

MEDICAL EDUCATION: PART I

MOCK CALLS: A TOOL FOR IMPROVING MEDICAL STUDENT PERFORMANCE IN THE MANAGEMENT OF MEDICAL EMERGENCIES

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Introduction

The July transition from medical student to internship brings potential risk for poor patient outcomes, including worsened mortality, known as *the July effect*.¹ Graded responsibilities based on competencies has been suggested as tool to mitigate the July effect.¹ A national survey of internal medicine residency program directors found their highest and second highest-ranked competency priorities for new interns were “knowing when to seek assistance” and “communication with nurses/nurse triage,” with 95.7% and 89% respectively assigning each of these competencies a high priority.² Further, 67% of incoming interns reported no formal training in cross coverage.³ Prior single-center experiences with simulated calls have demonstrated improved medical student confidence in their future internship performance.⁴ We utilized simulated nurse calls for mock emergency cases as a tool to build fourth-year medical student skills in communication with nurse team members, triaging patient scenarios for further evaluation, and escalation of care and to enhance student skills in the management of emergencies prior to internship.

Mock Call Structure

Thirty-seven students who had intentions to apply for an internal medicine internship were enrolled in a two-week internship preparedness course. As part of this course, they were provided didactic education on patient hand-

off, communication with physicians and nurses, and management of common medical emergencies. Sixteen preceptors (faculty and senior residents in internal medicine) were trained to simulate progressively challenging emergencies from a scripted case on a telephone call with a fourth-year medical student. The calls were to be made at a pre-scheduled window of time and each were to last between 15 to 20 minutes. During these mock calls, the student would be presented with a chief concern and a brief relevant history. The student could request appropriate vitals, physical exam findings, labs, and other information the nurse, simulated by preceptors, could provide from the script. If a student would ask for data that was not scripted, preceptors were asked to improvise a response based on the contents of the case, including responding that the data requested was either unavailable or unable to be obtained. The cases would involve dynamic changes in patient status based on the student’s management. For example, if a student correctly initiated insulin and dextrose in the management of hyperkalemia, a follow up electrocardiogram may show resolution of the signs of hyperkalemia that were present on initial evaluation. The students’ receipt of lab or imaging would also be based on simulated times for those tests. For example, an electrocardiogram would be provided relatively soon after the student requested it, but computed tomography of the abdomen may be delayed or not be available during

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FROM THE EDITOR

TIME TO LEAD

Tiffany I. Leung, MD, MPH, FACP, FAMIA,
Editor in Chief, *SGIM Forum*

Happy New Year! As another New Year transition passes, there is a familiar sense of renewal that I expect and look forward to each year. Already two years ago, I suggested that the 2020-21 New Year's transition would be a perfect opportunity for us to resolve to "promote our health and that of our colleagues."¹ During the 2021-22 transition, I reflected on *SGIM Forum* commitments to adhere to the DEI Workgroup recommendations for the Society.² This year's transition marks my final January issue as *SGIM Forum* Editor-in-Chief and I have only positive and professionally formative experiences to take away from this role.

As I think about 2023, I must give thanks to the village it takes to produce each monthly issue of *SGIM Forum*. I have the deepest gratitude for Francine Jetton, *SGIM* Director of Communications and Publications and *SGIM Forum*'s outgoing staff liaison, Taylor Wise, Social Media and Communications Specialist who will be *SGIM Forum*'s staff liaison going forward, Frank Darmstadt, *SGIM Forum* Managing Editor, and Howard Petlack, our graphic designer, for all their support and patience as I grew into this Editor-in-Chief role during the early pandemic period of 2020. I also thank Joseph Conigliaro, past Editor-in-Chief, for a smooth leadership transition and especially for encouraging me to write and edit throughout my pre-2020 years as an Associate Editor. To each Associate Editor I have worked alongside: thank you for your service and making this adventure the fulfilling and re-energizing space into which I have grown. Lastly, I am grateful to the *SGIM* Council and leadership for their support—especially each of the presidents whose columns are published in *SGIM Forum*, LeRoi Hicks, Monica Lypson, and Jean Kutner. Similarly, thanks to Eric Bass, *SGIM* CEO, for always keeping us updated on the latest news in Society partnerships, policies, and practices in his CEO Q&A column.

I look forward to reading even more innovative and thought-provoking work from *SGIM* members for a long time to come. I am especially excited to welcome a new Editor-in-Chief in early 2023. Don't miss out the chance to head a team in a unique leadership role and work with so many wonderful human beings along the way!³ The extended call for applications for *SGIM Forum* Editor-in-Chief is open until January 13, 2023.

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ALL ARE WELCOME HERE: SEEKING INPUT ON STRUCTURING ADVOCACY FOR AN EQUITABLE SYSTEM OF CARE

LeRoi S. Hicks, MD, MPH, FACP, President, SGIM

"USPTF has consistently been populated with respected SGIM members who dedicate their efforts to rigorously examining the literature prior to making recommendations. If SCOTUS were to uphold Judge O'Connor's decision, several measures proven to promote health may require patient copayment... being too costly for many of our nation's most vulnerable populations."



As we finish the holiday season and look forward to a new year, I'd like to tell you a bit about my background and its influence on my thoughts of the treatment of others. My father was a prominent Baptist Preacher in Indianapolis, Indiana—to many, he was an imposing figure. Rev. Hicks was a six-foot tall, 250-pound military veteran with a deep voice that attracted attention with minimal effort. What became clear to most, after getting to know him, was he was a gentle giant. For every memory I have of him speaking passionately from the pulpit, I can recall him bringing others to laughter while sharing experiences focused on the commonalities between us as opposed to highlighting our differences. I recall the numerous times my family provided free room and board for members of the community. My parents would often open our home

to people rejected by others in the church because of sexual orientation, being unwed and pregnant, or struggling with substance use. I write this column about my family so you can clearly understand my perspectives on the evil of unequal treatment. In my house, all were welcome, and I was taught that all people are deserving of love.

As a result of my upbringing, I am saddened by the current challenges we face to the provision of safe and effective health care. I was surprised and disheartened by the information provided by one of our committee chairs during a meeting a few weeks ago. Six plaintiffs had petitioned a court in Texas to overrule a provision in the Affordable Care Act (ACA) that requires employer-based insurers provide full coverage for HIV prophylaxis medication (PrEP). A few plaintiffs objected to the provision on religious grounds, arguing that the ACA mandate requires that they as employers incur excess costs to cover

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Q & A WITH SGIM'S CEO AND LEADERS OF THE PRIMARY CARE COLLABORATIVE (PCC) ABOUT THE ROLE OF PRIMARY CARE IN ADVANCING HEALTH EQUITY

Eric B. Bass, MD, MPH; Anders Chen, MD, MHS; Larry McNeely II, MPA; Ann Greiner, MCP

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EB: What is the mission of the PCC?

AG/LM: The PCC is a not-for-profit multi-stakeholder membership organization dedicated to advancing an effective and efficient health system built on a strong foundation of primary care and the patient-centered medical home. Representing a broad group of public and private organizations, the PCC's mission is to unify and engage diverse stakeholders in promoting policies and sharing best practices that support growth of high-performing primary care.

EB: Why did the PCC launch the "Better Health - Now" campaign?

AG/LM: In early 2022, the PCC partnered with the National Center for Primary Care and 39 other stakeholder organizations (including SGIM) to launch a new campaign focused on advancing the policy recommendations contained in the 2021 report from the National Academies of Sciences, Engineering, and Medicine (NASEM) on Implementing High Quality Primary Care.¹ Building on the NASEM report's call for fundamental changes in primary care payment and investment, the campaign issued the following five Concordance Recommendations:²

1. establish pathways for primary care practices to transition from a predominantly fee-for-service model to a predominantly population-based prospective payment model coupled with ongoing investments and guardrails to ensure that patients and communities most affected by health inequities realize the benefits;
2. overall healthcare spending in terms of ongoing payment and needed investment must be rebalanced toward primary care;
3. primary care funding must be risk-adjusted, including for social drivers of health, and sufficient to support multidisciplinary primary care teams that can meet the needs of diverse populations, with an

emphasis on providing high-quality care to disadvantaged communities;

4. to better support patient-clinician relationships and accountability for population health outcomes, patients should be encouraged to choose a regular source of accessible, culturally centered primary care;
5. increase Medicaid primary care payment to at least the level paid by Medicare, and fully fund state efforts to achieve this standard of payment.

EB: Why do you believe primary care is key to advancing health equity?

AC: Access to high-quality primary care has long been associated with improved health equity.³ As indicated in the PCC's recent report on primary care being a key lever to advance health equity,⁴ primary care practitioners are dedicated to building relationships, thereby engendering the trust needed to mitigate inequities stemming from social drivers of health. Primary care practices can help connect patients to available health insurance, use digital health technology to enhance access to care, offer culturally appropriate care, use team-based care and community resources to address unmet social needs, and engage with the community in system-level decision-making.⁴

EB: What are the most important policy steps to strengthen primary care and advance health equity?

AG/LM: We recommend focusing on five major policy steps.³ The first step is to enhance payments and federal appropriations for the primary care safety net. The second is to accelerate efforts to collect self-reported race and ethnicity data in clinical practices, ideally disaggregated to reflect differences among sub-populations, and including primary language, geographic location, socio-economic status, gender identity, sexual orientation, age, and ability status. The third is to transform primary care's fee-for-service payment paradigm by implementing

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ADDRESSING INEQUITY AND BIAS IN MEDICINE AND HIGHLIGHTING INNOVATIONS FROM THE SGIM UPDATE IN MEDICAL EDUCATION: PART TWO

Milad Memari, MD, MS; Tanya Nikiforova, MD, MS; Eva Szymanski, MD; Cornelius A. James, MD;
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Introduction

In part two of our Update in Medical Education series, initially presented during the 2022 Society of General Internal Medicine (SGIM) Annual Meeting, we highlight studies that offer targeted solutions to address racism, lack of diversity, and bias in medical school admissions and trainee evaluations. Additionally, we share innovative approaches to delivering educational content and improving trainee wellness.

Methods

Study authors employed a modified Delphi methodology to achieve group consensus on the selection of publications from journals that regularly publish medical education research. Additional details about methods used can be found in Part One of this two-part series.¹

Addressing Structural Inequities

This section highlights interventions aimed at addressing the lack of representation of minoritized populations in medicine and describe the efficacy of these approaches in achieving the desired outcome.

Improving Diversity in Medical Student Recruitment

Robinett, et al, report on the implementation of several interventions to reduce bias in the medical school admission process at one academic institution.² Interventions included: 1) providing unconscious bias training, 2) increasing recruitment efforts at colleges and conferences for underrepresented identities, 3) screening applications holistically and viewing the MCAT qualitatively, 4) blinding interviewers to GPA and MCAT scores, 5)

“There were many important innovations this past year that sought to address equity in the physician workforce, measured the effectiveness of societal guidelines on diversifying efforts, and demonstrated curricular innovations to reduce cognitive load and improve resiliency.”

soliciting applicant feedback about interview experience, and 6) diversifying admission committee membership. This multifaceted intervention significantly increased the number of applicants under-represented in medicine (URiM) who were interviewed, accepted, and

matriculated. The proportion of URiM identifying students increased from 10-13% in the preceding three years to 24% in the matriculating class. Of note, there was no meaningful difference in average MCAT and GPA in the matriculating students when compared to prior classes. When interventions are made at each touch point in the recruitment process, measurable improvements in medical school diversity result.

Mitigating Bias in Letters of Recommendation

Zhang, et al, examined Program Director (PD) Letters of Recommendation (LORs) for the 2019 and 2020 applicants to one cardiology fellowship to explore the potential for bias mitigation following changes in the 2017 Alliance for Academic Internal Medicine (AAIM) LOR guidelines.³

Qualitative content analysis was conducted on 56 LORs, according to AAIM guideline adherence and applicant qualifying as under-represented in cardiology (URC; self-identified Black, Latinx, or female). Bias against URC applicants was observed in both letter types, with URC applicants described with communal language (i.e., descriptions of kindness and empathy) and non-URC applicants described with agentic language (i.e., descriptions of leadership skills). AAIM guideline-adherent LORs included

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INTEGRATIVE MEDICINE IN RESIDENCY: LESSONS IN WHOLE PERSON HEALING FOR EVERYONE

Arlene Betancourt, MD; Mari Ricker, MD

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The COVID pandemic highlighted the disproportionate risk for poor health outcomes for people suffering from poverty and other inequalities. We are witnessing an alarming increase in mental distress, healthcare expenditure, burnout, and workplace attrition. A growing body of research provides evidence for the mind-body connection and the essential role of equity in advancing integrative healing for all. The Integrative Medicine in Residency brings the unique opportunity to learn and practice whole person medicine while supporting the well-being of healthcare workers.

Shifting the Health Paradigm: Moving from Treating Disease into Creating Health

Across millennia, ancient healing traditions considered the mind, body, and spirit in the pursuit of health and well-being. By early 20th century, scientific and technological advances brought forth a more reductionist approach to the teaching and practice of medicine. The Flexner report of 1910 established the biomedical model as the gold standard of medical training, contributing to an imbalance in the art and science of practicing medicine.¹

The U.S. health and medical education systems invest heavily towards acute and end of life care whereas only 3-6% of healthcare expenditure is allocated to primary care and health promotion. Despite staggering costs, U.S. health outcomes are lagging when compared to other developed nations. Our system is effective at treating disease but has been unable to reverse the epidemics of cardiometabolic disease, chronic pain and mental distress affecting patients and healthcare workers alike.

By end of the 20th century, thought leaders and academic organizations were proposing a more holistic approach to health and wellbeing. In 1994, Dr. Andrew Weil established the field of integrative medicine and founded his eponymous Center for Integrative Medicine at the University of Arizona in Tucson. In 1998, Martin Seligman, PhD, founded the field of positive psychology while the Office of Alternative Medicine became part of

the NIH, ultimately renamed the National Center for Complementary and Integrative Health (NCCIH). The following year, the Accreditation Council for Graduate Medical Education (ACGME) would establish a set of competencies to help define the foundational skills every physician should possess, emphasizing patient-centered care and interprofessional collaboration.

A healing-oriented medical specialty, Integrative Medicine encompasses evidence-based Western and Ancient therapeutic modalities and the partnership between patient and healer. Along with the concept of treatment, health promotion and the prevention of illness are paramount. The Veterans Health Administration was one of the first U.S. institutions to provide integrative care under the leadership of Benjamin Kligler, MD. An integrative approach to healing is proving to be beneficial in the treatment of complex disorders, such as chronic pain. Veterans who used Whole Health services have reported improvement in perceived stress, engagement in life, and decreased opioid use. In addition, the VA Whole Health initiative is demonstrating benefit in improving employee health and well-being with increased engagement and decreased reported burnout and voluntary turn-over.²

Integrative Medicine in Residency Is Growing a New Generation of Interdisciplinary Healers

Since its founding in 1994, the University of Arizona, Andrew Weil Center for Integrative Medicine (AWCIM) has trained thousands of physicians. In addition to fellowship training, AWCIM offers a wide variety of educational programs including elective rotations for medical students and residents, online courses, health coach certification, and the Integrative Medicine in Residency (IMR) program. Founded in 2008, the IMR program provides 200 hours of competency-based, online curricula designed for flexible incorporation into primary care residencies. The modules include topics on nutrition, mental health, clinician well-being, and integrative

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approaches to pain management—all designed to support the learning and practice of integrative medicine in a variety of settings. A majority of residents use CME funds to cover the tuition cost which ranges between \$800 and \$1,200 per resident (based on content specific to each specialty). A one-time payment provides access to the curricula for the duration of the residency program plus an additional year post-training.

Since its inception, the IMR has trained more than 1,700 residents and expanded to more than 116 sites within the United States and several international programs. The residency programs include internal medicine, family medicine, obstetrics and gynecology, prevention medicine, and psychiatry. Pharmacy residents are now participating as part of a new multidisciplinary IMR pilot. Under the guidance of a faculty leader, each cohort of residents engages in diverse educational activities which might include clinical training, interactive online learning, formal presentations, advocacy work, and experiential learning. Faculty leaders have opportunities for professional development through monthly leadership meetings and an annual faculty development conference. A shown benefit of the IMR program is enhanced recruitment into participating residencies.³

IMR for internal medicine residents at UT Southwestern was established at the safety net resident clinic in fall 2018. A total of six internal medicine residents participated between 2018-20. In response to the need for safe opioid prescribing and a whole person approach to the treatment of chronic pain, a novel bi-monthly clinic was created providing opportunities for interprofessional collaborations between internal medicine and pharmacy residents and faculty. The patient and clinician experience at the pilot clinic culminated in the founding of a new service, the Integrated Pain Healing Center. The multidisciplinary collaborations have now grown to include integra-

tive medicine, clinical pharmacy, social work, psychiatry, addiction medicine, nursing, and acupuncture.

In September 2020, a new integrative medicine and pharmacy clinic was designed to address the high prevalence of uncontrolled diabetes at a dedicated medical home for employees of the safety net hospital. The weekly clinic was staffed by the IMR faculty leader and a Pharm D resident training in ambulatory clinical pharmacy. Patients with a baseline Hgb A1c greater than 9% were referred by their primary care physicians to receive a whole person approach to care which included food insecurity screening, patient-reported PHQ-9 screening, lifestyle counseling, and optimization of care. During the supervised resident clinic phase, patients with a baseline Hgb A1c of 8% or higher had an average 2.2% reduction after 3-4 monthly visits. After completing residency training, the Pharm D resident was recruited to join the Employee Health clinic. One year after implementing integrated clinical pharmacy services at the employee clinic, 69% of patients with diabetes had a Hgb A1c below 8% with concomitantly increased utilization of GLP-1s and SGLT2-i among clinic providers.

The first multidisciplinary IMR pilot was established in December 2021. At the time of publication, the residency programs represented include internal medicine, pharmacy, psychiatry, neuro-psych and med-psych, for a total of five IMR learners. The interprofessional collaborators span a variety of disciplines including psychology, contemplative care, integrative nutrition, nursing, acupuncture, and non-profit organizations. Residents and faculty engage in a variety of mind-body interventions including virtual meditative movement and mindfulness workshops. We incorporate ceremonial methodology in the design of experiential workshops which include centering exercises, patient case discussions and opportunities for reflection—all provided

in a psychologically safe environment conducive to collaborative learning and integrative healing.

The past 50 years have brought forth previously unimaginable advances to humankind. From landing on the moon to genome sequencing, our knowledge continues to expand exponentially. However, despite major scientific progress, our society continues to face tremendous challenges that threaten the survival of humanity and our planet. To effectively address the complex challenges of the modern world, we need to think holistically and act collaboratively. An integrative, whole person approach to healing is proving to be beneficial in the treatment of complex disorders, such as chronic pain, cardiometabolic disease, and employee burnout. The Integrative Medicine in Residency program provides the unique opportunity to learn and practice integrative medicine—mind, body, spirit and community—while supporting the wellbeing of health-care workers and healers.

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FOOD FOR THOUGHT: NUTRITION IN MEDICAL EDUCATION

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Many patients in my primary care practice feel judged when their after-visit summary lists “morbid obesity” (ICD-10 code E66.01). Given the number of conditions associated with obesity, it may be startling to know some activists object not only to the stigma often attached to large body size but also to the pathologization of fat. Obesity’s complex present reflects its complex past. Indeed, the obesity epidemic itself has a history. It is typically said to have begun in 1998, when the National Institutes of Health (NIH) revised the upper limit of a normal body mass index from 27.8 kg/m² for men and 27.3 kg/m² for women down to 25 kg/m² for everyone. This brought the United States into line with World Health Organization definitions while promoting 29 million Americans from “normal” to “overweight” overnight. Yet, when the American Medical Association adopted Resolution 420 declaring large body size a disease in 2013, it did so against the advice of its advisory committee. The history of nutrition isn’t just interesting, it is important for understanding how we reached a time when dietitians struggle to be recognized as certified professionals in a market crowded with “nutritionists,” and patients ask their doctors about weight-loss medications from advertisements. Meanwhile, many physicians cannot offer more specific advice than “eat less, exercise more” and struggle to set realistic weight-loss goals with patients, but insurance companies will pay for bariatric surgery if providers label patients “deathly fat.”

How did we get here, and how do we improve trainee competence in nutrition? As Frantz, et al, explain, the mismatch between doctors’ perceived role as experts in nutrition and the proportion of medical training devoted to it dates to at least the 1950s.¹ Medical schools trained mostly male physicians, while the mostly female field of dietetics developed a parallel track for what are now registered dietitian [nutritionists] (RD[N]s). In the 1980s, clinical nutrition enjoyed brief popularity, when the new technology of total parenteral nutrition (TPN) promised to support patients undergoing extensive surgery or debilitating chemotherapy. Simultaneously, the most commonly cited guidelines for nutrition instruction in undergraduate medical education were devised: the Committee on

Nutrition in Medical Education (1985) and the American Society of Clinical Nutrition (1989) recommended 25-30 and 37-44 contact hours, respectively. However, the risks of blood clots, bloodstream infections, and liver damage tarnished TPN’s reputation as a panacea and (temporarily) diminished the demand for specialized nutrition training for doctors.

There were renewed efforts in the 1990s. For instance, the National Heart, Lung & Blood Institute and the National Institute of Diabetes and Digestive and Kidney Diseases granted Nutrition Academic Awards to 21 medical schools to create shareable content.² One of the most successful was the Nutrition in Medicine (NiM) project at the University of North Carolina, which disseminated 29 free, interactive cases for medical students, first on CD-ROM in 1995 and later via an interactive website (www.nutritioninmedicine.org). These were followed by Nutrition Education for Practicing Physicians modules for residents and fellows. In-depth (post) graduate medical education in nutrition became available when The Intersociety Professional Nutrition Education Consortium, founded in 1997 and likewise funded by the NIH, developed training standards and an independent board certification for Physician Nutrition Specialists®.

Even while the influence of diet and exercise on body size, shape, and composition has garnered increasing public attention after 2000, regulatory and grassroots interest in medical training in nutrition seems to have diverged. Most U.S. and Canadian medical schools have not met the benchmark of 25 hours, especially in the crucial clinical years.³ In 2013, the Association of American Medical Colleges declined to require nutrition as a competency for graduation. The NiM project ended in 2017 with its funding, and the online content so often touted in the secondary literature is inaccessible since the third-party Flash browser plug-in required to access it was discontinued at the end of 2020. While just a dozen, unaccredited fellowships in clinical nutrition exist today, multiple bills and resolutions have been proposed in the U.S. House of Representatives over the last decade to

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urge “meaningful training” in the subject (e.g., EAT for Health Act [unpassed] and HR 1118 [passed 2022]). Trainees are clamoring for more exposure to nutritional education,⁴ writing letters to journals,⁵ and rearranging their schedules to take electives such as the one I created.



Why didn't you learn about the history of the obesity epidemic in medical school? Should you have? Clinician-educators are designing innovative ways to increase students' competence and confidence in managing nutrition-related conditions across the lifespan.

“Medical Nutrition: Past & Present Theories & Practice” includes multiple modes of both synchronous and asynchronous instruction—lectures from experts, student research presentations, group activities, and readings for discussion—that can be accomplished in person or online. (I teach it remotely.) Each week is dedicated to a different topic: 1) general principles of (adult) nutrition and the so-called *lifestyle diseases* of diabetes mellitus, hyperlipidemia, and hypertension; 2) pediatric nutrition from breast- and formula-feeding of infants to disordered eating in adolescents; 3) obesity medicine, bariatric surgery, and the Health At Every Size® anti-dieting movement; 4) surgical nutrition, including peri-operative management of food and drink and artificial nourishment via tube feeds and TPN. The syllabus blends clinical knowledge on screening, diagnosing, and treating nutrition-related conditions with their sociocultural and historical background, for instance the popular but debunked “African gene theory” of hypertension. Students receive tips for counseling their future patients and practice skills such as calculating IV fluid rates. And the course encourages the kind of interdisciplinarity rarely seen in MD and DO training programs: guest instructors

include not just physicians and surgeons but nurses, dieticians, social workers, historians, and/or patients. We want to impress upon students both the importance of nutrition to the current practice of medicine and demonstrate the complexity of the subject to motivate life-long learning.

During the unfunded pilot, 17 fourth-year students enthusiastically debated the health benefits of butter versus margarine, walked to their local non-grocery store to prepare a meal on a strict budget, and filled the Zoom chat with comments when their classmates presented on fad diets. My colleagues have confessed that they wished that they had had the opportunity to take such as course. Afterward, 100% of students somewhat agreed (41%) or strongly agreed (59%) that the course had enhanced their clinical skills, and 100% somewhat agreed (24%) or strongly agreed (76%) that it had enhanced their historical knowledge. They found the course equally relevant to their foundations of clinical knowledge courses (e.g., anatomy, 59%), foundations of clinical skills (e.g., interviewing, 71%), other medical school electives (e.g., anesthesiology, 53%), and professional enhancement electives (e.g., POCUS, 41%). 47% and 53% found the pilot more relevant than other electives and opportunities (unpublished data).

A working group of both trainees and faculty is now bringing this educational innovation to multiple medical schools as “Hungry for Nutrition in Undergraduate Medical Education: An Elective Course in Knowledge, Skills, and History.” Thanks to an internal faculty grant, we will analyze pre- and post-course survey data on both knowledge and attitudes, and we will collect “lessons learned” from the implementation process. Challenges so far have included finding time in an already jam-packed four-year curriculum; recruiting guest lecturers, especially at smaller or non-academic centers; and agreeing upon a standard set of course objectives and a metric by which to

measure whether they have been met. Sometimes it feels as though we are re-inventing the wheel of nutrition education despite decades of literature arguing for its importance to the health and lives of both patients and practitioners. We will eventually offer interested teachers this vetted syllabus of topics, readings, learning objectives, discussion questions, and student projects that can be adapted in whole or in part, either as a stand-alone elective or integrated into existing rotations (e.g., outpatient medicine). But our efforts will remain just one more curricular intervention among many unless and until competency in nutrition is mandated by curriculum committees, accreditation bodies, and licensing organizations.

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MULTIFACTORIAL BUDD-CHIARI SYNDROME: A CASE REPORT AND LITERATURE OVERVIEW

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Case Presentation

A 64-year-old woman presented to her primary care physician with a subacute history of worsening diffuse abdominal pain with intermittent bilious vomiting and non-bloody diarrhea, with no aggravating and alleviating factors. Her past medical history was notable for class III obesity (body mass index 47.1 kg/m²), hypertension, anxiety, and hypothyroidism (on levothyroxine). She had no personal or family history of liver disease, obstructive sleep apnea, myeloproliferative disease, gallbladder cancer, or other malignancy. She reported no alcohol use, tobacco use, recent herbal supplement or mushroom ingestions, medication changes, intravenous drug use, recent travel, illnesses, or sick contacts. Evaluation in the PCP's office was notable for hypovolemia attributed to poor oral intake and she was sent to the emergency department for fluid resuscitation.

On initial ER evaluation, she had diffuse abdominal tenderness, a dusky-appearing right hand, and a diminished radial pulse. Initial laboratory studies revealed erythrocytosis (hemoglobin 19.8 g/dL) and abnormal liver chemistries (aspartate aminotransferase [AST] 1,280 U/dL, alanine aminotransferase [ALT] 1,750 U/dL, alkaline phosphatase 225 U/dL, total bilirubin 4.5 mg/dL, the international normalized ratio [INR] 1.88). She also had leukocytosis (white blood cell 28.5 x 10³/uL) and concomitant acute kidney injury with serum creatinine 1.9 mg/dL from a baseline of 0.9 mg/dL. She was admitted for sepsis complicated by acute liver injury and started on IV fluids and broad-spectrum antibiotics. Blood and urine cultures were negative, as were serologies for acute viral hepatitis. A mildly elevated anti-nuclear (ANA) antibody titer (1:80) was noted. In the setting of new erythrocytosis, she was found to have elevated serum erythropoietin of 64 mU/mL (reference range: 2.6-18.5 mU/mL). Abdominal ultrasound with doppler revealed diminished flow in the main and right portal veins, perihepatic ascites, and curvilinear calcification noted along the gall-

bladder fossa, suggestive of porcelain gallbladder. Non-contrast abdominal magnetic resonance imaging (MRI) showed caudate lobe prominence but no obvious hepatic vein thrombosis. Given the concern for polycythemia vera with Budd-Chiari syndrome, therapeutic phlebotomy and contrast-enhanced computed tomography were planned.

Unfortunately, the patient developed acute liver failure, disseminated intravascular coagulation, pulmonary hemothorax, and refractory septic shock over the next five days. The patient ultimately died from multisystem organ failure. On autopsy, she had multiple thromboembolic complications noted including pulmonary artery and hepatic venous thrombosis with intrahepatic venous extension. Additionally, an arterial and venous duplex ultrasound of her right extremity revealed an occlusive thrombus of the superficial basilic and cephalic veins. Histology revealed evidence of hepatocellular necrosis, gallbladder adenocarcinoma with calculous cholecystitis, and empyema. Bone marrow biopsy with JAK2 genetic testing was sent due to clinical suspicion of polycythemia vera-associated hepatic vein thrombosis, revealing a V617F point mutation.

Discussion

We present a patient with a common presentation of non-specific upper and lower gastrointestinal symptoms who was found to have several risk factors for thromboembolic disease, Budd-Chiari syndrome, and ultimately passed away from its complications. This case highlights how the patient's comorbid conditions, namely polycythemia vera, gallbladder carcinoma, and obesity, may have contributed to her hypercoagulable state and increased her risk for Budd-Chiari syndrome, as described in the table.

Budd-Chiari syndrome is a rare disease with an estimated incidence of 0.1 to 10 per million patients annually¹. Its hallmark is hepatic venous outflow obstruction, causing venous congestion that stretches the

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The Patient’s Risk Factors for Hypercoagulable State

Characteristics	Polycythemia Vera ²	Gallbladder Carcinoma ⁴	Obesity ⁵
Increased Risk for Venous Thromboembolism	13 times	6.2 times	2.33 times
Diagnosis	Hgb > 16.5 g/dL or Hct > 49% in men Hgb > 16.0 g/dL or Hct > 48% in women The above criteria must be met without evidence of secondary erythrocytosis (hypoxia, inappropriate EPO production, etc.).	Ultrasound sonography	BMI > 30 kg/m ²
Treatment	Phlebotomy, cytoreductive drugs	Surgery and/or chemotherapy	Lifestyle interventions (diet, exercise, behavioral modification), drug therapy, devices (intra-gastric balloons, laparoscopic gastric banding, etc.), bariatric surgery
Risk Reduction for Venous Thromboembolism in Outpatients	Anticoagulation is recommended. Phlebotomy, cytoreductive drugs, and hydration are recommended.	Anticoagulation is not recommended unless the patient has had prior VTE or has high-risk features.	Anticoagulation is not recommended unless the patient has had prior VTE or has high-risk features. Physical activity and diet intake rich in vitamins E and B6 are recommended.

liver capsule. The most common risk factor for Budd-Chiari syndrome is a hypercoagulable state, often secondary to myeloproliferative disorders, malignancy, hepatic lesions, pregnancy, or oral contraceptive use. Manifestations of Budd-Chiari syndrome include ascites, acute kidney injury, hepatic encephalopathy, and acute liver failure. Budd-Chiari syndrome can be diagnosed with visualization of the thrombus using ultrasonography with color doppler. Treatment includes reducing thrombus propagation with anticoagulants, as well as addressing the underlying cause. Definitive treatment includes thrombolytics and percutaneous transluminal angioplasty to relieve the obstruction as well as transjugular intrahepatic portosystemic shunts (TIPS) to reroute blood flow.¹

The largest contributory factor to the patient’s hypercoagulable state and Budd-Chiari syndrome was likely polycythemia vera, undiagnosed before the presentation. Polycythemia vera is a myeloproliferative disorder caused by the neoplastic proliferation of hematopoietic stem cells.² It is characterized

primarily by increased red blood cell production, and secondary white blood cell and platelet production. Diagnosis requires two of the following major criteria: Hgb > 16.5g/dL in men or Hgb > 16g/dL in women, hypercellularity of the bone marrow with trilineage growth, and JAK2 V617F mutation. Polycythemia vera causes a hypercoagulable state largely due to hyperviscosity from polycythemia and secondary thrombocytosis. Patients with polycythemia vera and JAK2 mutations comprise the largest subset of patients who develop Budd-Chiari syndrome, comprising an estimated 59% of cases.³ Management of polycythemia vera requires aggressive phlebotomy to achieve target hematocrit levels below 45%, at times necessitating additional cytoreductive drugs. For older patients with JAK2^{V617F} allele burden, controlling hematocrit levels and preventing cardiovascular risk factors are imperative in mitigating thrombosis risk.

Gallbladder carcinoma, also undiagnosed before the time of our patient’s presentation, is associated with an increased risk of throm-

boembolic disease. The overall incidence of incidental gallbladder carcinoma has been estimated to be as low as 0.51%.⁴ Gallbladder carcinoma-related thrombotic events have been reported in cases of non-bacterial thrombotic endocarditis as well as cerebral vascular thrombus, portal vein tumor thrombus, and common bile duct tumor thrombosis secondary to hepatocellular carcinoma.⁴

Additionally, obesity also contributed to our patient’s increased hypercoagulability risk. The systemic inflammation of obesity is thought to be associated with a higher risk for both thromboembolic disease and gallbladder carcinoma.⁵ Obesity remains a risk factor often overlooked but known to confer risk for myeloproliferative disorders, with weight loss as the main behavioral modification to ensure the prevention of associated thromboembolic risk.

This clinical case highlights the importance of a high index of suspicion for testing in the appropriate patient, expedited workup, and timely diagnosis of Budd-Chiari syndrome and its risk factors. Given

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medication that promotes homosexual promiscuity and that unconstitutionally incumbered their religious freedom. In early September, a U.S. district judge agreed with the plaintiffs and set a course for appeals and further litigation that will likely reach the Supreme Court (SCOTUS).^{1,2}

In his decision, Judge Reed O'Connor ruled that the ACA cannot mandate insurance coverage for proven preventative therapies like PrEP. The basis of the judge's decision is his statement that the members of the nation's recommending body, the United States Preventative Task Force (USPTF), are unconstitutionally appointed and thus have no authority to mandate insurance coverage for preventative services.² Over the years, the USPTF has consistently been populated with respected SGIM members who dedicate their efforts to rigorously examining the literature prior to making recommendations. If SCOTUS were to uphold Judge O'Connor's decision, several measures proven to promote health (e.g., cancer screening, prenatal care, vaccination) may require patient copayment and will have the potential of being too costly for many of our nation's most vulnerable populations to access. To be clear, I believe this to be one of several current threats to a just system of care and is a risk to further inequity in access to proven preventative testing and therapies.¹

Religion has been a key factor influencing health policy for many years, with both healthcare advocates and groups that object to gov-

ernmental intrusion in health care, utilizing religious arguments for their cases.³ However, in the case of mandated preventative services, I believe political ideology about the role government in achieving a system of equitable health care is the greater motivation for the legal challenges. The question we must answer as a society is how do we best respond to these sorts of challenges?

In a prior issue of the *Forum*, I reviewed the SGIM values articulated in our credo.⁴ In my opinion, one role of professional societies, such as SGIM, is to advocate for policies supported by a scholarly examination of best evidence. Knowledge of content experts, as in the case of the USPTF, should guide policy decisions by utilizing more objective standards. Currently, our Health Policy Committee and SGIM Council are hard at work strategizing ways to more effectively work at both federal and local levels to advocate for a just health system. I also hope we have maximal attendance at #SGIM23 in Colorado because I am enthusiastic about the role our #SGIM23 Program Committee has taken in examining ways to build local advocacy efforts into this year's annual meeting. This year, we are also hosting a special forum at #SGIM23 where participants will be able to join in on a guided discussion with medical ethicists, health policy researchers, division chiefs and past SGIM presidents to discuss the ways in which we may be more supportive of our members who live in states with policies counter to our

organizational values. Please attend the annual meeting and provide your input. I hope that everyone who can attend #SGIM23 in Colorado this year will be there, eager to participate in discussion.

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less communal language in describing URC applicants. Compared with non-URC applicants, LORs for URC applicants utilized more doubt-raising language, including hedging, faint praise, and negative language, and characterized applicants as being earlier in career trajectory. Authors provided 14 high-yield, succinct recommendations for reducing bias in PD LORs, including following AAIM guidelines, anti-bias training, and third-party review of LORs.

Decreasing Bias in Training Programs

In 2018, the ACGME updated their Institutional Requirements, stating that programs must “engage in practices that focus on ongoing, mission-driven, systematic recruitment and retention of a diverse and inclusive workforce” in response to calls to recognize and address inequity in residency training.

Martinez-Strengel, et al, explored leaders’ perspectives on the ACGME diversity standards through structured interviews of twenty residency PDs and APDs.⁴ A constant comparative method analysis was utilized to identify the following key themes: unawareness of the new standard, misgivings about the standard, and cautious optimism that the standard could catalyze change. The authors highlight the difficulties identified by program leaders who lack the resources to change systemic inequities and call on academic institutions to empower their leaders with the support and direction required to instigate meaningful change.

Novel Approaches Promoting Learning and Wellness in Residency Training

This section highlights novel, creative approaches to improving the residency training experience.

Increasing Learner Engagement Through Bite-sized Teaching (BST)

Noon conferences often cover topics of high complexity in a high intrinsic load setting. In response to this

structural issue, faculty at Emory University developed an educational model which they named *Bite-Sized Teaching (BST)* in which residents deliver a key concept, its main teaching points, and a schema to retain in a structured and concise 8-minute talk aimed at improving long-term retention.⁵

The team conducted a controlled trial: at one teaching hospital, all learners participated in a BST session on transfusion medicine while other learners received the traditional didactic session. The BST group scored significantly higher on a validated knowledge assessment immediately post-session. Although this effect size attenuated with time, their average scores continued to trend above those who received the traditional lecture. A survey of residents regarding their experiences with BST found that nearly 80% of respondents reported it was the “best” or “one of the best” formats for noon conference. They noted appreciation for the distilled nature of content, the delivery of multiple BST talks in one educational conference, and benefits of peer teaching.

Improving Trainee Well-being Involving the Show *Scrubs*

Holtzclaw, et al, developed a wellness curriculum for internal medicine residents at a single training program using episodes of the television program *Scrubs*.⁶ Twenty-four participants attended monthly, one-hour, faculty-guided discussion groups based on *Scrubs* episodes highlighting a theme relevant to trainees (i.e., patient mortality, physician cynicism, work-life balance). Available at \$0.99 an episode, *Scrubs* was chosen as an inexpensive yet creative approach to acknowledge the harsh realities faced by trainees in the context of a comedy show. Faculty facilitated discussions using provided session objectives and open-ended questions.

Residents’ burnout scores on the abbreviated Maslow Burnout Index improved over the six months

of the program. A focus group of participants revealed that residents found the informal nature of sessions and cross-PGY-year discussion to be helpful aspects of the curriculum. Residents universally voted to continue with this modality moving forward.

Conclusion

Medical education is undoubtedly changing. In the past year, many important innovations sought to address equity in the physician workforce, measured the effectiveness of societal guidelines on diversifying efforts, and demonstrated curricular innovations to reduce cognitive load and improve resiliency. We highlighted the promise of systemic changes to improving equity in medical school admissions, which emphasizes the impact of intentional, systemic approaches that aim to build a physician workforce that is representative of the population it serves. We recognized the value of national medical education societies’ efforts to put out guidelines to reduce bias in LORs and improve diversity in medicine, while acknowledging that these guidelines have yet to achieve the intended goal due to lack of awareness and limited adoption. We shared novel curricular approaches aimed at improving the resident training experience by innovating noon conference and creating reflective spaces.

In this upcoming year, we welcome additional studies to further identify and support the needs of our trainees, especially for learners with identities historically excluded from medicine. Systemic solutions to reduce the structural barriers, bias, and racism are needed to create environments where trainees can thrive and learn.

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the mock call. Preceptors were asked to simulate providing emergency treatment and initiate management the fourth-year medical student communicated they wanted.

During these mock calls, the fourth-year medical students were expected to do the following:

1. Utilize closed loop communication in receiving a concern from the mock call nurse;
2. Triage scenarios that required further testing, bedside evaluation and discussion with senior resident, consulting or attending physician;
3. Recognize scenarios that required escalations of care, such as transfers to intensive care units;
4. Initiate management of common emergencies; and
5. Advise the mock call nurse on next steps utilizing closed loop communication.

The mock cases were limited to nine chief concerns we felt interns commonly must respond to, including separate calls for hyperkalemia, tachycardia, gastrointestinal bleeding, chest pain, fever, dyspnea, alcohol withdrawal, abdominal pain, and a transfusion reaction. The cases varied in complexity and acuity, and preceptors were advised to start with simpler cases with lower acuity of illness and gradually introduce more challenging cases with improved student performance. At the end of each mock call, the student was provided formative feedback on their performance in the case, specifically in their expected competencies in communication, triage, escalation of care, and initiation of management based a rubric of what the student must do, should do, could do, and should not do. A total of four mock calls were completed with each student.

Mock Call Outcomes

All thirty-seven students participated in this mock call experience

through an end of year preparedness course. Students were asked to self-rate themselves prior to and after the mock call experience on a 1 to 5 Likert scale, with 1 being able to observe an emergency call to 5 being able to complete the emergency call with distant supervision, but with an attending or senior resident available. Prior to the mock calls the students self-rating on their fulfillment of the competencies of recognizing, triaging and initiation of management during an emergency nurse call was as a mean of 3.3 (range 1 to 5). After the mock calls, students self-rated themselves at a mean of 4.0 (range 3 to 5).

Preceptors subjectively noted student's performance improved on formative feedback on each mock call, with more "must dos" and "should dos" being completed on each subsequent call. Preceptor evaluators also noted 100% of students could utilize closed loop communication in advising the nurse in next steps with either direct or indirect supervision. Further, 88% of students could initiate initial management under either direct supervision or indirect supervision. Preceptor stated 83% of students could recognize scenarios that required escalation of care, bedside evaluation or discussion with a senior resident or attending physician with either direct or indirect supervision.

Challenges

Our preceptor evaluations were limited by a completion rate of 65% and by recall bias of the last mock call performance which was often stronger. Our preceptor evaluation data were also limited by not assessing the evaluation of patients and escalation of care separately. There was also heterogeneity in both the mock calls and the evaluations due to preceptors coming from different levels of training from senior residents to junior faculty. Training sessions for preceptors to prepare for the mock calls and evaluations were available in both live online and recorded formats, which may have resulted in

variable levels of preceptor training as some preceptors may not have completed recorded training. This in turn may have resulted in heterogeneity in evaluations and preceptor administered mock calls which these training sessions were designed to standardize. Recruitment of preceptors may have affected student performance and engagement, as the preceptors were recruited from a select group of internal medicine residents and faculty who were already participating in a medical student coaching program for the students in the course.

Conclusions

We found students enjoyed the experience of mock calls, as a unique and valuable experience. They self-rated an improved ability to recognize and manage emergency scenarios. Preceptors measured improved student communication, management, triage in evaluation, and escalation of care on each mock call. Mock calls on emergency scenarios provided fourth-year medical students a valuable simulated experience of handling emergencies in intern year. In the future, we plan on making our mock calls a longitudinal experience across the academic year to facilitate year-long learning, and to allow more student experience in mock calls. Additionally, we hope to survey past students on the impact of mock calls on their experiences and readiness in intern year.

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the Concordance Recommendations mentioned above. The fourth is to adapt recent telehealth flexibilities to address long-term disparity reduction goals by ensuring continued coverage of these services and expanding high speed internet access for the millions of Americans currently lacking such access. The fifth is to monitor implementation and advocate for evidence-based policy changes for impacted communities using quantitative metrics with ongoing input from community members.

EB: What are the best ways for SGIM members to support the Better Health - Now campaign?

AC: I encourage members to join SGIM's Health Policy Committee (HPC) or take advantage of the workshops, programs, and webinars

organized by the HPC to educate members about health policy issues and advocacy skills. Stay alert for opportunities to respond when the HPC issues specific calls for action. Finally, I encourage members to meet and talk with the government affairs staff in their own institutions about what can be done locally to strengthen primary care and advance health equity.

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MORNING REPORT *(continued from page 11)*

that diagnosis of polycythemia vera primarily involves a routine complete blood count (CBC), the patient may have received an earlier diagnosis and treatment of polycythemia vera, had she received regular primary care with routine blood work. In addition, this patient presented in a late stage of Budd-Chiari syndrome, after five days of persistent gastrointestinal symptoms, and quickly succumbed to the complications of fulminant liver failure. Had the patient presented earlier in her course, laboratory analysis may have revealed elevated aminotransferases, leukocytosis, and erythrocytosis characteristic of Budd-Chiari syndrome, and may have expedited access to life-saving treatment, including hospitalization and inpatient specialty consult for live-saving treatment such as angioplasty, thrombolytic therapy, or liver transplantation.

Our case emphasizes the importance of an internist's approach to expedited evaluation in patients in whom there is a high index of suspicion for Budd-Chiari syndrome. In a presentation of multiple days of nonbilious emesis and infectious gastrointestinal symptoms in a clinically ill patient and laboratory findings concerning for polycythemia and liver injury, a high index of suspicion for Budd-Chiari syndrome with expedited imaging for diagnosis may be lifesaving.

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