership with the Accreditation Specialists to manage the tasks for the site visit.

# Abstracts

## Poster# 74: Maximizing the Value of Institutional GME Exit Surveys to Assess and Improve Learner Experience

**Team:** Jeremy Podczerwinski, Allison Norenberg, MSc, Megham Twiss, MDiv, MAT, MA, Latassa Love, MS, Amanda O'Rourke, MBA, and Anita Blanchard, MD, UChicago Medicine

### Background
Residents and fellows contribute substantially to care delivery and hospital operations across the United States. At UChicago Medicine (UCM) residents and fellows comprise 12% of the organization's workforce, which is second only to nursing. Given the benefits of an engaged workforce and the value learners bring to the present and future function of academic medical centers, it is valuable to sponsoring institutions to continuously monitor learner experience. The Office of Graduate Medical Education at UCM recently expanded the pre-existing institutional exit survey to better assess learner experience and feedback.

### Objectives
The Office of GME at UCM aimed to improve assessment and feedback from graduating residents and fellows related to training experience, as well as immediate placement post-training. This abstract will describe the GME exit survey process, recent innovations to content, results to date, implications and next steps.

### Methods
The annual GME exit survey is embedded into the required sign-out process for all graduating residents and fellows. It is administered via the institutional GME learning management system, MedHub, and is completely anonymous. The exit survey was initially implemented as a five item survey to assess immediate plans and financial debt. Since initial implementation of the GME exit survey, the survey has evolved to include a total of 61 items in areas related to future plans, experience within the clinical learning environment and suggestions for future improvement. Examples of additions include:
- What is the most important reason you chose to practice at this location? (Relating to the selection of future plans)
- …I feel prepared for independent practice (1-5 Likert Scale Rating)
- Please rate (1-5) how strongly you feel the institution is represented in the following domains (well-being, QI, health equity, supervision/transitions of care, professionalism, value-based care)


### Results/Outcomes/Improvements
In 2019, 339 (89%) graduating residents and fellows completed the new exit survey with medicine, pediatrics and surgery department comprising ~50% of the population. Consistent with previous years, 40.6% of graduating residents and fellows will remain within the Chicago Metro area. The top three "most important" reasons for resident/fellow selection of future plans include (in order of highest rank): good fit, liked the team, met my professional goals, and proximity to family. 84.78% of respondents agree or strongly agree that they feel prepared for independent practice. Lastly, respondents rated professionalism as the domain with the strongest institutional representation.

### Significance/Implications/Relevance
A more robust and comprehensive survey of graduating residents and fellows provides invaluable institutional feedback. Data can be used for internal assessment, highlighting areas of focus for strategic priorities.

# Abstracts

## Poster# 75: Innovating the Resident Recruitment Process to Increase Workforce Diversity

**Team:** Amelia Challender, MA, Cleveland Piggott; Shontelle Jaramillo, Linda Montgomery, University of Colorado Anschutz

### Background
Studies have shown that a more diverse workforce enhances team function and the quality of patient care. With this in mind, the 2019 revisions to the ACGME Common Program Requirements required that, for the first time, residencies "engage in practices that focus on mission-driven, ongoing, systematic recruitment and retention of a diverse and inclusive workforce of residents, fellows, faculty members, senior administrative staff members, and other relevant members of its academic community." Program directors were required to describe in their annual report to the ACGME how they are ensuring diversity in trainee recruitment, selection, and retention.

### Objectives
To answer this call for a more diverse resident workforce, the University of Colorado Family Medicine Residency innovated our medical student recruitment processes with the goal of matching a more diverse residency class and evaluated our approach. We defined diversity primarily as residents of races traditionally underrepresented in medicine (URM) and secondarily as People of Color (POC), meaning non-white. Our evaluation was both summative (understanding how successful our approach was) and formative, providing us with data to guide future improvements.

### Methods
Our innovations included:
•changes to initial application review (including blinding reviewers to applicant photos)
•an applicant evaluation rubric aligned with the AAMC's holistic review process
•a training for all resident and faculty interviewers about holistic review, biases common in interviewing, and the using our new interview rubric
•improved marketing materials (website, brochure, slide shows) that highlighted diversity, and
•a Second Look for Minority Scholars event in which we invited our top URM interviewees to re-visit our program
Our evaluation included:
•a survey of all interviewees
•a survey of Second Look attendees, and
•an analysis of ERAS data to provide descriptive statistics for our formative and summative evaluations

### Results/Outcomes/Improvements
In 2018-19, we successfully implemented a holistic review process, including use of a new interviewer rubric and an interviewer training. We also successfully hosted a Second Look event and used improved marketing materials.
Early results suggest our innovations were successful in increasing the diversity of those who applied, interviewed, and matched at our program. The number of URM applicants from the US and Canada has increased over time, with 91 in 2017, 110 in 2018, and 134 in 2019.
Of the 132 applicants interviewed in 2018-19, 45 (34%) were POC and 30 (22.9%) were URM. This was more URM interviewees than in 2017-18, (18, 14% of 131), but a few less POC interviewees (47, 36%).
Of our 2019 intern class of thirteen residents across three tracks, the majority (seven or 53.8%) were POCs, including two URM residents (15.4%). This was an increase from 2018, when we matched four POC (30.7%) and no URM residents.
Results from our applicant surveys provided suggestions for improving our recruitment process.

### Significance/Implications/Relevance
Residencies considering innovating their recruitment processes to increase diversity can learn from our approach and may wish to consider instituting standardized holistic review rubrics, an interviewer training, and methods for actively recruiting top URM/POC applicants such as a Second Look event.

ACGME, ACGME Common Program Requirements (Residency), Effective July 1 2019, Retrieved October 9, 2019 (https://www.acgme.org/Portals/0/PFAssets/ProgramRequirements/CPRResidency2019.pdf).

# Abstracts

## Poster# 76: An Objective Assessment of Fatigue and Resident Cognition: A Prospective Cohort Study

**Team:** Anthony Dwyer, MS, Christine Pak, Sally Heinzel, PhD, Yanzhi Wang, PhD, Michelle De Sutter, Robert Wolford, MD, University of Illinois College of Medicine.

### Background
Approximately 60 million adults in the U.S. have sleep and wakefulness issues (CDC, 2011). This is problematic for residents working varying shifts, including nights or weekends. Limited and fragmented sleep can lead to potentially dangerous fatigue levels. Sleep deprivation can impair hand-eye coordination and executive functions of cognition like decision making and memory recall (Gaba & Howard, 2002). Decline in neurocognitive performance can lead to higher rates of fatigue induced errors (Caruso, 2014). Objectively studying levels of fatigue across multiple clinical departments could provide insights to make informed decisions on resident scheduling, wellness, sleep hygiene, and cognitive load analysis.

### Objectives
This IRB-approved study has 3 main objectives. The first is to assess overall levels of fatigue in medical residents using the validated Sleep, Activity, Fatigue, and Task Effectiveness (SAFTE) biomathematical model. The second objective is to determine how residents' fatigue levels impact their cognitive effectiveness. This is determined using SAFTE's objective fatigue algorithm based on circadian rhythm, time of day, sleep quantity, sleep & wake consistency, cumulative sleep debt, and wake episodes using three-dimensional accelerometers to produce an Alertness Score ranging from 0-100, where 100 represents baseline performance when well rested (Hartmann, 2015, Russell et al., 2000, Roma et al., 2012). Finally, the project aims to study how irregular sleep patterns affect fatigue levels by examining variable sleep onset times. In order to capture a wide-ranging pattern of sleep behavior, residents from 7 programs were recruited.

### Methods
Residents donned a wrist worn actigraph (ReadiBand™) to capture the cloud-based data points for each participant. A user must wear the ReadiBand™ for 3 consecutive days to calculate an Alertness score. Residents who had a previously diagnosed sleep disorder were excluded. A total of 65 residents participated, with 1 being excluded due to inadequate data. The remaining 64 residents wore the ReadiBand™ for at least 7 consecutive days, with the longest period of compliance being 55 days. Collectively, the residents wore the ReadiBand™ for a total of 1469 days.
Data was collected from February to July 2018 across two large academic medical centers. Participant names, programs, and work schedules were not tracked, and participants were assigned unique identifiers to ensure anonymity. Data was analyzed by a statistician who did not participate in data collection. Descriptive statistics were used to characterize the study population. Generalized estimating equation (GEE) model was used to compare the risk of getting fatigued and the risk of getting impaired among different sleep on set times.

### Results/Outcomes/Improvements
Residents were functioning below an Alertness Score of 90 during a mean (SD) of 51% (35%) of their time awake. Residents were functioning below an Alertness Score of 80 during a mean (SD) of 17% (24%) of their time awake. Residents were functioning below an Alertness Score of 70 during a mean (SD) of 4% (11%) of their time awake. Sleep onset time between 12 am and 3 pm is associated with higher risk of getting fatigued (<80 Alertness Score) compared with sleep onset time between 6 pm and 12 am, risk ratio is 1.8 with 95% CI [1.1,3.0]. Sleep onset time between 3 am and 6 am is associated with higher risk of getting fatigued (<80 Alertness Score) compared with sleep onset time between 6 pm and 12 am, risk ratio is 6.1 with 95% CI [2.9,12.9]. Sleep onset time between 6 am and 6 pm is associated with higher risk of getting fatigued (<80 Alertness Score) compared with sleep on set time between 6 pm and 12 am, risk ratio is 6.3 with 95% CI [3.3, 12.0]. Sleep onset time between 6 am and 6 pm is associated with higher risk of getting fatigued (<70 Alertness Score) compared with sleep on set time between 6 pm and 12 am, risk ratio is 8.7 with 95% CI [2.0,38.4].

**Significance/Implications/Relevance**

Optimal Alertness Scores are ≥90. Only 8 residents (13%) stayed above a score of 90 for the study period. A score of 80 predicts a 30% slower reaction time and a 3.7 greater likelihood of having an attention lapse. The study established that 39 residents (61%) fell below a score of 80 at least once during the study. A score of 70 predicts a 43% slower reaction time and 5.2 greater likelihood of a lapse, effects which are comparable to having a blood alcohol concentration of 0.08 (Russell et al., 2000). Sixteen residents (25%) residents fell below a score of 70 at least once during the study. Below 70, human factors errors are reliably greater than both nonhuman factors risk and chance (Hursh et al., 2006). This study demonstrates that a significant portion of residents were less than optimally effective and additionally at risk for attention lapses. The results of this study warrant further investigation into resident fatigue and mitigation techniques.

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# Abstracts

## Poster# 77: Empowered by Change: A Comprehensive Institutional Approach to the 2019 Common Program Requirements

**Team:** Hillary Chappo, MHA, Gerald Wickham, MA, EdD, Mark Wilson, MD, MPH, University of Iowa Hospitals and Clinics

**Background**
In 2019, the Graduate Medical Education (GME) Office at the University of Iowa Hospitals and Clinics (UIHC) launched a bold initiative to support 84 ACGME-accredited programs in their individual and institutional responsiveness to the new Common Program Requirements (CPRs) and associated WebADS requirements. This initiative involved:
1. Formation of a faculty-driven CPR subcommittee reporting to GMEC
2. Development of an institutional resource guide for program directors and coordinators
3. Provision of a newly created Collaborative Practices Workshop focused on CPRs/WebADS (of which 82 of 84 programs attended)
4. Implementation of a novel method in reviewing WebADS annual updates and providing fast turnaround feedback to each program

**Objectives**
The objectives of this initiative were to 1) Gather and share best practices on how programs and departments are addressing the new CPRs, increase collaboration, and reduce duplicative efforts, 2) Identify opportunities for curriculum improvement at the program and institutional level and, 3) Educate program leadership and serve as consultants/coaches in dictating, developing, and implementing solutions.

**Methods**
Following a comprehensive faculty-driven analysis of the new CPRs, in June 2019 the GME Office studied the resulting new data fields in WebADS to assess reporting changes for the annual program update. The GME Office handcrafted a program director and coordinator resource guide which included suggested institutional narratives to integrate into the new narrative fields. In conjunction with the resource guide, the GME Office developed four workshops from mid-July to early August for program leadership to share best practices and to collaborate. During the annual program update windows, the GME Office systematically reviewed ACGME-accredited programs and provided individualized feedback to the program directors and coordinators prior to the ACGME deadlines. The GME Office also served as a centralized resource by answering e-mails, phone calls, and holding in-person meetings with program leadership.

**Results/Outcomes/Improvements**
The program director and coordinator resource guide was developed by the GME Office and provided to all 84 ACGME-accredited programs at UIHC. Attendance across the four workshops represented 82 of 84 ACGME-accredited programs and included 94 people (program directors, associate program directors, coordinators). During the annual program update windows, the GME Office systematically reviewed 79 of the 84 (94%) ACGME-accredited programs and provided individualized feedback to the program directors and coordinators prior to the ACGME deadlines. Through the systematic review, the GME Office was able to identify curricular gaps and ways to improve assessment across programs which has led to more focused supportive institutional oversight.

**Significance/Implications/Relevance**
GME program leadership across the institution has gained greater knowledge of the institutional resources available and have identified opportunities for growth within their programs while also fulfilling the new Common Program Requirements. The GME Office and GME program leadership are in stronger alignment to work collaboratively towards providing an excellent clinical and educational environment for residents and fellows. Downstream outcomes will be evidenced in a potential reduction in AFIs/Citations as well as other tangible educational benefits.

# Abstracts

## Poster# 78: The Paradox of Resident Physician Leadership Education: 'It's very important and I'm already quite satisfied with my skill set'

**Team:** Brooks Obr, MD MME, Gerald P. Wickham, EdD, Mark C. Wilson, MD MPH, University of Iowa Hospitals and Clinics

**Background**
Healthcare providers function as leaders within their medical team, hospital, and the community at large. While Graduate Medical Education (GME) regularly provides advanced educational opportunities to address a range of specialized training, the topic of leadership development for resident physicians is relatively underexplored and under-addressed.

**Objectives**
This study examines resident perceptions of their own leadership-related strengths and weaknesses, as well as preferences for delivery of a new leadership development initiative.

**Methods**
We developed a web-based survey which was distributed in April and May of 2019. The survey was sent to all resident physicians training at the University of Iowa Hospitals and Clinics. To encourage participation, we sent two email reminders to our resident physicians as well as residency program coordinators. We explored overall frequency of responses via Qualtrics and identified opportunities for a few stratified analyses.

**Results/Outcomes/Improvements**
Our response rate (n=136) included a range of residents across post-graduate years (38 PGY-1, 44 PGY-2, 29 PGY-3, 19 PGY-4, 6 PGY-5+). Twenty-one specialties were represented in the responses. Most residents (83%) reported they were already satisfied to some degree with their leadership capabilities (9.6% highly, 48.5% moderately, and 25.0% slightly satisfied). The top 4 leadership topics that residents identified as the most interesting were "how to evaluate others", "promoting change", "conflict management", and "motivating your team/yourself". 72.6% of respondents reported that leadership training was either "extremely" or "very" important. 8.9% reported leadership training was either "slightly" or "not at all" important. When ranking the perceived best modality to teach these topics, "focused TED-like talks" and "small group sessions (longitudinal course)" were the two most commonly selected modalities. Respondents identified significant residency-based challenges that would impair their ability to participate in any new leadership development programming, such as "Conflicting residency responsibilities" and "other clinical or educational opportunities taking precedence".

**Significance/Implications/Relevance**
While our sample size prevents us from making conclusions about the needs and opinions of all of our residents, it does represent a large convenience sample of responses from those inclined toward leadership development. These responses reflect a paradox that many residents already report satisfaction with their leadership capabilities, yet overwhelmingly feel that leadership training is important during residency education. Additionally, it appears that Program Directors and institutional GME leaders should consider new feasible approaches to provide developmental leadership opportunities. A further interesting result was the selection of "focused TED-like talks" as the best modality for imparting this training. While not a commonly utilized tactic, these results seem to indicate there is an interest in exploring this format. Further, topics of interest ranked by residents, as well as provided in the miscellaneous comments, help to guide leadership training/curricular development.

# Abstracts

## Poster# 79: "Dashboarding" Case Log Review to Improve GMEC Oversight

**Team:** Katherine McKinney, MD, Sarah Gan, Todd Peurach, MBA, University of Kentucky College of Medicine

**Background**
ACGME graduate case log reports are rich with data regarding both program's graduate's case volume attainment as compared to established minimum standards, but also provide data regarding national case log volumes and trends. For Graduate Medical Education Committees (GMECs) and Designated Institutional Officials (DIOs) who oversee programs with ACGME case log requirements, proactively tracking and trending program compliance can be challenging due to the wealth and variety of data provided in ACGME case log reports. This project discusses the process and tools our GME office developed to assist the GMEC and DIO with efficient graduate case log volume review to ensure program accreditation oversight.

**Objectives**
To develop a tool for the sponsoring institution's graduate case log data oversight that allows the GMEC to critically analyze and effectively monitor case log volume trends.

**Methods**
2016 ACGME annual graduate case log data reports were utilized to create a Microsoft excel based dashboard housing data for all of the sponsoring institutions' programs required to log and report case volumes. Each programs' 2016 graduate data was de-identified and entered into the dashboard. Specialty specific case log minimum requirements and case volume percentiles were visually coded for each graduate's case volume. Pairs of GMEC members utilized the dashboard in conjunction with original ACGME graduate case log data reports to conduct case log review. Review included whether minimum case log requirements were met by each graduate, individual and program trends in comparison to national case percentiles by category, and variability of case log attainment within each program. Reviewers presented their conclusions during GMEC. Subsequent to annual case log review, reviewer feedback was solicited with suggestions for improvement implemented to iteratively to adjust the format and usability of the dashboard during review of 2017 and 2018 graduate case log data.

**Results/Outcomes/Improvements**
GMEC case log reviewer feedback indicated use of the case log dashboard improves the efficiency of a programs' case log review as compared to using only raw data from ACGME reports. The likelihood of appreciating variability within and across programs in case log volumes was also improved through the ability to compare data through a dashboard. The amount of time required to conduct discussion regarding case logs during GMEC meetings also decreased and the number of reviews requiring additional clarification through consultation with the program director or reanalyzing raw data also decreased. Reviewer satisfaction with the review process and GME office satisfaction with accreditation data management also improved.

**Significance/Implications/Relevance**
Use of an institutional case log dashboard within a standardized GMEC review process can assist with providing oversight for program accreditation indicators. Analyzing case log volumes through a dashboard approach can also improve ability to detect potential variability in case volume within programs and across the institution. In addition, case log dashboards can be used as an educational tool for the sponsoring institution's GMEC community to more efficiently analyze accreditation compliance across the sponsoring institutions' programs with case logging requirements.

## Poster# 80: Evaluating Department Readiness toward Graduate Medical Education (GME) Quality Improvement Education Implementation

**Team:** Debra Burke Paliani, MA, Jamie Lindsay, Andrew Dering, Michigan Medicine - University of Michigan

### Background
Education in quality improvement (QI) during residency and fellowship training is not only a requirement of the ACGME, but is also crucial for enhancing the patient experience, reducing healthcare costs and improving healthcare outcomes. Organizations such as the ACGME and AAMC publish guidance on what constitutes training in quality and safety, however a number of barriers to implementing high quality training in QI exist.

### Objectives
There were 3 main objectives to this project. The primary aim was to establish the current state of our core (residency) training programs in administering a QI curriculum. Secondly, we aimed to identify opportunities to direct institutional resources towards training programs most efficiently. Finally, we have an aspirational goal of identifying and using successful programs as exemplars for other programs, and to call upon these training programs to guide those that found administering QI training more challenging.

### Methods
We developed our assessment tool by first identifying the key domains where we felt at least some degree of competence was required for the successful implementation of a QI curriculum, namely,
1) knowledge of the faculty lead, 2) dedicated education time for the trainees, 3) infrastructure and support within the department, 4) engagement of additional faculty as mentors, 5) established processes for problem selection, 6) well defined objectives for the program and 7) integration and alignment with established institutional, departmental and/or clinic goals.  Next, using the ACGME milestones as a model, we developed our Readiness Assessment Tool. For each of the key domains, we described a range of competence from novice to expert. We solicited feedback from QI educators and used this to improve the tool.  Finally, we ran a pilot with five programs at varying points on their QI education pathway to identify confusing language or other gaps within the assessment tool. Once this development process was complete, we built the assessment tool within an online survey application (MedHub) and administered it to our 26 core (residency) departments.

### Results/Outcomes/Improvements
The survey administered to the core programs generated a response rate of 88% (23 of a total of 26 core residency programs). This provided us with a self-reported baseline of how those respondents currently perceive their QI training programs.  All domains showed programs identifying at each level of the competency scale, revealing that programs self-report a wide range of competence.

### Significance/Implications/Relevance
The readiness assessment model was able to provide insight into which domains programs were struggling, helping to identify institutional opportunities over local solutions.. Furthermore, we anticipate that the assessment will be used to measure improvement over time, and identify areas of expertise that may be of utility to programs struggling to implement a QI curriculum.  The next step will be to expand the use of this tool to the entirety of the accredited training programs at Michigan Medicine, and use the results to ensure optimal use of resources and consistency of curriculum across programs. Other institutions may find that administering a readiness assessment helpful in efficiently implementing a QI training curriculum while optimizing resources and establishing consistency.

# Abstracts

## Poster# 81: Physicians in Training Demonstrate High Desire for Financial Literacy Education and Exhibit Low Levels of Financial Literacy.

**Team:** Anderson Lee, Jamaal Tarpeh, Kristian Black, University of Michigan Medical School; Gurjit Sandhu, Niki Matusko, Jesse Wilson, Michael Englesbe, University of Michigan

### Background
The average graduating debt for 2018 medical school graduates was $196,520. This is a 3% increase from the year prior. As a result of high debt load, it is imperative that medical students are prepared to responsibly manage this burden. Previous studies have shown that medical students, residents, and fellows answer fewer than 55% of financial literacy questions correctly, reflecting low levels of financial literacy. Furthermore, higher levels of financial literacy have been associated with increased financial stability and overall wellness in medical professionals. Despite these findings, there are no requirements for financial literacy development in medical school curriculum. While exorbitant debt is acknowledged among learners, it is not well understood how level of financial literacy affects the desire for financial literacy education during medical training.

### Objectives
The objective of this study is to explore the relationship between financial literacy among medical students and their desire for financial literacy education during medical training.

### Methods
From April to May 2019, a cross-sectional, anonymous, web-based survey was administered to a convenience sample of first-year (M1) to fourth-year (M4) medical students at the University of Michigan Medical School. Respondents voluntarily answered a 51-item multiple-choice survey designed to assess their financial literacy, assess desire for financial literacy education during medical school, and demographic factors. For the portion of the survey that was used to assess financial literacy, proficiency was defined as answering greater than 75% of items correctly for each respondent. Cohort proficiency on each item was defined as greater than 75% of respondents selecting the correct answer.

### Results/Outcomes/Improvements
265 of 680 (39%) medical students completed the survey. Overall, respondents correctly answered 5.64 (37.6%) of the financial literacy questions, reflecting a low level of financial literacy among the cohort. Thirteen items captured lows levels of literacy and two items showed proficiency. No respondent correctly answered all of the fifteen financial literacy items. Four respondents were considered proficient based on their number of correct answers. Improving their financial literacy was extremely important or very important to 77.32% of students. 88.89% of students believed that medical students should receive financial literacy as a part of their medical training and 86.57% of students said that they would take a related course if it was offered.

### Significance/Implications/Relevance
Low financial literacy levels continue to be detected among medical students. In addition, medical trainees express a strong desire for adding financial literacy development to medical education curriculum. It is likely that medical students are aware of their limited financial literacy and welcome the opportunity to address that knowledge gap. Integrating financial literacy development into medical school education has the potential to increase personal financial stability, professionally enhance strategic financial decisions, and improve overall wellness in trainees.

# Abstracts

## Poster# 82: Sleep and Fatigue Mitigation: The Paradox of Training Health Care Trainees

**Team:** Muna Irfan, MBBS, VA, HHC, University of Minnesota; Meghan Walsh, Hennepin Healthcare; David, Dare, Mayo healthcare

### Background
American Council on Graduate Medical Education has been actively engaged in efforts to promote protection of health care trainees from the deleterious effects of sleep deprivation.

While conscious attempts have been made to restrict and monitor duty hours to protect sleep and well being, efforts towards teaching trainees how to mitigate sleep deprivation are variably undertaken at different institutes. Training of staff regarding sleep deprivation mitigation is an area of unmet need which requires collective attention.

Issues regarding sleep deprivation still remain at forefront of both public and academic concern in health care field and thus need more active participation at grass root level.

### Objectives
1. Increase awareness of the effects of sleep impairment in human performance
2. Recognize signs of sleep impairment in others
3. Become aware of strategies to mitigate sleep impairment
4. Learn about resources offered to house staff to help alleviate these effects

### Methods
54 residents from various departments participated in 60 minute long training module regarding sleep impairment at HCMC simulation center. Target audience was divided in 6 small groups of 7-12 members each.

Pre session survey was designed to assess trainees' baseline training in sleep impairment, impact on performance, recognition of impact and countermeasures employed

Clinical vignette, video, brief presentation and moderator facilitated interactive discussion were utilized during the course of the session

Post session survey was obtained to measure impact of module on the aforementioned parameters

### Results/Outcomes/Improvements
Sleep training module was demonstrated to be beneficial through improved knowledge scores among trainees across all specialties in all the areas including sleep education, effects of sleep impairment, recognition of signs of impairment, strategies to improve sleep and resources available locally. Most significant improvement was noted in satisfaction scores for training, resource availability and mitigation strategies teaching. Thus these areas should be further explored and utilized for maximum impact on sleep related outcomes in trainees in the future.

### Significance/Implications/Relevance
The above mentioned results highlight the fact that healthcare trainees and by extension all healthcare workers should receive sleep and fatigue mitigation teaching in interactive format so they can leverage the local resources and apply the strategies to help improve sleep in an optimal manner. Such trainings are unique opportunities to help equip future physicians with practical techniques which can have long lasting impact on personal well being directly and indirectly on their patient care delivery.

The aforementioned module instigated interest in several departments who approached the team for assistance with sleep training in trainees & employees. The module should be extended to other ancillary staff working in healthcare. Simulation involving standardized patient can be incorporated in future module.

1. Finan, Patrick & Quartana, Phillip & Smith, M.. (2015). The Effects of Sleep Continuity Disruption on Positive Mood and Sleep Architecture in Healthy Adults. Sleep. 38. 10.5665/sleep.5154. 2. Ratcliff, R., & Van Dongen, H. P. A. (2018). The effects of sleep deprivation on item and associative recognition memory. Journal of Experimental Psychology: Learning, Memory, and Cognition, 44(2), 193-208. http://dx.doi.org/10.1037/xlm0000452

# Abstracts

## Poster# 83: Faculty versus Resident Self-Assessment using Pathology Milestones: How Can We Use Discrepancies to Better Understand Trainees and Improve the Training Environment?

**Team:** Sienna Athy, Geoffrey A Talmon, MD, MEd, Kaeli K Samson, MA, MPH, Kimberly K Martin, Kari L Nelson, PhD, MA, University of Nebraska Medical Center

### Background
Competent physicians must know their strengths and limitations.  These perceptions of ability may impact the willingness of a trainee to complete a procedure.(1)  However, previous studies suggest that medical trainees may not accurately self-assess.(1-4)  We utilized ACGME Milestones data to compare Pathology residents' self-evaluations to those of experienced faculty (Clinical Competency Committee (CCC)).

### Objectives
We utilized Pathology Milestones data to determine if there were discrepancies in self- versus CCC ratings based on sex, program year (PGY), time of evaluation (middle versus end of academic year), and question category [Patient Care (PC), Medical Knowledge (MK), Systems Based Practice (SBP), Practice Based Learning and Improvement (PBLI), Professionalism (PRO), and Interpersonal and Communication Skills (ICS)].

### Methods
We completed retrospective analyses of Pathology Milestones evaluation scores from 2016-2019 (n=23 Pathology residents from PGY1- PGY4).  Resident self-evaluation and CCC evaluation were collected two times per year for all years, and the differences in evaluation scores were calculated by subtracting CCC scores from resident self-evaluation scores (i.e. a positive score indicates self-over rating). For visualization purposes, data were averaged within each resident such that individual groups did not contain multiple data points from a single resident. For statistical analysis, question level discrepancies in evaluation were used with generalized estimating equations to determine model adjusted main effects of sex, PGY, time of evaluation, and question type. Post-hoc pairwise comparisons were adjusted using simulation methods.  This study was deemed IRB exempt.

### Results/Outcomes/Improvements
Discrepancy (resident self-rating–CCC rating) scores are reported as model adjusted means and 95% confidence intervals (CI).  There was no significant difference in discrepancy scores between male (mean 0.00 (CI: -0.24, 0.24) vs female residents (0.01 (CI: -0.26, 0.28, p=0.94).  Discrepancy scores among all PGY were significantly different (p<0.0001), with PGY1 over rating by the largest margin (0.52 (CI: 0.33, 0.70), followed by PGY2 (0.16 (CI: -0.03, 0.34).  Both PGY3 and PGY4 under-rated themselves compared to CCC, (-0.23 (CI: -0.42, -0.05), and -0.42 (CI: -0.61, -0.23), respectively) with PGY4 having significantly lower discrepancy scores compared to any other PGY.   Time of evaluation impacted discrepancy rating, in January, residents under scored themselves vs CCC (-0.07 (CI: -0.25, 0.11) and in July residents over scored themselves vs CCC (0.08 (CI: -0.11, 0.26, p<0.0001). Question types had variable discrepancy scores, with SBP significantly lower (-0.21 (CI: -0.39, -0.04) than all other categories (PBLI and MK p<0.05, PRO, PC and ICS p<0.0001). While PRO was significantly higher (0.24 (CI: 0.06, 0.42) than all other categories (ICS p<0.05, MK, PBLI, PC, and SBP p<0.0001).

### Significance/Implications/Relevance
Accurate self-assessment is essential for proficient skill development.  In our study, males and females demonstrated no significant difference in discrepancy scores, which is contrary to many studies that indicate females tend to under-rate themselves.(5)  However, residents had inflated self-evaluations as PGY1s and understated self-evaluations as PGY4s, which mirrors trends in the literature,(5) but is concerning as PGY4 residents are preparing to enter independent practice.  In general, our trainees performed better with SBP than they self-evaluated, and were over-confident with PRO.  We anticipate using these discrepancies to help trainees improve self-assessment.  In addition, discrepancies indicate potential areas for amelioration, such as curriculum adjustments or wording on Milestones.

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# Abstracts

## Poster# 84: Development of an Innovative Curriculum Across the Educational Continuum to Meet Workforce Needs

**Team:** Catherine Coe, MD,  University of North Carolina School of Medicine; Dereck DeLeon, MD, Cone Health

### Background
The University of North Carolina School of Medicine has launched a novel three-year medical school curriculum to meet the needs of the rural/underserved areas of the state. The Fully Integrated Readiness for Service Training (FIRST) is a unique program that combines three years of an enhanced, expedited medical school, with three years of family medicine residency, and tied to three years of service in a rural/underserved area of the state. The program has matriculated four classes since its launch in 2015. In 2019 the program will expand to clinical sites and Area Health Education Center (AHEC) partners. This poster will address challenges and success to implementing a curriculum at a new clinical site focusing on Kern's Six-Steps to Curricular Development and Kotter's model for change management.

### Objectives
This project describes the expansion of the FIRST Program to the Greensboro AHEC and Moses Cone Family Medicine Residency Program (MCFMRP). Selected students will complete their clinical rotations at the Greensboro clinical campus and be conditionally accepted to the MCFMRP. Through this the objectives include 1) development of clinical teaching sites 2) student performance passing all examinations 3) improved patient metrics at the clinical sites. Through the FIRST program, UNC hopes to expedite training and placement of well-trained, full-scope family physicians into rural/underserved practice in the state.

### Methods
The expansion of the FIRST Program is currently ongoing, however, it began in January of 2019. Using Kern's six steps for curriculum development, we outlined a proposed curriculum for the program, modeled from the already successful FIRST Program in Chapel Hill. We sought to gather input and buy-in from stakeholders through focus groups inquiring about foreseeable barriers. Next a leadership group comprised of representation from each of the stakeholders met every three months in person to progress through the steps of Kotter's Change Management.

### Results/Outcomes/Improvements
The FIRST Program achieved support necessary for implementation at the Greensboro AHEC and MCFMRP. The program will recruit 2 students with the entering class of 2019. The poster will outline the successes and challenges of the implementation to achieve this. It will demonstrate use of Kotter's Change Management to implement a program and curriculum within a different institution. Results from the stakeholder focus group identified potential barriers as faculty time, clinical space to host the student, and need for scheduling support staff. It will describe the steps including creating a vision for change, removing obstacles, and building the change. We will have successfully implemented the FIRST Program through partnership with two regional AHECs, two healthcare systems, and two residency programs.

### Significance/Implications/Relevance
Several schools throughout the country have developed three-year medical school curricula, however, most offer contingent residency placement at the same institution. The FIRST Program is the first to expand to additional partner graduate medical entities and AHECs. If successful, cross-institutional agreements of accelerated medical student graduates would allow for a step towards time-variable education. Other institutions will be able to use the tools necessary to pursue an enhanced and expedited curriculum at their own institution and beyond.

Fully Integrated Readiness for Service Training (FIRST). Available at: https://www.med.unc.edu/ori/programs-opportunites/first/

# Abstracts

## Poster# 85: Resident Procedure Curriculum: A flipped classroom approach

**Team:** Lisa Nash, DO, MS-HPEd, Christopher Rheams, UNTHSC/Texas College of Osteopathic Medicine

**Background**
A flipped classroom is an instructional strategy and a type of blended learning... delivering instructional content, often online, outside of the classroom. […] In-class lessons may include activity learning… to engage students in the content. - Wikipedia, April 2019
Flipped classroom (FC) strategies were first adopted at high school level, spread to universities, then graduate health professions programs including graduate medical education.1 Rationale and pedagogical approaches for application in GME are sound and well described.2
FCs can improve learner satisfaction.3,4 FC approaches can improve both educational efficiency and effectiveness.2,5
With regard to procedural training in GME in particular, "…rising concerns over patient safety and cost-effective patient-centred care, the classical apprenticeship model by which patients suffer the burden of procedural training is currently ethically and legally unjustifiable." The authors further note that the former purely experiential manner of teaching can produce an undesirable " …complete and sudden immersion experience in direct patient care… [which can be] overwhelming and a source of significant frustration and anxiety…"

**Objectives**
This study describes resident engagement with the pre-course component of a flipped classroom approach to the required procedure curriculum in an internal medicine residency.

**Methods**
Setting: Internal medicine residency in a 102-bed, for-profit, community hospital.

Participants: six post-graduate year 1 (PGY-1) categorical internal medicine residents and ten PGY-1 preliminary internal medicine residents.

Design/Intervention: The procedural skills course is structured in the "flipped classroom" format with an online pre-course to provide the necessary knowledge acquisition prior to participation in the technical skills workshops in the simulation lab. The pre-course was hosted in a free web-based learning management system with 24/7 access from any web-enabled device. Course materials included an introductory module describing procedure requirements as defined by the certifying board and fourteen procedure modules inclusive of twenty videos and supplemental written study materials.
Twelve quizzes were developed to assess learning. A minimum satisfactory completion score for each quiz was set at seventy percent correct responses. Unlimited quiz attempts were allowed and the highest score was assigned as the final quiz score.

**Results/Outcomes/Improvements**
Sixteen residents enrolled in the course performed 1,697 total course page views. The twenty course videos were viewed a total of 244 times. Residents averaged 220 total minutes engaged in the course, with a range of 86 to 387 minutes. Sixteen residents completed 349 quiz attempts for the twelve quizzes, with a range of 1 to 7 attempts per quiz. Residents averaged 1.82 attempts per quiz. The average final pre-course grade for all residents was 90.95 percent correct quiz responses, with a range of 83.17 – 96.78 percent correct.

**Significance/Implications/Relevance**
Residents demonstrated high levels of engagement with the pre-course component of a "flipped classroom" design procedural skills course. Residents demonstrated persistent engagement until a self-determined desired level of mastery was achieved, well above the defined minimum acceptable standard.

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# Abstracts

## Poster# 86: Program Faculty and Coordinator Co-Development - Embedding Evidence Based Approaches and Best Practices to Translate Common Program Requirements

**Team:** Suzanne Karan, MD, Judy Marshall, Rena Gresh, University of Rochester; Sarah Peyre, University of Rochester Medical Center; Diane Hartmann, MD, University of Rochester School of Medicine & Dentistry.

### Background

The Accreditation Council for Graduate Medical Education (ACGME) continues to evolve and release updated common program requirements (CPRs). The monthly conferences that convene program directors and coordinators is an opportune time to develop these faculty and administrators with targeted education surrounding the latest knowledge and methodology to further facilitate the most up to date training and evaluation of our trainees. The curriculum will be based on a framework put forth by the Royal College of Physicians and Surgeons "CanMEDS" which provides resources (toolkits, podcasts, assessments, library of relevant journal articles) that will be mined and appropriately mapped to learning objectives anchored in the ACGME CPRs. This evidence-based practice linkage to CPRs will be presented, and current best practices will be cited and discussed in each monthly meeting (about 30 minutes for each 1.5 hr meeting). In accordance with providing CME credit, evaluations will reflect familiarity with the monthly CPR/Article/Best Practice. Likewise, coordinators will be able to log continuing education which can be used towards obtaining T-ACGME certification.

### Objectives

This activity aims to provide faculty and coordinator development by:

1. Enhancing knowledge of updated CPRs including but not limited to: oversight of program, evaluation of program, personnel management, scholarly development and promotion, and optimization of the clinical learning environment to enhance patient care and safety (measured by knowledge of CPRs)
2. Improving competence in recruitment/retention/postgraduate placement and overall program administration (measured by annual program evaluation, APE)
3. Increased participation in quality improvement activities that align with hospital patient safety goals (measured by already used surveys at University of Rochester, QI-T and UPPP participation)

### Methods

The monthly GMEC and PC meetings will serve as mandatory allotted time to spend 30 minutes addressing this specific development activity over a period of 18 months. This allows ample time to divide the ACGME CPRs and assign to appropriate milestone time periods (i.e. recruitment could be discussed in August), and to assign a relevant and topical journal article for review. Reviewing our institutional APEs has allowed us to collect best practices across multiple CPRs. Thus, relevant PD faculty will be asked to present relevant best practices.

### Results/Outcomes/Improvements

1. Knowledge of CPRs will be assessed in evaluations administered at the end of the monthly meetings.
2. Competence in translating CPRs will continue to be assessed in APEs, which are also used to benchmark all of our programs.
3. Participation in QI activities that align with hospital patient safety goals has already been an initiative of our GME, and will continue to be assessed by use of ongoing surveys.

### Significance/Implications/Relevance

ACGME common program requirements (CPR) state that program directors are responsible for administering and maintaining the educational environment for trainees, but the qualities of a "good" program director are not described. While the URMC GME office has been developing a reporting structure to compare the qualities of programs –there is a gap in defining this metric in the training program leadership. Thus, our goal is to utilize regularly scheduled meetings to develop our PD faculty, and our coordinators, into outstanding leaders by clarification of optimal and modifiable traits, harnessing best practices (within and outside UR), and enhancing peer collaboration.

ACGME does not specify attributes of the optimal program director. Thus, other resources such as medical education literature and CanMeds will be utilized to best understand preferred program director characteristics.

# Abstracts

## Poster# 87: Ob/Gyn Fellowship Research Boot Camp Improves Baseline Knowledge

**Team:** Courtney Olson-Chen, MD, Kyan Lynch, MD, Loralei Thornburg, MD, University of Rochester Medical Center

### Background
Research is a central component of Ob/Gyn fellowships.  A national survey of Ob/Gyn fellowship directors in 2015 identified deficiencies in fellow knowledge of research projects, statistical analysis and manuscript preparation (1). A needs assessment in our institution's Ob/Gyn fellowships identified that two-thirds of the fellows had no background of formal instruction in research methods. Previously described "boot camp" programs have largely been specific to clinical training. These focused instructional workshops have demonstrated significant improvement in baseline clinical knowledge. A boot camp focused on research topics could provide a similar solid basis for fellows.

### Objectives
We sought to investigate the improvement in knowledge of study design and research methods topics among Ob/Gyn fellows after implementation of a focused weeklong boot camp curriculum.

### Methods
We designed and implemented a weeklong curriculum focused on promoting baseline research knowledge. A total of 10 fellows from 4 different subspecialty training programs in Ob/Gyn participated and were free from clinical obligations during the course.  Topics covered included study designs, sample size calculation, confounding, idea generation, grant writing, institutional review board applications, statistics, and data analysis using statistical software. Time was also built into the curriculum for review of research ideas and discussion of future collaborations. Additionally, we incorporated lunch discussions related to the Clinical Learning Environment Review focus areas of well-being and professionalism.
Fellow participants completed both a 20 question pre/post-test on research knowledge as well as a pre/post-survey using a 5-point Likert scale rating comfort (1=very uncomfortable to 5=very comfortable) with a variety of research related topics.  The knowledge focused pre/post-test results were compared using a paired Wilcoxon signed-rank test, and the Likert scale survey results were analyzed using a two-sample t test with unequal variances.

### Results/Outcomes/Improvements
The mean pre- and post- research knowledge test scores were 12.1±3.1 and 17.4±2.20, respectively.  On average, post-test scores increased significantly by 5.3±2.3 points (p< 0.01). All Likert scale comfort levels improved with the curriculum. Specifically, there was a significant increase in comfort with randomization (1.2 points, p=0.02), study variables (1.1 points, p<0.01) and analysis planning (1.1 points, p=0.04). More than 80% of the fellows reported developing new research ideas or collaborations as a result of the research focused week. All fellows felt more prepared to complete their fellowship thesis projects, and they all agreed the boot camp should be repeated annually.

### Significance/Implications/Relevance
A weeklong focused research boot camp resulted in significant improvement in knowledge base and comfort with research related topics for Ob/Gyn fellows. Fellows developed a foundation in study design and statistics, and collaboration was promoted among the fellows and faculty. This curriculum could be introduced to a larger audience to assess the effectiveness across other subspecialties, institutions and at varying levels of background training.

1. Guntupalli SR, Doo DW, Guy M, Sheeder J, Omurtag K, Kondapalli L, Valea F, Harper L, Muffly TM. Preparedness of obstetrics and gynecology residents for fellowship training. Obstet Gynecol 2015,126(3):559-68.

# Abstracts

## Poster# 88: Through The Door:  Engaging Interns in Simluation Based Event Reporting

**Team:** Lisa Hutcherson, MS, MEdL, Megan Freeman, MD, UT Health San Antonio Texas

**Background**
The ACGME clearly identifies functional understanding of incident reporting as a core competency for resident education.  Delivery of this content poses unique challenges as understanding often hinges upon interaction with real safety hazards and events that seem overwhelming and intimidating to early trainees.  At University of Texas Health San Antonio (UTHSA) with its largest clinical affiliate, University Health System (UHS), didactic learning predominated as the educational methodology for these concepts.  This failed to engage learners in experiential, realistic encounters with this knowledge in a way that was more applicable to practice and consistent with principles of adult learning.  To answer this deficit, interns in internal medicine and orthopedic surgery participated in a multi-phase incident reporting simulation-based training pilot.  This Patient Safety Awareness Room (PSAR) allowed learners to identify errors through simulation, debrief the simulation with experienced faculty and patient safety staff, and then enter reports on what they had observed into the clinical learning environments (CLE) reporting system.

**Objectives**
The objectives of this experience centered on new trainees during intern orientation as a pilot project for future iterations of intern orientation more broadly.  We aimed to provide learners with simulation centered activities that would allow them to better master recognition of patient safety hazards and whether or not they perceived those hazards to be reportable incidents.  This was coupled with didactic learning in the form of group processing and debrief of the simulation.  Lastly, we sought to create opportunities for learners to actively enter incident reports based on the simulation.  These objectives provided tools and resources prior to the onset of clinical learning, creating formative experiences to better influence future practice.

**Methods**
Participants included internal medicine and orthopedic surgery interns volunteered by their program leadership.  The experience was housed within the UHS simulation center with four simulated patient rooms, an orientation conference room, and a computer lab.  Upon arrival, learners completed a baseline assessment of knowledge and attitudes toward incident reporting.  They received expectations, a written clinical scenario, and a blank hazard recognition, and reportability list.  They then moved to the simulated patient rooms and examined the environment, patient, and scenario for hazards and their reporting responsibility as individuals.  Their thoughts were transferred to blank lists and collected at the end of the simulation.  Learners proceeded to the computer lab where they debriefed with content experts and engaged in didactic learning.  The final outcome included active participation entering the simulated hazards they had witnessed into the reporting systems of the CLE.  After this skills practice, learners completed a post-experience assessment of knowledge and attitudes of incident reporting.

**Results/Outcomes/Improvements**
Forty-two incoming trainees participated in this experience.  Before participation, 29% of participants agreed/strongly agreed that they were aware of the CLE's reporting system compared to 100% awareness by the end of the activity.  Prior to the experience, only 21% felt confident/very confident in their ability to identify patient safety issues that should be formally reported within the CLE's reporting system as opposed to 86% after completion of the activity.  Perceived barriers to entering reports were assessed before and after the experience with reductions in those perceptions in all categories by the end of the activity.  After completion, 88% of learners felt the overall learning value of the experience to be very good or excellent, and 95% of learners stating they were more likely to utilize the CLE's electronic reporting system in the future.

**Significance/Implications/Relevance**
Providing hands-on experiential incident report learning prior to beginning an intern year helps to guide learners through the identification and reporting of near misses, adverse, and sentinel events.  Collaboration between the sponsoring institution and its largest participating site to provide this educational offering is a demonstration to the joint efforts of GME and executives from the clinical learning environment working together to build high-

functioning physician trainees.  Having completed a successful pilot, we will expand the program to all incoming interns/fellows in 2020.  Capturing learner participation in orientation increases the portability of this type of project to other institutions and makes it readily translatable to all specialties.  Next steps include two more simulations with the same participants over the course of their first year of training following the evolution of incidents followed by mock root cause analyses.

# Abstracts

## Poster# 89: Identifying Overarching Themes from an Institutional Self-Study Process

**Team:** Karen Miller, MS, Linsey Greenwood, MHA, University of Vermont Medical Center

### Background

A Sponsoring Institutions ACGME Self-Study process provides opportunities to reveal overarching themes of their GME training programs.  At UVM Medical Center, we developed a standardized model for conducting Self-Studies.  This standardization provides ample data for us to decipher overarching themes in our training programs, which can be leveraged to support improvement initiatives at the institutional level.

In June, 2017, several of our GME training programs received notification to begin their Self-Study.  At this time, a Self-Study process at UVM Medical Center was in development based on information gathered at national conferences, Self-Study articles published in JGMA, and information provided on the ACGME website. One fellowship piloted the Self-Study process and adjustments were made to this process for the remaining residencies (n=3) and fellowships (n=16) undergoing a Self-Study.

### Objectives

Develop a model for standardizing the Self-Study process and gather data to identify overarching themes.

### Methods

Each Self-Study meeting focused on a different topic: 1) program goal and faculty development, 2) graduate and resident performance, 3) work environment and learning experience, 4) prioritize SWOT findings, and 5) delineate aim statements and identify success measures.

At each meeting, participants were divided into small groups. The meeting format consisted of a review of data pertinent to the topic covered, a SWOT, and then participants selected 2 priorities for each SWOT category. These findings were compiled and during meeting 4 the participants placed each SWOT finding on a Difficulty vs. Impact grid. The cells in this grid were assigned to a category: Avoid, Non-critical, Easy Win, Consider, and Strategic.  Participants selected 2 findings from the Easy Win and Consider categories and 1 finding from the Strategic category.  These findings were used to develop their aim statements.

The SWOT findings were compiled in Excel to identify overarching themes.  Findings were manually assigned to a descriptive category.  This data was processed using a word cloud generator to count the number of occurrence for each category.

### Results/Outcomes/Improvements

The SWOT results from the residency programs identified 387 total findings. 189 (49%) of these findings consisting of the top 2 priorities and 198 (51%) categorized as other findings.  Strengths –culture and curriculum, Weaknesses – faculty protected time and evaluations, Opportunities – collaboration interdisciplinary and resident research opportunities, and Threats – workload increasing and UVMMC Health Network impact.

These findings demonstrate that these residency have strong culture and curriculum but faculty protected time to educate and supervise the residents and evaluations are of concern.  Resident research opportunities, interdisciplinary collaboration, and curriculum are identified as opportunities.  The increase in workload and the uncertainty about our health network were threats to resident education and training.

### Significance/Implications/Relevance

Compiling the SWOT findings provides strong support for GME leaders to address concerns with institutional Senior Leaders and propose changes to support resident and fellow education and work environment.  The GMEC can use these findings for strategic planning and to focus resources to provide support.

# Abstracts

## Poster# 90: Rural Residency Program Development:  Assets and Challenges in Engaging Rural Communities in Multiple Specialties:  Initial Results from the HRSA Rural Residency Program Development Grant Project

**Team:** Judith Pauwels, MD, Amanda Weidner, MPH, University of Washington School of Medicine; Randall Longenecker, MD, Ohio University Heritage College of Osteopathic Medicine; Erin Fraher, PhD, MPP, Emily Hawes, PharmD, Steven Crane, MD, Cristen Page, MD, MPH, University of North Carolina School of Medicine

### Background
14 percent of the US population lives in rural communities. Compared to urban counterparts, they have a higher burden of chronic disease, poorer social determinants of health and higher mortality rates. The complex causes of these disparities include chronic shortages of primary care and behavioral health providers.  Recognizing that one of the most effective ways to increase rural workforce capacity is to train physicians in rural communities, in 2019 the Health Resources and Services Administration (HRSA) invested $20 million in the Rural Residency Program Development (RRPD) grant program.  The RRPD program provides start-up funding to 27 organizations to develop rural residency programs, and funds a Technical Assistance Center (TAC) to provide guidance, tools and resources needed to help them meet the challenges of accreditation, financing, faculty recruitment and development, and resident recruitment.   The timing of this investment is synergistic with significant efforts of other organizations working to enhance rural training, including HRSA's Teaching Health Center Program, the Veteran Affairs' Mission Act and the ACGME's new framework that encourages rural GME development.

### Objectives
The purpose of this study is to report on the initial assessments of the 27 healthcare organizations in 21 states that received RRPD funding, providing new insights into perceived opportunities and challenges in starting new programs.  Our ongoing study will track these challenges and resolutions over the next two years, including coalition building, developing academic partnerships, securing sustainable financing, achieving accreditation, and recruiting faculty and students.
Using the grantees as case studies, these initial assessments describe:
•The characteristics of RRPD grantees, including the communities and health care facilities in which they are based and the programs under development.
•The initial status and early barriers in residency development.
•ACGME accreditation standards that remain challenging for rural programs to meet.
•Key financial questions, and specifically revenue sources, critical to the sustainability plan for rural programs.

### Methods
This cross-sectional, descriptive analysis presents data on the RRPD grantees' communities, their initial "program readiness" assessments, and barriers to developing residency programs defined by the grantees.  Using information submitted by grantees in their HRSA grant application, we describe their community needs, the types of health care organizations hosting the residency programs, and financial resources.  Additional data about the community characteristics of the programs was obtained from the Area Health Resource File, including poverty level, infant mortality, unemployment and education.
"Program readiness" assessments were based on a tool created by the TAC to support and monitor the progress of the RRPD grantees.  Grantees completed an initial Program Assessment to determine their stage in development from exploration through design, development, start-up and maturation.  Grantee assessments were confirmed by an advisor from the TAC team.  Specific barriers were also identified in comments by the grantees, including challenges with accreditation and financial issues.

### Results/Outcomes/Improvements
Grantees include 22 Family Medicine, 1 Internal Medicine, and 4 Psychiatry programs.  Many Family Medicine and the Internal Medicine programs are planning to be rural training track programs associated with existing core programs, remaining grantees will be new core programs, including the four psychiatry programs.  Grantees include rural hospitals, medical schools and urban hospitals in consortium with a rural training partner,

and health centers operated by a Tribal entity. All programs have, as required, at least 50% of resident training in a rural location.

Rural community characteristics will be described.  Program readiness scores and stages of development will also be reported.  We will contrast the characteristics of grantees with low vs. high program readiness scores and outline the barriers identified by grantees including challenges with ACGME accreditation and financial sustainability.  Community and program assets that support early program development will be described, including community engagement and commitment, presence of a rural physician to serve as the initial program or site director, and financial models suggesting sustainable funding.

**Significance/Implications/Relevance**

Developing new GME programs in rural communities will directly and profoundly impact the health of rural communities, through the direct provision of clinical services by residents in training and faculty, and by increasing rural workforce capacity through the retention of faculty and residency graduates who stay to practice in these communities.  The lessons and best practices learned from this project will be instrumental in the design and development of rural residency programs in the future. This work will make important methodological contributions to the field by creating a framework and validated measures that can be used to assess a community and program's readiness for residency program development. Findings will also identify both the assets and barriers that are most critical to program success and clarify the financial and accreditation issues that demand attention from federal and state policy makers and the ACGME.

1.What Does the Evidence Tell Us?: A Review of Rural Health Research Center Literature, 2000-2010. April 2011. Available at: https://www.ruralhealthinfo.org/assets/1145-4634/informing-rural-primary-careworkforce-policy.pdf 2.Patterson DG, Schmitz D, Longenecker R, Andrilla CHA. Family medicine Rural Training Track residencies: 2008-2015 graduate outcomes. Seattle, WA: WWAMI Rural Health Research Center, University of Washington. Feb 2016. Available at: https://www.ruralhealthinfo.org/resources/6714

# Abstracts

## Poster# 91: Clinical Librarian Use Trends in an Internal Medicine Program

**Team:** Emily Shohfi, MLIS, Kim Fabyan, MD, Walter Reed National Military Medical Center

**Background**
Walter Reed National Military Medical Center has employed Clinical Librarians for request-based services since 2014. In the beginning of the program, Clinical Librarians were embedded with the Internal Medicine program, and participated with rounds. The partnership was successful and additional librarians were added to this service to extend to more departments (IM, MICU, Psychiatry, GenPeds, Pediatric HemOnc, NICU). In addition to rounding with teams, the Clinical Librarians attend didactics, conduct training individually and as courses, and provide searching support for patient care and research. The increasing level of service was both in response to and a driver of increased demand by physicians.

**Objectives**
The objective of this project is to measure physician demand for clinical librarian services in response to an increasing cadre of available services.

**Methods**
Clinical questions during rounds, time spent on rounds, the number of training sessions held, number of people reached per training session, and the types of training sessions offered have been tracked for five years. Additionally, Residents were surveyed as they exited the program before graduation on the value of the library services, the impact of their education experience, knowledge gained, and their confidence searching or evaluating literature without a librarian, and recommendations to improve the clinical librarian program. Data were analyzed and compared to previous years'. Qualitative feedback was also captured with written comments and responses to search results from library patrons.

**Results/Outcomes/Improvements**
Demand for the IM Clinical Librarian's services climbs each year. In the program's first year in 2014, the librarian completed 877 searches, 328 which were completed on rounds or for urgent patient care. By 2019, request for evidence-based searches completed by the librarian had greatly increased. 1003 of the 1287 searches completed by the IM Librarian were completed on rounds or for urgent patient care. On days the Clinical Librarian rounded with teams, the census averaged eight patients and rounds lasted an average of 2.25 hours. The Librarian completed an average of six searches per rounds day for the teams, and often sent seminal articles for the interns and residents to learn from as well. Training also saw similar increases in demand. In 2014, the librarian held 45 sessions as either larger classes or in smaller 1:1 meetings. In 2019, this number swelled to 309 training sessions. Reflected in these are cyclical responsibilities - the Librarian is now a co-director in a year-long Evidence-Based Medicine Curriculum for interns and residents, and helps facilitate discussions at weekly Resident-led Journal Club.

**Significance/Implications/Relevance**
Hospital GME Programs should employ Clinical Librarians. Even if there is not currently an obvious need, the availability of Clinical Librarians may correlate with increased demand, more services and learning opportunities, and greater physician productivity.

Disclaimer: "The views expressed in this abstract are those of the author and do not reflect the official policy of the Department of Army/ Navy/Air Force, Department of Defense, or U.S. Government."

# Poster# 92 Resources to Promote Holistic Resident Screening and Selection Processes for Osteopathic Medical Applicants

David Kuo, DO, Melissa Turner, MS, Gerri Mahn, MLIS, John R. Gimpel, DO, Med, National Board of Osteopathic Medical Examiners

## Background

The Comprehensive Osteopathic Medical Licensing Examination of the United States (COMLEX-USA) examination series is designed to assess osteopathic medical knowledge, fundamental clinical skills, and other foundational competencies considered essential for the practice of osteopathic medicine. COMLEX-USA's primary and intended purpose is for licensure of osteopathic physicians and it is accepted for medical licensure in all U.S. states and jurisdictions. Secondary uses include a requirement for passing Levels 1 and 2 to graduate with a DO degree (a college of osteopathic medicine accreditation standard), screening by residency programs – for entrance and promotion in graduate medical education. According to the results of the 2019 NRMP Main March, the number of osteopathic applicants and matches has increased since 2015, by 103% (applicants) and 117% (matches).

## Objectives

The aim is to provide information for residency and fellowship program directors to improve understanding of what COMLEX-USA examinations measure, how standards are set, what the scores mean, and how they correlate to performance in residency and support holistic resident selection processes. Normalizing the use of COMLEX-USA scores in an effort to reduce stress and support wellness in residency applicants may help diminish barriers for DO students applying to programs with COMLEX-USA scores and improve holistic resident screening processes.

## Methods

The framework of COMLEX-USA is based on the foundation of the osteopathic approach to patient care. Its evidence-based design assures state licensing boards and the public that a DO has demonstrated minimal competence by passing a series of national standardized examinations designed for the practice of osteopathic medicine. Passing Levels 1 and 2 means a candidate has demonstrated competence to enter into supervised clinical practice settings, enter graduate medical education, and prepare for lifelong learning. Passing Level 3 means the candidate has demonstrated competence in foundational competency domains required for generalist physicians to deliver safe and effective osteopathic medical care of patients.

## Outcomes

A recently published collaborative study with the Federation of State Medical Boards on the predictive validity of COMLEX-USA demonstrates a strong correlation between successful completion of COMLEX-USA and a lower likelihood of state licensing board disciplinary action. Published research on score concordance demonstrates a strong association between COMLEX-USA Level 1 and USMLE® Step 1 performance of DO students who took both examinations. ERAS® provides links to a COMLEX-USA percentile score converter to help programs compare an applicant's relative performance to other applicants and correctly interpret assessment scores when filtering applications.

## Relevance

Holistic admission review processes in medical education consider the "whole" applicant to avoid disproportionate focus on a single factor in order to achieve diversity in a physician population that is prepared to address varied needs across healthcare populations. There is growing support for equivalent uses of COMLEX-USA and USMLE® for residency applications (e.g., American Medical Association and American Osteopathic Association policies), but a prevalent need exists to provide program directors with insight into the uses of COMLEX-USA and how COMLEX-USA scores can be an asset in holistic resident screening and selection processes.

# Pursuing Excellence Initiative Abstracts

## Preparing new clinicians to eliminate healthcare disparities through curricular innovations and transformation of the clinical learning environment

**Team:** Anthonia Ojo, MD, Sarah Wilson Hannay, MD, MEd, Laura Minikel, MD, Leslie Hardy Hood, Natisa Dill, NDP, MBA, RN, NE-BC, CPHQ, Michelle Loaiza, Theresa Azevedo, DIO, Kaiser Permanente, Lasha Pierce, MD, Alameda Health Systems, Carla Wicks, MD, The Permanente Medical Group

### Background
Kaiser Permanente (KP) is a national leader in identifying, measuring, and eliminating healthcare disparities through research, advocacy, and education. Our educational mission is to graduate members of the future healthcare workforce with the skills and agency to practice equitable care and to eliminate healthcare disparities.  With these goals in mind, we participated in the ACGME Collaborative and committed to an intentional transformation our OB/GYN residency training program and the clinical learning environment (CLE).

### Objectives
- Promote awareness and recognition of cultural humility across the CLE.
- Educate new clinicians on identifying health care disparities occurring in the Cle and the patient populations at risk for these disparities, which includes and understanding health equity.
- Develop and align strategic goals and priorities to identify and eliminate differences in the care delivered with the CLE through QI.

### Methods
Our focuses included resident and faculty curricular innovation and training, resident participation in healthcare disparity quality improvement (QI) work and institutional strategic prioritization. We created a reflection-based longitudinal residency curriculum on cultural humility and implicit bias and are developing immersive learning experiences to increase structural competency. Concurrently, our CLE committed to similar trainings for all faculty and staff. We are expanding the training sites with the addition of our local safety-net hospital. This change will give residents broader experiences in healthcare delivery and QI work and improve their awareness of disparities in healthcare services and social determinants of health. Finally, we have collaborated with key stakeholders in the CLE leadership to align our educational goals with the institutional vision to improve all patient experiences and decrease healthcare disparities.

### Results/Outcomes/Improvements
Over the 18 months of the collaborative, we have seen considerable growth and change in our residents, our program and our institution. All 18 residents, more than 80% of our Ob/Gyn faculty and a large percentage of the CLE staff participated in cultural humility and implicit bias training. We are developing innovative ways to measure behavior change and the impact on patient outcomes. The project has resulted in increased recruitment and interest in our program's specific focus on healthcare disparities work. All of the PGY1 residents have participated in a longitudinal QI project on disparities in breastfeeding rates. We have seen an increase in scholarly activity by our residents and faculty in QI and healthcare disparities and in medical education innovation.

# Pursuing Excellence Initiative Abstracts

**Significance/Implications/Relevance**

This work will lead to significant positive changes for our residency training program, our institution, the future physician workforce, and our community. Cultural humility and the ability to self-reflect on one's own biases should be considered core competencies of the physician workforce. Our curricular changes demonstrate how a residency training program can engage in increasing these competencies. This work will lead to a future workforce who provide more equitable, culturally inclusive patient care. For the broader GME community, our project's scope and organization serve as an example of how to intentionally transform the residency training experience to prepare new clinicians to eliminate health care disparities.

# Pursuing Excellence Initiative Abstracts

## Educating Residents in Health Care Equity

**Team:** Julie Maust, MPP, Kelly Frisch, MD, Sidney Van Dyke, MA, Barbara Banks, PhD, Adam Spieker, MBA, Scott Oakman, MD, PhD, Michelle Noltimier, RN, MBA, Jen Augustson, MPA, Liz Neubauer, DPM, Miguel Ruiz, MD, HealthPartners Institute

**Background**
The HealthPartners health system is a national leader in health equity and has built a health equity strategy throughout the organization. The residents and fellows who train at HealthPartners are not connected to this work and are not engaged in this strategy. Previous educational initiatives lead to the creation of a Health Equity Toolkit.  This ACGME collaborative allowed us to optimize and improve upon our existing framework by turning it into a structured health equity curriculum. Pairing it with structured quality improvement training and a guided QI project will allow residents to translate this knowledge into action and help us realize our vision, that residents are champions of change in reducing health care disparities.

**Objectives**
- Develop and align strategic goals and priorities to identify and eliminate differences in the care delivered with the CLE through QI.
- Promote awareness and recognition of cultural humility across the CLE.
- Educate new clinicians on identifying health care disparities occurring in the Cle and the patient populations at risk for these disparities, which includes and understanding health equity.

**Methods**
In partnership with our health system QI and health equity leadership, we identified key priority areas to focus our training with a pilot residency program:  Cultural Humility, Healthcare Disparities (including our organizational approach to addressing them), and Regions Hospital's priorities regarding QI and Health Equity.

We partnered with the Psychiatry Residency Program to deliver curricular content to the PGY-2 and PGY-3 residents from July – December 2019.  The PGY-1s and PGY-4s became our control group.  In July, 2019, all Psychiatry residents received our Health Equity Engagement Survey, gauging their understanding of certain health equity topics and their ability to apply health equity principles.  In February 2020, the PGY-2s and PGY-3s will receive a Post-Intervention Survey gauging the effectiveness of the curricular resources they used.  Also in February, all Psychiatry residents will once again receive the Health Equity Engagement Survey, which they completed in July as well.

**Results/Outcomes/Improvements**
Psychiatry resident engagement survey results are due back the week of February 17.  We will include those results in our posters.  Additionally, in 2020, we will be expanding our partnerships to bring this content to other programs and specialties.  QI and Health Equity leads will meet with training program directors to help them incorporate these resources into their existing curriculum and existing rotation experiences.

**Significance/Implications/Relevance**
At HealthPartners and Regions Hospital, we strive to make every person feel welcomed, included at valued as an initial key component to creating a culture around health equity.  Regions trains 600 residents and fellows each year from sponsored and affiliate programs.  Exposure to our culture and this health equity curriculum will not be limited to sponsored residents. At Regions, all residents and fellows are considered part of the care team and trainees are encouraged to be citizens, rather than tourists, in their education. Trainees will be able to take these lessons about health equity and incorporate them at other training sites as well, impacting different patient populations.

# Pursuing Excellence Initiative Abstracts

## A Children's Hospital Journey Toward Health Equity

**Team:** Susan Wu, MD, Jennifer Baird, PhD, MPH, MSW, RN, CPN, Rachel Cohen, MD, Tiana Blank, MD, Chandra Broadwater, MPH, MFA, CLSSBB, Lori C. Marshall, RN, MSN, PhD, Children's Hospital Los Angeles and University of California Keck School of Medicine

### Background
Children's Hospital Los Angeles is a large urban non-profit free-standing children's hospital, serving primarily publicly-insured minority patients. We have experienced rapid growth as local hospitals reduce pediatric services, leading to strain in the delivery system. The high proportion of families experiencing food insecurity, housing instability, migration trauma, and other stressors, adds to the complexity in providing optimal care. Our previous CLER survey highlighted the need to examine disparities in care that may be inherent in the system. In addition, our trainees and young health professionals are increasingly concerned about social justice, and seek out opportunities to practice in a socially and environmentally conscious setting.

### Objectives
- Develop and align strategic goals and priorities to identify and eliminate differences in the care delivered within the CLE through QI.
- Promote awareness and understanding of cultural humility and health equity across the CLE.
- Educate clinicians on identifying health care disparities in the CLE and the patient populations at risk for these disparities.

### Methods
We began the project by identifying key stakeholders. We discovered many pockets of work already being done within the organization, championed by passionate individuals. We cross-walked areas of overlap and identified opportunities for synergy. We aligned our work with several key initiatives: 1) update of the Community Health Needs Assessment, 2) establishment of the Office of Diversity, Equity, and Inclusion, 3) launching of the Inpatient Redesign project, 4) refresh of the enterprise-wide strategic plan, and 5) development of the enterprise data warehouse. Key partners included the nursing residency and research programs, the resident-faculty DEI Committee, Language and Cultural Services, Community and Government Affairs, program directors, and the Quality Department.

### Results/Outcomes/Improvements
We created a Health Equity dashboard which displays patient experience scores and rates of healthcare acquired conditions. The dashboard can be visualized by race/ethnicity, language, age, and insurance type. We are working on adding more measures including outpatient access, adherence to clinical pathways, and mapping features. We embedded disparities-sensitive measures into Inpatient Redesign, including quality of language services, family-centered rounds compliance by LEP status, and accuracy of medication histories by LEP status. We have begun training every hospital and medical staff member on cultural humility and health equity concepts, starting with annual reorientation, and expanding to new employee and physician onboarding. Poverty simulations and structural competency training opportunities are also offered. Additional education has been incorporated into existing venues, including grand rounds, resident professionalism conferences, journal club, and Schwartz Rounds. Residents have been crucial in leading some of these efforts.

### Significance/Implications/Relevance
Participation in the collaborative has provided urgency and visibility to health care disparities at our institution. It has served as a stimulus to consolidate siloed efforts into a more clear and strategic vision for addressing disparities, as part of our every day work and identity as an organization. We have found this work to also improve staff engagement and trainee "joy in work." Much work is still needed to spread and sustain the efforts, and to demonstrate actual impacts on disparities

# Pursuing Excellence Initiative Abstracts

## Implementing a Healthcare Disparities Curriculum at a Large Graduate Medical Education Program: Our Educational Journey

**Team:** Marcia A. Perry, MD, Ryan E. Tsuchida, MD, Andrew J. Dering, MD, FRCA, Ali M. Von Au Douglas, Raymond Y. Yeow, MD, Molly C. Dyer-White, MPH, John M. Hollingsworth, MD, David J. Brown, MD, *Michigan Medicine Healthcare Disparities Collaborative*

### Background
Michigan Medicine provides training for over 1300 physicians within over 100 programs. In alignment with ACGME/CLER priorities, it is our duty to society to ensure these physicians are equipped with the tools needed to provide equitable care for all patients. Our recent CLER report highlighted the absence of a systematic approach to identify opportunities to improve the care and outcomes for vulnerable patient populations. Targeted QI efforts are needed to address disparities.
We are leveraging our institutional assets to engage our house officers in developing leadership skills around changing the course of health disparities. We recognize that to achieve healthcare equity, we must prepare and empower our learners to deliver compassionate and personalized care to all persons.

### Objectives
Each trainee will participate in at least one structured QI project incorporating healthcare disparities that includes a current state assessment, uses data to define a problem, and includes the completion of an improvement cycle.

Trainees will:
- Understand and discuss, through the mechanism of cultural humility, how cultural identity affects health and healthcare.
- Develop leadership skills to become change agents for healthcare equity and explore ways to positively lead change and influence healthcare inequities.

Trainees will:
- Define, understand, and identify healthcare disparities in the CLE.
- Discuss how healthcare equity is foundational to quality care.
- Address social determinants of health in healthcare delivery by understanding and discussing how implicit bias and structural racism are drivers of healthcare disparities.

### Methods
We designed a curriculum using Kern's 6 steps. Our general needs assessment was adapted from the ACGME general CLER report, Michigan Medicine CLER report and the IOM report. Next we performed a targeted needs assessment with house officers and program directors, and reviewed our community needs assessment. Our goals and objectives for the areas identified in the needs assessment were aligned to ACGME core competences. Currently, education strategies and presenters are being identified. We will implement a pilot curriculum starting July 2020, targeting new trainees from each department. A parallel curriculum is being designed by our QI leaders that will help trainees design and present QI projects addressing healthcare disparities. We will evaluate and receive feedback of the program on an ongoing basis. The information in our curriculum was presented to program directors, the Clinical Leadership Team, the Michigan Leadership Team and the Michigan Quality Counsel to ensure stakeholder buy-in and alignment.

### Results/Outcomes/Improvements
We are building upon a pilot curriculum presented to invited medical students from across the country, that included Michigan Medicine house officers, faculty and staff at the inaugural "Health Equity Leadership Weekend: Becoming Change Agents in Health Equity". Expanding on this content we will incorporate it into a longitudinal year-long curriculum that will specifically address cultural humility

and social determinants of health. We will also provide foundational instruction on quality improvement supporting trainees in a project design to measure and eliminate healthcare disparities.

**Significance/Implications/Relevance**
To provide equitable care we must first educate trainees to understand and identify the Social Determinants of Health, and then to apply this knowledge in their daily practice. By providing house officers with these tools, they will provide higher quality/equitable care to future patients leading to decreased healthcare costs to the institution and society as a whole.

# Pursuing Excellence Initiative Abstracts

## Addressing Cultural Competence and Health Care Disparity: A Paradigm for Graduate Medical Education

**Team:** Frederick Waldron, MD, MPH, MS, Joshua Rosenblatt, MD, MSPH, Matthew Schreiber, MD, Jayshree Kumta, MD, Atiya Jaha-Rashidi, RN, Wai Soon Chan DO, DPT, Terri Tobias MD, MHS, Alexis Okoh, MD, Michael Patti, MS, MBA, Jason Hernandez, MD, Aakriti Bhargava, MD, Shreni Zinzuwadia, MD, Christian Engel, MD, Jose Bustillo, MD, Khalid Sawajed, MD, Shelly Jones-Dillon, MD, Newark Beth Israel Medical Center

### Background

It has been a national imperative for the last two decades, to address the widening health care disparities (HCD) that adversely affect vulnerable populations in this country. It is one of the goals of graduate medical education, to educate providers who are patient centered, culturally competent, and committed to the delivery of effective patient care. The clinical learning environment (CLE) Report 2018, found deficiencies in the formal education of Residents and Fellows, including inadequate training in cultural competence and HCD, to address the communities, in which they served. System based strategies to combat health disparities were infrequent in Graduate Medical Education, resulting in graduates who are ill equipped to address existing HCD. We propose an overhaul of the clinical learning environment, with the inclusion of training in Cultural Humility, HCD, Quality Improvement (QI) and Data Collection. This paradigm shift will result in the integration of a discussion of HCD in the CLE, and a new focus among house staff on recognizing them, and creating interventions that will improve health outcomes, and subsequently the amelioration and eventual elimination of HCD.

### Objectives

1. Develop and align strategic goals and priorities to identify and eliminate differences in the care delivered with the CLE through QI.
2. Promote awareness and recognition of cultural humility across the CLE.
3. Educate new clinicians on identifying health care disparities occurring in the CLE and the patient populations at risk for these disparities, which includes and understanding health equity.

### Methods

We created an educational curriculum in 3 phases, based on the Elaboration Likelihood Model (ELM) for adult learning, that is iterative, that cultivates independent thinking, problem solving, and collaboration. The Phases are:
1. Learning sessions
2. Cultural humility surveys / knowledge assessment
3. Application of knowledge (QI projects)

### Results/Outcomes/Improvements

NBI has a diverse house staff of 198 from 31 countries, of which 38% attended USA medical schools. The mean attendance for each Learning session was 30%. Medicine and Pediatrics comprised 85-90% of attendees. There was underrepresentation among: Fellows average 7%, OBGYN and Radiology who attended only 50% of learning sessions. Most of the respondents thought that the material was relevant (75 - 96%), Data Collection (54%), and had improved their knowledge (77%). Residents and Fellows completed all phases of the curriculum and successfully launched 8 QI projects listed below:

- Reduction of morbidity and mortality due to Pregnancy related Hypertension Emergencies
- Harvard Implicit Bias Testing
- Pediatric Social Determinants of Health (SDOH) screening
- Medicine: SDOH Screening
- Simulation: Poverty / Cultural Humility
- Reach out and Read (Early Education and Reading)
- Mortality study for Hypertensive Crisis
- Addressing Hypertensive Crisis by secondary screening and monitoring

# Pursuing Excellence Initiative Abstracts

**Significance/Implications/Relevance**

We successfully introduced a new curriculum to address Health Care Disparities in the CLE. Attendance was limited by the clinical commitment of house staff. It is expected that over a 3year period, all house staff will have attended each learning session at least once. There is rising enthusiasm for this program among administrators and staff.  More time is needed to measure the impact on the community.

# Pursuing Excellence Initiative Abstracts

## Aligning Health Care Equity, Outcomes and the Enterprise Scorecard: A QI Initiative

**Team:** Scott Holliday, MD, DIO, Janell Lee-Allen, MD, Filsan Farah, MD, Darrell Gray II, MD, Leon McDougle, MD, Mary Howard, DNP, Iahn Gonsenhauser, MD, The Ohio State University

### Background
We see inequity in healthcare regularly – variable access to care, affordability, chronic disease control, morbidity and mortality – yet, like most teaching health systems, we had not developed systems to address disparities occurring within our own walls.  Additionally, we have institutional patient care/quality metrics which have been prioritized by the senior leadership of our institution.  We joined this collaborative to develop strategies for teaching young physicians the importance of aligning patient centered care with institutional performance metrics and show how physician and institutional priorities can be married into common goals.

### Objectives
- Develop and align strategic goals and priorities to identify and eliminate differences in the care delivered with the CLE through QI.
- Promote awareness and recognition of cultural humility across the CLE.
- Educate new clinicians on identifying health care disparities occurring in the CLE and the patient populations at risk for these disparities, which includes and understanding health equity.

### Methods
Our project proposed aligning GME-led, healthcare equity QI projects with institutional performance metrics.  This approach has the potential to develop synergy between physician and senior leadership priorities, and the potential to demonstrate the impact that an engaged housestaff can make on institutional priorities.  To that end, we ambitiously sought to engage residents/fellows and other healthcare providers in four different disparity projects:

1. Reduce hospital readmissions for patients with CHF from two low socio-economic ZIP codes in Columbus
2. Eliminate disparities in door-to-balloon time for African-American STEMI patients
3. Create cancer screening-rate equity for cervical, breast and colon cancer screening
4. Develop systems to support elective joint replacement outcome equity

We developed a core team of champions and important stakeholders to strategize, guide projects and promote cultural humility.  We solicited support from senior leadership while engaging key leaders critical to our healthcare quality and inclusiveness themes in the implementation efforts.  Within GME we identified 20 resident champions from across the heath system and provided a boot-camp style primer on quality improvement and healthcare disparities (while adding similar educational content into the GME wide education series and new intern/fellow on-boarding).  We worked with our CQO to identify inequities, while also delving into data where providers thought inequities may exist.  At times, these investigations were met with resistance.  Yet, in each situation, conversations led to productive, synergistic discussions about working toward health equity.  The group works to promote discussions, policies and decisions that promote cultural humility at the medical center

### Results/Outcomes/Improvements
Projects are ongoing.  We have engaged GME as well as other team members across the health system in recognizing healthcare inequities and the efforts to eliminate them.

### Significance/Implications/Relevance
There have been several early wins as a result of the collaborative.  We've been able to identify silos of HCD work across the medical center for broader coalitions and visibility.  Outcomes level data evaluating

equity has been extremely challenging. However, the efforts of this collaborative helped our quality data team improve HCD data analysis.  As a result, our CQO has committed to including healthcare equity and metrics into our quality strategic plan.

# Pursuing Excellence Initiative Abstracts

## Three pillars to address Health Care Disparities (HCD): Technology, Education and Institutional Leadership

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### Background
Describe why your institution chose to engage in this ACGME Collaborative. Why is the topic of eliminating health care disparities relevant to graduate medical education and their CLE?

Eliminating health care disparities (HCD) is an institutional priority. Given the diverse communities we serve, discrete initiatives across the system existed previously, but there was little coordination and no strategic plan in place to maximize the work. The collaborative provided a framework of unification, the opportunity to learn from other organizations, and the resources to build a comprehensive strategic plan to guide our work.

### Objectives
- Develop and align strategic goals and priorities to identify and eliminate differences in the care delivered within the CLE through QI.
- Promote awareness and recognition of cultural humility across the CLE.
- Educate new clinicians on identifying HCDs occurring in the CLE and patient populations at risk for these disparities, which includes understanding health equity.

### Methods
Share key stakeholders, resources, and strategies used to meet the objectives of the Collaborative. Explain how you created a strategic conversation about health care disparities, identified opportunities to enhance educational programs with cultural humility, and through your project integrated learners to be active participants in identifying and developing solutions to eliminate health care disparities.

We gained strong leadership support at both the system and clinic levels to address HCD by connecting our work to its impact on health outcomes, patient safety, and patient experience. We catalogued efforts to address HCD across the organization. A learner and faculty attitudes assessment was conducted. We collaborated with content experts to create a curriculum on cultural humility and unconscious bias. HCD goals were incorporated into ambulatory QI work, training was done for staff in unconscious bias, and changes were made within our IT systems to support the identification of HCD and ongoing improvement work.

### Results/Outcomes/Improvements
Describe the impact of this work on the institutions awareness and engagement of residents, fellows, faculty members, and others in eliminating health care disparities.

Over 50% of patients were listed as unknown or other for race/ethnicity and little data on sexual orientation and gender identity (SOGI) was collected on initial review, despite recent staff training. A workflow assessment revealed multiple challenges that were mitigated through this project, which included adjusting the placement of the SOGI fields in a way to improve utilization, helping staff understand the importance of this data, and providing resources to help staff talk with patients about it. This effort generated a larger organizational conversation leading to the creation of the GME Healthcare Disparities strategic plan involving hospital quality, GME, Office of Diversity and Inclusion (ODI) and Health IT. Our initial efforts catalogued 6 programs to educate learners about disparities and health equity; over 800 residents and 150 faculty participated in training. At one site, the team has been able to develop a bias and health disparities learning module which was delivered to 75% of PGY 2-3s in of the ambulatory QI curriculum. This resulted in adding a disparities aim to this clinic's QI process. The focus on disparities also allowed us to incorporate race/ethnicity and SOGI data into the design of our new safety event reporting system.

# Pursuing Excellence Initiative Abstracts

**Significance/Implications/Relevance**
Describe the significance of this work to your institutions and to the broader GME community.

The collaborative work on healthcare disparities integrates well with MSHS focus on patient and staff experience as the sum of safety, quality, and operational efficiency. The work allows us to connect existing resources in the ODI with a developing community of practice of residents, fellows and faculty who are interested in doing this work across the system. It provides new meaning to quality and safety work while revealing a blindspot in our current approach to quality improvement and patient safety.