

Health Professions Education Institute (HPEI)

Title here: Building a Patient Navigation Program to Improve the Student and Patient Experience at a Student-Run Free Clinic

Presenter here: Abigail Heilenman, BS

Co-authors here: Priscila Arellano Zameza, MS, Brian Robusto, BS, Anita Rong, BS, Corrinne Dunbar, BS, Jessica Valente, MD

CURRICULAR INNOVATIONS

Word count 349 excluding subheadings

Problem/Needs Assessment:

The Delivering Equal Access to Care (DEAC) clinic is a student-run free clinic (SRFC) affiliated with the Wake Forest University School of Medicine. Students in the MD and PA programs are eligible to volunteer. There are limited opportunities for first-year students to participate in direct patient care, leading to dissatisfaction among students and high turnover. The volunteer nature of the clinic also impacts the patient experience and continuity of care. DEAC needed a solution to address these challenges.

Program Objectives:

Patient navigation programs have demonstrated efficacy in improving patient satisfaction. Initially developed by DEAC student leaders as a pilot program, the Patient Navigation Program (PNP) aims to enrich first-year health professions students' experiences and enhance continuity of care for patients. By connecting students with patients with higher levels of need, PNP fosters early experience with holistic care and patient advocacy.

Description of Program:

First-year MD and PA students are invited to apply each year, and student navigators are selected by a team of upper-level Student Supervisors and one Medical Director. Potential

patients for the program were identified as having medical comorbidities, missed appointments, difficulty affording medications, and other challenges. Patients are enrolled on a rolling basis and each one is paired with a Student Navigator. The team meets monthly, students attend two mandatory trainings and are encouraged to attend their patients' DEAC visits. All communication is logged by navigators and reviewed by Student Supervisors. PNP is supported by a \$1,000 budget.

Evaluation/Assessment:

PNP evaluates student satisfaction and patient outcomes through surveys and qualitative feedback. Analysis includes students' responses and patient data. Ongoing assessments guide training needs and resource allocation, and aim to capture the impact of PNP, paving the way for continuous improvement and program sustainability.

Conclusions and Lessons Learned:

PNP enhances student engagement, improves patient satisfaction, and fosters leadership. Of the Student Navigators in the 2022-2023 cohort, 57% expressed a desire to continue their student-patient relationship, and 50% joined DEAC leadership. Perceived impact on patients' health includes obtaining additional health services, improved appointment attendance, and meeting health goals. PNP is a replicable model that provides valuable insights for SRFCs aiming to improve student experiences and patient outcomes.

Health Professions Education Institute (HPEI)

Title here: DEAC Outreach: An Educational Opportunity for Graduate Health Students

Presenters here: Alexandra Monetti, BS; Natalie DeRoche, BS

Co-authors here: Michelle Keating, DO, MEd, FAAFP

WORKS IN PROGRESS

Background/Needs Assessment:

Delivering Equal Access to Care (DEAC) Outreach is a program through the DEAC Clinic that provides monthly health screenings, health education, and clinic referrals to underserved members of the Winston-Salem community. In partnership with community organizations, student volunteers screen patients' blood pressures, body mass index, and glucose levels and provide health counseling under the supervision of an Advanced Practice Provider or Physician.

DEAC Outreach facilitates learning for graduate health students at all levels of training. Students in the preclinical years (M1, M2, and PA1) perform their clinical skills on real patients and work with an underserved population, which is not routinely done within the current preclinical PA and MD curriculums.

Objectives:

Our objective is to determine the change of pre-clinical students' confidence level in performing clinical skills including blood pressure measurement and glucometer use. Another objective is to determine the change in students' comfort level in working with underserved community members.

Methods/Description of Program:

Before the DEAC Outreach event, students will receive an email with a training video for glucometer use and information on best practices for blood pressure screening. Before screening patients, preclinical students will receive on-the-spot training from the Outreach directors and an opportunity to practice their clinical skills under the supervision of an Advanced Practice Provider or Physician. While providing health screenings, pre-clinical students will receive guidance and encouragement on their clinical skills from clinical-level students.

We will assess student confidence levels in performing clinical skills (blood pressure measurement and glucometer use) with a pre- and post-survey. Additionally, we will assess how rewarding students believe working with underserved populations is. Pre-surveys will be collected prior to training, and post-surveys will be collected after the event. Students' confidence levels will be rated on a scale of "not at all confident" to "extremely confident". The absolute difference before and after each outreach event will be recorded for each student.

Anticipated Results/Evaluation Plan:

We expect students to feel more confident with clinical skills, blood pressure measurement, and glucometer use, following participation in the DEAC Outreach events.

Next Steps:

This survey will help delineate the effectiveness of DEAC Outreach in facilitating learning for graduate health students. These results will guide future changes to DEAC Outreach to serve as a better educational experience for students.

Health Professions Education Institute (HPEI)

Title here: Benefits of Joint Peer- and Faculty-Led Intervention in Preparation for the Fourth Year of Medical School

Presenter here: Ali Satchmei, Class of 2025

Co-authors here: Karina Irani, Claire Hoffman, Sarah Pennypacker, and Emily Barr, Class of 2025; Kevin Hiatt, MD, Department of Diagnostic Radiology

MEDICAL EDUCATION RESEARCH

Background: The transition from the third (M3) to fourth (M4) year of medical school represents a crucial milestone in students' development. A major challenge faced by rising M4s is transitioning from structured clerkships to self-directed responsibilities. Students create rotation schedules, finalize specialty selections, prepare residency applications, and take board exams. In conjunction with faculty, near-peer tutors (NPTs) may assuage anxiety associated with this transition, as they are shown to improve learning outcomes due to cognitive and social congruence.

Objectives: This study examines the use of both NPTs and faculty in the M3-to-M4 transition and hypothesizes that a joint intervention is effective at quelling uncertainty associated with transitioning to the fourth year of medical school.

Methods/Design: A seminar led by faculty and outgoing M4s was held for rising M4s discussing specialty selection, requirements, and expectations. A separate seminar discussing Step 2 scheduling and study planning was led by outgoing M4s. A survey using a 4-point Likert scale was administered before and after the seminars to compare baseline and post-intervention student knowledge. Pre- and post-intervention survey questions were assigned mean assessment scores and their responses compared. Unique identifiers were assigned to link pre- and post-survey data.

Results: 57 students completed the pre-intervention survey and 23 completed the post-intervention survey. 21 attended the specialty seminar and 18 attended the Step 2 seminar. Of those, 16 students completed both surveys.

The joint intervention was found to effectively inform students, with an increase in “very well” responses between pre- and post-surveys regarding away rotations (0% vs. 56%), letters of recommendation (0% vs. 50%), acting internships (0% vs. 50%), Step 2 resource planning (0% vs. 44%), and Step 2 scheduling (0% vs. 44%). 95% of specialty seminar attendees and 78% of Step 2 seminar attendees noted benefit and felt their concerns were alleviated and questions answered.

Conclusions: A joint peer-faculty intervention provided incoming M4s with useful information about the residency application process and fourth-year planning. As opposed to a traditional, purely faculty-led intervention, this study shows a joint intervention including NPTs is beneficial in alleviating student concerns regarding the residency application process and the M3-to-M4 transition.

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: Expanding the Definition of a PA Healthcare Educator to include Preceptor and Guest Lecturer

Presenter here: Andrea McKinnond, MMS, PA-C, Artina Dawkins, PhD, MPA, C-TAGME, and Donna F. Murray, DMSc., MS, PA-C

Co-authors here: Andrea McKinnond, MMS, PA-C, Artina Dawkins, PhD, MPA, C-TAGME, Donna F. Murray, DMSc., MS, PA-C

WORKS IN PROGRESS

Background/Needs Assessment:

In September 2020, the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA) produced the 5th edition of its Accreditation Standards, delineating the organization's diversity policies. These policies mandated that all sponsoring institutions must demonstrate true commitment to faculty, staff, and student diversity and inclusion by providing support to their PA programs in the following ways - in defining diversity and inclusion goals, making resources available to promote diversity and inclusion, and implementation of recruitment and retention strategies. Despite preexisting efforts to improve racial diversity at all levels in America's PA programs, the numbers remain critically low.¹ In this curricular intervention, a four-part virtual lecture series, the authors challenge traditional healthcare education to view educators with an inclusive lens by including the guest lecturer and preceptor. The authors provide training to newly included educators to support them in their role as we work to graduate the next generation of diverse and culturally humble PAs.

Objectives:

To bring attention to the lack of workforce diversity in the PA profession and to present a roadmap to become a PA healthcare educator.

Methods/Description of Program:

This curriculum was designed as a four-part, one-hour virtual series delivered as a PowerPoint presentation. RSVP information for each session was distributed via the Physician Assistant Education Association (PAEA) listserv, via our institution's Department of PA Studies and Orthopaedic Surgery distribution lists, and via personal LinkedIn accounts. Zoom was utilized as the platform to collect RSVPs and the pre- and post- webinar survey data. After participants signed up to attend a session, they were automatically emailed a Zoom link to the virtual session. Each webinar was designated for one AAPA Category 1 CME credit. Participants were required to complete the post-webinar survey to receive the credit. Data were collected from both surveys and exported into an Excel file.

Anticipated Results/Evaluation Plan:

Anticipated results are that the analyzed data demonstrates that the webinar series successfully conveyed the importance of workforce diversity within PA programs as well as the steps required to become a preceptor and a guest lecturer.

Next Steps:

Next steps are to conduct a data analysis on data collected from the pre- and post-webinar surveys.

References

1. Bradley-Guidry, C., Burwell, N., Dorough, R. et al. An assessment of physician assistant student diversity in the United States: a snapshot for the healthcare workforce. BMC Med Educ 22, 680 (2022). <https://doi.org/10.1186/s12909-022-03717-9>

Health Professions Education Institute (HPEI)

Title: Comfort Level with Working with a Vulnerable Population

Presenter: Ashleigh Medda

Co-investigators: Jennifer Kipp, Harrison Huang, Malini Nair, Anuj Jailwala,

MEDICAL EDUCATION RESEARCH

Background:

Medical providers are committed to evaluating and treating patients from all backgrounds including those from vulnerable populations. Due to the constraints on current medical education, it is often difficult to ensure that students are exposed to individuals from all backgrounds including the homeless. At the Wake Forest University School of Medicine (WFUSOM) Delivering Equal Access to Care (DEAC) Foot and Ankle Clinic, we aim to provide both medical students and physician assistant students the opportunity to feel comfortable evaluating and treating members of our community's homeless population.

Objectives:

The objective of our study was to improve the students' (medical and physician assistant) comfort level with working with the homeless.

Methods/Design:

Our DEAC Foot and Ankle Clinic is a WFUSOM student-run and physician-staffed clinic that serves the homeless community of Winston-Salem. At each clinic, students evaluate and treat this specific vulnerable population.

From August 2021 to May 2023, we surveyed 49 first-time volunteer students. We collected information entailing how many students had previously worked with the homeless and their comfort level prior to and after the DEAC Foot and Ankle Clinic.

Results:

From the 49 students who were surveyed, 32 were 1st year medical students, 8 were 2nd year medical students, 2 were 4th year medical students, 2 were 1st year physician assistant students and 5 were 2nd year physician assistant students. Of the 49 total students, 36 students had previously worked with a homeless population in some capacity. On a scale of 1-10 the average comfort level of working with the homeless prior to the DEAC Foot and Ankle Clinic was 6.59 and the average comfort level after the clinic increased to 8.39. The average increase in comfort of working with the homeless before the clinic to after the clinic was 1.8 which was statistically significant ($P < 0.0001$). 47% of students felt their communication skills with the homeless population improved by at least 50% or more.

Conclusions:

In conclusion, we were able to improve the comfort level of working with the homeless population for 1st time medical and physician assistant student volunteers at the WFUSOM DEAC Foot and Ankle Clinic. We are hopeful that this clinic provides students with an invaluable opportunity to expand on their knowledge and expertise regardless of if they have previously worked with a homeless population in

the past. With our clinic's ability to improve students' communication skills and comfort level with a vulnerable population who they will treat and advocate for both now and throughout their medical careers, we feel the DEAC Foot and Ankle Clinic is vital to the medical education at WFUSOM.

Health Professions Education Institute (HPEI)

Title here: Use of Area Deprivation Index for Equitable Recruitment to the National Institutes of Health Short-Term Research Experience Program to Unlock Potential (STEP-UP)

Presenter: Camelia R. Singletary, MPH

Co-authors: TanYa M. Gwathmey, MS, PhD and Justin B. Moore, PhD, MS, FACSM

WORKS IN PROGRESS

Background/Needs Assessment:

The Short-Term Research Experience Program to Unlock Potential (STEP-UP), is funded by National Institutes of Diabetes and Digestive and Kidney Diseases (NIDDK) of the National Institutes of Health (NIH). The aim of this program is to provide training to high-school students from backgrounds traditionally under-represented (UR) in science, specifically the areas of diabetes, digestive diseases, nutritional disorders, obesity, and kidney diseases to enhance the diversity of the behavioral and clinical research workforce.

Wake Forest University School of Medicine (WFUSM) serves as a coordinating center for the southeastern area of the United States. In our third year of funding, we are working to better tailor our recruitment to increase application rates in some of our most disadvantaged areas.

Objectives:

1. To increase awareness of the unique challenges facing a diverse population living with diabetes, obesity, and kidney disease and of the opportunities for research that addresses these issues. Recruitment activities are tailored to reach UR students with an interest in this research to apply for the WFSM STEP-UP program.
2. To expand opportunities for paid research internships at participating university sites during the summer and academic year, where hands-on research exposure, mentorship, state-of-the art training, and career-development resources will be provided to increase UR students involved in health disparities research related to diabetes, obesity, and kidney disease.

Methods/Description of Program:

In efforts to expand recruitment outreach in our catchment areas, we will take a more strategic approach to target underserved areas in the states and territories within our region. Using the Area Deprivation Index (ADI) to quantify socioeconomic disadvantage, we will target students from high schools with limited resources to address their social determinants of health. The ADI aggregates data on income, education, employment, and housing quality, and allows for rankings of census tracts by socioeconomic disadvantage, with higher scores denoting greater disadvantage. Once identified, we will target outreach to these areas to increase awareness of STEP-UP, applications to the program, and quality of the submitted materials. This approach is being taken since schools in census tracts with high ADI scores often do not have the capacity to facilitate college and career readiness, particularly in the realm of scientific research.

Anticipated Results/Evaluation Plan:

We will seek to determine if there are an increased number of applicants and matriculations to the STEP-UP program in the targeted regions. We hypothesize that we will observe a higher number of

applicants/participants from areas that have more disadvantage (i.e., ADI Score=10) compared to the two years prior to this initiative, thus achieving the overall objective of increasing the involvement of under-represented students from under-resourced communities in health disparities research.

Next Steps:

To follow-up, we will take a closer look at area via qualitative methods to determine how we can help those in areas with higher disadvantage (i.e., ADI Score=10). The premise is that we can use lessons learned from the areas that have an increased number of applicants, to help provide feasible recommendations for recruiting an increased number of under-represented, disadvantaged students.

Health Professions Education Institute (HPEI)

Abstract submission template

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Title here: Cognitive Load, Scaffolding, and Pharmacology Case Studies

Presenter here: Catherine Baxter DNP, CPNP-AC

Co-authors here: Victoria Talbot MSN, RN, CNE, CHSE

CURRICULAR INNOVATIONS

Problem/Needs Assessment: Pharmacology carries a high cognitive load for nursing students. With the importance of medication administration in practice and a high percentage of questions on NCLEX, understanding this material is crucial. Constructivism learning theory allows educators to reimagine teaching difficult material through active learning strategies. Scaffolding breaks down content into smaller points allowing learners to build on their mental models of concepts. To engage learners using constructivism and scaffolding, pharmacology and medical-surgical faculty collaborated to develop case studies for junior and senior students.

Program Objectives: The purpose of this project is to improve academic nursing, enhancing the curriculum by scaffolding challenging pharmacology content across 2 courses using innovative case studies.

Description of Program: Two-part case studies were developed correlating the material covered in pharmacology and advanced medical-surgical classrooms. Case studies included frequently prescribed medications and client's names related to the specific medications. (S.T. Atin, Moxie Cillin). Case studies prompted junior level students to employ clinical judgment with medications. Senior level students were expected to apply previous knowledge of medications to adverse reactions and complex problems. Case studies were used during class and students collaborated in groups allowing the sociocultural aspect of scaffolding. Students completed case studies within 20 minutes and then discussed responses.

Evaluation/Assessment: This project was developed summer 2023, will be piloted fall 2023 with IRB submission. Pharmacology students will complete the first part of the case studies during the semester, then complete the second part as senior students. Current senior level students will complete both parts of the case studies.

Conclusions and Lessons Learned: By experiencing an innovative case study approach and scaffolding of pharmacology content, students are actively engaged in the learning process, moving complex material into long-term memory.

Health Professions Education Institute (HPEI)

Title: Developing a Medical Professionalism Curriculum based on a Novel Framework of Trust for WFUSM Medical Students

Presenter here: Catherine Malisse, BS

Co-authors here: Jennifer Jackson, Andrea Triplett, Cindy Burns, Katherine Schafer, Cheraton Love, Tim Peters, Stacy Schmauss, Leila Dewitt, E. Shen, Elizabeth Whiting, David Popoli, Marcia Wofford, Matthew Miles

Background: Professionalism is an expectation of physicians by patients, society, and the collective medical profession¹. Medical schools are tasked with helping students develop their professionalism but there is not a cohesive conceptual framework for teaching professionalism within undergraduate medical education (UME)²⁻⁴. These challenges are evident in WFUSM's MD curriculum, so we propose developing a new conceptual framework of professionalism based on trust that outlines the rationale behind medical professionalism, identifies what successful professionalism performance looks like (observable behaviors/actions), and connects to professional identity formation as a developmental process.

Objectives: Develop a conceptual professionalism framework that is based in trust and trustworthiness of physicians. Conduct a targeted needs assessment to explore our current professionalism curriculum with key stakeholder insights, evaluate gaps and redundancies in learning content and assess alignment with learning objectives and proposed conceptual framework.

Methods: This study will include all MD students at WFUSM graduating classes of 2023-2027, standardized patients, and faculty. Our current professionalism curriculum will be analyzed with a targeted needs assessment. Current stakeholder perspectives will be elicited through a baseline survey sent to students, faculty and education leadership, and standardized patients. Additionally we will have self-selected focus groups with students and faculty/leadership. Qualitative analysis will explore stakeholder perspectives toward our current medical professionalism instruction and ways to integrate our new framework. Content analysis will be performed on narrative data.

Results: Outcome measures include the targeted needs assessment of our current professionalism instruction and assessment, mapped to our new professionalism framework. Specifically, exploratory qualitative analysis of stakeholder perspectives and attitudes related to medical professionalism. Coverage and gaps of learning content related to professionalism, and alignment with current professionalism learning objects being explicitly taught at WFUSM (content (i.e., number, %, distribution, and listing of topics appropriately aligned vs. those misaligned).

Next Steps: We anticipate these findings will provide valuable insight to inform our development of an effective and explicit UME professionalism curriculum with the new trust framework. We are currently in the process of IRB approval.

References:

1. Cruess SR. Professionalism and medicine's social contract with society. *Clin Orthop Relat Res.* 2006;449:170-176. doi:10.1097/01.blo.0000229275.66570.97
2. Standards, Publications, & Notification Forms | LCME. Accessed January 21, 2024. <https://lcme.org/publications/>
3. The Core Entrustable Professional Activities (EPAs) for Entering Residency. AAMC. Accessed April 6, 2022. <https://www.aamc.org/what-we-do/mission-areas/medical-education/cbme/core-epas>
4. Common Program Requirements - Residency. Accreditation Council for Graduate Medical Education. ACGME Common Program Requirements (Residency). Accessible at: https://www.acgme.org/globalassets/pfassets/programrequirements/cprresidency_2023.pdf.

Utilizing the Complete Blood Count (CBC) to Create a Path to Understanding of Hematology: Pediatric Resident Education in Hematology

Author: David Gass, MD, MS

Co-Authors: Chad McCall, MD, Michelle Wallander, Ph.D. James Symanowski, Ph. D.

Background/Needs Assessment:

Learning activities that allow adult learners to integrate knowledge with professional activities and engage with others often produce meaningful learning.¹ At Atrium Health Levine Children's Hospital (LCH), pediatric interns complete only a single month-long rotation in hematology/oncology, which often contributes to a lack in confidence to interpret a CBC, which is a key lab test that can aid them in differential diagnoses and management of patients in multiple areas of medicine. We have aimed to create pediatric hematology/oncology rotation that would provide each learner with opportunity to hone CBC interpretation skills.

Objectives:

- Evaluate the feasibility of the new hematology curriculum.
- Evaluate whether the new curriculum improves the residents' hematology knowledge and overall perception of their own hematology skills and knowledge.

Methods:

Before starting the hematology/oncology rotation, interns will complete a multiple choice, board style pre-test, and a self-assessment, which will evaluate their baseline hematology knowledge. At the beginning of rotation, pediatric residents will review three pre-recorded PowerPoint lectures on blood count and smear interpretation. During their rotation, residents will independently complete three case reports that require the resident to interpret complete blood count data as well as analyze a blood smear to aid in the diagnosis or management of the patient. Upon completion of the rotation, residents will complete a post-test and self-assessment to determine if the curriculum improved their hematology knowledge and skills.

Anticipated Results:

Feasibility will be demonstrated if the residents complete the pre-test, post-test, and three case reports. We anticipate that individual resident's change in hematology knowledge will be $\geq 20\%$ correct as measured on pre and post test score. We will assess change in overall

perception of hematology knowledge and skills with comparison of pre and post-rotation scores using a Likert scale questionnaire. Lastly, qualitative feedback on a case report activity will be captured from mandatory departmental curriculum review surveys.

Next Steps:

This study is ongoing. In 2023, we have had six interns complete the curriculum. We plan on continuing the curriculum through summer 2025. An interim analysis will be performed in the summer of 2024, followed by a final analysis in Summer 2025.

References:

1. Mahan JD, Stein DS. Teaching adults-best practices that leverage the emerging understanding of the neurobiology of learning. *Curr Probl Pediatr Adolesc Health Care*. 2014;44(6):141-149. doi:10.1016/j.cppeds.2014.01.003

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: Excellence in Cardiovascular Sciences Program (EICS) Promotes Interest in Research and Biomedical Careers

Presenter here: David R. Soto-Pantoja, PhD

Co-authors here: TanYa M. Gwathmey¹, Shea Gilliam-Davis¹, Lydia Durr¹, Shanna Ellison¹, E. Ann Tallant¹, Debra I. Diz¹. Cardiovascular Sciences Center, Hypertension and Vascular Research, Department of Cancer Biology, Wake Forest University School of Medicine, Winston Salem, NC 27157

MEDICAL EDUCATION RESEARCH

Background: The WFSM EICS Program provides diverse undergraduate students with research experiences in cardiovascular (CV) diseases and related health disparities. The program includes training in laboratory research and exposure to advanced degrees in biomedical sciences careers, along with professional development and guidance for advanced degree pursuits.

Objectives: To provide short-term research training and establish programs to attract minoritized undergraduate students to biomedical research.

Methods/Design: Metrics are informed by evidence-based best practices and expectations of NHLBI. Students score program components and skills development. Participant completion of the Bachelor's and entry into an advanced degree program or work setting is tracked. Data are provided for the periods indicated as mean scores out of 4 maximum, mean \pm SEM (n = 84 - 88 scores per metric), or percentages.

Results: Applicants are 62% African American/Black, 18% Asian/Pacific Islander, and 13% Hispanic. Native American applicants doubled from 1% to 2% in the past 5 years, resulting from recent successful recruitment efforts. Historically, applicants and participants are 71% female with a 3.42 GPA. For the past 10 years, the Overall Program rating is (3.2 \pm 0.1). Mentors (3.5 \pm 0.1) and Hands-on Research (3.4 \pm 0.1) average Outstanding to Very Good. Ninety-three % of students intend to continue interactions with mentors/PDs, and 85% of mentors indicate they remain in contact. The Journal Club (3.1 \pm 0.1) and Interest in a Science Career rated Very Good (3.1 \pm 0.1). In 2020 and 2021, 83% and 93% of trainees, respectively, indicated increased awareness of CV sciences, and 78% indicated interest in CV-related research in the future. Over 29 years, 300 individual trainees participated in EICS, with an additional 28 still in UG training. We tracked 90% (270 of 300) to completion of the Bachelor's degree: 100% obtained

a BS/BA with 96% in MSTEM; >83% are enhancing the BMS workforce diversity with graduate (34%) or medical/health profession (33%) degrees or technical/teaching positions (16%) without advanced degrees.

Conclusions: EICS implements training in competencies that retain UR students in research careers. Outcomes highlight our substantial expertise in providing scientific knowledge, self-efficacy/confidence, socialization, and continued mentoring to foster the long-term success of our trainees in MSTEM fields.

Health Professions Education Institute (HPEI)

Title:

Rural Community Medicine Rotation for Family Medicine Resident Physicians

Presenter:

Dawn Caviness, MD, BSN

Co-author:

Aaron Lambert, MD

WORKS IN PROGRESS

Background/Needs Assessment:

It is well established that we are lacking in primary care physicians in the rural areas of NC and that this is contributing to the higher morbidity and mortality of patients in rural areas.¹ Research shows that one of the main predictors of whether physicians choose to work in a rural location is if they have training in a rural setting.² Rural Health experiences for all medical learners are imperative if we hope to better serve the rural population of NC.

Objectives:

The Rural Community Medicine Rotation is a required two-week rotation during the PGY-2 year and is part of the rural health curriculum that all residents at Cabarrus Family Medicine are required to complete. The resident learners spend 2 weeks being mentored by a family physician in a rural health clinic or hospital to experience family medicine in a rural setting and contemplate a future career in a rural area.

Methods/Description of Program:

Residents precept all patient cases with rural preceptors. Residents will be encouraged to reflect on the similarities and differences between the community rural practice and the resident's home residency practice. Also, residents will be encouraged to hold a dedicated discussion with their rural preceptor about living in and practicing medicine in a small town.

Anticipated Results/Evaluation Plan:

1. A weekly evaluation form of clinical performance will be completed by family medicine preceptor at the rural clinic site.
2. Completion of the Rural Preceptor Interview
3. Personal Reflection Document: 1)What surprised you? 2)What inspired you? 3)What did you learn? 4) Could I see myself practicing medicine in a rural area in the future?

Next Steps:

It is important for all resident doctors of Cabarrus family medicine to have meaningful learning experiences in rural settings to ensure that all residents are considering a career path in rural medicine. We will review collected data and end of rotation feedback from learners and

preceptors to modify and improve curriculum for the next academic year. We will share data collected with other programs across the state so they too can consider the value of adding required rural health training to their curriculum.

1 Sharma A, Basu S. Does primary care availability mediate the relationship between rurality and lower life expectancy in the United States? *J Prim Care Community Health* 2022;13:1-8. Doi:10.1177/21501319221125471

2 Patterson DG, Shipman SA, Pollack SW, et al. Growing a rural family physician workforce: The contributions of rural background and rural place of residency training. *Health Serv Res.* 2024; 59(1):e14168. doi:10.1111/1475-6773.14168

Health Professions Education Institute (HPEI)

Title: The Good Surgeon: design, implementation, and evaluation of a communal, mentored program to promote flourishing and character development in surgical trainees.

Presenter: Ethan Stonerook, MS, MMS, Assistant Professor, PA Studies, Wake Forest University School of Medicine

Co-authors:

Luke Neff, MD, Associate Professor, Wake Forest School of Medicine, Surgical Sciences – Pediatrics

Kristen Zeller, MD, Associate Professor, Wake Forest School of Medicine, Surgical Sciences – Pediatrics

Randi Stanulis, PhD, Professor, Assistant Dean for Professional Development, Michigan State University College of Medicine

WORKS IN PROGRESS

Background/Needs Assessment:

Surgical trainees are at high risk of emotional exhaustion (31.8 – 46%), depersonalization (38.4% - 48.9%), waning self-efficacy (21.3% - 47.2%)¹, and generalized burnout (45.2%), with 32% stating they would not recommend the vocation to their children^{2,3}. This leads diminished patient care and declining engagement in habits that engender physician flourishing^{4,5}. Offending factors include diminishing levels of empathy, psychological safety, and engagement with mentors⁶⁻⁸. Typical wellness initiatives, directed at individualized, one-off activities, fall short in ameliorating these challenges⁹.

Objectives:

Faculty from medicine, surgery, and the humanities developed The Good Surgeon (TGS); a program aimed to foster flourishing and character development in surgical trainees. Residents and mentors share monthly dinners, discussing practical and phenomenological challenges while engaging contemporary and ancient literature and art to shepherd imagination, co-create vision, and habituate practices leading to flourishing.

Qualitative research aim: How do residents interpret the influence of TGS on their development as surgeons?

Quantitative research aim: Describe the relationship between participation in TGS and empathy, burnout, and flourishing.

Secondary objectives:

- Understanding faculty motivations to attend to resident flourishing.
- Understanding program impact on local clinical culture.

Methods/Description of Program:

Recruitment: Ten general surgery residents at AHWFB (PGY1 - PGY5).

Qualitative Component: Qualitative analysis is framed in appreciative inquiry (AI), a social constructivist method focused on possibility, aspiration, and flourishing over systematic shortcomings^{10,11}. Interviews focus on describing 1) what is working well for each participating resident as they reflect on their engagement in TGS, 2) the impact TGS could have on clinical culture as it relates to sense of vocation and personal values, 3) incremental actions which foster flourishing within the training environment.

Quantitative Data Component:

Participants complete a 57-question survey capturing various dimensions of resident vocational health and the broader healthcare team, including key portions of the Maslach Burnout Inventory, the Johns Hopkins Learning Environment Scale, and the Jefferson Scale of Empathy.

Anticipated Results/Evaluation Plan:

Eleven residents have begun participation in TGS. Data collection is underway with results anticipated in summer, 2024. Following these results, the present study will be expanded to include two subsequent cohorts.

Next Steps:

With its focus on developing whole persons and habits of flourishing, TGS could protect residents from burnout, increase empathy, and foster habits of flourishing. We also anticipate positive impacts on clinical culture as perceived by the broader healthcare team. TGS is currently being adapted to serve other training programs in the institution.

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Health Professions Education Institute (HPEI)

Abstract submission template

Title here: Impact of Health Insurance Education Program on Health Professional Students

Presenter here: Hannah Y. Gantz, BS

Co-authors here: Emily Barr, BS, Hannah Y. Gantz, BS, Greg Russell, MS, and Amresh Hanchate, PhD

MEDICAL EDUCATION RESEARCH

Background: Health insurance impacts patient care and the patient-provider relationship across specialties. It's imperative that future health professionals are knowledgeable about health insurance and its limitations to best serve and advocate for patients. However, there is a gap in health insurance education amongst many school curriculums. This study implemented a yearlong extracurricular health insurance education program for students at Wake Forest University School of Medicine.

Objectives: This study examined the impact of a one-year health insurance education program on health professional students (MD, PA, Nursing, Biomedical Sciences). Our hypothesis was that there will be a statistically significant improvement in students' understanding of a series of foundational health insurance concepts after the curriculum intervention.

Methods/Design: This IRB-approved study utilized a pre- and post-program survey measuring twelve variables regarding knowledge of foundational health insurance concepts. The twelve variables included: familiarity with health insurance, confidence in educating patients, malpractice, out-of-pocket costs, medical bankruptcy, community resources, caring for the uninsured, disability, Affordable Care Act, HIPAA, No Surprises Act, and Medicare expansion. Workshops were offered monthly and were hosted by expert guest speakers on the aforementioned topics. Program completion required attendance of at least six workshops and a capstone project. The pre- and post-program surveys were administered to participants before and after program completion, respectively. This case control was analyzed using a two-sided Wilcoxon signed-rank test (p -value < 0.05).

Results: Thirteen participants were included for data analysis. Of the twelve concepts assessed, all were found to have a statistically significant improvement except participants' subjective familiarity with health insurance, suggesting that the longitudinal program increased knowledge in the eleven other categories.

Conclusions: The implementation of a longitudinal health insurance curriculum yielded statistically significant results in self-reported pre- and post-program knowledge and comfortability regarding foundational health insurance concepts. This suggests that incorporation of such education into health professional curriculums would be largely beneficial, and academic centers should consider this data when preparing their trainees for clinical work. Future directions include repetition of this study to include a larger sample size and to determine whether the results can be duplicated. Limitations of this study include subjective reporting and a small sample size.

Health Professions Education Institute (HPEI)

Abstract submission template

Title here: Enhancing Emergency Department Care for Cyclic Vomiting Syndrome: Implementing Guideline-Based Strategies to Improve Patient Outcomes

Presenter: Jonathan Dvorak, MD.

Co-authors: Shadab Saboori, MD; Baharak Moshiree, MD

WORKS IN PROGRESS

Background/Needs Assessment: Cyclic Vomiting Syndrome (CVS) presents a significant challenge in clinical settings due to its characteristic episodes of nausea and vomiting, which frequently necessitate ED visits and hospitalizations. In the ED, CVS is often overlooked and misidentified, resulting in overdependence on emergency services and sub-optimal care provision. A survey of 251 CVS patients and their caregivers indicated a concerning trend: CVS was incorrectly diagnosed in 88% of ED visits. This failure in recognition contributed to 2,435 hospital admissions, with patients seeking effective treatment across an average of four different EDs. Additionally, most of these patients were not referred to an outpatient gastroenterologist, further limiting their access to comprehensive and specialized care.

Objectives: To educate ED healthcare providers on CVS recognition and management and develop a guideline-based standardized approach within the Atrium Health System for managing CVS in the ED via implementing an EPIC order set. We aim to decrease ED visits and hospitalization rates, create defined admission criteria, and provide expedited GI referrals.

Methods/Description of Program: We are creating our EPIC order set to fulfill our goals in collaboration with our emergency department colleagues, mainly through the Patient Care Alignment Committee and the Pharmacy Subcommittee. Our approach is two-pronged: firstly, we are intensifying educational efforts to improve healthcare providers' recognition of CVS, and secondly, we are developing a specialized ED electronic order set within our EPIC EMR system.

Anticipated Results/Evaluation Plan: Our electronic order set includes tiered medical interventions based on 2019 ANMS guideline therapies to abort CVS episodes. We have developed admission criteria which includes assessing baseline versus post-treatment GCSI scores and Nausea/Retching/Vomiting subscores, to identify treatment success and failure. Most importantly, our order set includes prescription medications, expedited referrals to a gastroenterologist, and addiction medicine specialists for those suffering from CHS. Our protocol will be implemented throughout several Atrium Health facilities. We will measure the frequency of EPIC order set use, track hospitalization versus discharge rates from the ED, and whether appropriate gastroenterology referrals are placed.

Next Steps: We continue collaborating with our ED colleagues on the EPIC order set and logistical implementation of our strategies.

Assessing the Impact of Research Interest Group (RIG) to Increase Scholarship in Psychiatry Residency: A Quality Improvement Project

Presenters: Samantha Ongchuan Martin MD, Kaushal Shah, MD, MPH

Authors: Kaushal Shah, MD, MPH*, Samantha Ongchuan Martin MD*, Sahil Munjal, MD

*S.M. & K.S. shares first authorship and are presenters

Background:

Understanding research for evidence-based medicine is a key milestone in psychiatry training (SBP 1 and PBLI 1). Recognizing the decline in psychiatrist research, the NIMH appointed the National Psychiatry Training Council (NPTC) to implement the Institute of Medicine's (IOM) recommendations. Common barriers to resident engagement in research include time constraints, lack of interest, inadequate mentoring, and limited research skills and technical support. Addressing these, we introduced a research interest group (RIG) for interested psychiatry residents and medical students.

Objectives:

Our goal is to assess the role of RIG in remediating above mentioned known barriers.

Methods:

Initiated in October 2022, our voluntary Research Interest Group (RIG) at Atrium Wake Forest University Baptist Psychiatry program holds biweekly meetings. Aimed at supporting interested residents and medical students, the group monitors deadlines, discusses ideas, develops methodologies, and guides publication strategies. Participation is optional and has no negative impact on evaluations. Effectiveness is measured by attendance, support sought, and project progress compared with the previous year.

Results

The participation rate of residents in research activity has increased since October 2022. If we compare it to a Pre-Test period of January 1st until September 30th, 2022, it has grown by about 77.77%. During the pre-test period, 9 residents engaged in research activities via national conferences (APA, ANPA, ACLP) and had one manuscript published. In contrast, since October 2023, 16 residents have participated in research activities with 3 manuscripts published, 5 submitted for review, and 17 other ongoing projects. Current projects range from original needing data collection and analysis, systematic review, and case report. Although there is no baseline information from the pre-test period on medical student engagement in psychiatry research, a total of 12 medical students expressed interest in RIG, of which 83.33% have worked on at least one project.

Conclusion:

Our resident-led research group correlates with increased scholarly activity and heightened interest among residents and medical students applying for psychiatry residency. Enhancing

resource accessibility and fostering a scholarly culture through the RIG stimulates ongoing growth, transferrable across institutions to identify factors contributing to research culture in residencies.

Title:

Bite-Sized Teaching (BST) via "PRITE BITE" Program to Enhance and Integrate Learning into Evidence-Based Clinical Practice: Our Time is Now to Approach Learning Beyond Requirement

Presenter:

Kaushal Shah, MD, MPH⁺

Co-authors: Tyler Thompson, MD⁺, Jinhyuk Song, MD⁺, William Hathaway, MD⁺, Sahil Munjal, MD⁺*

⁺Department of Psychiatry, Wake Forest University, Winston-Salem, NC

*Residency Program Director, Department of Psychiatry, Wake Forest University, Winston-Salem, NC

Problem/Need Assessment:

The Psychiatry Resident-In-Training Examination (PRITE), assessing residents' Medical Knowledge (MK) across 3 domains of Neurosciences, Clinical Neurology, and Clinical Psychiatry, correlates moderately with ABPN board passing success. Given Wake Forest Psychiatry Residents' below-average PRITE scores in 2022 compared to U.S. counterparts, we explored the significance of innovative teaching, specifically Bite-Sized Teaching (BST) to address low scores, enhance continuous education, engage residents, and improve knowledge retention.

Program Objective:

To improve residents' PRITE scores and learning by assessing PRITE preparation barriers, evaluating "PRITE BITE" Program impact on scores, resident engagement, and retention of clinically valuable information, and advocating for Bite-Sized Teaching to program leaders for modern education.

Description of Program:

In the "PRITE BITE" Program implemented from June 2023 until December 2023 where all the residents signed up to volunteer to take the lead every week in disseminating educational PRITE style multiple-choice questions (MCQs) at least three times a week via email with appropriate explanations to all psychiatry residents.

Evaluation/Assessment:

In April 2023, a Pre-Test Survey assessed PRITE preparation barriers for 28 psychiatry residents at Wake Forest University. Findings revealed challenges in workload, inadequate preparation and support, and identified areas (neurology, developmental, psychotherapy) needing more emphasis in general didactics, which negatively impacted PRITE 2022 performance.

The "PRITE BITE" program, initiated in June 2023, conducted a Post-Test in December. Results showed 57% of residents found participation in writing PRITE MCQs helpful, while only 9% did not. In knowledge retention, residents scored 63% correctly. Comparing 2023 PRITE scores to 2022, Wake residents exhibited an overall improvement across all Medical Knowledge domains, with an average increase of 10.1%.

The average change from 2022 to 2023, when contrasted with US residents, showed a remarkable 337% increase. Additionally, per PGY level, scores for each MK domain in 2023 surpassed both 2022 Wake residents and US residents' scores.

Conclusion and Lesson Learned:

Positive outcomes from the "PRITE BITE" Program indicate significant improvements in PRITE scores and resident engagement. Expansion to other residency programs, forming regional and national alliances to advance evidence-based clinical practice through modern learning approaches to promote evidence-based clinical practice, education, and inclusivity.

Health Professions Education Institute (HPEI)

Abstract submission template

Title here: Simulation of POCUS to diagnose calciphylaxis using novel training models

Presenter here: Lindsay Strowd, MD

Co-authors here: Bridget Francis, Max Oscherwitz, Casey Glass MD, Chris Kelly MD

WORKS IN PROGRESS

Background/Needs Assessment: Calciphylaxis (CUA) is a disease primarily affecting patients with end stage renal disease that creates significant morbidity and carries high risk of mortality secondary to sepsis. CUA typically first presents as painful indurated lesions on the thighs, pannus, breasts, legs, penis, or acral digits and rapidly progresses to excruciatingly painful ulcerations. CUA is challenging to diagnose, with the current gold standard being skin biopsy but with high rates of false negativity, leading to delays in diagnosis and prompt initiation of potentially life-saving treatment. Various other diagnostic tools have been examined including plain Xray, nuclear medicine scans, and mammography with limited success and logistical barriers to implementation. Point of care ultrasound (POCUS) is a bedside diagnostic tool that is increasingly utilized in a variety of patient care scenarios within the hospital. POCUS has benefits for use in CUA diagnosis due to its ability to scan large areas of skin, quickly identify calcifications within small intradermal arterioles and capillaries, and is a painless procedure. While POCUS has not been widely used thus far in CUA diagnosis, investigators at Wake Forest (LS, CK) have previously published on its utility (<https://doi.org/10.7326/aimcc.2022.0441>). Barriers to implementation of POCUS include lack of dermatologist training in use of ultrasound and lack of training models to practice POCUS detection of intravascular calcifications. In response to this knowledge and training gap, the authors spent two years developing a novel skin training model for calciphylaxis, leveraging CEAL expertise in ultrasound model creation and clinician expertise in CUA ultrasound appearance. The authors are planning a novel training program in February to develop POCUS skills in Wake Forest dermatology residents using the developed training models.

Objectives:

Objectives of this educational session include:

1. Recognize the clinical presentation of calciphylaxis in various skin types and understand the pathophysiology of calciphylaxis
2. Demonstrate basic competence in use of ultrasound for skin and soft tissue diagnosis
3. Apply newly-gained ultrasound knowledge and skills to scan skin models and correctly diagnose calciphylaxis

Methods/Description of Program:

Training program development was completed by a working group which included the authors. All dermatology residents agreed to participate in the training program, scheduled for February 21st in the CEAL classroom at NCBH. Residents will complete both a pre-test and post-test. The program outline is below:

9:00-10:00 AM Pre-test, Lecture on calciphylaxis clinical diagnosis and pathophysiology (Strowd)
10:00-10:30 AM Lecture combined with hands-on small group activities on ultrasound basics and knobology (Kelly)
10:30-11:30 AM Small group stations where residents will practice scanning normal skin, scan for calciphylaxis using novel trainer models, and practice water bath ultrasound (Strowd, Kelly, Francis, Glass)
11:30 AM Post-test

Anticipated Results/Evaluation Plan:

All residents will complete a pre-test evaluating their baseline knowledge of calciphylaxis, ultrasound and POCUS techniques. At the end of the training session, residents will complete a post-test and an evaluation of the training session to assess for acquisition of knowledge, skills, and attitudes and likeability of the format of the session. This information will be analyzed to modify and improve the training session and materials. Based on results of this session, the authors would like to expand the training session to internal medicine and emergency medicine residents.

Next Steps:

The training session will take place on February 21st and pre/post data will be analyzed. The authors are planning to use data obtained from this teaching event to publish a manuscript.

Maria Krakovski – MS3

Cooking Up Leaders: Service Learning and Developing Social Responsibility in Medical Students

“Cooking up Leaders” was born out of a thoughtful observation – every day as I walked into my local YMCA, I noticed teenagers congregated around a communal space. I learned after meeting with the YMCA’s Executive Program Director that these teenagers were part of a program for “at-risk youth” from local schools. Without paying attention, many of my peers are unaware of these students. Moreover, there is a gap in MD students’ development of their social responsibility, given thoughtful awareness and “soft” skills is critical in our future profession, yet challenging to grasp in our curriculum.

I proposed a four-week cooking program to be held at the neighboring Brenner FIT Kitchen, with the following objectives: 1) empower youth to sustain trust within themselves and their peers, 2) teach responsibility, ownership, nutrition, and kitchen skills, 3) introduce medical students to this vulnerable population and the opportunity to teach and mentor.

Over the course of a few months, I created a curriculum of integrated cooking and personal lessons (i.e teamwork, communication) and trained MD student leaders and volunteers. I worked with the Teen Coordinator to identify the participants and secured funding (the IDEA Grant) to purchase materials. I created pre-class and post-class surveys to gather data from the teens, such enjoyment of classes, favorite and least favorite aspects, and takeaway lessons.

Over the course of the program in Fall 2023, many medical students realized the privileges of their positions and ability to be active in community health promotion. I collected MD student feedback through a debrief circle and asked both volunteers and leaders to provide reflections and feedback. Summary of feedback included a broader understanding of social responsibility and desire to engage with communities outside of our hospital “bubble”. In the next cohort in Fall 2024, I intend to explicitly assess the impact of the program on MD students’ understanding of addressing community needs and engaging in socially conscious care using pre- and post-surveys. To think this all started from an empathetic curiosity, I hope to encourage medical students to feel empowered to pay attention and act!

Enhancing Scientific Literacy: Leveraging Review Papers as Dynamic Educational Tools in “Pharmacology Courses”

Bitá Nickkholgh, MD. PhD and Jennie McGuire, EdD

Graduate School of Arts and Sciences, Biomedical Graduate Programs, Wake Forest University

Introduction: Proficiency in reading and comprehending scientific literature is vital for scientific progress. This study explores the utilization of review papers as an educational resource within the "Cellular and Molecular Biology of Drug Response" pharmacology course. Review papers are essential for evaluating methodological approaches, addressing inconsistencies in prior results, and outlining research insights. Despite their importance, research on teaching with review articles is limited. This study aimed to assess the impact of carefully selected review papers on students' performance and perception of pharmacological concepts.

Method: Review and original papers relevant to the course curriculum were chosen by the course director and assigned to student groups (4-5 students per group). Students discussed and created presentations based on a rubric, emphasizing integration with course material. Pre and post-tests measured immediate knowledge gain while exam grades and a questionnaire evaluated performance (retaining the learned material) and perception. In total three group activities were designed for the course. The activity was refined over four years based on students' feedback. In the first year, students were provided with papers without any accompanying rubric. In the second year, rubrics were developed. Finally, in the last two years, the study design was completed, including the creation of pre- and post-tests. The exam grades from the first year were utilized as the control to assess students' performance and retention of the material. T-Test with Welch correction was used for statistical analysis.

Results: Pre- and post-test data from 84 students across two cohorts (2022, 2023) showed a significant increase in immediate knowledge gain ($P < 0.0001$). Exam grades comparison between intervention and control cohorts demonstrated a significant improvement ($P < 0.0001$) indicating students' retention of knowledge for a longer period of time. Evaluation forms indicated positive effect of the activity on perception of the taught pharmacological concepts and positive impact on students' presentation skills. Approximately $80\% \pm 11\%$ of students perceived the activity as enhancing or solidifying their learned knowledge. Students appreciated the real-world application of theoretical knowledge. Constructive suggestions for improvement were proposed by approximately $59\% \pm 0.90\%$ of students. Minor changes will be applied based on the students' suggestions to improve the experience for the next cohorts.

Conclusion: The intervention positively influenced students' performance and perception of the pharmacological concepts, highlighting the effectiveness of review papers as an educational tool. Thoughtful selection of papers based on curriculum enhances students' learning, bridging theoretical knowledge with practical applications.

Health Professions Education Institute (HPEI)

Title: Serving Digestible Nutrition Education to Medical Students

Presenter: Pinyu Chen, BA

Co-authors: Seth McKenzie Alexander, MD, EdM; Brittany Morgon Browning, EdM; Vanessa Baute Penry, MD

CURRICULAR INNOVATIONS

Problem/Needs Assessment:

Wake Forest University School of Medicine (WFUSOM) medical students have limited nutrition education in their curriculum, making them unprepared to offer nutrition counseling to patients. Given the increased prevalence of chronic conditions that can be managed with dietary modifications, it is imperative that medical students have foundational nutrition knowledge. However, barriers exist, such as lack of available faculty and curriculum time, that prevent the incorporation of nutrition education long-term.

Program Objectives:

The purpose of this project was to identify the existing nutrition education gaps in the curriculum and to design an online nutrition module that would efficiently prepare medical school students to counsel patients.

Description of Program:

Our module, *Foundations in Nutrition*, was developed based on nutrition knowledge gaps identified from a needs assessment survey sent to WFUSOM students. To assess the efficacy of the module, students were asked to take pre-and post-module assessments containing the same 20 questions. Two months after the completion of the post-module assessment, participants were asked to complete a follow up assessment within seven days.

Evaluation/Assessment:

Differences were analyzed through paired sample t-tests with alpha level set at $P < 0.05$. Twenty-nine individuals completed the pre-module assessment, with mean score of 13.5 out of 20 questions. Twenty individuals completed the post-module assessment, with mean score of 17.4. The difference between the mean pre- and post-module score was 3.8 points ($p < 0.0001$). A

total of 15 individuals completed the follow up assessment, with mean score of 16.7. The difference between the mean post- and follow up score was -0.93 ($p = 0.1154$).

Conclusions and Lessons Learned:

The significant improvement in scores between the pre- and post-module assessments indicates that the module was efficacious in teaching students about foundational nutrition topics. Students were able to retain the information over time, given that the decrease between the post- and follow up score was not statistically significant. Since *Foundations in Nutrition* does not require dedicated faculty to plan the coursework and lecture long-term, it is an efficacious and sustainable way of teaching medical students about foundational nutrition topics.

WORKS IN PROGRESS

The 360 Method- An Innovative Teaching Method Emphasizing Specific and Targeted Feedback

Rikera Curry, MD

Amber Butler, MD, Bradford Hutcheson, MD, Shilpa Krishnan, DO, Rodney Villanueva, MD

Background/Needs Assessment:

Studies show that a positive learning environment can increase medical students' interest in psychiatry and contribute to their well-being during medical school. We identified two established teaching methods, the One-Minute Preceptor Teaching Method and the Triangle Teaching Method and subsequently developed the 360 Method, which combines both methods with the goal of providing time-efficient learner-centered feedback in various clinical settings. The 360 Method encourages students to provide preceptors with knowledge about their clinical strengths and weaknesses prior to the patient encounter, gives students an opportunity to present the case in front of the preceptor and the patient, and grants the preceptor an opportunity to provide general teaching points in addition to feedback that is specific to the student's perceived strengths and weaknesses.

Objectives:

Describe The 360 Method and understand medical students' perceptions of its effectiveness.

Methods/Description of Program:

Ten medical students participated in teaching sessions (5 students were assigned to either the One-Minute Preceptor Teaching Method or Triangle Teaching Method) from July 2023 to January 2024. Medical students were sent feedback surveys that were analyzed using a Top-Box Analysis. Feedback and survey responses were then used to develop The 360 Method, a combination of both teaching methods with an emphasis on students' perceived strengths and weaknesses. Preceptors were trained to utilize The 360 Method during teaching sessions with medical students that will occur from January 2024 to June 2024. 20 students will participate in these sessions and provide feedback to understand their perceptions of the new method.

Anticipated Results/Evaluation Plan:

The 360 Method will be used in various clinical settings. Data on its effectiveness will include primary outcome measures that assess the students' comfortability with the method, perceived knowledge gained from their preceptor, and satisfaction with the time spent engaged in the teaching session.

Next Steps/ Impact Statement

The 360 Method will improve upon medical students' skillsets by offering learner-centered feedback that is also time-efficient for assigned preceptors.

Health Professions Education Institute (HPEI)

Title: Sustaining a Social-Emotional Learning Curriculum through Developing a Leadership Training Program Utilizing Coaching and Feedback Skills for Pre-K Teachers

Presenter: Sarah Floyd Vess, PhD, LP, HSP-P, NCSP

CURRICULAR INNOVATIONS

Competency-based medical education (CBME) elicits the need for medical schools and training facilities to embed teaching skills training within their curriculum and practice. Medical trainees play a key teaching role with their peers and subsequent cohorts, yet they typically receive very little skills-based teaching training (Al Achkar, Hanauer, Morrison, & Davies, 2017). The practice of utilizing residents as teachers is widespread and necessitates residents be prepared for their teaching roles, yet the integration of formal teaching skills training into postgraduate medical education (PGME) is sporadic. Cohen, Steinert, and Ruano Cea (2022) conducted a comprehensive literature review on Student-as-Teacher (SaT) curricula utilized in medical school and found formal teaching skill training was provided in only 44% - 82% of the articles surveyed and the training that was offered was typically optional in nature, provided only to more senior residents, of short duration, and focused on delivering feedback and learning activities. Guiding principles for SaT curricula noted by the authors including: 1) compulsory formal teacher training embedded in the program, 2) longitudinally and progressively teaching skill design, 3) content aligned with existing curriculum, and 4) authentic opportunities for teaching roles embedded into curricula. This presentation discusses a grant-funded longitudinal teacher leadership program designed for teachers to teach their peers that incorporated 1-1 coaching, instructional didactics, guided authentic teaching opportunities with feedback, and individualized leadership development plans. The program included 3 of the 4 recommended SaT curricula principles mentioned above and is presented as an example of how best practices in medical education can be incorporated into a formalized learning experience to develop teaching and leadership skills and effect change. Medical residents are not only serving as teachers for their peers, they are also leaders and coaches and need preparation for these roles. The Incredible Years (IY) Teacher Leadership Program components directly translate to identified areas of need in medical education. The IY Teacher Leadership Program was designed to promote internal sustainability by creating IY Dina ambassadors within the system that could continue to coach and mentor fellow teachers and encourage the continuation of IY Curriculum. 8 teachers who taught the IY Dina program with fidelity and demonstrated leadership potential were selected to participate in the two-year IY Teacher Leadership Program. Participants received monthly 1-1 leadership coaching with a psychologist and attended quarterly didactics and group consultation sessions which provided instruction on the principles of coaching and delivering effective feedback. The opportunity to practice and apply these skills throughout the year was provided as participants were assigned mentee teachers to coach in IY instruction with support from a psychologist. Teachers identified target areas of growth for their teaching and coaching skills and these identified areas of need became the basis for both the monthly coaching conversation and the ongoing teacher leadership development plan. 100% of the participants continued in the program from year 2 and 3 and graduated from the program. Qualitative analysis of interview data post year 2 and year 3 demonstrated satisfaction with the program and feedback that the coaching was valuable for general personal and professional growth as well as keeping participants on track with their IY related goals. Barriers to

continued sustainability post-program were identified by the participants: co-teacher turnover, burnout, time, introduction of a new required reading curriculum, and lack of director support. Only 32% of teachers not involved in the program continued utilizing the curriculum, whereas 100% of the teachers involved in the IY Leadership Program continued teaching the IY Dina Curriculum and 100% of their mentees continued utilizing the IY Dina Curriculum in their classrooms through the teaching and coaching support of their mentor. Center directors reported satisfaction with the program, specifically noting seeing changes in their teachers to take on more responsibility and accountability and that teachers who had been resistant to their suggestions were more likely to listen to the suggestions of the peer teachers and confide areas in which they needed additional support.

Physician, Heal Thyself: The effects of life and career coaching on burn out, self-compassion, and resiliency in medical residents

Sarah White, MD

Background/Needs Assessment:

There is growing awareness surrounding physician suicide, depression, and burn out. At least 300 physicians each year commit suicide, one of the highest as of suicide amongst any profession and two times higher than the rate of the general population. Attributed to this trend is the high rate of depression amongst medical trainees. A systematic review revealed that depression affects between 20.9 and 43.2% of residents and that rates of depression increased throughout training.² Similarly, numerous studies have described high rates of burn out in trainees, which is described as the triage of emotional exhaustion, depersonalization, and feelings of inefficacy from chronic work-related stress.³ While reported since as early as 1989, a recent prospective study described rates of burnout as high as 75% in residents.⁴ Physician depression and burnout is associated with increased medical errors, higher patient mortality rates, decreased workplace productivity, and high job turnover.^{5,6} Though this has been called a public health crisis, the solution to physician depression and burn out remain nebulous. Multiple system wide strategies to mitigate burn out have been employed, including mindfulness training, stress management, and duty hour restrictions, with only modest improvements in burn out rates.⁷

Burn out, in part, may be related to physician perceptions and beliefs. Traits that often are needed to succeed in medical training, such as perfectionism, self-denial, and delayed gratification, can ultimately lead to feelings of inadequacy.⁸ A recent narrative of resident burnout described several factors that lead to increased burn out: the perception of insufficient autonomy, stressful work environments, attending physician demands, lack of timely feedback, and an environment in which personal needs are felt to be inconsequential.⁹ Factors protective against burn out included maintaining a positive outlook, avoiding a delayed gratification mentality, and being able to positively reframe situations.⁹ This suggests that at least in part resident perceptions may be leading to burn out.

As more focus has been placed on mitigating physician depression, burn out, and suicide, life and career coaching has become an area of interest. Professional coaching focuses on metacognition with the supposition that the client, in this case a medical professional, possesses sufficient inner resources and merely needs guidance to adequately use these. The coach does not mentor or provide advice but rather helps the client learn to identify and question their thoughts and perceptions and actively choose new thoughts to achieve a new outcome. Professional coaching has long been used in other fields but is only recently described the medical professional, particularly with medical trainees. A recent study published in 2022 demonstrated that with a 6 month online coaching program, female medical residents experienced decreased rates of emotional exhaustion and imposter syndrome and increased rates of self compassion.¹⁰ While promising, this program involved asynchronous online learning as well as additional coaching at night, which can be difficult to manage with the rigors of a residency schedule, and in populations already prone to perfectionist tendencies, may lead to worsened behavior and thought patterns. Therefore, the objective of this project is to determine if a structured life coaching program incorporated into existing didactic sessions will lead to improve rates of burn out, imposter syndrome, resiliency, and self-compassion amongst a cohort of residents.

Objectives:

The objective of this study is to determine if a structured life and career coaching program leads to improved rates of burn out and resiliency in medical residents

Methods:

This is a prospective cohort study involving all residents in the Department of Obstetrics/Gynecology. A structured life and career coaching curriculum has been incorporated into the standard didactic curriculum for the obstetrics and gynecology. Sessions are 60 minutes in length and are held quarterly during protected teaching time within the residency program. Prior to the start of the curriculum, residents are anonymously able to provide topic ideas for the curriculum or for coaching sessions. The first two sessions were dedicated to introducing the foundational topics of life coaching and cognitive restructuring and will focus on The Thought Model (see appendix 1), thought journaling, identifying thought distortions, and creating new thoughts and beliefs. The remaining sessions will be more participant led and will focus on topics pertinent to medical trainees such as imposter syndrome, receiving negative feedback, unexpected outcomes, productivity/overwhelm, and the future self. The first 15 minutes of each session introduce the topic of the session as well as provide fundamental life coaching strategies for that topic. The remaining time in the session is dedicated to interactive discussions with the participants and group coaching. Opportunities for individual coaching or anonymous written coaching will be provided at the request of participants.

Prior to the start of the curriculum and at the conclusion of the last session, the Maslach Burnout Inventory, Clance Imposter Scale, Neff's Self-Compassion Scale- Short Form, and the Brief Resiliency Scale will be administered. A survey regarding participant satisfaction and feedback will be given at the conclusion of the curriculum as well.

Anticipated Results/Evaluation Plan:

Results will be analyzed initially using descriptive statistics. Comparison between pre and post curriculum surveys will be done using chi square tests for proportions, and t-tests or ANOVA procedures for continuous variables. Other inferential statistical analysis will be conducted as appropriate.

Next Steps:

The pre-curriculum surveys (the Maslach Burnout Inventory, Clance Imposter Scale, Neff's Self-Compassion Scale- Short Form, and the Brief Resiliency Scale) have been administered and are being analyzed. Preliminary data suggests elevated scores on the Maslach Burnout Inventory and Clance Imposter Scale across all residents, but additional analysis by level of training and additional demographic factors is needed. In June 2024, following the initial year of the curriculum, the surveys will again be administered to assess for any change in scores following the implementation of the curriculum. Participant surveys will also be administered to assess for perceived improvement in symptoms, satisfaction with the curriculum, and to evaluate ways to improve and expand this program.

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Health Professions Education Institute (HPEI)

Abstract submission

Breakfast with Ronald McDonald: An IDEA Grant Project

Presenter: Sydney Karre

WORKS IN PROGRESS

Background/Needs Assessment: The Ronald McDonald House Charities is an incredible organization with a mission of keeping families close during difficult times, such as serious illness or injury. A critical component of positive health outcomes is having a strong support system present at the bedside which improves patients' mental and emotional health, reduces loneliness, allows for more well-informed treatment decisions, and prevents readmission^{1,2,3}. The Ronald McDonald House (RMH) makes it possible for families to be united during difficult times by providing housing, food, and other resources at no cost⁴. This project, which was supported by an IDEA grant, worked to further these efforts and increase Wake Forest School of Medicine (WFSOM) student engagement by serving meals to the guests at RMH. This communicates to students and families alike that WFSOM and Atrium Health Wake Forest Baptist (AHWFB) values this aspect of patient care and takes action to make sure that patients and their families receive support.

Objectives: The basic research aim was to explore the impact these provided meals had on the families and the impact of this service on participating students.

Methods/Description of Program: Working with the RMH staff, three dates were selected. Students signed up to help prepare breakfast on these days. Students submitted written statements about their experience following the event. Discussions with families and the RMH staff were carried out throughout the project and used in our analysis.

Anticipated Results/Evaluation Plan: A mixed methods framework was utilized to evaluate the efficacy of the project. Quantitative measures provided data points such as guests served and students engaged, while qualitative elements such as impact statements from participating families and students afforded a rich and complimentary lens for exploration of themes.

Next Steps: This project has built the foundation of enhanced trust between AHWFB and the families at the RMH, which we believe will improve health outcomes. It also highlighted the profound positive impact the project had on participating students. We believe regularly incorporating patient-facing volunteering in UGME would be an invaluable curricular element.

This year, we plan to use the same model of breakfast events to evaluate in more depth the effects of service on student mental health/wellbeing and a sense of belonging in one's community.

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Health Professions Education Institute (HPEI)

Title: Gamification in Medical Education: Medical Students' Perspectives on Gamifying Electrocardiography and Cardiac Pharmacology in Year 2 Cardiology Block

Presenter: Sydney Means, BS

Co-authors: Camryn Means, BS; Lindsey Palmquist, MS; R. Brandon Stacey, MD

Background: Medical education continues to be a rapidly evolving field. With the incorporation of diverse technology and multimedia educational tools in medical curricula, alternatives and supplements to standard lecture-based methods are being integrated. Gamification refers to using a gaming framework in non-game settings. Gamified medical education is becoming a more widely used tool to enhance the delivery of information to medical students.

Objectives: This study seeks to understand medical students' (i) pre- and post-session knowledge, (ii) satisfaction, and (iii) perspectives of gamification in a Year 2 Cardiology block.

Methods/Design: A mixed methods study was designed. 145 second-year medical students were presented with anonymous pre- and post-session surveys related to two optional gamified classes: Electrocardiography Session III (ECGIII) and Cardiac Pharmacology. Comfort with pre- and post-session knowledge was rated on a 5-point Likert scale. The post-session surveys additionally rated satisfaction with each session. The post-session survey asked if sessions contributed to knowledge in a meaningful way and student likeliness to attend other gamified lectures. Post-session perspectives on gamification were allotted an open text-box response. Survey response data was analyzed using paired t-tests to compare reported knowledge pre- versus post-session; open-ended student responses were analyzed for themes.

Results: 23 students completed all three surveys. Students' reported knowledge of ECGIII and Cardiac Pharmacology topics significantly improved following each session (both $p < 0.001$). The majority of students reported they were Satisfied (39.1%) or Very satisfied (47.8%) with ECGIII. The majority of students reported they were Satisfied (43.5%) or Very satisfied (43.5%) with Cardiac Pharmacology. All but one student reported these sessions contributed to their

knowledge in a meaningful way. All students reported they would attend more gamification sessions during preclinical curriculum blocks. Several themes were identified among the open-ended student perspectives: reinforcement of material, innovative and fun style, increased engagement, usefulness in learning, and collaboration among peers.

Conclusions: Students reported satisfaction of and responded positively to gamifying topics in the medical school curriculum, lending support for medical educators to incorporate gamified sessions into medical curricula. Further investigations should aim to increase response rates and explore the impact of gamification on student performance.

Abstract

Title: Learning From a Hospital Food Recovery Program

Authors: Ulysis Baal, B.S., Yaffa Ali, B.S.

Background: In 2018, North Carolina was identified as having the 10th highest prevalence of food insecurity (FI) in the USA, with Winston-Salem experiencing a particularly high rate: 16% of all households and 21% of households with children, exceeding the national average.^{1,2} This situation is exacerbated by significant food waste, a key contributor to FI.³ Notably, hospitals have been identified as major sources of food waste, contributing 10-15% of all healthcare-related solid waste.⁴

Objectives: To create a food recovery program, RxPurpose, a collaborative initiative between WFSOM and Atrium Health Wake Forest Baptist Hospital. The program's goal is to 1) address local FI by establishing a student-run organization dedicated to redistributing surplus food from hospital cafeterias to community organizations and 2) create a valuable learning experience for medical students.

Methods: Collaborative effort between medical students of WFSOM, AHWFB and selected organization of choice: Salvation Army Center of Hope in Winston Salem. Medical students will work with the leadership of hospital cafeterias and community organizations to foster collaboration, create opportunities for student involvement and learning, examine the volume of food waste and meal preparation processes in hospitals, and conduct semi-structured interviews with participants involved in the service. Biannual analysis will be performed to measure hospital food waste metrics to assess cost of burden. Utilizing this analysis, a set number of meals will be prepared once a week. A delivery schedule will be designed to foster a long-lasting system of food redistribution. Data will be collected and analyzed by the Directors of organizations to quantify the food waste redistribution and other metrics.

Results: The anticipated quantifiable outcome measures include a reduction in food waste at the participating hospitals and an increase in the availability of food at local shelters. Results captured will include food waste projections in monetary value, highest costs of burden in the hospital food waste arena, total number of meals served, total monetary value of meals and the number of individuals served via meals. The study's results are expected to contribute to a broader discussion on adopting food recovery systems on a larger scale as well as bolster medical student learning, leadership, and practical involvement in addressing Winston's food insecurity. This initiative could also integrate with academic programs like the Health Equity Certificate Program, providing students with experiential learning opportunities that encourage internships in community initiatives through a lens of innovation.

Next Steps: Future direction involves translating the RxPurpose blueprint to more hospital networks in North Carolina. Allowing the pilot project to be introduced into other affiliate hospitals will allow for long-lasting, impactful relationships to be built within the local community and through the medical school. This invites medical students to participate in collaboration and initiatives to support their local community and learn about the social inequities that exist. Understanding the food waste footprint in our hospitals will also allow opportunity for hospital logistical improvement to forge waste prevention culture. Additionally, it is feasible to start a unique certificate program around this program focused on food insecurity and its health implications. This program aims to deepen Wake Forest Medical Students' engagement, offering leadership roles and fostering collaborations to improve existing community initiatives. Ultimately, the initiative seeks to create a sustainable, student-led movement towards health equity and food security, integrating these vital issues into the core of medical education and practice.

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