CURRICULAR INNOVATIONS

Title: Using a "Shark Tank" Format to Facilitate Climate Directed Innovations During Resident Orientation

Presenter: Aaron Levy, DO

Co-authors: Cheryl Courtlandt, MD, Suzette Caudle, MD, Deborah Simpson, PhD

Problem

There are limited structured opportunities for residents to connect climate change to patient care and leverage sustainability-centered solutions. For example, plastic material is mostly formed from climate change driving fossil fuel-based chemicals, which break down into microplastics, becoming part of our environment. Plastics are used extensively in healthcare delivery and are now found throughout the human body and linked with toxicologic effects[1].

Program Objectives

Foundational learning objectives included: 1) climate change impacts patient health; 2) routine health care delivery contributes to emissions and waste that is harmful to health; and 3) vulnerable groups experience these effects disproportionately.

Description of the Program

Our team identified resident orientation for Atrium Health Carolinas Medical Center as an optimal time to engage residents. We designed a 45-minute exercise to demonstrate health care’s contributions to climate change and illustrate opportunities to reduce/repurpose waste. This was preceded by a presentation elaborating on foundational learning objectives.

The residents were divided into teams of 4-6 and tasked to propose how the non-infectious hospital plastic waste provided could be repurposed into something useful for patients. Each team pitched their idea in a “Shark Tank” format to judges including Plastic Lab Director at the Innovation Barn[2]. The winning team proposed creating a

plastic prosthetic socket for pediatric patients with limb loss.These patients are unique, growth of residual limbs with ever changing volume causes prosthetic sockets to need frequent adjustment. Plastic may be repurposed to create a temporary socket to achieve proper fit.

Assessment

Resident attendees [60% (64/105)] voluntarily completed a pre-session survey. Most [81% (52/64)] reported being somewhat, minimally, or not knowledgeable on 1) how the healthcare industry's carbon footprint and waste harms patient health. A majority [79% (51/64)] were somewhat, very, or extremely interested in becoming more involved in addressing these issues. The post-orientation survey had a single climate-related question with 93% (42/45) responding that the session increased their understanding of the intersection of climate and health equity.

Conclusions and Lessons Learned

By engaging residents in a creative, “gamified” process to discover sustainability-focused solutions for improving climate-resilient patient care, we achieved our aims. Future sessions should continue to explore learner-driven solutions to improve healthcare’s environmental impact.

1. Marfella R, Prattichizzo F, Sardu C, et al. Microplastics and nanoplastics in atheromas and cardiovascular events. N Engl J Med. 2024;390(10):900-910.

2. Innovation Barn. Envision Charlotte. Accessed October 10, 2024. https://www.envisioncharlotte.com/innovation-barn/

Abstract adapted from “New Ideas” submission to Journal of Graduate Medical Education. Accepted 12/12/24, pending publication.

Project is part of Atrium Health’s participation in Alliance of Independent Academic Medical Centers (AIAMC) National Initiative IX: Addressing the Social and Moral Determinants of Health.

Health Professions Education Institute (HPEI)

CURRICULAR INNOVATIONS

Title: From Classroom to Community: A Guided Health Equity Elective for Future Physicians

Presenters: Brittany Watson, MD, MPH; Aaryn Hammond, MD

Co-authors: Aaryn Hammond, MD; Nancy Denizard-Thompson, MD; Brittany Watson, MD, MPH

Problem/Needs Assessment: Disparities in healthcare access and outcomes highlight the need for future physicians to understand and address health inequities. The Liaison Committee on Medical Education (LCME) emphasizes the importance of this education, yet structured opportunities remain limited.[1] This elective was created to bridge the gap by providing essential knowledge and skills.

Program Objectives: The Projects in Health Equity Fourth-Year Elective aims for students to: 1) Analyze a health disparity, 2) Develop a project to address it, 3) Engage with community partners, 4) Apply prior health equity coursework, and 5) Reflect on personal and professional growth.

Description of Program: This four-week elective allows fourth-year medical students to explore health disparities and social drivers of health through project-based learning. Under faculty mentorship, students design and implement a scholarly, experiential, or service project addressing a health barrier in a vulnerable population. The course integrates independent study, community engagement, public health, policy, and advocacy. Students complete health equity modules and pre-selected required readings, engage with community organizations, and participate in discussions. Projects may include research, collaborations with community-based organizations, public health initiatives, or medical education interventions. The rotation culminates in a scholarly product. Students are evaluated based on their deliverables, clinical performance and engagement with course readings and other materials.

Evaluation/Assessment: Over 50 students have completed the course. Project examples include implementing the DEAC Foot Clinic, contributing to course modules, published papers, and poster presentations. Ninety-two percent of survey respondents rate the quality of the clerkship experience as “excellent”. The free text course evaluation responses convey

increased confidence in addressing social drivers of health and advocating for systemic change.

Conclusions and Lessons Learned: This flexible, self-directed elective fosters engagement in research, community partnerships, and direct patient care. Exposure to community organizations deepens understanding of social drivers of health and enhances interdisciplinary collaboration. Autonomy in project design encourages meaningful engagement, while hands-on experiences with underserved populations reinforce the importance of advocacy. Students gain practical insights into health policy and systemic inequities, strengthening their ability to drive change in healthcare. Student feedback shows this design is conducive to engaged learning and is a valued opportunity for students seeking to gain skills to care for and support vulnerable populations.

References:

1. Standards, Publications, & Notification Forms | LCME. Accessed February 15, 2025. https://lcme.org/publications/

Health Professions Education Institute (HPEI)

Abstract submission

Title: Expedition Med School: Rethinking Our Approach to Wilderness Medicine Education
Presenter: Abigail Smith Wehner, MD - Wake Forest Wilderness Medicine Fellow
Co-authors: Abigail Smith Wehner, MD and Christopher Davis, MD

Problem/Needs Assessment: Opportunities for healthcare students to engage with wilderness medicine exist though are often stand-alone courses that can be expensive or inaccessible due to scheduling or location. Wilderness medicine is the practice of medicine in austere settings "where fixed or transient geographic challenges reduce availability of, or alter requirements for, medical or patient movement resources[1]." It requires teamwork, problem solving, and ingenuity. Wilderness medicine education augments traditional medical education, helping learners develop adaptability, creativity, communication skills, and resourcefulness.

Program Objectives: To implement a program that can provide an affordable and accessible introduction to wilderness and austere medical care and use outdoor education to provide foundations for students to nurture fulfilling careers in medicine through personal growth.

Description of Program: We developed a longitudinal, self-paced certificate program based on current standard-practice wilderness medicine education curricula for medical and PA students. They begin in their first year and complete the program by graduation. We built a "curriculum matrix," allowing students to choose their own combination of experiences to fulfill requirements from a wide variety of options including in-person skills workshops, flipped classroom events, community outreach, and individually directed research supported by faculty.

Evaluation/Assessment: In order to evaluate the feasibility of completion, success in meeting student goals, and barriers to completion, all participants were asked to complete an anonymous survey, completed by 64%. Those discontinuing the program were offered an anonymous exit-survey, completed by 54%. Questions were answered with likert scale or free-text. Of respondents continuing (n=32), 88% found the program was meeting their goals. Of total respondents (n=39), 72% felt the requirements were appropriate and 80% appreciated the program's flexibility. The most significant barriers to participation in events were schedule or communication related: 54% felt their schedule was too busy, 67% noted conflicts with mandatory school events, and 49% reported needing more advanced notice of events. The most common reasons for discontinuing were related to location and schedule changes in clinical years.

Conclusions and Lessons Learned: While it appears feasible to implement this curriculum, we are still evaluating its effectiveness, due to its longitudinal nature. We have encountered multiple challenges in implementation including coordinating schedules with multiple different classes in different programs, working within the shifting framework of a growing medical school, and even the self-paced nature of the program. We are currently restructuring the certificate program to help address these and other lessons learned.

[1] Hawkins, S. and Prince, T. (2022, March 31). The definition of wilderness medicine. *Wilderness Medicine Magazine, 39(1).*

Health Professions Education Institute (HPEI)

Title here:

Addressing Education In Systems-Based Practice With Gamification: Pulmonary Critical Care Fellows Tackle *Friday Night At The ER*®

Presenter here:

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MEDICAL EDUCATION RESEARCH

Background:

Systems-based practice (SBP), a core ACGME (Accreditation Council for Graduate Medical Education) competency, emphasizes the provider's role within the broader healthcare system. For pulmonary and critical care medicine (PCCM) fellows, SBP milestones involve resource stewardship, patient safety, quality improvement, and interprofessional collaboration across health systems. While literature supports SBP's importance in improving outcomes, its integration into medical education remains underdeveloped.[1] Gamification is increasingly used in education for its capacity to motivate learners through purposeful tasks and peer-driven competition.[2] To teach SBP, we used the tabletop board game *Friday Night at the ER*® (*FNER*), which simulates healthcare triage, resource management, and interdepartmental coordination. While previous research for *FNER* has focused primarily on students in healthcare professional programs, its application to resident or fellow education is more limited. The game has been associated with significant improvements in Systems Thinking Scale (STS) scores—a validated tool for measuring systems thinking in quality improvement work.[3,4] This project introduces *FNER* as a novel educational tool to strengthen SBP competency among PCCM fellows.

Objectives:

- Implement an educational intervention using gamification that simulates systems-based challenges in healthcare

- Explore the feasibility of using gamification in graduate medical education to teach core systems-based practice (SBP) milestones, such as interprofessional collaboration, resource allocation, and methods for quality improvement

- Use the Systems Thinking Scale (STS) to assess systems-based thinking progression quantitatively

Methods/Design:
Ten PGY(post-graduate year)-4 fellows participated in *FNER* gameplay. Participants experienced roles leading different departments of the hospital. Over the course of a simulated 24-hour period, participants admitted patients, assigned staff, completed documentation, and facilitated patient transfers—all while responding to evolving system-wide obstacles. Success in the game depended on effective interdepartmental collaboration and prioritization of quality patient care and cost efficiency. Following gameplay, a structured debriefing explored key systems-based practice concepts encompassing care quality, financial impact, barriers to collaboration, innovation in team function, and the role of data-driven decision-making. To assess quantifiable educational impact, participants completed an anonymous pre- and post-session STS. [2]

Results:
After gameplay, learners demonstrated increased systems thinking as measured by the STS. The mean pregame STS score was 58.4, rising to 67.9 postgame. These scores compare favorably to published STS benchmarks, where scores between 45–79 are typically observed in healthcare professionals with five or more years of quality improvement experience.[3] Our findings are limited by a small study population (n=10), and the improvement from pregame to postgame STS scores may or may not correlate to changes in actual systems-based practice. However, improvement in average score postgame supports gamification in teaching SBP principles

Conclusions:
Despite being an ACGME core competency, SBP instruction lacks standardized methods. *Friday Night at the ER*® provided PCCM fellows with an interactive, systems-level experience emphasizing collaboration, resource management, and quality improvement. Post-session gains in STS scores suggest that gamified simulations can enhance SBP understanding and may represent a promising strategy for practicing medical learners.

References

1. Johnson JK, Miller SH, Horowitz SD. Systems-based practice: improving the safety and quality of patient care by recognizing and improving the systems in which we work. *Advances in Patient Safety: New Directions and Alternative Approaches.* 2008; 2. https://www.ncbi.nlm.nih.gov/books/NBK43731/. Accessed November 11, 2024.
2. Rutledge C, Walsh CM, Swinger N, et al. Gamification in action: theoretical and practical considerations for medical educators. *Acad Med*. 2018;93(7):1014-1020. doi: 10.1097/ACM.0000000000002183
3. Moore SM, Dolansky MA, Singh M, Palmieri P, Alemi F. (2010). The Systems Thinking Scale. Unpublished manuscript. https://case.edu/nursing/sites/default/files/2018-04/STS_Manual.pdf. Accessed November 11, 2024.
4. Watts S, Helms R, Thornton E, Fruge AD, Young C, Sewell J. Using gaming to prepare healthprofessional students to practice systems thinking. LearnHealth Sys. 2025;9(1):e10441. doi:10.1002/lrh2.104414

Title: Evaluating the effect of the problem-based learning instructional methodology on medical dispositional learning of the medical students: A mixed method study

Presenter: Victoria Garcia, MD candidate / Amin Shah, PhD

Co-authors: Kimberly Wiseman, MS; Roy Strowd, MD; David Popoli, MD; Tafline Arbor, PhD; Brooks McPhail, PhD; Lauren Fowler, PhD; Deeksha Sikri, MD; Lauren King, PhD, Christopher Burns, PhD

WORKS IN PROGRESS

***Background/Needs Assessment*:**
Dispositional Learning refers to cognitive and emotional habits formed about learning, such as critical thinking, curiosity, and collaboration. Dispositional learning is important for medical student due to the nature of the profession, which requires skills in addition to medical knowledge. In alignment with LCME standards, the WFUSM MD educational program objectives recently incorporated five dispositional learning outcomes: Intellectual Humility, Compassion, Respect for Diversity, Curiosity, and Collaboration.

Problem-based learning (PBL) is and educational methodology in which a clinical problem serves as the stimulus to student learning. This pedagogical approach helps students acquire medical knowledge through self-directed learning guided by a faculty facilitator and provides an opportunity for dispositional learning. Within the WFUSM's Wake Ready curriculum, students learn the foundational sciences via two different instructional methods: a didactic-first approach followed by faculty-guided active sessions at Winston-Salem campus and a PBL-based approach at the Charlotte campus. We aim to compare the effect of the two instructional methodologies on dispositional learning outcomes for medical students in the pre-clerkship phase of the MD program.

***Objectives*:**
To investigate the impact of different instructional methodologies on dispositional learning outcomes (intellectual humility, curiosity, and critical thinking) in medical students

***Methods/Description of the Program*:**
ANCOVA will be used to assess the change in dispositional learning outcomes post-year 1 of the pre-clerkship phase and to compare change across campuses and instructional methodologies. Correlation and regression analysis will be performed to determine the relationship between dispositional learning outcomes and academic performance. Quantitative data will guide analysis of the focus group data, which will be thematically analyzed for overarching themes and synthesized with the quantitative data to understand mechanisms behind quantitative findings.

***Anticipated Results/Evaluation Plan*:**
We expect that students will experience dispositional development via each instructional methodology, but expect that the mechanisms by which this occurs will be different between the PBL and non-PBL instructional methodologies. Data from the qualitative focus groups will highlight the mechanisms behind this difference, which we expect to be related to key constructs of self-directed learning theory and social constructivism.
Further, we anticipate that larger increases in dispositional learning outcomes will be positively associated with the better academic performance.

***Next Steps*:**
The next steps are to collect pre-year 1 data via surveys at both campuses and conduct focus groups.

A Longitudinal Graduate Medical Education Curriculum in Clinical Informatics: Function, Structure, and Evaluation

Presenter: Bradley Rowland

Co-authors: Jacqueline You, Richa Bundy, Adam Moses, Lauren Witek, Corey Obermiller, Ajay Dharod

Problem/Needs Assessment: There is a need to integrate informatics education into medical training programs given the rise in demand for health informaticians and the call on the Accreditation Council for Graduate Medical Education (ACGME) and the body of undergraduate medical education (UGME) for implementation of informatics curricula.

Program Objectives: This report outlines a 2-year longitudinal informatics curriculum now currently in its seventh year of implementation. This report is intended to inform United States (US) Graduate Medical Education (GME) program leaders of the necessary requirements for implementation of a similar program at their institution.

Description of Program: The curriculum aligns with the core content for the subspecialty of clinical informatics (CI) and is led by a multidisciplinary team with both informatics and clinical expertise. Residents participate in the pathway while completing their medical training. Residents identify a "pain point" in clinical care and develop informatics skills to address it. Pathway milestones include Physician Builder certification, IRB protocol development, data analytics and electronic health record (EHR) implementation and evaluation. This educational pathway has a low direct cost and is a practical example of the academic learning health system (aLHS) in action. The pathway is housed within an internal medicine department at a large tertiary academic medical center.

Evaluation/Assessment: The curriculum has yielded 13 graduates from both internal medicine (11, 85%) and pediatrics (2, 15%) whose projects have spanned acute and ambulatory care and multiple specialties. Projects have included Clinical Decision Support (CDS) tools, of which some will be leveraged as substrate in applications seeking extramural funding. Graduates have gone on to CI board certification and fellowship, as well as several other specialties, creating a distributed network of clinicians with specialized experience in applied CI.

Conclusions and Lessons Learned: An informatics curriculum at the GME level may increase matriculation to CI fellowship and more broadly increase development of the CI workforce through building a cadre of physicians with HIT expertise across specialties without formal CI board certification. We offer an example of a longitudinal pathway which is rooted in aLHS principles. The pathway requires a dedicated multidisciplinary team and departmental and IT leadership support. Small sample size and resident selection criteria are a limitation of generalization. Future direction will include expansion beyond internal medicine and pediatrics, as well as to additional hospital systems.

Health Professions Education Institute (HPEI)

Abstract submission template

Please type your title and then utilize the headings within the appropriate abstract type.

Delete submission types that are not relevant to your submission

Title here: Medical Education: Point-of-care Ultrasound Evaluation for Coarctation of the Aorta

Presenter here: Brandon S. Hays, MD

Co-authors here: Brittney N. Watts, RDCS, Joshua M. Zavitz, DO

CURRICULAR INNOVATIONS

Problem/Needs Assessment: Coarctation of the aorta (CoA) can present with acute circulatory collapse during the neonatal period or in early infancy. This can be a diagnostic challenge for the practitioner evaluating an ill-appearing neonate or infant and carries a broad differential diagnosis. While findings such as a decreased femoral arterial pulse, raised upper limb blood pressure as compared to lower limb and differential cyanosis should raise suspicion of CoA, these data may not have adequate sensitivity. Arriving at the correct diagnosis as quickly as possible is paramount as swift treatment can reduce morbidity and mortality.

Program Objectives: To educate students how to diagnose CoA using Point-of-Care Ultrasound (POCUS).

Description of Program: POCUS is a growing field where a practitioner can obtain rapid sonographic information in a wide variety of clinical environments to help guide patient care. Wake Forest School of Medicine has a unique elective for 4th year medical students where they obtain comprehensive exposure to the clinical utility of POCUS through hands-on ultrasound training. As a part of the elective, students spend 2 days with pediatric cardiac sonographers receiving exposure to a complete pediatric cardiac ultrasound as well as specific training to assess a child for CoA. Educational reading is provided regarding the clinical presentation of CoA as well as its sonographic evaluation. Students observe a technician perform a pediatric evaluation for CoA and independently perform two complete coarctation evaluations.

Evaluation/Assessment: 4th year medical students who graduated in years 2022-2024 were included. They were evaluated by the sonographer using a direct observation score sheet and received points for demonstrating suprasternal notch views (0-3) and Doppler (0-3) as well as subcostal abdominal views (0-3) and Doppler (0-3) for a maximum score of 12 points. From 2022-2024, 61 students completed training and testing, 100% scored 12/12.

Conclusions and Lessons Learned: POCUS can be a life-saving tool to help make the diagnosis of CoA. Fortunately, the sonographic views needed are easy to learn. Further research may include repeating direct observation testing of students at a later timepoint to assess long-term skill retention.

Health Professions Education Institute (HPEI)

WORKS IN PROGRESS

Title: Bridging the Gap: A Novel Medical Student Elective in Safety Net Healthcare

Presenter: Brittany Watson, MD, MPH

Background/Needs Assessment: Healthcare access is constantly challenging in underserved communities. Twenty percent of Americans live in rural communities, yet only nine percent of physicians practice in rural settings.[1] For many reasons, physician burnout and turnover are higher in safety-net settings.[2] It is vital to equip future physicians with the tools necessary to serve patients with complex medical and social needs. Whether students will be working directly in a primary care safety-net setting, or providing specialty care for underserved individuals, this course is designed to equip students to be effective in and out of the clinical setting.

Objectives: 1.) Train future physicians on safety net healthcare 2.) Increase understanding of clinical challenges and health disparities in underserved populations. 3.) Foster commitment to reducing health disparities and advocating for safety net resources. 4.) Promote advocacy and stewardship through practical skills and community engagement. 5.) Equip students with broad knowledge of health systems, safety net resources, and social drivers of health.

Methods/Description of Program: Supported by Carolina Complete Health, a Medicaid-managed care plan in North Carolina, this course invests in the healthcare workforce by funding away rotations for students and providing financial support to health centers for learner education. It covers the history and evolution of safety net healthcare, including health disparities and social drivers of health. It explores various forms of health insurance and funding mechanisms for safety net programs. The program promotes community engagement and advocacy, building skills in these areas. Finally, students apply their experience and advocacy tools towards a deliverable that directly addresses an issue or challenge facing the health center or the community. Students will be asked to provide specific areas of interest so that their experience can be tailored towards their personal goals.

Anticipated Results/Evaluation Plan: Students will provide feedback on didactic sessions and the overall course through surveys and 1:1 meetings. Health centers will also share written and verbal feedback to assess mutual benefit. This feedback will guide course improvements and measure success in achieving objectives.

Next Steps: The course will undergo continuous refinement based on feedback. The course director will research similar programs at other institutions to integrate best practices.

References:

1. Rosenblatt RA, Hart LG. Physicians and rural America. *West J Med*. 2000;173(5):348-351.
2. Quigley DD, Slaughter ME, Qureshi N, Hays RD. Associations of Primary Care Provider Burnout with Quality Improvement, Patient Experience Measurement, Clinic Culture, and Job Satisfaction. *J Gen Intern Med*. 2024;39(9):1567-1574. doi:10.1007/s11606-024-08633-w

Exploring the Effects of Community Outreach on Medical Student Clinical Competence and Engagement with Underserved Populations

Caitlyn Perrone

Alexandra Monetti, BS[1]; Natalie DeRoche, BS[1]; Caitlyn Perrone, BS[1]; Michelle Keating, DO, Med, FAAFP[2]

Background: Student-run free clinics (SRFCs) provide early clinical exposure for preclinical medical and physician assistant (PA) students, enhancing their confidence in clinical skills and fostering engagement with underserved populations. However, the impact of community outreach on medical student education remains underexplored. DEAC Outreach, a program affiliated with the DEAC Clinic, offers preclinical students' opportunities to conduct health screenings and patient counseling under provider supervision at local community events.

Objectives: This study aims to evaluate the impact of participation in DEAC Outreach events on preclinical students' confidence in performing clinical skills and their perceptions of working with underserved populations.

Methods: This single-center pre-post assessment study surveyed first- and second-year medical students and first-year PA students from Wake Forest University School of Medicine who volunteered at DEAC Outreach events. A 5-point Likert scale was used to assess confidence levels in performing manual blood pressure measurements and point-of-care glucose testing before and after participation. Additionally, student perceptions of working with underserved populations were evaluated.

Results: Thirty-five preclinical students participated in the study. Confidence in performing manual blood pressure measurement increased but was not statistically significant ($p = 0.198$). However, confidence in performing point-of-care glucose testing significantly improved ($p = 0.00049$). Notably, 100% of students agreed or strongly agreed that working with underserved populations is rewarding.

Conclusion: Participation in DEAC Outreach events enhances preclinical students' confidence in clinical skills, particularly point-of-care glucose testing, and reinforces the value of working with underserved populations. These findings highlight the role of community outreach programs in medical education and their potential to shape socially conscious and competent future healthcare providers.

Health Professions Education Institute (HPEI)

Title here:

The Summary Statement: Evaluating Student Problem Representation in Observed Structural Clinical Examinations

Presenter here:
Catherine G. Trigonis, MD

Co-authors here:
David E. Manthey MD, Nicholas Hartman MD MPH, Cynthia A. Burns MD, Mackenzie Wood MS, La'Trisa Howard Caesar MBA, Leslie Giles Nester BA, Tonya Robinson MBA, Cathy Wares MD, Jessica McPherson MD MSCR

Problem/Needs Assessment:

Diagnostic reasoning is a component of the core entrustable professional activities for medical students entering residency. There are few formal studies investigating methodology for evaluating students' clinical reasoning skills. This intervention describes a method whereby a critical component of students' clinical reasoning skills can be formally evaluated. Medical students often make diagnoses for illnesses they have learned about but have never seen. Teaching students to create a problem representation or 'summary statement' is a critical first step in their diagnostic approach. A summary statement allows learners to compare their key findings to an illness script for a particular disease. Summary statements should contain semantic qualifiers. Use of semantic qualifiers is associated with strong clinical reasoning and is a building block of a good summary statement.

Program Objectives:

By incorporating a discrete summary statement section to our Y3 OSCE, student problem representation could be formally evaluated for each case.

Description of Program:

A structured grading rubric was created for a summary statement within each case. The rubric includes patient demographics, pertinent risk factors, semantic qualifiers, and key symptoms and signs. Non-pertinent information could result in a score reduction.

Evaluation/Assessment:

144 students participated in 6 OSCE cases and created a total of 428 summary statements. 96.5% passed the summary statement exam component. The use of semantic qualifiers varied by case, ranging from 31.6% - 96.5%.

Conclusions and Lessons Learned:

Despite being a novel introduction to the OSCE, students have performed very well on the summary statement component. It was seamlessly integrated. Future cohorts will participate to improve our understanding of student performance and better tailor the grading rubrics to capture and evaluate student clinical reasoning skills. The discrete summary statement section is a sustainable component of the Y3 OSCE. With future OSCE iterations, and continuous honing of the grading rubric, we hope to glean greater understanding of students' clinical reasoning skills and begin to compare their problem representations with other components of clinical performance.

Health Professions Education Institute (HPEI)

Abstract submission template

Please type your title and then utilize the headings within the appropriate abstract type.

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Title here: Pulling back the curtains on the hidden curriculum: Using an administrative coaching curriculum to facilitate learners' time management, organization, and administrative skills.

Presenter here: Chelsea Riley, MA

Co-authors here: Katherine R. Schafer MD

WORKS IN PROGRESS

Background/Needs Assessment:

Medical training is rife with hidden curricula in clinical and administrative domains and learners often struggle with the latter. Competency with administrative skills such as task completion and time management are central to a physician's professional development; students cited for irresponsibility in medical school (e.g. not completing assignments) are more likely to be censured by their state medical boards as practicing physicians (1). Structured coaching for administrative and time management skill development could benefit these early learners and prevent future licensure issues. The Inpatient Internal Medicine (IM) Course Administrator (CA) and Course Director (CD) created a customizable coaching curriculum to facilitate this skill development.

Objectives:

The overall objective of the curriculum is to support students' administrative skill development through individualized coaching and sharing tools to help them address their self-identified growth areas. Specifically, by the end of the coaching session, students will be able to 1) identify areas of growth with administrative tasks or scheduling, 2) create an accessible system for organizing and completing their administrative assignments, and 3) create a scheduling system to facilitate efficient and effective time management.

Methods/Description of Program:

Applying the foundations of student development theory, the CA and CD created a pre-session survey, session agenda, and time management worksheet to address the above stated learning objectives. The pre-session survey allows the student to reflect and identify their growth areas which then become the focus of the CA's coaching. Student participants complete a post-coaching survey to measure the acceptability and effectiveness of the session for meeting the stated learning objectives.

Anticipated Results/Evaluation Plan:

The coaching curriculum is currently in its pilot phase and five students have completed it at the time of submission. Pilot data suggest that the curriculum is extremely effective at meeting the learning objectives, with an overall effectiveness mean score of 9 (range 1-10). The pilot will continue through August 2025, at which time post-survey data will be analyzed for acceptability and efficacy.

Next Steps:

Our next steps include: 1) disseminating the curriculum to other learner settings (e.g. pre-clinical students) and 2) engage students who excel in administrative responsibilities to partner as a peer-to-peer mentor program.

1. Teherani A, Hodgson CS, Banach M, Papadakis MA. Domains of unprofessional behavior during medical school associated with future disciplinary action by a state medical board. Acad Med. 2005;80(10 Suppl):S17-20.

Innovations in Resident Wellness: Embracing Vulnerability and Building Resilience.

Problem/Needs Assessment: In 2017, the ACGME added requirements for residencies to develop curriculum on the psychological, emotional and physical aspects of well-being in residents. Despite the emphasis on promoting resident wellness, guidance about the content of wellness programming has been limited. Using resident survey data about the areas of residency that generate the most stress, we developed programs to enhance the psychological and emotional well-being of residents.

Program Objectives:

1. Develop a skill building workshop that teaches the science behind resilience and offers targeted skills that can be incorporated into the workday.
2. Develop a self-reflective workshop that explores the value of vulnerability in medicine and how to overcome losses and mistakes.
3. Develop a panel presentation of distinguished faculty who model resilience by discussing how they have coped with personal and health challenges.

Description of Program: To enhance resilience, family medicine residents complete 2 workshops and attend 1 panel presentation over the course of residency. The 1st workshop aims to build brief skills in relaxation, self-compassion and optimism. The 2nd workshop focuses on vulnerability and building resilience in the face of losses and mistakes. The panel discussion includes 3 faculty, who discuss how they managed serious personal and health challenges while practicing medicine.

Evaluation/Assessment: We will present resident survey data from 2 classes (N=14) from both workshops. In response to workshop #1, 100% of residents reported that the workshop was very beneficial to their personal well-being and 92% reported intending to use 1-2 of the new strategies. Residents and faculty were asked to rate workshop #2 from 1-10 on how

meaningful the workshop was to their professional development. On a 10 point scale, mean ratings for residents were 6. 5 and for faculty were 8.6.

Conclusions/Lessons Learned: Skill building that is rooted in positive psychology and focuses on brief skills that can be incorporated into the workday is very well received by residents. Workshops that focus on vulnerability in medicine are powerful but difficult for some of young residents to embrace.

HPEI 2025 Presentation (350 words max)

- **Title**
  - What are new medical graduates evaluating when they are choosing their first job? A qualitative study to improve recruitment to rural Appalachia
- **Background**
  - In the United States, the rural Appalachian region continues to experience some of the worst access to care disparities in the country, coupled with some of the greatest health needs. Although recruitment providers to rural areas has remained a policy focus, there has been a continued contraction of the rural health workforce. Better understanding the current generation's (Generation Z) preferences for a job is needed so that effective policies can be designed to bolster rural recruitment.
- **Objectives**
  - (1) Identify job preferences of resident physicians, physician assistant (PA) students and nurse practitioner (NP) students, (2) elicit the conditions that would need to be met to choose a job in rural Appalachia, and (3) better understand complex evaluation of multilevel factors these trainees evaluate when choosing a job.
- **Methods/Design**
  - We conducted a qualitative study using purposive sampling; we recruited final year medical residents, PA students, and NP students in 2024. Participants completed individual, semi-structured interviews over the phone by a member of QPRO. Thematic analysis was used to analyze the data.
- **Results**
  - We completed interviews with 22 individuals, including medical residents (n=6), PA (n=14), and NP students (n=2). The sample represented six universities in 4 states. The findings indicate that participants evaluated having a supportive team with a cohesive environment, the medical specialty/subspecialty of the position, with having average/adequate salary. Respondents reported that for them to choose a job in a rural area, the salary should be slightly higher than in an urban area, the reputation of the healthcare system and culture was important, and they did not want to be further than 30-45 minutes away from a more urban area. Team dynamics, feeling a sense of community, and being raised in a rural area were the most important job-, community- and personal-level factors evaluated when choosing a job.
- **Conclusions**
  - This study provides a framework on how new graduates evaluate jobs. Efforts to improve recruitment to rural areas include a focus on the culture of organizations and the system's reputation. In contrast to our expectations, salary was not listed as a very important factor when selecting jobs for new medical trainees.
- **Authors and affiliations**
  - Chris Gillette, PhD*
  - Aylin Aguilar, BA
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  - Chris Everett, PhD, PA-C

HPEI 2025 Presentation (350 words max)

- Dawn Caviness, MD
- Esita Patel, PhD, RN
- Jan Ostermann, PhD-senior

Title: A Pilot Study on the Development and Validation of the Diversity, Equity, and Inclusion Index (DEII): A Tool for Assessing DEI in Medical Education Lectures

Presenter: Christiana Agbonghae MD

Co-Authors: Cortlyn Brown MD, Desiree Leverette MD, Christiana Agbonghae MD, Joseph Rigdo PhD, Edward Ip PhD

Background: Evaluating diversity, equity, and inclusion (DEI) in medical education is crucial to ensure an inclusive and effective learning environment.

Objective: The Diversity, Equity, and Inclusion Index for Medical Education (DEII for MedEd) aims to improve DEI educational content through a comprehensive training video and feedback series. In this pilot study, we aimed to create and validate the first tool to assess DEI within medical education lectures.

Methods/Design: This pilot cross-sectional study was conducted from January 2022 to December 2023. We developed the Diversity, Equity, and Inclusion Index (DEII) and assessed its face and content validity. The study followed the COSMIN taxonomy guidelines. Interrater reliability was calculated using intraclass correlation coefficients from DEII scores of 50 lectures. The study was conducted at several academic medical centers, encompassing diverse medical education settings. 10 expert DEI reviewers and 10 non-expert DEI reviewers who represented the major sections of medicine including physicians, nurses, researchers, and ancillary staff helped develop the DEII. Expert reviewers were defined based on specific criteria, including board certification, leadership positions in DEI, authorship of peer-reviewed DEI publications, national presentations on DEI topics, and implementation of DEI initiatives. Non-expert reviewers were selected based on their involvement in medical education but without specific DEI expertise. Participants were recruited through a convenience sample approach. All approached participants agreed to take part in the study. To assess interrater reliability, three researchers scored 50 medical education lectures on

YouTube whose audiences ranged from respiratory therapists, nurses, physicians, physician associates, and those training to be each.

Results: The DEII demonstrated strong face and content validity based on feedback from both expert and non-expert reviewers. The tool showed high interrater reliability, with an intraclass correlation coefficient indicating consistent scoring among different raters.

Conclusion: In this pilot study, the DEII is a reliable and valid tool for assessing diversity, equity, and inclusion in medical education lectures. Its implementation may enhance the inclusivity of medical education, ultimately leading to better-prepared healthcare professionals and improved patient outcomes. Further research is needed to refine the tool and explore its impact on educational practices and outcomes.

Connecting with the Community: Perceptions of a Community Tour

MEDICAL EDUCATION RESEARCH

Christopher Jones, DrPH Kandice Reilly, MPH, PhD Brian Peacock, MMS, PA-C Nancy Denizard-Thompson, MD Alicia Walters-Stewart, MEd Leslie Doroski McDowell, DNP, ANP-BC, RN Jessica Valente, MD, MPH Aylin A. Aguilar Michael Lischke, EdD, MPH, FCPP Kimberly Montez, MD, MPH

Background: Clinical care accounts for only 20% of health outcomes, highlighting the importance of social determinants of health (SDOH). Academic medical centers (AMCs) are incorporating SDOH content into medical curricula. The Community Plunge, an educational program at Wake Forest University School of Medicine (WFUSOM), offers experiential SDOH exposure through community immersion tours. This study explores the transformative effects of the Community Plunge on healthcare delivery, community engagement, and trainee perspectives.

Objectives: This study aims to qualitatively characterize trainees' perspectives on the Community Plunge's impact on healthcare delivery, community engagement, and to gather ideas for future enhancements.

Methods/Design: The study involved qualitative interviews with 20 clinicians from WFUSOM who participated in the Community Plunge within the last 15 years. Interviews were conducted between April and August 2023, audio-recorded, transcribed, and analyzed using thematic analysis. Participants were compensated with a $25 gift card.

Results: The study identified four key themes: 1) Insights into the community's history, structural contexts, and challenges; 2) Positive influence on clinician attitudes towards patient care, fostering empathy and holistic approaches; 3) Increased community involvement among participants, with some reporting career trajectory changes towards advocacy and volunteerism; 4) Suggestions for enhancing the Community Plunge, including offering the tour multiple times and providing accessible resources.

Conclusions: The Community Plunge provides a replicable model for AMCs and other organizations to build empathy, instill compassion, and foster self-reflection. It is especially valuable when participants are shaping their careers and establishing their identities as community members and health professionals. Our results suggest that this community-based tour promotes self-reflection, an understanding of one's community, and encourages participation in community-based solutions. The Community Plunge emerges as a powerful educational tool for addressing SDoH and health disparities. By incorporating self-reflexive exercises and considering multidisciplinary perspectives, future iterations can maximize their effectiveness. These insights are not only applicable in clinical settings but also contribute to a broader understanding of health equity. Future research should explore the integration of virtual and augmented reality technologies for community tours and the inclusion of community asset mapping.

Health Professions Education Institute (HPEI)

Abstract submission template

Title:
The Training in Research Affecting Child Health (TRAC)-Implementing an Innovative Transdisciplinary Research Training Program for Learners across Multiple Educational Stages

Presenter:
Claudia Olivier, PhD[1,2]

Co-authors:
Lydia Durr[1,2]
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CURRICULAR INNOVATIONS

Problem/Needs Assessment:

Innovative training in research methodologies, critical thinking skills, and mentoring for learner independence are needed for successful careers in biomedical research but traditionally limited to a single educational stage in most programs. TRAC, a novel transdisciplinary research training program, addresses these needs for multiple educational stages and empowers learners to autonomously develop child health-related projects and community engagement.

Program Objectives:

To establish a transdisciplinary child-health research training program with customized curriculum responsive to varying learner needs and with reach across the academic learning health system.

Description of Program:

TRAC, designed to promote horizontal peer coaching among muti-level learners, includes three main stages: (1) a *runway*, from acceptance into the program until (2) an immersive full-time summer research experience and (3) continued learner-driven research during the following year to complete project deliverables. TRAC uses a learner-PI© model to encourage autonomous child-health focused research projects of learner design. Proposed research ideas, presented during application interviews, are conceptualized during the *runway*. Varying learner needs (program dates, elements for medical vs. undergraduate students) are addressed by staggered start times and adjustments in complexity of program elements. Experienced research coach-mentors matching learner topic areas provide individual support; weekly horizontal near-peer coach-mentoring© meetings with TRAC learners and program leaders support team building, transparency and accountability and continue monthly throughout the year. Pediatrics-centered sessions supplement shared didactic and professional development activities across multiple programs that maximize networking. While the in-person program elements build community, research projects can accommodate coach-mentoring virtually, allowing inclusion of faculty across Advocate Health.

Evaluation/Assessment:

Twelve TRAC learners matriculated in 2024 (six undergraduate, six medical students). Feedback is collected continuously and in pre- and post-surveys. Program success, learner- and coach-mentor satisfaction, measured qualitatively, showed high learner excitement for autonomous projects and some challenges for coach-mentors, responded to in coach-mentor training. Deliverables include abstracts (2024: 18 WFUSM, 7 external), manuscripts (11 submitted or in preparation), and conference presentations (18 WFUSM, 7 external posters).

Conclusions and Lessons Learned:

Autonomous research projects enhance continuous learning and research output. Successfully integrating various-stage learners boosts peer-coaching and broadens perspectives. TRAC will expand learners to pediatric residents and include alumni participation to build longitudinal support for careers in child-health research.

Health Professions Education Institute (HPEI)

Abstract submission template

Title: Collaborating across multiple summer training programs to build a supportive scientific community and develop the next generation of biomedical researchers

Presenter:

Claudia Olivier, PhD[1,2]

Co-authors:

Tina E. Brinkley, PhD[1-4], Debra I. Diz, PhD[1,2], Lydia Durr[1,2], TanYa M. Gwathmey, MS, PhD[1,2], Jill Harp, PhD[5], Gary D. Miller, PhD[4,6], David Soto-Pantoja, PhD[2,7], Thea Smith[8], Andrew South, MD, MS[1,2,9], Ashley Weaver, PhD[8]

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CURRICULAR INNOVATIONS

***Problem/Needs Assessment*:**

WFUSM offers summer programs in biomedical research for internal and external learners across multiple educational levels. While some training programs at WFUSM already actively collaborate, including with WSSU and WFU, each has limited space, research focus, resources, and networking options. To leverage resources, foster a welcoming environment and strong community connection, and highlight biomedical research as an environment for all learners to thrive in and identify with, we need to increase exposure and networking opportunities across our academic learning health system.

***Program Objectives*:**

We aimed to effectively leverage resources and enhance collaboration between biomedical research training programs through shared workshops, social events, and symposia to help develop future researchers who are more engaged, networked and confident.

***Description of Program*:**

Two undergraduate summer programs focused on cardiovascular and aging research, have been sharing didactic, hands-on research training, and professional development activities for undergraduates for the past six years. Other training programs (e.g., in biomedical engineering and informatics) have participated in select didactic offerings during this time. The pediatrics-focused program for multiple educational stages (undergraduate, graduate, and medical students, residents, fellows), joined collaborative activities in 2024. Collectively, program directors and administrators have worked to maximize exposure and interactions among learners, peers, and faculty through shared program activities, including social and networking events and an end-of-summer research symposium.

***Evaluation/Assessment*:**

Learner and mentor feedback obtained via anonymous surveys and informal group discussions documented the effectiveness of networking across disciplines and programs. Specifically, collaborative programming enriched learner identification with biomedical research, fostered a sense of community, and reduced perceived barriers between learners and faculty. Implementing 1-2 weekly core activity days maximized interactions (40+ learners,

plus faculty mentors). Combining activities reduced redundancy of presentations and burden on faculty time (1 vs. 4 didactic, professional development, and regulatory sessions, including responsible research conduct and rigor training). Shared events reduced cost, administrative, and space burden.

***Conclusions and Lessons Learned*:**

Implementing program collaborations is feasible with careful planning and communication. Sharing activities enriched programs, enhanced networking and engagement, and saved resources. Integration of additional summer programs could broaden the learner experience further. For continuous quality improvement, programs should adjust content and format based on annual qualitative and quantitative feedback.

Health Professions Education Institute (HPEI)

Title: The Center for Precision Medicine Summer Research Internship Program: An Immersive Research Opportunity for Undergraduate and High School Students

Presenter: Cynthia Van Horn, PhD

Co-authors: Claudia Olivier, PhD, Michael Olivier, PhD, Laura Cox, PhD

Type of Abstract: **WORKS IN PROGRESS**

Background/Needs Assessment:
In order to promote interest in biomedical research as part of an academic learning health system (aLHS), the Center for Precision Medicine (CPM) has offered an immersive Summer Research Internship since 2018. This STEM outreach program provides hands-on research opportunities for highly motivated local high school students and college students nationwide.

Objectives:

1. To provide STEM internships for both high school and college students as early opportunities for students to experience biomedical research and discover career paths.
2. To include peer mentoring among high school and college students as a unique aspect of the internship.

Methods/Description of Program:
The Center has developed a unique Research Immersion Summer Internship Program for college and high school (HS) students. College students are assigned to CPM labs for 9 weeks to participate in state-of-the-art research, where they are paired with HS students and serve as near-peer mentors. To date, the program has supported 50 college students from 29 academic institutions, and 44 regional HS students. Application to the program is highly competitive; we received over 140 applications for 9 positions for 2024 and 186 applications for 2025. Of the students that have completed the program, 31% were accepted into medical school (MD, DO, DVM), 25% to graduate school (MS, MPH, or PhD), and 13% were accepted in NIH Post-Baccalaureate Training Programs. The remaining interns currently work in research labs or in the medical field. This program greatly benefits students to be more competitive in their graduate or medical school applications.

Anticipated Results/Evaluation Plan:

1. Interns participate in entrance and exit interviews during each summer program to assess their impressions of the program and the impact of the research experience.
2. Participating faculty mentors provide feedback pertaining to the program and the research projects conducted by the interns.
3. All former interns have recently been invited to participate in a survey of the CPM internship program to assess their career trajectories and lasting impact of their participation.

Next Steps:

We are reviewing collected data and feedback from intern participants and faculty mentors to improve the experience and outcomes for the next intern cohort. We plan to share the collected data as a published journal article.

Health Professions Education Institute (HPEI)

Abstract submission

Title here: Development of the Engagement Scale for Simulation-Based Education (ESSBE): Item generation and early psychometric findings

Presenter here: Darla S. Morton, M.S.
Co-authors here: Megan Stuhlman, Ph.D.

MEDICAL EDUCATION RESEARCH

Background: Simulation-based education (SBE) is an essential teaching modality in healthcare; learner engagement in scenario-based SBE is critical for learning and knowledge retention.[1,2] None of the currently validated scales assessing learner engagement are appropriate for measuring engagement in healthcare professionals participating in scenario-based SBE.[3-5]

Objectives: We present development and initial validation evidence for the Engagement Scale for Simulation-Based Education (ESSBE), a self-report tool measuring behavioral, cognitive, emotional, and social dimensions of the engagement construct within scenario-based SBE.

Methods/Design: Messick's validity framework was followed, along with a 3-phase/9-step, mixed methods approach included item generation, expert review, and cognitive pretesting.[6,7] Learners already attending undergraduate and graduate healthcare education programs at a southeastern simulation center voluntarily completed an 18-item, 7-point frequency response survey immediately after a scenario-based simulation session (n= 402). Participants were mainly nursing students (58%), nurses (21%), and medical residents (17%), and a majority were women (81%). Reliability was tested using Cronbach's alpha and Spearman's Rank (rho). Dimensionality was assessed via confirmatory factor analysis (CFA) and invariance testing.

Results: Out of several structural models tested, best-fit was obtained using a 2nd Order/4-dimensional model with 11 retained items (CMIN/3.3, CFI/.945, TLI/.91, SRMR/.055, RMSEA/.075). Additional empirical evidence supported scale reliability (alphas $\geq .610$; rho $r(401) \geq .434$, $p < .01$) and metric invariance (held for Δ SRMR and Δ RMSEA).

Conclusions, Limits, Next Steps: Initial evidence confirms that engagement in SBE is a multidimensional construct, and empirical evidence supports scale reliability and metric invariance, but more work is

needed to improve the performance and number of items in the emotional dimension. Future studies using the ESSBE are needed to build the validity argument via tests of convergent/ discriminate validity and to add predictive validity components (i.e., correlations with learner outcomes, observable metrics of engagement, and qualitative data). Other limitations and next steps are considered (i.e., potentially meaningful items were removed to attain model fit; a maximum of 25% learners could have completed the survey twice; generalizability was limited; and both question order and acquiescence biases were possible). We anticipate the scale, and its future development, will be of interest to researchers and faculty who support continuous quality improvement for SBE offerings to healthcare professionals.

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Health Professions Education Institute (HPEI)

Abstract Submission

Title: Can Natural Language Processing Models Identify Potential Blind Spots in a Holistic Admissions Process?

Presenter: Daryl Rosenbaum, MD

Co-authors: Irinia Viviano, MS Zhitu Ma Modupeola Akinola, MD Rachel Ryding, PhD

WORKS IN PROGRESS

Background: Holistic screening of medical school applications is labor intensive and subject to bias and inconsistency. The average MD admission cycle at WFUSM involves over 12,000 applications for 193 seats.

Objectives: Determine if an artificial intelligence model could identify whether applicants who, in their essays, demonstrate the core values desired by the Committee on Admissions (compassion, community engagement, equity, teamwork, integrity, excellence, work ethic), and develop a method for grouping applicants essays based on similarities in topics.

Methods: Analysts obtained essay responses and application data for the last 5 years of MD application cycles, along with available application data from the current 2024-2025 cycle to compare. The five essays contained within each application were combined into one document per applicant, then applied the all-MiniLM-L6-v2 pre-trained model with pooling to convert text into a numerical representation. Four iterations of the BERTopic topic modeling algorithm were applied to identify topics.

Huggingface's zero-shot classification pipeline with the bart-large-mini model was used to calculate the probability of each essay demonstrating the Committee on Admissions' values identified above. Max-pooling across all essays was then applied to determine the highest probability for each value, referred to as "value expressions". All test scores (GPAs, MCAT, Casper) and value expressions were ranked independently within each topic group. The final rankings were based on the average (with equal weight) of these rankings.

Anticipated Results/Evaluation Plan: On average, we found 38 topics each year. Combining the topic modeling results with historical admissions data could identify groups of similar applicants who were not well represented among those invited to interview.

We used the ranking score to generate a list of potential "top" applicants within each essay topic area where a below average number of applicants were offered interviews.

Next Steps: Continual model adjustments will be made moving forward to refine these algorithms and determine appropriateness for use and relevant limitations. The results of this pilot project suggest that topic modeling and ranking of applicant essays could be used to identify subgroups of applicants that were not recognized by the standard admissions process and nominate them for additional consideration.

Title: *Utilizing the Complete Blood Count (CBC) and Blood Smear Analysis to Improve Pediatric Residents' Skills and Knowledge in Hematology*

Authors: David Gass, MD, MS; Chad McCall, MD, Ph.D.; Michelle Wallander, Ph.D.; James Symanowski, Ph.D.

Abstract:

Background: Effective learning in medical education often integrates knowledge with clinical activities, particularly through hands-on, interactive experiences. At Atrium Health Levine Children's Hospital (LCH), pediatric interns undergo only one month of hematology/oncology rotation, which may contribute to a lack of confidence and proficiency in interpreting Complete Blood Count (CBC) and blood smear results, which are key tools in developing differential diagnoses and patient management plans across various specialties. This project aims to develop a pediatric hematology/oncology curriculum that enhances residents' CBC interpretation skills through structured case reviews and expert supervision.

Objectives:

- Assess the feasibility of implementing a hematology curriculum incorporating case reviews, where residents interpret CBC data and blood smears with expert supervision.
- Evaluate the feasibility of completing the curriculum within the constraints of a one-month rotation.
- Measure the impact of this curriculum on residents' hematology knowledge and self-perception of their skills.

Methods:
Before beginning the rotation, residents complete a pre-test and self-assessment to gauge baseline knowledge. They then engage in three pre-recorded PowerPoint lectures covering blood count and smear interpretation. Throughout the rotation, residents independently analyze three patient cases, interpreting CBC data and reviewing blood smears with guidance from hematology and pathology experts. At the end of the rotation, residents complete a post-test and self-assessment to evaluate changes in hematology knowledge and skills. Qualitative feedback on the curriculum is also gathered through departmental surveys assessing the pediatric hematology rotation.

Preliminary Results:
Thus far, 87% of residents (20 out of 23) have completed all components of the assignment within the rotation timeframe. On average, residents demonstrated a slight improvement in

hematology knowledge (mean score improvement of 9%) based on pre- and post-test assessments. However, substantial improvements in residents' perception of their skills were observed, with the most significant gains in their ability to formulate management plans for conditions like severe neutropenia and recognition of blood smear abnormalities. Qualitative feedback indicates that residents valued one-on-one expert sessions but expressed dissatisfaction with the length of the PowerPoint lectures. They also would have preferred electronic pre- and post-assessments for convenience.

Discussion and Future Directions:

Preliminary results suggest that the curriculum is feasible and beneficial in terms of increasing residents' confidence and self-reported knowledge in hematology. Despite limited gains in board-style knowledge tests, the hands-on experience with blood smear interpretation and expert feedback was well received. Future revisions will focus on reducing lecture length, improving the delivery of content (e.g., through one-on-one teaching), and transitioning assessments to electronic formats. This curriculum may serve as a model for implementing impactful learning experiences in short rotations, aligning with ACGME requirements for reduced time in subspecialty rotations.

Conclusion:

This work-in-progress highlights the potential of a focused, case-based curriculum for enhancing pediatric residents' hematology knowledge and clinical skills. With adjustments based on learner feedback, this model could become an essential component of future hematology training

Health Professions Education Institute (HPEI)

Abstract submission template

Please type your title and then utilize the headings within the appropriate abstract type.

Delete submission types that are not relevant to your submission

Title here:
A Backward Design Framework for Creating Vertical Integration of Clinical Content in Pre-Clerkship Courses

Presenter here:

David W. Mullins, Ph.D. (WFUSM)

WORKS IN PROGRESS

Background/Needs Assessment:

Vertical integration across the Foundational (Pre-Clerkship) and Clerkship phases in a medical school curriculum potentially offers multiple benefits, including enhanced learning relevance, improved retention and understanding, early clinical exposure, and development of critical-thinking and problem-solving skills.

Traditionally, most vertical integration in undergraduate medical curriculum has evolved organically from the recognition of shared content, which is then labeled as "integrated" content. However, this approach typically fails to facilitate the creation and delivery of intentional, temporarily-aligned educational experiences that achieve the above-stated goals and ultimately drive improvements in clinical performance.

Optimal integration consists of purposeful, scaffolded content that directly supports student development and mastery of program-level learning objectives.

Objective:

To optimize the process for creating effective vertical integration in Foundational courses, we developed a backward design framework to identify high-yield objectives and temporally-appropriate integration points for the creation of clinically-relevant integration.

Methods/Description of Program:

To facilitate the intentional creation of clinically-relevant integration in Foundational courses, we developed a three-step development process:

1. Identify Opportunities: Clinical clerkship leaders create a rank-ordered "wish list" of necessary student outcomes, then Foundational course directors create a rank-order list of core content in their topic. Using these lists, a curricular heat map of integration points is generated, facilitating the identification of potential opportunities for intentional integration.
2. Determine the Optimal Approach: From the integration heat map, Foundational course directors and clinical clerkship leaders select the highest-yield opportunities, create specific learning

objectives that support the achievement of mastery in Foundation course *and* optimize preparation for success in the subsequent clinical courses and clerkships.

3. Plan and Implement the Curriculum: The course faculty create sessions plans, including the instructional approach, learning activities, and assessment plans, and establish the optimal temporal sequence for the programming of the integrated content.

Anticipated Results/Evaluation Plan:

Applying this approach at the Geisel School of Medicine at Dartmouth, we created vertically-integrated dermatology objectives that were incorporated into a year-one microbiology/immunology/infectious disease course. In a repeated measures study with a matched-comparison group, students experiencing the integrated curriculum demonstrated improved performance on assessment items, as compared with historical controls who experienced the less-integrated curriculum. In the initial deployment, student satisfaction with the integrated dermatology content was high, although some expressed skepticism about the durability of learning and long-term implications of integration on their subsequent clinical performance.

Next Step

Recognizing that vertical integration helps create a more cohesive and effective medical education experience, we propose to apply the backward design approach to clinically-related curricular thread topics for the generation of integrated content in early Foundational phase courses [such as Human Structure and Function (HSF) and Metabolism and Defense (MAD)] at WFUSM. We will then evaluate the educational effectiveness both within and after the foundational courses, using longitudinal repeated assessments and mixed-methods measures (surveys and focus groups) to assess student satisfaction, perceptions of learning, and recommendations for improvement. We believe this approach will improve the quality of integrated curriculum through a directed and accelerated process.

Health Professions Education Institute (HPEI)

Title:
Rural Health Education in a Suburban Family Medicine Residency Program: A Two-Year Review

Presenter:
Dawn Caviness, MD, BSN

Co-author:
Aaron Lambert, MD

Curricular Innovation
Problem/Needs Assessment:

North Carolina faces a shortage of primary care physicians in rural areas, contributing to higher morbidity and mortality (1). Research shows rural training is a key factor in physicians' decision to enter rural practice (2). Exposure to rural healthcare is crucial for family medicine residents to develop unique skills and explore rural careers. This study evaluates a three-part rural health curriculum integrated into a suburban family medicine residency program.

Program Objectives:

The Rural Health Curriculum consists of 3 components:

Objective 1: Residents learn about issues in rural health care at annual Rural Health Day, including didactic lectures and Q&A session with rural physicians.

Objective 2*:* Residents provide direct medical care for farmworkers and be more aware of farmworker health needs by working at Patterson Farms Mobile Farmworker Outreach.

Objective 3: PGY-2 residents spend 2 weeks with a rural family physician to experience rural healthcare and careers.

Description of Program:

Objective 1: Learn common rural health topics from rural health leaders in a 3-hour Rural Health Day session. Participate in a Q&A with rural physicians

Objective 2: Family Medicine Attending will teach farmworker health topics. Residents will care for farmworkers in the mobile unit

Objective 3: Resident precept patient cases and reflect on rural living and practice with rural preceptors.

Evaluation/Assessment:

Objective 1: Assessed by completion of the Rural Health Day evaluation form and Active Participation with rural physician panel measured by direct observation

Objective 2: Measured by direct observation of each patient encounter by supervising attending.

Objective 3: Weekly evaluation form of clinical performance completed by preceptor at the rural clinic site, including preceptor interview and personal reflection

Assessment Data: Over the past two years, 26 residents participated in a voluntary survey about the rural health curriculum. All family medicine residents reported learning a teaching point and 86% of residents found it valuable. The farmworker clinic experience had 9 respondents: 7 found it valuable, 1 neutral, and 1 disagreed. Of the 7 residents who completed the required community medicine rotation, 6 agreed it was valuable and 1 was neutral to its added value. Qualitative data from the rotation is available but not reported here due to space limitations.

Conclusions and Lessons Learned:

Ensuring meaningful rural learning experiences is essential for residents considering rural medicine careers. Feedback will help refine the curriculum. We hope to highlight the importance of mandatory rural health training to better serve North Carolina's rural populations.

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MEDICAL EDUCATION RESEARCH

***Title*:** Exploring the Intersection of Social Media, MedEd and Visual Learning- Insights from the Pathodoodles Experience

Presenter: Deeksha Sikri MD

***Background*:**
Social media, both pre- and post-COVID 19, has emerged as a dynamic tool in medical education. Through different audio-visual modalities and now incorporation of generative artificial intelligence, it is an excellent platform to engage, educate and connect learners innovatively. Pathodoodles, a pathology-focused social media account, utilizes visual learning through doodles, infographics and short videos to simplify and integrate pathology concepts. Understanding how audiences with diverse learning styles, levels, and requirements engage with such content can inform development of instructional methods. Additionally, the impact and utilization of social media for disseminating niche pathology content to a broader audience can lead to exploration of more channels for networking and engagement.

***Objectives*:**
1. To analyze the reach and impact of Pathodoodles among its audience on various social media platforms
2. To identify the preferred content format and styles across different professional groups

Methods/Design:
An online survey link to Google Forms was shared across Pathodoodles accounts on Instagram and Facebook, garnering 584 responses over two months. Questions focused on audience demographics, frequency of engagement, content preferences, and the perceived effectiveness of Pathodoodles content. Responses were analyzed to determine trends in content utilization among medical students, residents and practicing pathologists.

***Results*:**
- Majority of the audience consists of pathology residents with practicing pathologists also engaging with Pathodoodles content for updates and quick reviews, indicating a gap of pathology knowledge and application during pre-clerkship training. Most of the respondents used Pathodoodles for both reviewing known topics and learning new material through visual content. Algorithm-based posts and summary compilations were highly favored, reflecting a preference for structured, concise information. Only 15.2% of the users were infrequent visitors; majority regularly checked the account for new content. More than 50% of the audience followed the accounts after social media platform suggestions, indicating the importance of social media algorithms in the reach of Pathodoodles. The survey underscored the need for engaging, simplified content to address the overwhelming nature of traditional resources.

***Conclusions*:**
Pathodoodles demonstrates the effectiveness of visual learning in pathology education to address foundational gaps and learn new concepts. Strong engagement through diverse learner groups highlights the need for educational tools that are informative as well as visually appealing. Utilizing social media to share resources and collaborate is an innovative method to make pathology more approachable, accessible and visible for the future workforce.

Health Professions Education Institute (HPEI)

Title here: Increasing HIV Primary Care Training with an Area of Concentration for Family Medicine Residents

Presenter here: Douglas Meardon, MD, AAHIVS

Co-authors here: **None**

WORKS IN PROGRESS

Background/Needs Assessment:

There is a shortage of HIV experienced clinicians across the Southeastern United States with greater than 80% of counties affected. In contrast, this region has an increased incidence of new HIV infections accounting for 50% of new diagnosis. This project's aim is to increase training in the care of persons with HIV (PWH) during Family Medicine (FM) residency and to create a pathway to certification in HIV care through an Area of concentration (AOC).

Objectives:

1. Increase direct care of PWH in outpatient settings for residents in our CMC Family Medicine Residency
2. To develop a pathway for Family Medicine residents to train in culturally competent and quality driven HIV care and meet minimum standards to be credentialed in HIV care by the American Academy of HIV Medicine (AAHIVM).

Methods/Description of Program:

The HIV primary care AOC is available to all residents within the three tracks at CMC FM residency during PGY2 and PGY3. Residents will gain an additional 3 months of intensive clinical training in HIV care beyond the baseline curriculum. All FM Residents rotate in FM multidisciplinary HIV clinics within our residency-based clinics. As part of the AOC, clinical experiences are coordinated within the Atrium Health ID Department, VA and community preceptors. In addition to didactics, residents virtually complete the National HIV Curriculum. Upon completion of the AOC, they will meet minimum standards to be able to sit for HIV credentialing exam for AAHIVM.

Anticipated Results/Evaluation Plan:

Aggregate evaluations will be provided for each resident at the end of the elective month and progress in longitudinal curriculum will be tracked. Qualitative feedback in exit interviews will be collected. We anticipate 1 resident per year to participate with 100% meeting minimum requirements for the AAHIVM credentialing. Upon successful completion of this AOC, we anticipate that graduating residents will incorporate HIV-primary care into their clinical practice. Physicians will be surveyed at 5 years and beyond regarding their clinical practice.

Next Steps:

1. Transition to a competency-based evaluation with core entrustable professional activities related to HIV primary care.
2. To develop a 4th year elective for medical students interested in HIV/ID care.

References:

Bono RS, et al, Human Immunodeficiency Virus–Experienced Clinician Workforce Capacity: Urban–Rural Disparities in the Southern United States, Clinical Infectious Diseases, Volume 72, Issue 9, 1 May 2021, Pages 1615–1622, https://doi.org/10.1093/cid/ciaa300

Armstrong WS, The Human Immunodeficiency Virus Workforce in Crisis: An Urgent Need to Build the Foundation Required to End the Epidemic, Clinical Infectious Diseases, Volume 72, Issue 9, 1 May 2021, Pages 1627–1630, https://doi.org/10.1093/cid/ciaa302

Health Professions Education Institute (HPEI)

AI curriculum development for family medicine residents: utilization and implementation of DAX AI transcription tool in a family medicine residency setting

Presenter: Elim Chao, MD

Co-authors: Rebekah Aurie, DO, Benjamin Simmons, MD, Shala Sundaram, MD

Category: Works in Progress

Family medicine physicians face a significant documentation burden impacting their ability to provide high-quality patient care and maintain their well-being. To address this, our healthcare system has integrated an Artificial Intelligence (AI) transcription service, DAX, within the electronic health record (EHR)to assist with documentation. While AI is a rapidly emerging transformative tool, and despite its growing adoption, research on its impact in residency education remains limited. DAX has the potential to enhance documentation efficiency for residents and increase their time for high-quality patient care and overall well-being. Our project has three main objectives: assess resident readiness to use DAX, develop a structured curriculum for its effective use, and to evaluate its impact on resident well-being. A baseline OSCE (Objective Structured Clinical Examination) will be conducted to assess residents' ability to generate clear, accurate, and comprehensive notes without AI assistance. Subsequent evaluations will compare the quality and accuracy of resident- and AI-generated notes. Residents will be educated on the use of DAX and critical evaluation of AI-generated content paralleling the faculty development focused on AI-generated note assessment. We will use the Mayo Clinic Well-Being Index to measure perceived documentation burden, job satisfaction, and overall quality of life before and after the DAX implementation. Faculty feedback and patient satisfaction surveys will assess the quality of care provided by residents over time. We expect this

curriculum will result in improved documentation skills and increased proficiency in AI tool usage. By integrating standardized assessments and reflective exercises, we aim to gain meaningful insights into the impact of AI on resident education and well-being. We anticipate that effective DAX implementation will lead to a reduction in perceived documentation burden and an improvement in resident well-being. Additionally, this project serves as a scalable model for other institutions seeking to optimize AI use in residency training. We are confident that this project will advance the field of medical education and further integrate resident training with emerging technological advancements.

Health Professions Education Institute (HPEI)

Abstract submission template

Title here: Engaging Fourth-Year Medical Students in Teaching Radiology

Presenter here: Elizabeth Zieser-Misenheimer BS MBA

Co-authors here: Pinyu Chen BA, Kate Szczesniak BS, Kevin Hiatt MD

CURRICULAR INNOVATIONS

Problem/Needs Assessment:
Approachable touchpoints with radiology education can be limited in medical school curricula.

Program Objectives:

1. Involve M4s as peer educators in workshops to enhance preclinical educational opportunities in radiology.
2. Develop interactive digital learning materials to ensure long-term accessibility of radiology content.

Description of Program:
Fourth-year medical students' recent experience navigating the preclinical curriculum allows them to assess learning needs and deliver a tailored experience through peer-to-peer teaching. The Radiology Scholars Ambassadorship Program (RSAP) offers senior students the opportunity to teach first and second-year students through faculty-supervised workshops. In a central IV placement workshop, ambassadors help teach junior students to differentiate veins from arteries using ultrasound, identify longitudinal and short-axis views, and track a needle's trajectory into a vein. RSAP ambassadors also lead a variety of similar workshops on topics including ultrasound guided procedures, head imaging, and chest x-ray interpretation. Through these workshops, junior students gain a practical understanding of radiologic techniques, while senior students sharpen their teaching, procedural, and image-reading skills. Ambassadors must also contribute to the curriculum by developing YouTube videos, Instagram posts, or new workshop content, ensuring the creation of enduring educational materials.

Evaluation/Assessment:
Program effectiveness assessed via:

- Workshop attendance: Workshops staffed by RSAP ambassadors reach approximately 50 students annually, engaging one-third of each MD class.
- Digital content engagement: RSAP ambassadors have produced 54 YouTube videos, with a median of 63 views per video.

Conclusions and Lessons Learned:
Consistent workshop offerings that are routinely attended at full capacity and the creation of enduring materials by peer educators together ensure continued access to radiology educational content that is approachable and relevant, even for students not pursuing radiology careers. Digital resources can be updated year over year which promises a lasting impact on the preclinical radiology curriculum and extends the reach of peer-to-peer teaching beyond those who are able to attend in-person workshops. Through these efforts, junior students receive enhanced education while senior students gain teaching and leadership skills, and all parties receive more exposure to radiology. Engaging fourth-year students

in teaching cultivates an early sense of ownership over the process of training others and promotes continual learning which benefits everyone.

Health Professions Education Institute (HPEI)

Abstract submission template

Resident-facilitated evidence-based medicine workshop: Providing tools to answer clinical questions

Emily Manlove, MD, MPH

Zachary Morehouse, DO, MS

WORKS IN PROGRESS

Background/Needs Assessment: Family medicine physicians encounter multiple clinical questions in a typical workday while seeing patients. Many questions go unanswered due to lack of time or limited access to high quality resources. Additionally, trainees face many burdens on time and attention and may not be able to find answers to their clinical questions.

Objectives: Our study seeks to investigate the utility of a short, resident-facilitated EBM workshop in increasing family medicine trainees' confidence in asking clinical questions and finding answers with high quality resources.

Methods/Description of Program: The workshop will be held on February 12, 2025 and will be 90 minutes in duration. It will be facilitated by one lead PGY3 resident (ZM), and small groups will be facilitated by six other PGY3 residents. ZM will give a brief introduction to EBM. Then they will break-out into small groups, each facilitated by a PGY3 resident. They will work through one inpatient case (choose one of three), developing clinical questions and working together to find answers in high quality resources. They will then work through one outpatient case (choose one of three). The group will come back together and debrief what they learned.

Anticipated Results/Evaluation Plan: The residents will be given a post-session survey to assess their perceived likelihood of utilizing EBM resources to answer clinical questions in the future. The facilitators will be given a post-session survey to assess their confidence in facilitating the session and their perceived value of the session.

Next Steps: If the workshop is deemed feasible and valuable, it will be incorporated into the curriculum and repeated in the future.

Health Professions Education Institute (HPEI)

Title: Implementing a Pilot Procedure Curriculum for Internal Medicine Interns

Presenter: Erin Deery MD

Co-authors: Christopher Kelly MD, Lillie Pitts MD, Courtney Rowland MD

WORKS IN PROGRESS

Background/Needs Assessment:

The use of point-of-care ultrasound (POCUS) for diagnostic evaluation and performing bedside procedures is becoming increasingly important in the field of internal medicine (IM).[1] The Wake Forest Internal Medicine residency has a robust POCUS curriculum for diagnostic evaluation but does not currently have a standardized curriculum for ultrasound-guided procedures. A pilot intern procedure curriculum was developed to introduce IM interns to procedural topics and provide a standardized framework for teaching bedside procedures relevant to the practice of general IM such as peripheral IVs, arterial lines, central lines, paracentesis, thoracentesis, and lumbar puncture.

Objectives:

This study examines the effectiveness of a standardized, longitudinal procedure curriculum within the intern year to increase intern knowledge of and comfort with performing bedside procedures.

Methods/Description of Program:

This curriculum was developed as a longitudinal, resident-driven curriculum including both self-directed online modules and in-person, supervised training sessions. In-person sessions will be supervised by trained upper-level IM residents and IM faculty. The curriculum will be completed by IM categorical interns during ambulatory weeks between August 2025 and March 2026. To evaluate the curriculum's effectiveness and increasing participants' comfort with performing bedside procedures, a pre-course and post-course Likert scale questionnaire will be conducted. To evaluate the curriculum's effectiveness in increasing participants' knowledge of procedural techniques, pre-module and post-module quizzes will be conducted. Qualitative analysis will be performed on the survey data collected. The number of procedures performed by interns in the 2025-2026 year will also be compared to that of the previous two academic years.

Anticipated Results/Evaluation Plan:

Data collection is expected to conclude in March 2026 following the completion of the intern procedure curriculum. We anticipate that completion of the curriculum will increase participants' comfort level in performing and supervising bedside procedures, and that participants will have increased knowledge of bedside procedures. We also anticipate there will be an increase in the number of procedures performed by interns who have completed the curriculum in comparison to the prior academic years.

Next Steps:
We plan to implement the intern procedure curriculum and evaluation during the 2025-2026 academic year. Results from evaluation of the pilot curriculum will inform changes made to subsequent iterations of the curriculum.

References:

Charles M. LoPresti, Trevor P. Jensen, Renee K. Dversdal, Donna J. Astiz,
Point-of-Care Ultrasound for Internal Medicine Residency Training: A Position Statement from the Alliance of Academic Internal Medicine, The American Journal of Medicine, Volume 132, Issue 11, 2019, Pages 1356-1360, ISSN 0002-9343, https://doi.org/10.1016/j.amjmed.2019.07.019.
(https://www.sciencedirect.com/science/article/pii/S000293431930614X)

Health Professions Education Institute (HPEI)

Abstract submission template

Title: Is policy inhibiting opportunity? A survey of third and fourth-year students at WFSOM.

Presenter: Garrett Reid

Co-authors: Garrett Reid, Jackson Sullivan, Irene Kuriakose, Jinal Patel, Kevin Hiatt MD

MEDICAL EDUCATION RESEARCH

Background: Opportunities to participate in conferences and attend residency interviews are a critical part of the medical school experience, but associated absences have the potential to conflict with school attendance policies.

Objectives: This study evaluates students' perceptions of institutional support for conference and residency interview attendance.

Methods/Design: Survey data were collected from third- and fourth-year medical students from the Wake Forest University School of Medicine (WFSOM) classes of 2026 and 2025, respectively. Both groups were asked about conference attendance during the third year of medical school, and the fourth-year group was additionally asked about conference attendance during fourth year and residency interviews.

Results: 34 third-year and 36 fourth-year students completed the survey. 66% of respondents reported attending at least one conference during third year and 58% reported attending at least one conference during fourth year. Pushback from superiors on conference attendance, having to cancel accepted presentations, being discouraged from submitting to a conference, and having to cut short attendance at a conference were reportedly witnessed by 56%, 31%, 47%, and 57% of students, respectively. 49% of students who attended conferences reported having to spend more than $300 in excess of funds provided by the school for conference attendance. Regarding residency interviews, 80% of respondents reported having to use absence requests, 33% witnessed pushback from superiors for attending scheduled interviews, 28% witnessed an interview having to be rejected or cancelled due to absence policy or other curricular activities, and 52% reported insufficient time off for interviews needed for their specialty.

Conclusions: This study reveals frequent conflict between WFSOM attendance policies and students' opportunities to attend conferences and residency interviews, which exposes students to difficult decisions and uncomfortable interactions with superiors. Additionally, funding provided for conferences falls far short of needed financial support. These results present a call to action for the WFSOM administration and highlight the need for a nationwide survey to gauge the scope of this issue.

Problem/Needs Assessment: A diverse healthcare workforce has many beneficial implications, such as increasing access to high-quality, culturally appropriate healthcare services and advancing cultural competency (Dreachslin et al, 2007). However, students from low-resource communities are underrepresented in the health professions.

Program objectives: The objectives of Propelling Adolescents Towards Careers in Healthcare (PATCH) are to: 1. Expose high schoolers from underrepresented backgrounds to the health professions ; 2. Improve college readiness; 3. Develop research skills; 4. Increase social capital; 5. Expand leadership and teaching opportunities for medical students while enhancing their understanding of social drivers of health.

Description of Program: The PATCH program is a pathway program for high school students from low-resource communities that provides exposure to various health professions. The mission is to diversity the healthcare workforce. Students come to campus on 8 Saturdays to engage in interactive workshops and didactics with doctors and other health professionals, develop and present original community health research guided by medical students, and receive college guidance.

Evaluation and Assessment: This mixed-methods evaluation includes pre- and post-surveys (N=49) of Scholars and participant observations to evaluate Scholars' college readiness, knowledge and attitudes towards health careers; cultural relevance of instruction; and more. A post-survey was conducted with medical student volunteers.

Surveys indicate that 45% of Scholars were "very likely" to pursue health professions, increasing to 72% post-program. Career planning and knowledge of health professions significantly improved as did confidence in career goals, understanding admissions requirements, and research skills. The majority reported increases in social capital.

Medical student volunteers (n=15) universally indicated that PATCH enhanced their understanding of SDOH and the relationship between social factors and health disparities. Nearly all respondents indicated improvement in cultural competency skills, working with low resourced populations and confidence in working with communities from different backgrounds.

Conclusion and Lessons Learned: The PATCH Program successfully recruits underrepresented students and develops knowledge, skills and confidence to pursue healthcare careers while increasing social capital. Tracking long-term program outcomes will enable a better understanding of the impact of PATCH in diversifying the healthcare workforce. Most importantly, our findings indicate that institutionalizing PATCH within the School of Medicine will enhance medical student education while our new medical school may provide a "destination" for our PATCH Scholars.

Exploring the Integration of Extended Reality (XR) in Medical Education at Wake Forest University School of Medicine

Background/Needs Assessment: Extended reality (XR) has demonstrated promising potential in augmenting medical education by providing immersive, interactive experiences that have been shown to enhance learning efficiency and information retention[1–4]. The use of these 3-dimensional learning experiences remains under-explored in medical education at WFUSM. This project seeks to assess the feasibility of integrating XR-based learning modules into the medical curriculum at Wake Forest University School of Medicine.

Objectives: To comprehensively evaluate the role of XR in medical education by examining multiple facets of its impact. Specifically, this project aims to assess both student and faculty engagement and enthusiasm for XR-enhanced learning experiences, identify specific subject areas where XR may be most beneficial, and examine the effectiveness of XR in improving spatial understanding, retention, and application of complex medical concepts.

Methods/Description of Program: To assess enthusiasm and engagement with the technology, pre- and post-intervention surveys will measure interest levels, engagement, and motivation changes before and after XR exposure. To identify subject areas most suited for XR learning, students and faculty will be presented with XR modules covering anatomy, procedural skills, and clinical decision-making scenarios. Follow-up surveys will collect qualitative feedback on which subject areas students and faculty found most effective for XR-based learning. Users will be asked about their confidence in replicating procedural steps or applying knowledge from the XR-based modules to real-life scenarios to quantitatively assess the effectiveness of XR in medical education.

Anticipated Results/Evaluation Plan: We anticipate that students will report increased engagement and improved spatial understanding of anatomical structures as well as increased confidence making clinical decisions and performing clinical procedures. Survey responses will highlight the most effective use cases for XR in preclinical and clinical medical education.

Next Steps: Following data analysis, findings will inform future XR curriculum integration efforts. If successful, expanded implementation across additional courses and a longitudinal study evaluating long-term learning benefits will be considered. Further research will explore faculty training needs, scalability, and cost-effectiveness to ensure sustainable adoption. Collaboration with educational technology specialists and institutional leadership will be pursued to facilitate broader XR integration across medical education programs at Wake Forest University School of Medicine.

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1. Pottle J. Virtual reality and the transformation of medical education. *Future Healthc J*. 2019;6(3):181-185. doi:10.7861/fhj.2019-0036

2. Ebert J, Tutschek B. Virtual reality objects improve learning efficiency and retention of diagnostic ability in fetal ultrasound. *Ultrasound Obstet Gynecol Off J Int Soc Ultrasound Obstet Gynecol*. 2019;53(4):525-528. doi:10.1002/uog.19177

3. Krokos E, Plaisant C, Varshney A. Virtual memory palaces: immersion aids recall. *Virtual Real*. 2019;23(1):1-15. doi:10.1007/s10055-018-0346-3

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Title: LGBTQ+ Healthcare Training for OB/GYN Residents using Simulation-based Learning Experience

Presenter:
Jonathan Seibert, MD, FACOG, Principal Investigator
Clinical Assistant Professor
Wake Forest School of Medicine
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Acknowledgment: Special thank you to the Carolinas Simulation Center Team who were critical in developing and running these Simulation-Based Learning Experiences and research project.

WORKS IN PROGRESS

Background:

Lesbian, gay, bisexual, transgender, queer, and persons with other gender identities (LGBTQ+) have reported difficulties in accessing and receiving healthcare, which likely contributes to the well-established health disparities experienced by these communities.[1] When LGBTQ+ individuals can access healthcare, some have reported challenges in finding welcoming, responsible, and inclusive healthcare provider practices across specialty areas.[2] On the provider side of this issue, 90% of OB/GYN residents express a desire for “more” or “a lot more” education related to providing healthcare for the LGBTQ+ community.[3] In a separate study surveying OB/GYN residency program directors, half of

the respondents report providing no training on care for transgender patients and cited lack of faculty expertise and curriculum materials as leading barriers. [4]

Objectives:

The objective of this study is to explore whether participating in a Simulation-based Learning Experience (SBLE) designed to provide residents the opportunity to practice meeting healthcare needs of members of the LGBTQ+ community results in OB/GYN PGY3-4 residents feeling more confident and having more knowledge about providing care to this community.

Methods:

Between 2024 and 2025, twelve 3rd and 4th year OB/GYN residents at Carolinas Medical Center participated in a four patient SBLE covering a range of LGBTQ+ related topics. Participants confidence and knowledge were assessed pre, immediate post and 6 months post SLBE. Confidence was measured utilizing a 7-item Likert-style self-report of confidence providing equitable care that was adapted from a previously published study. Knowledge was assessed utilizing an 8-item multiple choice assessments that was developed for the present study (as no existing tools were available) and internally validated by a panel of 4 national and local experts. Data from the pre, immediate post and 6-month follow-up knowledge tests and confidence surveys will be compared with repeated measures ANOVA.

Anticipated Results/ Evaluation Plan:

Seventy percent of our participants reported 2 hours or less of previous training experiences related to LGBTQ+ healthcare. Almost eighty percent of the participants reported a previous lecture, which was the most common previous training experience. There was a mean13% improvement in the immediate knowledge assessment ($p=0.01$) and a mean 20% improvement in the immediate confidence assessment ($p<0.001$). This improvement in confidence was comparable across LGB and Transgender focused assessments. We are awaiting the final 6 month follow up data but anticipate the

improvement from baseline knowledge and confidence will persist but may be diminished from the immediate post assessment.

Next Steps:

All SBLEs have been completed and final data collection of the 6-month follow-up is ongoing. We plan to submit both the outcome data from our study along with the SBLE curriculum to help fill the existing gap in available LGBTQ+ curriculum for OB/GYN residents.

References:

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2. Ufomata E, Eckstrand KL, Spagnoletti C, et al. Comprehensive curriculum for internal medicine residents on primary care of patients identifying as lesbian, gay, bisexual, or transgender. *MedEdPORTAL* 2020;16:10875.https://doi.org/10.15766/mep_2374-8265.10875.
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Expanding Thoracic Outlet Syndrome Care and Education: A Decade of Growth at Atrium Health Wake Forest Baptist

Introduction:
Thoracic Outlet Syndrome (TOS) is a rare condition involving compression of neurovascular structures within the thoracic outlet, including the brachial plexus (nTOS), subclavian artery (aTOS), and subclavian vein (vTOS). It affects less than 1% of the population and is infrequently encountered in vascular surgery clinics. This poses challenges for learners to gain clinical exposure to the disease and its treatment. It is crucial for learners to gain experience with patients presenting each type of TOS, as well as more complex cases such as TOS in children and cases requiring re-operation. This experience helps learners better recognize the disease's presentation and gain proficiency in surgical interventions like first rib resection and anterior scalenectomy (FRRAS). Prior to 2015, the clinic performed very few cases annually, but over the past decade Atrium Health Wake Forest Baptist (AHWFB) has become a regional center for TOS management and treatment. The aim of this study is to evaluate the growth of the TOS Vascular Surgery Clinic at AHWFB since 2015 and if it has led to an increase in complex and diverse cases of TOS, thereby enhancing learner exposure and educational opportunities in the diagnosis and treatment of this uncommon disease.

Methods:
All TOS patients who received a first rib resection and anterior scalenectomy (FRRAS) at AHWFB were retrospectively reviewed via the electronic medical record. Following IRB approval, patient information was collected and maintained in a HIPPA compliant database. Demographic and clinical factors collected included age, sex, TOS subtype, first time operation vs redo operation, and length of follow up. Clinic growth was evaluated annually in addition to a comparison of two separate time periods, 2015-2019 (period 1) versus 2020-2024 (period 2). Complex TOS cases were defined as those performed on children and cases requiring reoperation.

Results:
Since 2015, 212 FRRASs have been performed for indications of neurogenic (92; 43%), neurogenic with arterial symptoms (17; 8%), neurogenic with venous symptoms (6; 3%), venous (75; 35%), venous with neurogenic symptoms (14; 7%), arterial (6; 3%), and arterial with neurogenic symptoms (2; 1%) TOS. The number of cases performed annually increased from 2 in 2015, 3 in 2016, 3 in 2017, 15 in 2018, 26 in 2019, 25 in 2020, 17 in 2021, 39 in 2022, to 57 in 2023, with a slight decrease in 2020 and 2021 due to the COVID-19 pandemic and surgical delays. Overall, there has been a 2750% increase in growth of the clinic from 2015 to 2023. In period 1, 49 (15M; 34F) FRRAS cases were performed of which 10 were pediatric and 1 was a redo residual rib case. In period 2, 163 (58M; 105F) FRRAS cases were performed of which 34 were pediatric and 13 were redo residual rib cases, demonstrating an increase in complex cases performed. Table I illustrates the cases performed showing that in period 2 there was a larger variety of TOS subtypes as well as more cases of each type of subtype. The average length of follow up as seen was 19.08 months (0-65 months) in period 1 and 7.52 months (0-37 months) in period 2.

Conclusion:
Our results indicate the successful growth of the TOS Vascular Surgery Clinic at AHWFB over the past decade, accompanied by an increase in the diversity of TOS subtypes and complex cases. The establishment of AHWFB as a regional provider of TOS treatment, particularly with the arrival of a specialist in the field, Dr. Julie Freischlag, allowed for the creation of a specialized TOS clinic that fostered significant growth. This growth was facilitated solely through word of mouth. As a result, the clinic now attracts TOS patients with a wider range of subtypes, age variety, and levels of complexity, providing learners with increased exposure to the management of diverse presentations of TOS and proficiency in its surgical treatment. Ultimately, the growth of the TOS Vascular Surgery Clinic at AHWFB has expanded

the types and complexity of TOS cases seen and provides learners with increased exposure to an uncommon disease and a deepened understanding of its management.

Health Professions Education Institute (HPEI)

Abstract submission template

Title here:

STANDARDIZED VIDEOS INCREASE STAFF ENGAGEMENT & REDUCE WORKFLOW IMPACT DURING SYSTEM-WIDE INTER-PROFESSIONAL SIMULATION TRAINING:
A Subset Analysis of Operating Room Simulations

Presenter here:

Kenneth A Lipshy, MD, FACS ACOS Surgery WG Hefner VA, Associate Professor Dept Surgery Wake Forest University

Co-authors here:

Dakeita Kluttz, MSN, RN, CEN (Inpatient Care Nurse Education)
Jessica Plyler, MSN, RN, CNOR (Perioperative Care Nurse Educator)
Gina Reed MSN-Ed, RN, CEN (Simulation & SLICE Program Director)

CURRICULAR INNOVATIONS
COMPLETED

Problem/Needs Assessment:

Facility leadership questioned the effectiveness of communication during complex events in the operating room (OR). A needs assessment was conducted via literature review, staff interviews, and consultation with VA SimLearn. Based on these findings, we developed a system-wide* pilot simulation project aimed at improving staff perception of teamwork and leadership skills, including communication, conflict management, and de-escalation.

*System= Healthcare system composed of 3 facilities located 100 miles from one end to the other.

Program Objectives:

- Implement standardized, abbreviated point of care inter-professional simulations at three facilities with minimal impact on clinical schedules.
- Create standardized videos to streamline the process.
- Improve staff perceptions of teamwork, collaboration, and leadership skills among surgical team members.

Program Description:

A point of care pilot project (OR, ICU, Surgery Procedural areas) was conducted from July 2023 to March 2024. The focus was on improving debriefings after events with multiple unexpected challenges. Inter-professional teams developed simulation scenarios with subject matter experts from seven surgical specialties. **This study focuses only on the OR subset**. Sixty-nine perioperative staff (36 nursing, 20 surgery, and 13 anesthesia) participated in 11 renditions of 9 different OR scenarios in 7 surgical disciplines with 8 O.R. simulation videos produced.

Following initial challenges of organization, consistency of presentation of simulation components and expectations of participating staff at three sites of care in three different clinical environments, videos were created to assure consistency of the project.

Each simulation video included the pre-briefing, case-based scenario, and debriefing. During the simulation scenarios, staff faced unique profession-specific challenges (Anesthesia, Nursing and Surgery). After viewing the scenario video, participants engaged in a 5-minute role-playing exercise

focused on debriefing. The simulations were ultimately completed in 20 minutes, reducing the original duration of 1.5 hours, with minimal clinical disruption.

Evaluation/Assessment:

Participants completed retrospective surveys immediately and after a delay, assessing self and team performance (reviewed by the IRB and AFGE). **In the subset analysis of the Operating Room component of the pilot project**, 59 of the 69 participants responded to the surveys. Results showed that 87% were satisfied, 83% recommended program continuation, and 83% reported enhanced subject matter knowledge. Additionally, 64% observed improved team reconciliation of complex events, and 81% reported improved communication after training.

Conclusions and Lessons Learned:

The pilot demonstrated that standardized simulations can be implemented across a healthcare system (3 facilities) with minimal disruption to clinical schedules. Participants reported the perceived improvements in staff management of complex situations. Specialty-specific videos proved essential for conducting simulations in a condensed time frame. This approach allows perioperative leadership to provide on-demand training, supporting ongoing team development and adaptability in managing OR challenges.

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Health Professions Education Institute (HPEI)
Abstract submission template

Title
Integrating an Undergraduate Medical Education Leadership Workshop into the Clerkship Years of Two VA Affiliated Medical Schools

Presenter
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Duane Bidwell, PhD, Department of Health Professions Education, USUHS ;

NOTICE:

- **This curriculum was developed as requirement for an ongoing culminating project required for completion of a Masters in Health Professions Education at Uniformed Services University Health Science Center.**
- **Funding for this MHPE was made possible by the WG Hefner VA, Salisbury NC; No other funding was utilized in this project.**
- **This curriculum**

Problem/Needs Assessment

Leadership skills are essential for physicians to optimize patient outcomes and enhance the well-being of healthcare teams. Despite this recognition, Undergraduate Medical Education (UGME) leadership programs during the clerkship period, where students can practice leadership skills, remain scarce. A significant barrier to implementing such programs is the difficulty of integrating non-clinical material into already overburdened clinically oriented schedules.

A needs assessment was conducted through literature review, informal and formal interviews (students, interns, residents, faculty, GME program director, UGME educational director), and a pre-implementation survey (students). These assessments identified followership, conflict management, communication, and emotional intelligence as critical topics.

Program Objectives

- Provide foundational leadership knowledge and skills
- Recognize leadership moments for learning
- Use reflection as a tool for leadership development
- Transition effectively from student to physician leader

Program Description

Based on the needs assessment and feedback from UGME clinical directors, we developed and piloted a UGME leadership curriculum within the clerkship period at two schools affiliated with our VA. Each school hosts over 150 clerkship students across multiple statewide healthcare settings.

The curriculum includes one large-group session and three small-group sessions focusing on the identified skills, with the goal of preparing students for internship. From November 1, 2024, to March 6, 2025, the large group session and three small-group sessions were completed.

Due to distance and time constraints, sessions were conducted virtually. Sessions emphasized knowledge acquisition and skill practice through case-based scenarios.

Evaluation/Assessment

Learners completed IRB-reviewed surveys after each session to assess engagement and respondent perceived knowledge acquisition. Follow-up surveys were distributed 30–60 days later. Of the 32 immediate survey responses, 88% reported high engagement, 87% recommended the sessions and 87% expressed the course enhanced their knowledge. Of the 8 delayed responses all respondents agreed the sessions were valuable and improved their skills. Overall, interactivity and engagement were cited as key strengths.

Conclusions and Lessons Learned

We successfully integrated four planned leadership sessions into the clerkship period, receiving overwhelmingly positive feedback and demonstrating knowledge acquisition. While enthusiasm for the curriculum was high during planning, one affiliate faced challenges due to curriculum pressures, resulting in a smaller than originally anticipated small group session attendance. This pilot highlights how medical schools can incorporate leadership education with minimal curricular disruption.

Health Professions Education Institute (HPEI)

Title here: Understanding and Addressing Health Literacy Gaps within Research Study Informed Consents as a Research Clinician

Presenter here: Kiandra Austrie, RN, BSN

Co-authors here: Natalie Cignetti, MD, Christine Patino, RN, BSN, Tami Guerrier, BS, Chidera Uzowihe, MD

WORKS IN PROGRESS

Word Count 332 excluding headings and references

Background/Needs Assessment:

Informed consent is a cornerstone of ethical research. For a patient to make appropriate informed decisions regarding research participation it is vital that the information on the nature, purpose, risks, and benefits of the research study, upholding participant autonomy and rights, and maintaining compliance with legal requirements is written in a way that promotes comprehension and accessibility to a wide range of individuals. Unfortunately, available research suggests that many participants may have difficulty understanding the information conveyed during the consent process[1-7]. This study is being conducted to assess and improve the informed consent process, specifically at Carolinas Rehabilitation, to promote participant comprehension.

Objectives:

The objectives are to analyze and score current consent forms used in the PM&R research department; create a health literate consent template; and gather participant feedback determining whether our template improved understanding or not.

Methods/Description of Program:

Current department consents will be assessed for health literacy scores using “Readable”, a website that scores content with 17 different readability algorithms. A literature search will be

completed with the following key words: health literacy, consent, and research. Using this information, a consent template will be developed using simplified language and organization while complying with federal guidelines and including the 9 required basic elements of a consent. A 7-question survey will be dispensed to PM&R research participants after going through the informed consent process to determine their perception on how clear the current process is. Then the new consent template will be applied to the department's current consents and agreeing participants will then complete the same survey distributed to participants prior to the consent changes.

Anticipated Results/Evaluation Plan:
Data gathered from the participant feedback will be analyzed using descriptive and summary statistics such as means, ranges, and percentages, where appropriate.

Next Steps:
We plan to see positive feedback from our participants after implementing the new health literate consent template. If so, we will apply the health literate consent template to all consents within our department and disseminate our findings as a resource for other research clinicians who develop informed consent documents.

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Title: Acute Heart Failure Advanced Life Support: Innovative and Interactive Educational Model for Management of Acute Heart Failure

Presenter: Lauren Eyadiel, PA-C

Co-authors: Nicole Cillis, DO, MPH; Barbara Pisani, DO

Background: Nationally, there are over five million hospitalizations per year with a primary diagnosis of acute decompensated heart failure (ADHF)(1). Delay in timing to diuretics and lack of adherence to guideline-based management (GBM) result in prolonged length of stay, increased readmission rates, and higher mortality (1-3). To date, no training program has been established in the United States that focuses on an algorithmic, GBM of ADHF. In collaboration with Sociedade de Cardiologica de Estado de Sao Paolo, we developed and implemented the Acute Heart Failure Advanced Life Support Course (AHFALS). This program, initially created for Brazilian learners, was adapted for American learners and is a four-hour, simulation-based course using a standard, algorithmic approach on GBM of ADHF across the continuum of care.

Objectives: Train medical learners in an interactive, case-based, algorithmic approach for GBM of ADHF.

Methods/Design: Pre/post survey data and a pre/post multiple-choice question-based assessment was administered to ascertain both qualitative and quantitative data on the effectiveness of the AHFALS course. A post-test score of $\geq$70% was considered passing, resulting in course certification.

Results: 641 medical learners completed AHFLAS pre/post-test and participant satisfaction survey. There was a statistically significant difference between pre (mean 52%, SD 16.22) and post-test (mean 71%, SD 16.22) exam scores (p-value <0.0001). Participant self-assessment demonstrated improvement in knowledge of GBM of ADHF with 100% of

participants believed that following the course, patient care and adherence with GBM in patients with ADHF would be improved.

Conclusions: The AHFALS course demonstrated qualitative and quantitative improvement in the care of patients with ADHF. Medical learners had high satisfaction, improvement in knowledge base, and adherence with GBM of ADHF across the continuum of care. Early data indicates a need and gap in training on GBM of ADHF with opportunity for broader expansion of the AHFALS training program.

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Equity in Telehealth: Educating Physicians on Interpreter Utilization

Luisa Paredes Acosta MD; Tiffany M. Shin, MD; Nancy Denizard -Thompson, MD

The rise of virtual care in the US aims to enhance patient access, yet disparities persist, especially for non-English language preference (NELP) patients. Clinical observations indicate that telehealth is often more accessible to English speakers. Our study explored resident physicians' comfort with telehealth for NELP patients and developed a training focused on utilizing interpreters during virtual visits. We developed an asynchronous, thirty-minute, self-directed, interactive module accessible via mobile device. We utilized text, video, flip-cards, and images that highlighted both standard practices for medical interpreter use in all settings, as well as institution-specific logistical steps to engage the interpreter over phone and video visits. We shared the link to the module with **33** internal medicine interns via email, and they were encouraged to complete the module within a week in place of a one-hour, in-person lecture. Pre and post surveys were integrated at the beginning and end of the module. We found that only **13.8%** of residents felt comfortable providing virtual care to NELP patients at baseline, and while **65.5%** were confident in their ability to access interpreter services for in-person visits, only **20.6%** did so for telehealth encounters. Module completion increased intern reported ability to access interpreter services during telehealth visits by **47.4%.** It also increased overall comfort providing virtual care to NELP patients by **42.2%.** Features that made this module successful for busy trainees were its short duration, self-directed nature, multimedia components that required interaction, and ability to complete “on the go” from any mobile device. **96%** of participants thought the time required to complete the module was reasonable, and **100%** would recommend this learning activity to other residents. In conclusion, while Telehealth promises to increase access to care, it may widen health disparities if physicians are not equipped to use the technology with diverse patient populations. A simple, brief, asynchronous training module can increase physician comfort with caring for NELP patients in Telehealth encounters by improving their ability to access and utilize interpreter services in virtual settings.

Title: Use of a Policy Debate to Teach Residents About Health Care Reform

Presenter here: Mark Hirsch, PhD, FACRM, FPRD
Co-authors here: Vu Q. C. Nguyen, MD, MBA

Objective: To evaluate use of a PM&R resident led debate format1 to develop expertise about the Patient Protection and Affordable Care Act (PPACA).

Setting: Department of Physical Medicine and Rehabilitation at large healthcare system.

Study Design: Data were collected May 9, 2014 before and after non-arbitrated debate led by PM&R resident physicians, through pre and post PPACA knowledge test, and open-ended questions on participants' views of U.S. healthcare reform, using a newly developed instrument on PPACA knowledge that addresses how PPACA may affect U.S. physician practice and health care delivery. Data were analyzed for descriptive statistics and key themes supported by quotes.

Subjects: Convenience sample of 35 subjects (n=10 PM&R faculty, n=11 PM&R resident physicians, n=14 rehabilitation staff) were questioned about U.S. healthcare reform and the PPACA.

Results: Majority of respondents felt the current U.S. health care system is "average" (42%), "poor" (25%), or "failing" (8%) and ~25% respondents expressed PPACA is "a step in the wrong direction". Percentage correct responses (mean±SD) on the PPACA knowledge test was 55.4±19.7 for the pre-test and 60.4±23.2 for the post-test. Responses to open ended questions varied widely.

Conclusion: While approaching a topic as broad as health care reform with the debate format promoted knowledge, reflection and interaction with both the opposing debaters and audience, participants have suboptimal knowledge of PPACA. More research is warranted on use of debate in graduate medical education.

Key Words: Physiatrist, graduate medical education, debate, health care reform

The impact of structured peer-facilitated learning on student performance in clinical anatomy and physiology

McKenna Gallagher, Mary Dover, Blake Jones, Jo Kelly, Ali Satchmei, Eliza Dewey, Thomas Perrault PhD

Wake Forest University School of Medicine, Winston-Salem, NC, US

Background: Teaching, Learning; Developing Recall (TL;DR) is a student group which serves as a peer-facilitated study resource for first-year medical students completing the Clinical Anatomy & Physiology course at Wake Forest University School of Medicine. TL;DR facilitators lead weekly study sessions and host mock practical sessions in preparation for in-house exams. The goal of this program is to develop competency in the anatomy curriculum, as well as in peer-directed education.

Objective: This study aims to describe the structure and functions of TL;DR as a model for potential adoption by other institutions, and to assess the impact of TL;DR participation on student performance in-house exams.

Methods: A retrospective review of 149 first-year MD students' performance on in-house Clinical Anatomy and Physiology exams at Wake Forest University School of Medicine was performed. A one-way ANOVA ($\alpha < 0.05$) with Welch correction and Games-Howell post-hoc tests were conducted to compare performance on the written portion, practical portion, and total combined score on exams amongst mock practical attendees, non-attendees, and TL;DR leadership.

Results: There was a significant difference in score between the three groups for the written portion, practical portion, and total (all $p < 0.05$). Games-Howell post-hoc tests revealed that on the written portion TL;DR leadership performed on average 10% better than mock practical non-attendees ($p < 0.001$), while mock practical attendees performed on average 7% better than non-attendees *($p = 0.002$),* but there was no difference between TL;DR leadership and mock practical attendees. For the practical portion and the total exam score, TL;DR leadership performed 11.5% and 10.5% better than non-attendees ($p < 0.001$, $p < 0.001$), Attendees performed 7.4% and 7.4% better than non-attendees ($p < 0.001$, $p < 0.001$), and TL;DR leadership performed 4.3% and 3.3% better than attendees ($p < 0.001$, $p = 0.006$).

Conclusions: The TL;DR program serves as an effective peer-facilitated study resource, significantly improving student performance in Clinical Anatomy & Physiology exams. These results suggest that similar programs could be successfully implemented at other medical institutions to enhance student learning. Future research should explore the long-term impact of peer-facilitated study groups on knowledge retention and clinical application.

Abstract for 2025 Health Professions Education Institute (HPEI)

Title: From Subjectivity to Standardization: Training Raters for Consistent Assessment of Clinical Judgment

Presenter: Megan Stuhlman, MEd, PhD

Co-authors: Morton, D, MS Avila, C , MSN, Bencken, C, MSN, Buck, P, MSN, Capel, S, MSN Mickens, K, MSN, Noble, J, MSN, Smith, A, DNP, Trent, C, MSN.

Submission Type: MEDICAL EDUCATION RESEARCH

BACKGROUND:

Non-technical skills (NTS) are increasingly recognized as key skills that should be incorporated into pre and post licensure educational programming for healthcare professionals.[1] Clinical judgment skills (CJS) in nursing students and practicing nurses are one example of NTS. CJS are essential for optimizing performance of healthcare teams and ensuring patient safety, and their importance is recognized on the NCLEX licensure exam.[2] However, accurately assessing CJS in nursing students is challenging due to their complexity and subjective interpretation.[3-4] Tanner's (2006)[5] model and Lasater's 11-dimension Clinical Judgment Rubric (LCJR)[6] are key frameworks for evaluating CJS. Even with these frameworks, achieving consistent assessment scores across raters remains difficult due to variability in raters' interpretation, background experiences, and characteristics of the SPEs.[3,7,11] Effective rater training programs are key to providing accurate, consistent assessments.[3,4,7]

OBJECTIVE OF PRESENT STUDY:

We are developing a rating protocol, training program, and multi-media resources to improve rater consistency and accuracy in assessing nursing students' CJS during simulated patient encounters (SPEs) using the LCJR.[6] Our rating protocol uses research-supported practices regarding key training resources, the level at which ratings are made, and the rating scale.[8,9]

METHOD:

A one-group pretest posttest design was used to evaluate the impact of rater training resources.

A novice rater (NR), who was an experienced nurse educator unfamiliar with LCJR, initially coded five randomly selected video recordings with the original LCJR rubric using a 7-point behaviorally anchored rating scale (BARS). After 10 hours of training and using our developed materials, the NR coded 18 new videos using an expanded version of the 7-point BARS. Inter-rater reliability (IRR) between the NR and members of the development team was assessed at intervals of 4-5 videos using:

- Percent agreement within a 1-point interval
- Intraclass Correlation Coefficients (ICCs; two-way mixed, absolute) for both single (2,1) and average (2, k) measures to address reliability of scores resulting from a single rating and when averaging multiple ratings

RESULTS:

Pre-training assessments showed poor agreement with trained raters (low/negative ICCs, 58% adjacent agreement). Post-training, agreement improved significantly for all dimensions except "Commitment to Improvement," with:

- 86% agreement within a +/- 1-point interval
- Mean $ICC_{average}$ = 0.85 (range: 0.62–0.89), indicating "good" to "excellent" reliability[10]
- Mean ICC_{single} = 0.74 (range: 0.45–0.80), indicating "fair" to "excellent" reliability[10]

CONCLUSIONS, LIMITATIONS & NEXT STEPS:

Our initial efforts to improve IRR for a NR with content expertise were successful in that IRR thresholds were met after initial training + rating 14 videos. Current limitations being addressed in ongoing work include: time required for rater training, testing limits of degree of content expertise needed, and validating ratings against meaningful external criteria.

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Health Professions Education Institute (HPEI)

Abstract submission template

Title here: NBME Obstetrics and Gynecology Subject Exam: Medical Student Preparation and Performance

Presenter here: Meghan Valentine, MD

Co-authors here: Jessica McPherson, MD, Tasha Gill, PhD

MEDICAL EDUCATION RESEARCH

Background: Clerkship grades have historically been a key component of medical student competitiveness during the residency application process. In 2022, the USMLE Step 1 Score was changed to pass fail.[1] Arguably, this change resulted in residency programs placing greater emphasis on clerkship grades when selecting applicants. A recent national survey of Ob/Gyn clerkship directors found that 87.6% of clerkships used a combination of factors, such as clinical performance, written examination, and other items to determine clerkship grades. In looking at use of the National Board of Medical Education (NBME) Ob/Gyn subject exam, 69.3% of Ob/Gyn clerkships used a NBME examination score threshold to pass the clerkship, and 35% used a NBME examination score threshold to achieve the highest grade in the clerkship.[2] Similarly, the majority (92%) of clerkships, in all specialties, require a passing NMBE score threshold in order to complete the clerkship.[3] Despite clear emphasis being placed on this objective assessment of student performance within the third-year Ob/Gyn clerkship, there remains a paucity of data to guide medical student preparation for the examination. A variety of study materials exist, including question banks, NBME subject-based practice exams, textbooks, journal articles, online databases, and podcasts. Prior research has shown that on average, students use 3-6 resources per clerkship to study for the NBME and that resource usage depends on availability.[4] The most commonly used resources include question banks, online databases, and board review or test preparation books.[5] However, it remains unclear if use of specific resources, or a combination of resources, is associated with better performance on the NBME. In this study, we hope to better understand what resources medical students are using to prepare for the Ob/Gyn NMBE subject exam; and if there is any correlation with the resources used and NBME performance.

Objectives: To evaluate the correlation between resources used in preparation for the NBME Ob/Gyn subject exam and student performance.

Methods/Design: A retrospective cohort study of third-year medical students at a single academic institution between March 1, 2024 and March 1, 2025. Survey responses were matched with exam scores. Resource usage and subject exam scores were assessed using

Pearson correlation coefficient (r).

Results: Of the 97 medical students (response rate: 72%), the majority of students were aged 20-25 (60.82%) and female (59.79%). While all students completed the practice exam, 74.23% completed ≥4 practice exams. Practice exam scores were significantly correlated with final exam scores (r=0.37, p=0.0003). Nearly 95% of students used a question bank and 59% used the practice exam as their primary resources. Over 90% of students ranked both resources as very-highly useful. Conversely, 78% of students did not use case-based books, while 91% avoided traditional textbooks. Resource usage and exam scores were not correlated. There was a weak negative correlation between the number of resources used and final exam score, however this was not statistically significant (r=-0.19, p=0.07). Nearly all students used UWorld as their primary question bank (96.77%), followed by APGO UWise as a secondary resource (55.91%). Students who ranked AMBOSS as a lower priority resource demonstrated higher final exam scores (r=0.39, p=0.04).

Conclusions: Resource usage was not correlated with subject exam scores. Future studies should examine whether students struggling with the NBME Ob/Gyn subject exam use these preparatory resources differently and the validity of subject exam question banks.

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Title: Surgical Education in OBGYN: Enhancing Faculty Professional Fulfillment and Teaching Strategies through Mentorship and the Brief Intraoperative Debriefing (BID) Model

Authors: Melissa B Woolworth, MD, Patrick R Teefey, MD, Cecile Ferrando, MD, Jessica Opoku-Anane, MD, Lynn Amy Boardman, MD

Background: The operating room (OR) is a high stakes learning environment, yet few faculty have formal training in surgical education. Previous studies have found that excellent surgical educators are experienced, knowledgeable, and preserve learner autonomy while promoting a safe, calm, and respectful environment. A study exploring junior general surgery faculty found that utilization of the briefing, intraoperative teaching, and debriefing (BID) model improved resident-perceived teaching skills. However, studies have not examined the BID model in gynecologic surgical education.

Objectives: To assess the impact of a structured mentorship program utilizing the BID model for surgical education of residents among academic gynecologists.

Study Design: This was a prospective study of faculty gynecologists at two academic centers. Self-identified mentees or mentors were randomly paired. Mentees were filmed teaching residents during three operations. Paired mentors reviewed the cases and provided feedback on surgical teaching techniques. All participants completed pre- and post-surveys and feedback assessments for each surgery performed. Thematic analysis of qualitative data was performed. Student's t-test was conducted to assess differences in pre- and post-surveys.

Results: There were 12 mentor-mentee pairs. Mentees were junior faculty with 83% being ≤5 years post-training. Conversely, 92% of mentors had ≥10 years of experience. Only one mentee had prior formal surgical educational training compared to 33% of mentors. Regarding motivation to participate in the study, 83% of mentees aimed to improve their surgical teaching skills, while professional development was a primary goal for 67% of mentors. Among mentees, there was a statistically significant improvement in patience (3.83±0.83 vs 4.42±0.67; p=0.01) and overall confidence in their teaching ability (3.50±0.67 vs 4.42±0.51; p=0.002). While not statistically significant, mentees reported increased professional fulfillment and enjoyment in teaching over

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the course of this study. Common themes from post-operative assessments were clear communication, pre-operative goal setting, and resident autonomy.

Discussion: The BID model provided a shared mental model for intraoperative teaching allowing mentees to improve patience and confidence. After completing the program, participants felt more professional fulfillment and enjoyment. Future research should explore the impact of a surgical education mentorship program on OBGYN residents' perceptions of the learning environment and faculty teaching effectiveness.

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Health Professions Education Institute (HPEI)

Title here: Optimizing Canvas Usability: Enhancing Navigation, Accessibility, Engagement, and Personalization for Student and Faculty Success

Presenter here: Dr. Mendy Ingiaimo

Co-authors here: Brittany Browning, Scott Nolt, Taylor Elkins

CURRICULAR INNOVATIONS

Problem/Needs Assessment

As digital education continues to evolve, Learning Management Systems (LMS) cannot keep pace with the demand from faculty and students for usability, accessibility engagement, and personalization. Course designs suffer from poor navigation, erratic course structures, and lengthy, disorganized material, leading to low satisfaction for both students and faculty. On the other hand, a consistent and reliable course structure with enhanced organization can greatly improve the student experience and provide a structure that can lead to greater faculty efficiency.

Program Objectives

This innovative educational project seeks to:

- Improve usability and accessibility by enhancing navigation and ensuring consistency in course homepages.
- Merge instructor-directed mechanisms that furnish effective oversight of course management.
- Employ technology to craft increasingly individualized educational journeys and boost student involvement.
- Make use of tools from Cidi Labs to improve the function and uniformity of Canvas pages.
- Utilize data from the technology needs assessment.

- Administer a survey to faculty and students to confirm the accuracy of the new Canvas site redesign.

Description of Program

This initiative improves the usability of Canvas by providing tools such as DesignPLUS, which aids navigation, content structuring, and consistency. It has three major components:

1. Enhancing Navigation: - Uniform standard homepages for courses that have coherent layouts, structures that are simple to navigate, and clear, unmistakable expectations.
2. Personalization: - Aspects that capture student interest and connect the student to the course material and facilitator.
3. Faculty & Student Engagement: - Interactive tools, discussion forums, and multimedia resources.

Evaluation/Assessment

Student Survey - These surveys target the usability, engagement, and satisfaction of the learner when faced with a redesigned, consistent course and navigation structure.

Face-to-Face Student Feedback Session – This allowed students to verbalize their thoughts on the new design and to advocate for certain functionality.

Faculty Survey – These surveys target the ease of use for course directors and facilitators.

Technology Needs Assessment – This data provides feedback from students and faculty on various technology platforms.

Conclusions and Lessons Learned

Navigation, organization and personalization improves with the redesign of Canvas pages. A consistent experience increases student confidence in navigating coursework. This new design and navigation have resulted in greater student and faculty satisfaction. Additionally, AI integration will be essential within the LMS. Future steps include continued

monitoring of usability metrics and feedback analysis over the next two years as upgrades are scaled across campuses.

Health Professions Education Institute (HPEI)

Abstract submission template

Title: The Leaking Nitrous Oxide - Not a Laughing Gas Anymore!

Presenter: Mia Guzynski, *Wake Forest University School of Medicine, M3*

Co-authors: Sandeep Narayan, MD; *Scope Anesthesia of North Carolina*

MEDICAL EDUCATION RESEARCH

Background: Anesthetic gases are not metabolized by patients and are released directly from hospitals into the environment where they exhibit potent greenhouse gas effects. Compressed gases, like nitrous oxide (N_2O), are commonly stored in a central tank and delivered through pipes in facility walls to the anesthetic ventilators. Several reports have shown that these pipelines leak 70-90% of the N_2O before usage.

Objectives: This project sought to firstly, determine the leak rate of nitrous oxide at Carolinas Medical Center, Main Campus in North Carolina and secondly to determine the impact of a sustainability education lecture regarding anesthetic gas usage.

Methods/Design: Purchase and utilization data was analyzed to determine the leak rate. 719,264 liters of nitrous oxide was purchased for 2023. Clinical usage data for the year was calculated based on a 6-month data model of anesthesia records of the main operating rooms and estimations of clinical usage for areas of the hospital using paper records. The monthly percentage of adult cases using N_2O before and after a sustainability education lecture was obtained from the health records system.

Results: Only 100,000 liters of N_2O was clinically accounted for compared to the 719,264 purchased, showing a clinical usage rate of only 14%, and a leak rate of 84%. Carolinas Medical Center's N_2O leak rate is comparable to other reported facilities. Rates of usage of N_2O after the sustainability education lecture were significantly lower than pre-lecture rates and have remained below 10% utilization for over a year following the event.

Conclusions: Decommissioning existing central pipelines and transition towards cylinders attached to each anesthesia machine could reduce anesthetic gas wastage and reduce associated environmental impacts. The educational event surrounding sustainability resulted in a long-term decrease in N_2O usage.

Health Professions Education Institute (HPEI)

Abstract types & submission instructions

Directions: please provide an abstract of your teaching scholarship according to the following specifications. To be considered for acceptance, you must limit the body of your abstract to **350 words** (12 pt font/ 1.5 spacing), exclusive of headings, title, presenter, authors, or references. Abstracts are encouraged from faculty, staff, graduate students, fellows, residents, interns, or students.

Submissions to the "Medical Education Research" and "Curricular Innovations" should be completed projects with demonstrable outcomes data either in the form of outcomes data (e.g. research abstracts) or evaluation/assessment data (e.g. curricular innovation).

Body of Abstract (approximately 350 words):

Title: Pilot of a longitudinal, embedded subspecialty-primary care collaborative teaching program

Authors: Michelle Curtin DO, Olivia R. Little , Kyra M. Porter & Andrea Triplett MD

Submission type: **MEDICAL EDUCATION RESEARCH**

Background: Subspecialty workforce shortages and rising patient populations have created critical need to increase physician competency with serving children and adolescents with neurodevelopmental disabilities (NDDs) within primary care settings.

Objectives: Investigate the impact of a pilot, longitudinal consultation and educational program on the evaluation and management of pediatric patients with NDDs cared for by pediatric residents.

Methods/Design: Within a pediatric resident training clinic, a collocated subspecialty consultant provided a didactic educational session at the start of the clinic session. Subsequently, this subspecialist provided real-time, in-person consultation services including case formulation, diagnosis, screening tool use, and tailored recommendations to residents caring for patients with NDD and similar diagnoses. Additional educational interventions were also provided (e.g., direct observations, specialty physical exam). Program impact was evaluated with descriptive statistics of consult frequency, recommendations, and orders placed by the resident.

Results: From 2/2024-10/2024 across 27 half day sessions, 36/68 residents (53%) used the consult service for 82 patients, 20 (21%) of whom received new diagnosis. All residents received didactic education. Second-year residents (43%) requested the most consults, followed by first-years (35%) and third-years (22%). The majority of these residents requested either 1 or 2 consults each (44% and 28%, respectively) with 7 residents (19%) requesting 3 consults each and only 3 residents (8%) utilizing >5 consults each.

To evaluate the follow-through by residents on subspecialist recommendations, frequency of recommendations made in 4 categories were compared to the frequency at which they were ordered by residents: further specialty evaluation (100%), developmental therapies (77%), behavioral therapy (50%), and genetic testing (50%).

Conclusions: The co-located consult service was well-utilized, with over half of residents requesting at least one consult, though few residents were frequent users. Implementation of consultant recommendations was variable, though this may have been impacted by family treatment preference or other unknown circumstances. Limitations include single site study and inability to track virtual consultations. To assess educational impact, future steps include assessing adherence to guideline recommendations by those residents who are heavy users of the consult service when caring for patients independently.

Health Professions Education Institute (HPEI) Curricular Innovations Works in Progress Abstract Submission

Title: Child Protection Education for Medical Trainees

Presenter: Nicole Barrett, MD

Co-author: Kendra Ham, MD

Background/Needs Assessment

More than 550,000 children in the United States are victims of child maltreatment each year.[1] However, pediatric residents and pediatric emergency medicine (PEM) fellows receive minimal exposure to child abuse pediatrics[2,3] and trainee knowledge of child maltreatment topics is low.[4] The evaluation of children with suspected child maltreatment is comprehensive, with a single patient encounter lasting several hours. Thus, hands-on clinical experiences, while valuable, are limited. An innovative curriculum for trainees is needed to address knowledge gaps of this unique subspecialty in the setting of inconsistent clinical experiences.

Objectives

To improve pediatric resident and PEM fellow knowledge and awareness of child maltreatment.

Description of Program

Goals of the rotation will be updated to coincide with the ACGME Core Competencies[5] and objectives will be updated to reflect board specifications.[6,7] Instructional strategies will be provided for each objective, to include reading up-to-date literature, completing Evidentia and Kahoot learning modules, in-person didactics, and meetings with community partners, in addition to traditional outpatient and inpatient clinical encounters. A schedule will be provided for the various electives (2-week vs. 4-week, resident vs. fellow) to complete during the learner's non-clinical time. Opportunities for self-assessment of competence will be provided, including self-assessment quizzes, discussion with faculty members, and completion of worksheets.

Anticipated Results/Evaluation Plan

In addition to self-assessment, each learner will be required to complete anonymous 12 question pre-tests and post-tests related to the identified goals and objectives. The difference in average scores of

pre-tests and post-tests will be calculated and tested for statistical significance. At the completion of the rotation, formative feedback will be given of both the learner and the rotation in the form of anonymous Microsoft Forms and face-to-face meetings. This will serve as a qualitative measure of improvement in learner knowledge and awareness, as well as opportunities for improvement in the curriculum.

Next Steps

Next steps include implementing the curriculum with pediatric residents and PEM fellows, expanding to include a medical student rotation, and modifying the curriculum based off commonly missed questions on the pre- and post-tests and learner feedback.

References

1. U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2019). *Child Maltreatment 2022*
2. *ACGME Program Requirements for Graduate Medical Education in Pediatrics*. Accessed February 5, 2025. https://www.acgme.org/globalassets/pfassets/programrequirements/2025-prs/320_pediatrics_2025.pdf
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4. Dubow SR, Giardino AP, Christian CW, Johnson CF. Do pediatric chief residents recognize details of prepubertal female genital anatomy: a national survey. *Child Abuse Negl*. 2005;29(2):195-205. doi:10.1016/j.chiabu.2004.03.017
5. ACGME Core Competencies | The American Board of Pediatrics. www.abp.org. https://www.abp.org/content/acgme-core-competencies
6. *General Pediatrics Content Outline In-Training, Certification, and Maintenance of Certification Exams*. https://www.abp.org/sites/public/files/pdf/content-outline-general-pediatrics-2024.pdf
7. *Pediatric Emergency Medicine Content Outline.* https://www.abp.org/sites/abp/files/pdf/content-outline-emergency-medicine.pdf

Health Professions Education Institute (HPEI)

Abstract submission template

Title here: Establishing a Psychiatry Resident Liaison to Improve Fourth Year Medical Student Engagement and Communication

Presenter here: Omari Baines-Waiz, D.O.

Co-authors here: Rodney Villanueva, M.D.

WORKS IN PROGRESS

Background/Needs Assessment: Fourth-year medical students often choose psychiatry rotations at our institution because they are interested in applying for the Atrium Health psychiatry residency program. However, their understanding of the program is typically shaped by informal resident interactions rather than structured mentorship. To bridge this gap, we propose a Psychiatry Resident Liaison position to provide these students with a dedicated point of contact for mentorship, guidance in the field of psychiatry, and program-related questions. This role, to be filled by a psychiatry resident, aims to improve communication, enhance student engagement, and offer residents a structured opportunity to participate in undergraduate medical education.

Objectives:

- Assess the need for a resident liaison position from the perspectives of current residents and previous fourth year medical students.
- Define the role and responsibilities of the resident liaison.
- Identify communication gaps related to scheduling, didactics, and program expectations for visiting students.

Methods/Description of Program: A needs assessment survey was distributed to current psychiatry residents and previous fourth-year medical students. The surveys included seven questions using a combination of Likert scale, multiple-choice, and open-ended formats to explore experiences with communication, mentorship, and logistical challenges during the psychiatry rotation. The results will be analyzed to determine whether a structured liaison role is necessary, what responsibilities it should entail, and how the position should be selected.

Anticipated Results/Evaluation Plan: We anticipate that the survey will reveal key communication barriers between residents and medical students, reinforcing the need for a designated liaison. The data will guide the formalization of the position, ensuring it addresses student concerns while integrating smoothly into resident responsibilities.

Next Steps: If the needs assessment supports the creation of a resident liaison position, the role will be implemented for the next academic year. Based on the needs assessment, responsibilities of the liaison will be delineated and the method of section for the liaison will be implemented. This initiative is expected to enhance visiting student engagement with the program, improve mentorship opportunities, and provide residents with meaningful involvement in undergraduate medical education. Feedback on

how the utility and benefit of the liaison will be obtained via surveys given to the fourth-year students at the end of each rotation block.

Formal leadership curriculum for surgical residents, fellows and attendings: Supporting non-technical skill acquisition

Peter M. Waters MD MMSc, Steven L. Frick MD, Joshua C. Patt MD, Rebecca E. Glavin MBA LCSW, Brian P. Scannell MD

BACKGROUND/NEEDS ASSESSMENT: Non-technical surgical skills are important, yet rarely formally taught, with limited educational endeavors to improve leadership skills and emotional intelligence in surgical training programs. In 2017, a leadership course was initiated for residents and fellows at Boston Children's Hospital/Harvard Medical School. The program was extended to surgical residents, fellows and attendings at Atrium Health Musculoskeletal Institute, OrthoCarolina, Wake Forest University, Stanford University, University of Toronto, and the Pediatric Orthopaedic Society of North America.

PROGRAM OBJECTIVES: To grow participants' self-awareness and emotional intelligence, leadership and team based skill development through formal educationaL programming.

DESCRIPTION OF PROGRAM: The customizable program ranges from 4 to 12 sessions annually. Topics include Leadership Styles; Communication Styles and Personality; Maximizing Elite Performance; Volatile, Uncertain, Complex, Ambiguous situations; Surgical Complications/Second Victim; and Building Multi-Talented Teams. The program utilizes the PRISM personality and conflict management style assessment and provides written and video content through SurePeople's external platform. Participants' leadership knowledge and expertise grows by discussing and reflecting in a seminar format; studying leadership and management skills with pre- and in-seminar session assignments as individuals and teams; and open professional dialogue with peers and faculty.

EVALUATION/ASSESSMENT: Evaluations at the beginning and end of the course include responses to clinical vignettes approximating real surgical events (i.e. incorrect consent form, patient with excessive bleeding, drug reaction) , scored by validated non-technical surgical skills tool (NOTSS), and 360 degree feedback on leadership effectiveness through the Sure People platform. Simulation testing of operating room non -technical skills, and direct observation in the operating room are used in advanced courses.Most sessions require submitted reflections such as leadership philosophies, disruptive leadership experiences, complications and second victim risks.

ANTICIPATED RESULTS/EVALUATION PLAN: Initial data show increased non-technical skill awareness and application in the pre and post clinical vignettes collected using the NOTSS. Pre versus post 360 feedback for attendings show participants' leadership skills improved from their direct reports' point of view, but supervisors and peers did not notice changes. Participant feedback has been highly favorable.

CONCLUSIONS AND LESSONS LEARNED: Future studies are needed to compare clinical vignettes, 360 feedback and pre/post course surveys to assess the effectiveness for each subset of participants: residents, fellows and attendings. Future analyses can also include Qualitative Analyses of vignettes submitted as pre and post session work. The course can be modified to fit the departments' needs varying in length (4, 6 or 12 sessions) and in modality (in-person, virtual or hybrid). This type of education is not common in Graduate Medical Education. Residents, Fellows, and Attending Physicians value the program's furthering their skills and careers.

Health Professions Education Institute (HPEI)

Please type your title and then utilize the headings within the appropriate abstract type.

Title here:

Teaching, Collegiality, and Patient Care: What Students Value Most in Psychiatry Clerkships

Presenter here: **Predrag Gligorovic, MD, MHA, DFAPA**

Co-authors here: **Predrag Gligorovic, MD, MHA, DFAPA, Kaushal Shah, MD, MPH, MBA**

MEDICAL EDUCATION RESEARCH

Background:

After completing psychiatry clerkship, MS3 students at WFSOM provide feedback through an 18-question standardized survey (1,2). Analysis of their responses revealed that students identified a wide range of experiences as their "best educational experience" during the clerkship, highlighting the diverse impact of the rotation on their learning. A total of 18 unique categories emerged from the collected responses.

Objectives:

This study aimed to identify and categorize the "best educational experience" in the psychiatry clerkship and assess patterns in student preferences across multiple rotation groups.

Methods:

We examined responses to Question 2 (Q2) of the post-clerkship survey from 479 students across 50 MS3 psychiatry clerkship rotations between 05/14/2018 - 03/08/2020 and 03/06/2023 - 11/24/2024. These rotations were unaffected by the COVID-19 pandemic and provided a consistent 4-week structure, including one-week rotations in adult inpatient psychiatry, child inpatient psychiatry, consultation-liaison (C/L) psychiatry, and psychiatric emergency

department (ED) services. Additional embedded experiences included electroconvulsive therapy (ECT), intensive outpatient (IOP), partial hospitalization programs (PHP), transcranial magnetic stimulation (TMS), and HOPE programs. A total of 810 responses were collected and grouped into 18 categories based on thematic similarities. If students identified multiple aspects, such as inpatient adult and IOP, both responses were recorded as significant learning experiences.

Results:

Eighteen distinct themes emerged from the analysis. The most frequently cited experiences included:

Resident teaching and collegiality (121/810, 15%)

Inpatient child psychiatry unit (101/810, 12%)

Clerkship welcoming culture and lectures (92/810, 11%)

Inpatient adult psychiatry unit (83/810, 10%)

Independent learning opportunities (interviewing, phone calls, participating) with residents and attending support (58/810, 7%)

Additional valued experiences included exposure to ECT, IOP, C/L services, ED rotations, and hands-on clinical coaching.

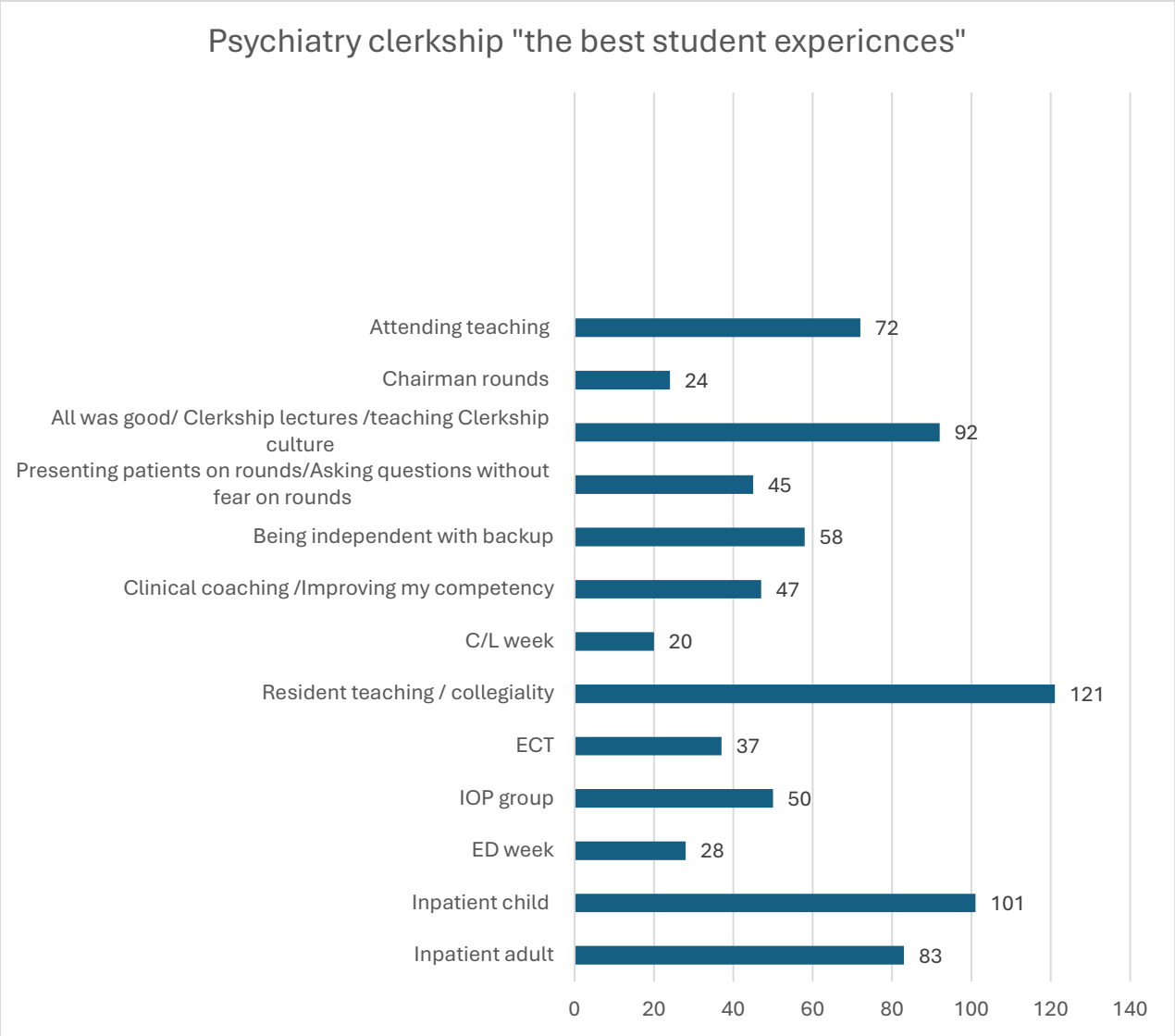
Table 1

Inpatient adult	83
Inpatient child	101
ED week	28
IOP group	50
ECT	37
TMS	4
Resident teaching/ collegiality	121
C/L week	20
Clinical coaching/Improving my competency	47

Being independent with backup	58
Presenting patients on rounds/Asking questions without fear on rounds	45
All was good/Clerkship lectures /teaching Clerkship culture	92
Chairman rounds	24
Attending teaching	72
Student case presentations/discussion	7
HOPE	6
PHP partial hospitalization program	5
Outpatient	10

number of rotations 12+ 12+ 12 + 14 number of students 479	Y20 116	Y21 143	Y25 141	Y26 79	Total
Inpatient adult	15	19	29	20	83
Inpatient child	16	44	17	24	101
ED week	5	12	7	4	28
IOP group	23	12	10	5	50
ECT	16	13	8		37
TMS			4		4
Resident teaching / collegiality	29	37	35	20	121
C/L week	2	11	3	4	20
Clinical coaching /Improving my competency	13	13	8	13	47
Being independent with backup	6	19	20	13	58
Presenting patients on rounds/Asking questions without fear on rounds	6	14	13	12	45
All was good/ Clerkship lectures /teaching Clerkship culture	15	19	36	22	92
Chairman rounds	15	8	1		24

Attending teaching	11	20	27	14	72
Student case presentations/ discussion	1	2	3	1	7
HOPE			3	3	6
PHP partial hospitalization program			5		5
Outpatient	2	3	2	3	10



Conclusions:

Despite the standardized nature of the psychiatry clerkship, students identified different aspects as their "best educational experience," reflecting the individuality of learning preferences (2). While all students participated in the same structured educational program, their responses highlighted the significance of teacher-student interactions, collegiality, and patient-centered experiences in shaping their perception of the rotation. These findings underscore the need to view each student as a unique learner and tailor educational strategies to foster engagement and enhance the learning experience (3,4).

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3. Weyant-Cheeseman ME, Abrams MP, Toselli N, Castiglioni A. Understanding learners' experiences across three major transitions in undergraduate medical education. *BMC Med Educ*. 2024;24(1):748. Published 2024 Jul 11. doi:10.1186/s12909-024-05422-1
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WORKS IN PROGRESS

Breaking the Silence: Using AI Generated Case-Scenarios Based on Landmark Court Decisions Regarding Patient Confidentiality

Rodney Villanueva, M.D.

Bradford Hutcheson, M.D.

Background:

Forensic psychiatry education for medical students is inconsistent, despite its importance, due to resource and curricular limitations. A survey in the mid 1980's showed that courses or modules on forensic psychiatry were not commonly offered in US medical schools.[1] While medical school curricula have changed since the mid 1980's there is a relative dearth of more recent comprehensive surveys that examine the availability of courses on forensic psychiatry at the medical student level. This makes it difficult to accurately assess the state of forensic psychiatry education for medical students. This is problematic given physicians' need to understand patient confidentiality's legal and ethical complexities. To address this, an innovative educational intervention using landmark legal cases and realistic clinical scenarios was developed. This project proposes enhancing this approach with AI-generated scenarios, prompting student discussion and nuanced decision-making around confidentiality breaches by presenting compelling arguments for and against disclosure.

1Felthous AR, Miller RD. Teaching forensic psychiatry to medical students. *J Forensic Sci*. 1989;34(4):871-880.

Objectives:

1.Recognize 3 landmark cases that involve patient confidentiality

2.Explain at least 3 ways in which landmark legal case decisions relate to cases regarding breaching confidentiality.

3.Implement knowledge of the landmark cases in at least one hypothetical clinical vignette where maintaining patient confidentiality is in question.

4. Rate as valuable this learning activity for increasing awareness of forensic psychiatry

Methods:

This activity, designed to improve medical students' understanding of patient confidentiality, adapts Thomas et al.'s curriculum development method[2] and incorporates elements from the "Take a Stand" activity.[3] Third year medical students in their psychiatry clerkship will take part in the activity and the duration is open ended. Forensic psychiatrists identified three key cases (Tarasoff[4], Jaffee[5], Doe v. Roe [1977][6]). AI generated ethically ambiguous clinical vignettes based on these cases, which were reviewed for appropriateness and bias. The case scenarios were generated using the Gemini AI platform. For each landmark case, Gemini was asked: *"Generate a simulated legal case scenario based on the [name of landmark case] decision. Make the case ambiguous so that there is no obvious outcome."* Students, after reviewing case summaries, role-play physicians, debating whether to breach confidentiality, considering impacts on all stakeholders. Facilitators guide discussion and can introduce new facts to challenge student perspectives.

2 Thomas PA, Kern DE, Hughes MT, Chen BY. Curriculum Development for Medical Education: a Six-Step Approach. 3rd ed. Baltimore, MD: Johns Hopkins University Press; 2016.

3 https://pz.harvard.edu/sites/default/files/Take%20a%20Stand%20-%20Educator%20Guide.pdf

4Tarasoff v. Regents of the University of California, 12 Cal.3d 425, 131 Cal. Rptr. 14,551 P.2d 334 (1976).

5 Jaffee v. Redmond, 518 U.S. 1 (1996)

5 Doe v. Roe 93 Misc. 2d 201, 400 N.Y.S.2d 668 (1977)

Anticipated results:

This learning activity aims to enhance medical students' understanding of patient confidentiality, especially within forensic psychiatry. By analyzing legal cases and AI-generated scenarios, students develop critical thinking skills and learn to balance ethical and legal considerations. Active learning and discussion promote nuanced reasoning and informed decision-making. Exposure to complex scenarios may also increase interest in forensic psychiatry, ultimately contributing to more competent and ethical practice.

Next Steps:

This project anticipates improved medical student understanding of patient confidentiality, evidenced by increased knowledge of landmark cases and their application in clinical scenarios. Enhanced critical thinking, ethical reasoning, and potential interest in forensic psychiatry are expected, contributing to more competent practice. Next steps include data analysis from pre/post tests and questionnaires, dissemination of findings, and potential curriculum integration. Further research will explore long-term impact, AI scenario design, and comparisons with other teaching methods. Feedback and data will drive refinement of the activity.

Health Professions Education Institute (HPEI)

Abstract submission template

Please type your title and then utilize the headings within the appropriate abstract type.

Delete submission types that are not relevant to your submission

Title here: Crafting Your Story: Guidelines for Helping Medical Students Highlight Their Lived Experiences when Applying to Psychiatry Residency Programs

Presenter here: Rodney Villanueva, M.D.

Co-authors here: Rikera Curry, M.D.

WORKS IN PROGRESS

Background/Needs Assessment:

The Supreme Court's recent ruling on affirmative action (Students for Fair Admissions, Inc. (SFFA) v. President & Fellows of Harvard College (Harvard) and SFFA v. University of North Carolina (UNC), Nos. 20-1199 & 21-707) has the potential to have significant impacts on diversity of the future psychiatric workforce. As of June 2023, the consideration of race and ethnicity in higher education admissions has been deemed unconstitutional. With studies showing that a diverse workforce contributes to positive patient outcomes, psychiatry residency programs will need to utilize a holistic review while also considering how an applicant's protected class (race, ethnicity, gender, sexual orientation, etc.) may contribute to the diversity that residents bring to psychiatry residency. This workshop will provide guidelines on how medical students can identify and explain how their lived experiences will contribute to their ability to provide culturally competent patient-centered care.

Objectives:

1.Explain the Supreme Court ruling in the following cases: Students for Fair Admissions, Inc. (SFFA) v. President & Fellows of Harvard College (Harvard) and SFFA v. University of North Carolina (UNC), Nos. 20-1199 & 21-707

2.Interpret the impact that the rulings may have on medical student applications to residencies

3.Explain the role of the personal statement in the holistic review process of resident selection

4.Construct a personal statement that highlights how a students' lived experience makes them a compelling applicant for residency programs

5.Implement the skills learned in this workshop in advising medical students applying to psychiatry residency programs

Methods/Description of Program:

We will begin the workshop by reviewing results from a literature review on the impact of a diverse workforce on patient care outcomes. We will then discuss how various lived experiences may contribute to the diversity within a residency program. Feedback will be analyzed from an informal survey sent to program directors regarding how the personal statement has been used to maintain diversity within their programs. Next, we will discuss results from a literature review on the components that make up a strong residency personal statement. After we will outline the process of creating a personal statement that highlights how an applicant's lived experiences will impact their ability to provide culturally competent care to diverse patient populations. Attendees will then develop the introductory paragraph, summary paragraph, and an outline of talking points to be included within the body of a sample personal statement. These personal statements will be shared with other attendees who will then provide peer feedback on how compelling the statements are in making the case for the applicant to be a desirable candidate for residency. Finally, we will discuss the process of reviewing and providing guidance to medical students that will ensure that their personal statements emphasize their diverse lived experiences

Anticipated Results/Evaluation Plan:

Affirmative action has historically been used in admission decisions to foster diversity within healthcare systems by increasing representation of underrepresented minority groups. A literature review was conducted regarding the impact of diversity on positive patient outcomes. Per findings, diversity impacts health equity and improves access to care in underserved and minority populations. Studies have shown that life expectancy improves for minority groups when they are treated by diverse healthcare teams given improved communication, trust, and comfort level between patients and their providers.

The personal statement is a required component of a residency application. Applicants can use the personal statement to describe their desire to enter a certain specialty and commitment to the specialty through experiences prior to and during medical school. Per review of literature, there has been limited official guidance regarding what components are important to include in the essay. Current literature indicates that a personal statement should be concise and highlight unique personal qualities, thoughtful consideration of career choice, and provide emphasis on short- and long-term goals.

In previous surveys, program directors have reported that they value honesty and demonstration of professionalism within the statement and often use it to guide interview talking points. An informal survey was sent out to program directors through the AADPRT (American Association of Directors of Psychiatric Residency Training) Listserv to assess how they have used personal statements to maintain diversity within their training programs. Survey results were analyzed and used to develop the personal statement workshop that will offer guidance for how medical students can highlight diversity in their personal statement by emphasizing their lived experiences.

On the day that the workshop will be given, we will give the participants a pre-workshop and post-workshop survey to understand their perceptions of the personal statement and how emphasizing lived experiences might help convey to psychiatry residencies that applicants are compelling candidates based on their qualities, knowledge, and response to adversity.

Commented [RV1]: I added this paragraph

Next Steps:

The Supreme Court has recently ruled that consideration of race and ethnicity in admissions decisions is unconstitutional. This ruling has the potential to have profound impacts on diversity within residency programs and the future makeup of the United States healthcare workforce. In previous years, affirmative action has been used to increase representation of under-represented minorities in higher education. Representation is important because studies show that a diverse workforce leads to positive patient outcomes through improved access to culturally competent care. The personal statement is a tool that can be used to highlight diversity through unique lived experiences. There is currently limited guidance for medical students and their advisors on how to create an effective personal statement. Considering the supreme court ruling and the need to maintain diversity within healthcare, we are proposing a workshop that offers a framework for the creation of a personal statement that details consequential experiences that will impact the care that future physicians are equipped to provide. We anticipate that through highlighting these experiences, program directors will have an improved understanding of how applicants from diverse backgrounds will serve as positive additions to their residency program and contribute to improved patient outcomes in their respective communities. The effectiveness of the workshop will be assessed by post workshop surveys.

Health Professions Education Institute (HPEI)

Abstract submission template

Title here:
Better Together: Investigating Impacts of Relatedness Interventions on Pediatric Resident Scholarship Engagement

Presenter here:
Ryan Wolf, MD

Co-authors here:
Ashley Strahley, MPH, Kimberly Montez, MD, MPH, Jeanna Auriemma, MD, Stephen Downs, MD, MS
Elizabeth E. Halvorson, MD, MS, Laurie W. Albertini, MD, John Darby, MD.

MEDICAL EDUCATION RESEARCH

Background:
The Accreditation Council for Graduate Medical Education requires that "residents must participate in scholarship" as a core component of pediatric residency. Building on the work of others, our program designed a resident scholarship program using Self-Determination Theory (SDT) as a guiding framework. Anticipating generational needs, we developed our program with a particular focus on relatedness, the basic psychological need for human connection and social belonging.

Objectives:
The objective of this study was to qualitatively explore the experience of collaboration and feelings of relatedness during pediatric residents' scholarly projects.

Methods/Design:
Through an iterative process, we developed an interview guide based on review of the literature and using SDT. Eligible pediatric residents were recruited by email and included those with a completed or near completed scholarly project. Renumeration included $10 coffee gift cards. Semi-structured interviews were conducted by a trained interviewer, audio recorded, transcribed, and de-identified. A codebook was developed inductively, and each transcript was coded independently by two investigators (RW, AS, JD). Coding discrepancies were resolved via consensus. A thematic analysis identified emerging themes.

Results:
Thirteen pediatric residents completed semi-structured interviews, the majority of whom were post-graduate year three (1 PGY-2, 12 PGY-3). We identified several emerging themes: (1) personal connection with collaborators facilitated project work; (2) project collaborations facilitated new personal connections; (3) busy and/or conflicting collaborator schedules challenged project progress; (4) division of responsibilities between collaborators helped maintain project momentum; (5) residents valued having multiple perspectives on a project; and (6) collaborators provided valuable guidance on the research process and helped residents set realistic project expectations.

Conclusions:
Pediatric Residents participating in scholarly projects valued collaborations and felt that factors influencing relatedness and personal connections influenced project work. Our study offers insights into the need for social connectedness during the pursuit of scholarship in residency.

Theme	Illustrative Quotations
Personal connection with collaborators facilitated project progress	*"[…] with the fellow that I did have that stronger connection to, if I had had a particularly long day or something like that and didn't necessarily feel like doing any screenings, I would give that a second thought and try to push through it to help my team leader for this project out and try to get this done a little bit sooner. Definitely there were moments where that connection with the fellow definitely added a little extra motivation." (P14)* *"I think just being comfortable with the people you're working with makes it a lot easier to move forward with projects because there's no hesitation in terms of like, oh, I need to sit down and send a formal email to ask this one question. Whereas, in a setting like this I can just text and be like, [project-specific question redacted] It ends up being both more comfortable and quicker to communicate with people that you know already." (P12)*
Project collaborations facilitated new personal connections	*"We actually ended up spending a lot more time with the faculty member talking about non-project things than project things. But no, our faculty mentor is definitely one of my favorite people that I've gotten to work with during residency. Whenever we first started the project, I really had not gotten to work with him very much. As we went through and started having more conversations about it, and I got to know him a little bit better, it turned into someone that I had a lot more connection with." (P14)* *"They really have become valuable resources to me. I know that if I needed anything in the future, they would be great resources to go to. […] I feel like we developed a really great relationship between the three of us. I started off not knowing them at all, but then, into the project, feeling like we had a great relationship—and people that I could go to in the future." (P16)*
Busy and/or conflicting collaborator schedules challenged project progress	*"Aligning schedules was insane. As a resident you're just more busy some months, and that didn't always line up with when [faculty member 1] had free time or [faculty member 2], or even [resident 2] and [resident 1] and I. I was on inpatient for most of the time we tried it to get our stuff done, and they were on outpatient stuff, and so it can just be hard to find time together." (P03)* *"I think, obviously, we're both super busy, so just trying to find some time to get together. Sometimes, it was a challenge to do that. We ended up doing a video visit, and then did a video call, and did phone—over the phone—or we just opened a Google document together and, eventually, started just editing that together. We found ways around it, but it was sometimes hard to get coordinated to discuss things together." (P13)*
Division of responsibilities between collaborators helped maintain project momentum	*"I think it can be daunting when you think about a project, just all aspects of the literature review, and getting questionnaires out, and answering the questions you want to, it's just good to divide up work and rely on people that you know you can trust and will do the work, and then you can come together and talk about what we did." (P03)* *"When one of us was one a busy rotation, the other would step up and do a lot of the work. We didn't have to really talk about that necessarily, we kind*

	of just both did that. Which I think is a very unique kind of work relationship." (P10)
Residents valued having multiple perspectives on a project	*"One really positive aspect was, obviously, in writing up the abstract and then also in going through the editing process. It was really neat to see their different perspectives on the case. It was a case that involved both—it was a case report where the patient's presentation could have been [specialty] etiology, or it could have been [specialty] etiology." (P16)*
Collaborators provided valuable guidance on the research process and helped residents set realistic project expectations	*"[…] I certainly appreciated the mentor who was a little bit more hands on and helping set our goals and deadlines and things. Just, like I said, in the setting of busy residents and stuff, I think that that really helped get things done and keep us focused." (P15)* *"I've definitely learned a lot. They've both [faculty mentors] been doing research for a very long time and they both crank out a lot of journal articles. It's good to see a process when people already know what to do, it cuts out some of the trial and error that you have when you're trying to do recruitment or do data gathering, or trying to come up with the questions, all those things. If you already have had people that have done similar things, they make the process run more smoothly, I think." (P07)*

Health Professions Education Institute (HPEI)

Title here: Evaluating the Impact of Student-Run Free Clinic Volunteering on Clinical Confidence in Pre-Clerkship Medical Students

Presenter here: Sarah A. Martin BS

Co-authors here: **Natalie S. DeRoche BS, Caitlyn S. Perrone BS, Salvatore J. Lumia BS, Karen Wolf MD, Michelle Keating MD**

WORKS IN PROGRESS

***Background/Needs Assessment*:** The Delivering Equal Access to Care (DEAC) Clinic at Wake Forest University School of Medicine (WFUSM) is a student-run, physician-staffed free clinic that serves underserved populations in Winston-Salem. Medical students have the opportunity to volunteer in various roles, including triage, med team, lab, and outreach. While students of all levels are offered valuable learning opportunities through volunteering with DEAC, DEAC particularly serves as a wonderful opportunity for lower-level MD students (M1s, M2s) to practice their clinical skills in real clinical environments prior to their clerkship years. As part of WFUSM's third-year Ambulatory Internal Medicine Clerkship curriculum, MD students are required to volunteer once a year; however, there is no requirement for lower-level, pre-clerkship MD students to complete clinical volunteering.

***Objectives*:** This study aims to assess whether volunteering with DEAC enhances student confidence in clinical skills to support the benefit of incorporating a clinical volunteering requirement into the pre-clerkship curriculum.

***Methods/Description of Program*:** This is a survey-based study assessing changes in confidence among pre-clerkship MD students following a volunteer shift with DEAC. Surveys will be distributed immediately pre-shift, immediately post-shift, and again one month later. Confidence will be measured on a five-point Likert scale, tailored to specific volunteer roles: (1) Med Team – confidence in chart review, HPI gathering, hypothesis-driven physical exams, lab result interpretation, and patient presentations; (2) Triage – confidence in taking vitals and HPI collection; (3) Lab – confidence in phlebotomy and lab result interpretation; and (4) Outreach – confidence in manual blood pressure measurement, glucose testing, result interpretation, and

working with underserved populations. Data will be analyzed using descriptive and inferential statistical methods.

***Anticipated Results/Evaluation Plan*:** We anticipate that pre-clerkship students will report increased confidence in clinical skills immediately following their DEAC volunteer shift and that these improvements will be sustained at the one-month follow-up.

***Next Steps*:** If our findings support an increase in lower-level students' confidence through DEAC volunteering, we plan to recommend considering incorporating a clinical volunteering requirement into the pre-clerkship curriculums at WFUSM. Such an addition could provide structured early clinical exposure, reinforcing practical skills while fostering a commitment to community service. These findings could have broader implications for structuring early clinical experiences in medical education.

Health Professions Education Institute (HPEI)

Tobacco Olympians: Tools for Tobacco Cessation Counseling

Sunitha Pawar, DO and Emmanuella Mensah, MD

MEDICAL EDUCATION RESEARCH

Background: The Carolinas Medical Center Family Medicine Residency Program includes three clinics within the Charlotte and Monroe area, in which 7,819 patients use tobacco.

Objectives: This study aims to address underutilization of tobacco cessation counseling by increasing provider counseling rates by 25% from baseline with the assistance of visual aids and electronic medical record (EMR) smartphrases within six months.

Methods/Design: Multi-site (three clinics), prospective cohort study. Eight family medicine residents (pre-exposure, post-exposure) followed for a six-month period. Interventions: educational visual aids in English and Spanish within the EMR, physical copies of the visual aids at resident's workstations, and weekly email reminders for one month. Primary outcome: use of tobacco cessation counseling Current Procedural Terminology (CPT) codes. Secondary outcome: provider's confidence and knowledge improvement through pre/post surveys. Given the small sample size, standardization was calculated for comparison. Data was then analyzed using Fisher's exact test and z-score to determine significance.

Results: 100% response rate. Compared to the pre-intervention phase, CPT code usage for tobacco cessation counseling increased by 64.29% ($p = 0.001$). After the intervention, participants were more likely to feel comfortable with counseling (12.5% vs 75% feeling very comfortable, $p = 0.01$) and more likely to remember to use the CPT code (0% always or very likely vs 50% always or very likely, $p = 0.16$). All participants agreed that limited time during a visit was a barrier (50% strongly agree, 50% agree). However, they did not identify lack of confidence as a barrier (12.5% strongly disagree and 75% disagree). 75% of participants agreed that receptivity of patients contributed to lack of counseling with 25% strongly agreeing. At the end of the intervention, 62.5% strongly agreed or agreed that their participation increased their knowledge of counseling options vs 25% neither agreed nor disagreed, and 12.5% disagreed.

Conclusions: Family medicine residents who were exposed to additional resources to aid in tobacco cessation counseling including visual aid and EMR smartphrases were more likely to use CPT codes than prior to intervention. Participants in the study felt more comfortable with counseling after intervention. Study limitations include sample size and inconsistent clinic times. Future research could explore long-term sustainability.

Health Professions Education Institute (HPEI)

Abstract submission template

Patient-Facing Volunteering in Medical Education: Impacts on Student Wellbeing and Community Belonging

Presenters: Sydney Karre, BS (MD 2026) and Dominic Quiros, BA (MD 2026)

Co-authors: Parissa J. Ballard, Ph.D

MEDICAL EDUCATION RESEARCH

Background: Medical student burnout is a significant issue, with 44.2% affected before residency [1]. Globally, 27% report depression, 34% anxiety [5], and 18% intense loneliness [3]. Additionally, 85.6% experience emotional exhaustion and 32.5% low professional efficacy [7]. In contrast, burnout among general university students is only 12.1% [2]. To combat this, medical schools have implemented stress management, mental health services, and mentorship programs [4,6], but few have explored integrating patient-facing volunteer opportunities. This may be a missed opportunity given that research among community and clinical samples of adolescents, young adults, and older adults suggests that volunteering might promote positive mental health and belonging and reduce negative mental health symptoms [8,9].

Objectives:

1. Assess the impact of patient-facing volunteering on medical student well-being, mental health, and community belonging through post-volunteering surveys.
2. Explore themes to amplify participant insights, refine programs, and enrich quantitative findings.
3. Explore integration of patient-facing volunteering in medical school curricula.

Methods/Design: This study collected data from post-volunteering surveys. Volunteering consisted of medical students preparing breakfast for Ronald McDonald House guests on several weekends in 2024; anonymous surveys were collected after each event regarding the self-reported impact on mental health and sense of community belonging among volunteers. Semi-structured interviews were conducted with a subset of interested students.

Sample. The survey included 24 total participants. The gender distribution was 16.7% male, 83.3% female. The majority of respondents were within the 25–34-year age range (75%). Most respondents were from the class of 2026 (70.8%). 25% of students were first-time volunteers at the Ronald McDonald House.

Results: The mean satisfaction with the volunteer experience was 4.6 out of 5 (with 5 being very satisfied and 1 being very unsatisfied). The mean enjoyment of the experience was 4.96 out of 5. The average feeling of community contribution was 4.38 out of 5 (with 1 being no contribution at all, 5 being significant contribution).

In post-volunteering surveys, students reported reduced stress levels (62.5%), increased energy levels (91.7%), reduced feelings of loneliness/isolation (95.8%), and improved mood (100%). Most respondents felt a stronger connection to their community within Wake Forest (95.8%) and Winston-Salem at large (87.5%). All participants expressed interest in continuing to volunteer in similar patient-facing activities (100%) and 83.3% were very likely to recommend volunteering as a means to improve mental health and community connection. 91.7% of students felt that patient-facing volunteering should be part of medication education curriculum.

Major themes emerging from participant interviews (N = 13) included the power of small acts of kindness, building connections and gaining perspective, creating a positive impact in one's community, encouragement of teamwork and community engagement, the need for continued collaboration, and the importance of empathy/human connection.

Conclusions: Our results suggest that patient-facing volunteering improves student wellbeing and enhances one's sense of purpose and belonging within the school community and the community at large. We recommend that patient-facing volunteering be integrated into medical school curricula throughout all four years as an approach to fostering wellbeing, belonging, and perspective-taking throughout training.

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Title: Assessing the Effectiveness of an Escape Room Challenge in Knowledge Retention in an Intern Bootcamp

Presenter: Tony Dang, MD

Co-authors: Nick Young, M.D., Hannah Florian, M.D., Margaret Lewis, M.D., Courtney Brantley, M.D., Michael Leonard, M.D.

MEDICAL EDUCATION RESEARCH

Background and Objectives: Traditional education models face challenges in the wake of newer generations' preference for hands-on, social learning. With learners demonstrating increased aptitude for visual learning, immersive education approaches, like serious games, have emerged as effective alternatives. One such serious game format is the escape room, which has demonstrated effectiveness in multidisciplinary teaching settings since the format provides realistic simulation, hands-on learning opportunities, and high engagement levels. Despite this philosophical shift, our internal medicine noon conference series continues to rely on traditional, lecture-based didactics. Specifically, all interns participate in "Intern Bootcamp" (IBC) during their initial three months where thirteen lectures are given which cover fundamental internal medicine content. However, there is a lack of formal evaluation regarding their effectiveness. In response, we hypothesized that designing and implementing an escape room game tailored to IBC topics would enhance knowledge acquisition and retention. This would be measured as a statistically significant increase in test scores after the intervention.

Methods/Design:
Prior to IBC, interns took a pre-test consisting of twenty-five internal medicine board style questions from The Medical Knowledge Self-Assessment Program version 18 question bank, with approximately 2 questions per core topic covered in IBC. Scores were recorded as percent of questions answered correctly. Additionally, interns completed a Likert scale survey assessing their comfort levels in diagnosing and treating the core topics addressed in IBC. The scale ranged from 1 (not comfortable) to 5 (completely comfortable). The thirteen one-hour, IBC didactic lectures occurred from July 2023 through September 2023 at Atrium Health Carolinas Medical Center in Charlotte, NC. Interns were encouraged to self-study outside of lecture. Half of the intern cohort participated in an escape room challenge, consisting of three rooms designed to cover 11 of the 13 core topics addressed in IBC. Teams were divided into pairs and given 20 minutes to complete each escape room. Time to completion along with the number of hints given within each room were tracked. A debrief session was conducted at the conclusion of the challenge to review content. Upon the completion of IBC and the escape room challenge, all interns underwent the same post-test and Likert scale survey. Data analysis was conducted using descriptive statistics.

Results:
Twelve interns were included in the final analysis as they completed both the pre- and post-tests. The intervention group comprised six categorical interns, while the control group included two categorical and four preliminary interns. Comparison of post-test scores and Likert scale surveys between the intervention and control groups did not reveal a significant difference. Mean post-test score in the control group was 74.0% ± 6.6% and 65.3% ± 12.0% in the intervention group ($p = 0.15$). Mean Likert scale in the control group was 4.2 ± 0.3 and 3.9 ± 0.4 in the intervention group ($p = 0.25$). However, within-group analysis of the Likert scale surveys at the culmination of IBC indicated a significant improvement in comfort levels with the 13 core topics among both the intervention and control groups. Teams were able to complete all rooms successfully within the timeframe.

Conclusions:
Overall, those who participated in the escape room challenge enjoyed the experience. Our intervention did not result in a statistically significant difference in knowledge acquisition or retention, as evaluated by test scores. It also did not result in a statistically significant difference in comfort in dealing with the 13 IBC topics, as measured by the average scores on the Likert scale survey. Our study was limited by a small sample size and the absence of control for variables such as hours of self-studying, conference attendance, and board scores. Though not part of the objective of our study, we noted the team who worked together the most seamlessly finished all the rooms faster. While medical education predominantly focuses on the cognitive learning domain, success in residency requires proficiency in teamwork, communication, and trust, along with skills like time management, division of labor, and multitasking, which are challenging to teach and assess. Our intervention, while not directly impacting knowledge acquisition, provided valuable insights into soft skills. Proctors were able to observe and assess qualities such as adaptability, conflict resolution, communication, teamwork, and time management, which are essential for success in medical practice but often overlooked in traditional educational settings. This may present an avenue for further study or use of escape rooms in medical education.

Performing a Chart Biopsy: Creating a Checklist for Third-Year Medical Students to Effectively Pre-Chart on the General Medicine Wards

Background: The introduction to the general medicine wards is the perfect example of drinking from a fire hose, with a large quantity of information to find, assess, synthesize and present during rounds for third year medical students, all while learning the difficult balance between efficiency and thoroughness. As such, a framework was created in which the students can identify key information and incorporate their findings into assessments of patients at various stages in the hospitalization.

Objectives: The primary objective is to pilot a framework from which third year medical students will develop an organized approach to pre-charting as part of their preparation for morning rounds. Specifically, using a checklist designed by an Internal Medicine (IM) resident will teach students how to identify overnight changes in the patient's condition, summarize lab values and imaging results, and facilitate application of the summarized chart data to a proposed assessment and plan.

Methods/Description of Program: An IM resident created a checklist highlighting different portions of the EMR that are particularly high-yield for gleaning important background information about the patient's overnight course. This intervention is being piloted for MD Class of 2027 on the inpatient IM clerkship. In March 2025, an IM resident led a session during their first week to introduce them to Encompass and where to find high-yield information in the EMR. The resident provide the students with an introduction to the checklist and how it fits into their pre-charting as well as their presentations on rounds.

Evaluation Plan: Each group of students that completes the inpatient IM rotation will complete a RedCap survey to assess the acceptability and feasibility of the checklist and how well the checklist meets the stated learning objectives. By the time of the HPEI conference, the first group of students' data will be available to analyze for basic efficacy of the checklist for meeting the learning objectives. .

Next Steps: The current checklist is designed for patients on the general medicine ward services. However, the third-year medical students rotate on several other specialty services while on in-patient IM: hematology/oncology, heart failure, CV-ICU, general cardiology, leukemia, and nephrology. The goal is to tailor the checklist for the intricacies of these services.

Wake Forest University School of Medicine | ADVOCATEHEALTH

From Faculty Development
Office of Faculty Affairs:

Empowering Faculty with AI for Administrative Task Efficiency

Background/Needs Assessment:

Microsoft Copilot is a generative AI chatbot created in February 2023. WFU School of Medicine, an early adopter, aims to increase faculty adoption to boost administrative efficiency across Microsoft Office programs.

Objective:

After participating in this session, participants should be able to: Use Copilot to boost efficiency in Microsoft Office tasks. Create a pilot program with a diverse faculty cohort to train others. Identify metrics to measure Copilot's adoption and impact.

Presenter: Yasmain Rice, MSL
Co-authors: Darcy Reed, MD, MPH, Vice Dean for Faculty Affairs
Gregroy Hawkins, PhD
William Huneycutt
Suzanne Danhauer, PhD
Nicholas Smith-Stanley, MBA,
***Julie Silver, MD**

Methods/Description of Program:

The pilot learning community at Wake Forest University School of Medicine aims to increase faculty adoption of Microsoft Copilot. It includes curated content with monthly 1-hour training sessions over 10 months, targeting faculty across all career stages. Experienced users, called "Copilot Captains," help faculty integrate Copilot into administrative work.

Anticipated Results/Evaluation Plan:

To foster faculty adoption, an innovative & inclusive learning community was formed to: Deliver training sessions for departmental Captains across technological skillsets and diverse backgrounds. The program's success is measured by participant numbers, satisfaction, and reduction in administrative load. Expected outcomes include participant numbers & departments, session attendance, and licenses distributed. We will measure satisfaction & perceived reduction in administrative workload.

CCLC Attendance Chart: (Current thru 4/26/25)

Presenter: Yasmain Rice, MSL
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William Huneycutt
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***Julie Silver, MD**

Session 1: 2-26-25

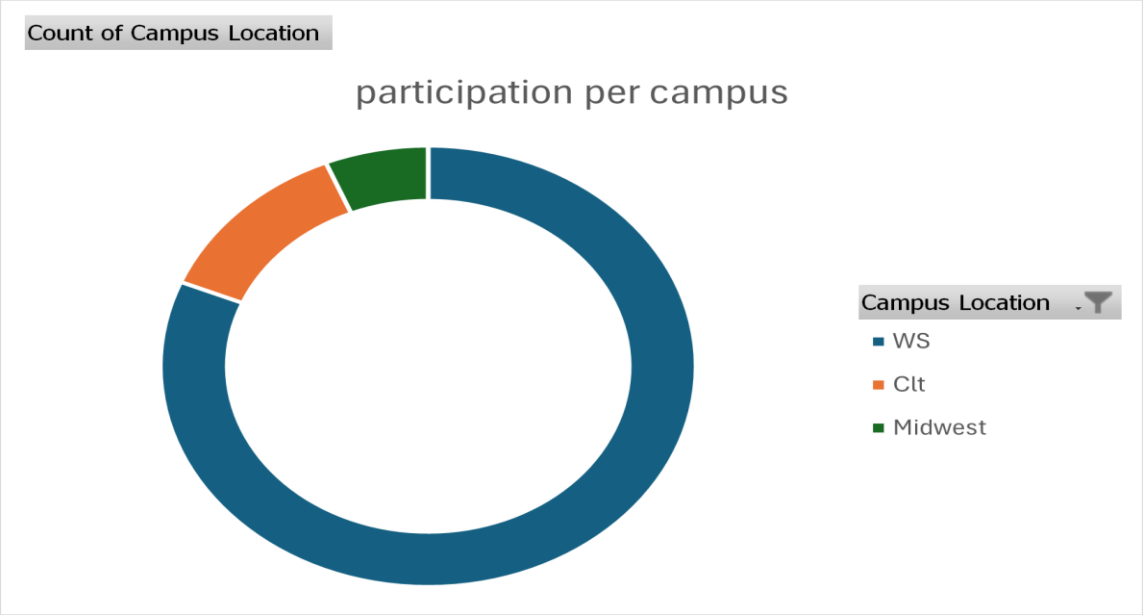
Campus Location	Count of Campus Location
WS	81.25%
Clt	12.50%
Midwest	6.25%
Grand Total	**100.00%**

Session 2: 3-26-25

Campus location	Count of Campus location
WS	91.67%
Midwest	8.33%
(blank)	0.00%
Grand Total	**100.00%**

Session 3: 4-23-25

Campus Location	Count of Campus Location
WS	80.95%
Clt	14.29%
Midwest	4.76%
(blank)	0.00%
Grand Total	**100.00%**



1 - Graph depicts current faculty participation in percentage by campus

Presenter: Yasmain Rice, MSL
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Obtaining a Microsoft Copilot License

You must apply for a license and receive approval. Microsoft Copilot will then be embedded across your Microsoft 365 apps. If you would like to apply. Please scan the QR code.

Interested in Joining Microsoft Copilot Captains Learning Community (Please scan the QR code below)

Presenter: Yasmain Rice, MSL
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A comparison of pediatric endotracheal tube cuff choice in academic and community emergency departments

Zachary Gibson DO—Pediatric Emergency Medicine Fellow—Carolinas Medical Center

Christyn F. Magill MD—Program Director, Pediatric Emergency Medicine Fellowship—Carolinas Medical Center

Background

Historically, uncuffed endotracheal tubes (uETTs) were preferred in pediatric intubations due to concerns regarding post-extubation stridor (PES) and subglottic stenosis (SGS) [1–3]. Recent studies demonstrated comparable rates of PES and SGS between cuffed endotracheal tubes (cETTs) and uETTs, prompting academic EDs to adopt cETTs [1,4–8]. However, community practice has not been evaluated in the United States (US) since 2011, when uETTs were predominantly used in children under 8 [9].

Objectives

The primary objective compared cETT versus uETT use between community EDs (cEDs) and an academic pediatric ED (aPED) referring to a large, academic PICU. We secondarily evaluated the proportion of intubations requiring tube exchange by setting and tube type. A subgroup analysis compared uETT proportion between higher-resourced community (HRC) and lower-resourced community (LRC) EDs.

Methods

Using an internal database and chart review, this retrospective observational study examined pediatric intubations performed in the ED by an emergency physician referring to a single PICU. We included children aged 0–8.99 years, excluding cases with a history of SGS and occurring prior to initiation of a new electronic medical record at the receiving PICU. Data was analyzed descriptively, and group comparisons were made using Chi-square and Fisher Exact tests ($p < 0.05$).

Results

Of 1260 encounters, 153 met inclusion. There was a difference in indication for intubation ($p = 0.03$) between groups, but not in age ($p = 0.20$), weight ($p = 0.46$) or tube size ($p = 0.06$).

The cED group used a higher proportion of uETTs (25.7% vs 5.6%, $p < 0.001$); OR 5.8 (95% CI 2.05 - 16.45). The proportion of tube exchange differed between uETTs and cETTs (69.2% vs. 2.9%, $p < 0.0001$), but not between sites ($p = 0.0865$).

The aED demonstrated a difference in proportion of uncuffed tubes compared to both HRC (20.8% vs. 5.6%, $p = 0.013$) and LRC (40% vs. 5.6%, $p = 0.0001$) sites. When compared, HRC and LRC proportions were not different ($p = 0.17$).

Conclusion

In this study, cEDs used a higher proportion of uncuffed endotracheal tubes for the intubation of children regardless of resources. There was no difference in tube exchange between ED settings. This study was limited by its small sample size and single center design. However, it highlights a practice gap. It demonstrates the need for a population-level examination of endotracheal tube cuff choice.

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Kids on your nerves? Stay CALM! Clinical Acuity Learning Mastery in Pediatric Emergency Medicine

CALM Curriculum
Zack Gibson DO–Pediatric Emergency Medicine Fellow, Carolinas Medical Center
Lia Cruz DO–Associate Program Director, Pediatric Emergency Medicine Fellowship, Carolinas Medical Center

Background/Needs Assessment

Pediatric Emergency Medicine (PEM) fellowships rely on didactic conferences to develop skills for high-acuity, low-occurrence (HALO) pediatric emergencies. However, fellowship sizes are often small, limiting inter-fellow interactions. A 2023 national survey of PEM program directors found most feel unable to provide adequate bedside teaching. Additionally, near-peer interactions enhance learning but remain underutilized. Fellowship training would benefit from structured, fellow-driven educational models designed to improve bedside translation of didactic content.

Objectives

PEM didactic teaching is content-rich, but links to learner-centric needs and bedside application are less well-defined. We aim to develop an educational model emphasizing fellow-driven learning, grounded in cognitive load theory. This approach fosters a learner-centric curriculum that leverages near-peer learning and integrates relational skill sets with core content to enhance bedside translation. Optimizing content retention and application in real-time patient care is a key goal of this initiative.

Methods

A multi-factorial needs assessment included fellow focus groups, in-training exam reviews, PEM faculty discussions, and an analysis of American Board of Pediatrics (ABP) content specifications. These findings informed a backwards design approach using the Understanding by Design (UbD) model, ensuring intentionality in curriculum development. A pilot session led to the creation of a standardized facilitator template to guide implementation.

A case-based, fellow-driven critical care curriculum was designed, with one fellow assigned to lead a HALO case featuring predetermined objectives and critical actions. A structured debrief

followed, reinforcing related core content and encouraging reflective learning. Figure 1. demonstrates the curricular roadmap.

Evaluation Plan

A competency-driven assessment based on the American College of Graduate Medical Education (ACGME) PEM milestones was created for evaluation, and included core domains (Table 1). These provided a well-rounded base outside of content delivery with identifiable links for transferability to clinical practice and components simulating on-shift experiences. After completion of the pilot phase, fellows will independently facilitate one session yearly with faculty feedback and evaluation with the assessment.

Next Steps

The curriculum is in its pilot phase, with ongoing fellow-driven feedback and improvement cycles. Future iterations will incorporate curated asynchronous educational resources to reinforce key concepts. Fellows will be encouraged to complete a post-case assessment (3-5 questions) linking objectives and critical actions to clinical vignettes. A structured review with PEM faculty and fellows will inform ongoing curricular refinement.

Figure 1.

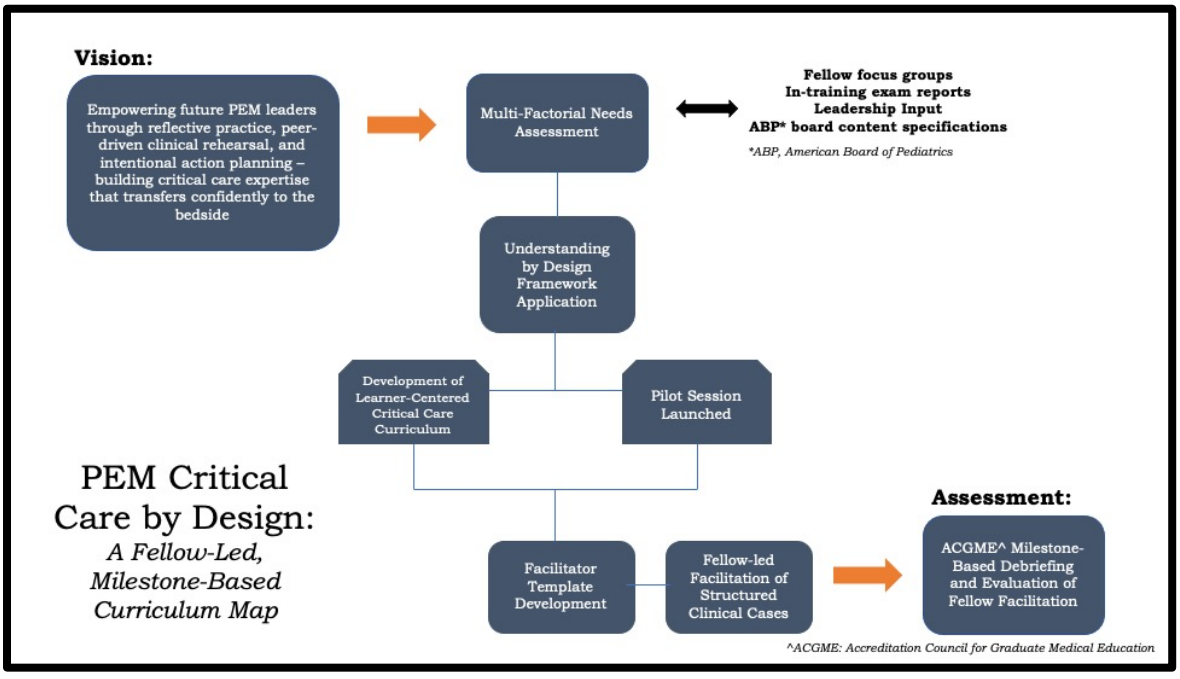

Table 1.

Milestone Domains Paired with Curricular Features

Milestone Domain	Curriculum Feature
Interpersonal and Communication Skills	Facilitates peer-led role assignment and collaboration
Medical Knowledge	Case-based reasoning; focused clinical discussion
Practice-Based Learning	Scenario-guided therapeutic planning and synthesis
Patient Care	Delivers content aligned with ABP and current evidence
	Guides debriefing and personal action planning
	Model and describe key history/exam elements
	Coaches peers on critical care task organization
	Guides diagnostic decisions through peer coaching
	Facilitates diagnostic selection and interpretation
	Coaches management of complex cases
	Facilitates discussion of emergency stabilization
	Facilitates peer review of procedure steps
Professionalism	Active role modeling in simulated scenario
Systems-Based Practice	Facilitates safety-focused systems debriefing