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PERSPECTIVE

CONTEMPLATING THE COVID-19 VACCINE IN PREGNANCY

Cassedy Mahrer Owen, DO

Dr. Owen (cassedy@uw.edu) is an academic hospitalist fellow and acting clinical instructor at University of Washington in Seattle, WA.

The year 2020 was a lot of firsts for me—first year as a hospitalist, first house, first pregnancy, and first time practicing medicine during a pandemic. With the arrival of 2021, I reflect on the ups and downs of last year's journey. As a pregnant woman, I noticed that, in general, people seemed disarmed by the humanness of this experience and were suddenly interacting with me in a way that strangers never did in the past. For the most part, it has overall been a positive experience as a young hospitalist at a public safety net hospital.

During my third trimester, a nurse from France whom I'd never met before greeted me by placing her hands on my belly saying "And who is this?" in a very kind and genial way. Patients who are facing difficult diagnoses and scary procedures often smile when they see the bump and enjoy giving me a few parenting tips or stories that seems to temporarily ease their mind from their stressful situation. As a rule, I avoid self-disclosure to remain professional and patient centered unless there is a very high chance that it will strengthen a therapeutic alliance without crossing any boundaries. Being so visibly pregnant somewhat undermines this effort, but I am grateful that on the whole it does not seem to have had a detrimental effect on my practice.

With the recent availability of the COVID-19 vaccine, I encountered some less-than-welcome attention due to my status as a pregnant woman. Unsolicited advice from Facebook friends, coworkers, patients, and loved ones about whether pregnant women should get the vaccine has come pouring in thereby sowing seeds of doubt in my initial resolve to roll up my sleeve and get vaccinated.

Upon seeking guidance from major healthcare organizations at the time, ca. December 2020, I was disappointed that the recommendations were quite vague. The World Health Organization (WHO) went so far as stating pregnant persons should *not* get the vaccine unless they are in very high-risk jobs (such as frontline healthcare workers, like myself) but failed to specify *why* aside from citing a lack of data. Although technically I was "okay" to receive the vaccine by the guidelines given my status as a frontline healthcare worker, they were far from comforting and my doubts grew stronger.

After doing some research and discussing the vaccine with my infectious disease colleagues, I found that there are no known toxic materials to fetuses in the vaccine and that based on the physiologic mechanism of how an mRNA vaccine works there is no real theoretical risk to a pregnant mother or fetus. It seems that the only reason societies recommend against the vaccine is that they have not yet studied the pregnant population (as is the case for

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PRACTICING MULTILINGUAL MEDICINE

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

"*Hoe kan ik u helpen?*" I asked a Dutch physician communications teacher, playing the role of a patient. "*How can I help you?*" was one way I greeted patients in primary care practice. But her response communicated, "What do you mean?" Language translation is often fraught with such nuances where literal translation loses cultural context and leads to confusion or the wrong message. On occasion, it can garner a laugh and shared realization of the awkwardness of communicating across cultures and linguistic boundaries.

Language concordance is essential to ensure patient understanding of their diagnosis among other positive outcomes.[1] However, in clinical practice and academic medical careers, translation is needed well beyond the linguistic task. Physicians are experts on human health and disease *and* have expertise in the contexts and drivers of those conditions (think: social determinants of health). In short, physicians translate constantly for patient care—complex pathophysiology and more into digestible and actionable care plans for patients.

Translation happens elsewhere beyond the clinical encounter. Basic science researchers translate their findings into discoveries that benefit human health (translational science). Implementation and system scientists translate organizational and system issues into improving health services delivery and patient care outcomes (implementation science). Clinical informaticians translate clinical practice and workflow needs into information system changes that improve efficiency and work satisfaction or drive health service innovation (applied clinical informatics). Physician-advocates translate clinical practice into actionable legislative points to drive policy change (health policy). These are only a few examples. General internists span numerous healthcare and societal boundaries to achieve their many aims.

Translation work also involves community and network building, bridging traditional and new boundaries. In non-healthcare industries, such boundary spanning work drives innovation and creativity.[2] The same also applies to general internal medicine: boundary spanning work is essential to being an effective general internist. Hybrid roles create new opportunities, new ideas or approaches, and positive societal change.

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COMBATING COLLECTIVE BURNOUT WITH 525,600 MINUTES OF SGIM A YEAR

Monica L. Lypson, MD, MHPE, FACP, President, SGIM

"During the pandemic, all our worlds have been and continue to be shaken. Generalists are at the crossroads of justice and equity in our boardrooms, examination rooms, and hospital rooms. Daily, those interactions demonstrate the stark realities of differential access to societal assets and the health outcomes of those disparities."

Five hundred twenty five thousand six hundred minutes...
How do you measure, Measure a year?...
How do you measure a year in a life?...

How about Love?...
It's time now to sing out, tho the story never ends let's celebrate remember a year in the life of friends...
Remember the love!

—Seasons of Love (from the Broadway musical "Rent")
Music & Lyrics by Jonathan Larson

I am continually awed by SGIM's story. We were established as the Society for Research and Education in Primary Care Internal Medicine (SREPCIM) in 1978 with a grant from the Robert Wood Johnson (RWJ) Foundation and an affiliation with the American College of Physicians (ACP). Our founders were responding to a perceived need to focus on academic primary care, intent on building an environment and space for such members to professionally develop and network. The concept of burnout in clinical medicine was nascent in medicine at that time but the structure of the Society unintentionally seemed focused on combating collective burnout.[1, 2]

The Society was created as a forum to highlight clinical care, education, and research in primary care. Over the years, we maintained a laser focus on generalism through SGIM's mission which states the need to cultivate "innovative educators, researchers, and clinicians in academic general internal medicine, leading the way to better health for everyone."[3] Our Commissions highlight the continuum of generalist care across transitions (Academic Hospitalist; Geriatrics) as well as our commitment to equity (Health Equity, Women and Medicine).

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Q & A WITH SGIM'S CEO ABOUT THE NATIONAL ACADEMIES OF SCIENCES, ENGINEERING, AND MEDICINE (NASEM) STUDY ON IMPLEMENTING HIGH-QUALITY PRIMARY CARE

Eric B. Bass, MD, MPH; Asaf Bitton, MD, MPH; Molly Cooke, MD; Shreya Kangovi, MD; Luci Leykum, MD, MBA, MSC

Dr. Bass (basse@sgim.org) is the CEO of SGIM. Drs. Bitton (abitton@bwh.harvard.edu), Cooke (Molly.Cooke@ucsf.edu), Kangovi (shreya.kangovi@pennmedicine.upenn.edu), and Leykum (Luci.Leykum@austin.utexas.edu) are SGIM members who served on the NASEM Study Committee.

Why did NASEM convene a study on implementing high-quality primary care?

Primary care is severely challenged in terms of daily practice, workforce pipeline, access barriers, and inequitable outcomes; yet, primary care has never been more necessary. We know what high-quality primary care can look like—grounded in longitudinal relationships between interprofessional primary care teams and the individual, family, and community, tailored to their needs, and delivered in varied settings. In 2020, NASEM convened a committee to examine the current state of primary care in the United States and develop an implementation plan to build upon the recommendations from the 1996 Institute of Medicine's report, 'Primary Care: America's Health in a New Era,' to strengthen primary care services in the United States, especially for underserved populations, and to inform primary care systems around the world.[1]

What are the objectives of the NASEM committee's plan for implementing high-quality primary care?

The plan has five objectives: 1) pay for primary care teams to care for people, not doctors to deliver services; 2) ensure that high-quality primary care is available to every individual and family in every community; 3) train primary care teams where people live and work; 4) design information technology that serves the patient, family, and interprofessional care team; and 5) ensure that high-quality primary care is implemented.[1]

How could SGIM members act upon recommendations in the committee's report?

SGIM members are positioned to act, given their expertise in primary care practice, education, research, and implementation science, and their commitment to achieving a just system of care. Members could implement and evaluate changes recommended by the committee, such as asking practices to assume an ongoing relationship with uninsured people they are treating, and engaging community members in team-based practice design. More data on the impact of changes could help to guide future policy making. Members also could help train primary care teams in how to function in rapidly changing environments, making primary care practice more joyful and diversifying the primary care workforce.

SGIM's Health Policy Committee (HPC) could advocate for recommended actions, including: 1) *payers* should evaluate and disseminate aligned payment models based on the ability to promote high-quality team-based primary care, increase spending on primary care, catalyze empanelment efforts connecting all patients to primary care teams, and ensure that health systems in risk-based contracts provide sufficient funds for primary care services; 2) the *Department of Health and Human Services (HHS)* should invest in new health centers for federally designated shortage areas; 3) the *Centers for Medicare & Medicaid Services (CMS)* should improve access to primary care services for Medicaid beneficiaries and extend support for COVID-19 rule revisions facilitating team-based care and virtual visits, as well as support continued transformation of payment models away from fee-for-service (FFS); 4) the *Health Resources and Services Administration (HRSA)* should enhance incentives for interprofessional care team members to enter primary care in underserved areas; 5) *HRSA and CMS* should increase funding for interprofessional training in community-based settings; 6) the *Office of the National Coordinator for Health Information Technology* should design information technology that better serves patients, families, and the primary care team; and 7) *HHS* should prioritize funding for primary care research and

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INSIGHTS INTO INTERPROFESSIONAL CARE DURING A "TRANSITION TO ATTENDING HOSPITALIST" ELECTIVE

Andrew Orr, MD; Kamini Hogan, PA-C; Nadia Bennett, MD, MSEd;
Kendal Williams, MD, MPH; D. Rani Nandiwada, MD, MS

Dr. Orr (Andrew.orr@pennmedicine.upenn.edu) is an assistant professor of clinical medicine at the Perelman School of Medicine at the University of Pennsylvania. Ms. Hogan (Kamini.hogan@pennmedicine.upenn.edu) is a physician assistant at Pennsylvania Presbyterian Medical Center. Dr. Bennett (nadia.bennett@pennmedicine.upenn.edu) is an associate professor of clinical medicine at the Perelman School of Medicine at the University of Pennsylvania. Dr. Williams (Kendal.williams@pennmedicine.upenn.edu) is an associate professor of clinical medicine at the Perelman School of Medicine at the University of Pennsylvania. Dr. Nandiwada (rani.nandiwada@pennmedicine.upenn.edu) is an assistant professor of clinical medicine at the Perelman School of Medicine at the University of Pennsylvania.

As hospital medicine attracts growing numbers of graduating internal medicine residents, the question of how to best prepare trainees for independent practice during residency remains unanswered. Nationwide, hospitalist elective rotations vary widely in goals and structure.[1] Further, despite the field's increasing collaboration with advance practice providers, only two of 11 identified residency "tracks" for hospital medicine offer resident collaboration with advanced practice providers (APPs).[2] This lack of exposure to interprofessional care models during residency comes despite general acknowledgment from hospitalists that graduate medical education leaves them underprepared in interdisciplinary care systems.[3] Faculty development efforts and fellowship programs to train new hospitalists and APPs in collaborative care exist but are variable in their intensity, mentorship, and availability.[4] After identifying this training gap, we launched the "Transition to Attending Hospitalist" rotation—a two-week elective for senior internal medicine residents and focused on interprofessional teaming with APPs.

Methods

Planning

We designed this two-week elective rotation to be run at a single academic institution for third-year internal medicine residents entering hospital medicine after graduation. After performing an internal needs assessment based on existing didactic curricula and clinical rotations, a group of medical education experts identified a gap in exposure to APPs and teaming best practices in the current training model. The study was deemed exempt from IRB approval.

Structure

The rotation was designed to allow the participating senior resident to functionally replace the attending of record for roughly half the patients on the census of an interprofessional general internal medicine service with two frontline APPs. The resident was granted autonomy to develop care plans with the APPs and instructed to see patients, run the list, and attest APP notes as if there were no supervising attending. Attending physicians were still required to see patients independently and review the care plan daily as they would when working with APPs without residents. Each resident was paired with an APP mentor and received a one-on-one session with the APP site leader to discuss best practices for workflow and communication.

Over the course of the two-week block, the participating resident also received standardized, one-hour facilitated discussions with faculty covering other important elements of daily hospitalist practice. These topics included: leadership skills training, patient triage, billing, documentation compliance, and utilization review. For each session, a facilitator guide was developed that includes debriefing and reflection questions as well as references for further reading.

From 2017 through 2019, 10 residents enrolled in and completed the rotation under the supervision of eight separate hospitalist faculty members. Five out of the seven APPs at this medical center worked with residents on the elective.

Evaluation

Participating residents completed a qualitative post-rotation survey that assessed commitment to future behavior changes that were identified as best practices during this rotation. Graduated residents who completed the elective in its initial year (n=4) were sent a follow-up survey (using a 5-point Likert scale) in their first year as hospitalist faculty to assess the elective's relevance to their current

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REIMAGINING THE VIRTUAL INTERPROFESSIONAL TEAM CARE DURING THE COVID-19 PANDEMIC

Joy Achuonjei, MS; Daniel J. Coletti, PhD; Maya Alexandri, JD; Nancy LaVine, MD; Lauren Block, MD, MPH

Ms. Achonjei (jachuonjei@northwell.edu) is medical student at Zucker School of Medicine at Hofstra/Northwell. Dr. Coletti (dcoletti@northwell.edu) is assistant professor of psychiatry and medicine at Zucker School of Medicine at Hofstra/Northwell. Ms. Alexandri (malexandri1@pride.hofstra.edu) is medical student at Zucker School of Medicine at Hofstra/Northwell. Dr. LaVine (nlavine@northwell.edu) is assistant professor of medicine at Zucker School of Medicine at Hofstra/Northwell. Dr. Block (lblock2@northwell.edu) is associate professor of medicine and science education at Zucker School of Medicine at Hofstra/Northwell.

Introduction

The COVID-19 pandemic forced healthcare systems worldwide to reinvent medical education and healthcare delivery using telehealth technology. Social distancing disrupted traditional educational models and teams had to improvise to establish workflows for patient care and education in the online space.[1] We describe in this piece the implementation and initial evaluation of a reimagined interprofessional training practice functioning remotely and collaborating through technology.

An interprofessional team structure is associated with improved patient quality measures and decreased clinician burnout.[2, 3] Integrated primary care teams have been associated with improved chronic disease management, positive patient satisfaction scores, and higher ratings of individual effectiveness.[4] U.S. federal policy changes enacted through the Cares Act and other policies expanded reimbursement for telehealth modalities.

Collaboration in interprofessional (IP) teams through huddles and rounds is associated with improved patient outcomes.[2, 3, 5] Recreating this collaboration and transitioning co-located ambulatory teams online remains a challenge in virtual patient care. We developed and studied an innovative approach to virtual IP ambulatory training and practice.

Methods

This was a pilot study of communication within an IP ambulatory training program operating remotely over a period of five weeks starting in May 2020. The Improving Patient Access Care and cost through Training (IMPACcT) team includes residents, graduate-level students in medicine, pharmacy, physician assistant (PA) training, and clinical health psychology, a medical assistant, and patient access coordinator. Faculty preceptors include physicians, pharmacists, and a psychologist.

Patient sessions began with huddles held via videoconference. Huddles included introductions, mini-didactic sessions led by faculty or trainees, and a discussion about which team members would see each patient. Continuous team communication occurred throughout the clinical session using the secure chat feature of Microsoft Teams. Pharmacy students called patients prior to their scheduled appointment to perform medication reconciliation and counseling, then communicated their findings and recommendations to the team. Psychology students were available to assist with behavioral health care management and treatment adherence. Medical visits were conducted via video or telephonic platforms (e.g., Doximity, Avizia). Residents supervised PA students or medical students on the telehealth visits. The resident and student then communicated with faculty by phone about the case. Finally, the resident (or resident with faculty) reconnected with the patient as needed.

At the end of the five-week period, team members participating in the virtual clinic were emailed a link to an online questionnaire to examine benefits and drawbacks of the virtual model. All IMPACcT residents and students were surveyed. The project was deemed exempt by the Northwell IRB.

Results

Surveys were emailed to 26 team members—six trainees and seven faculty responded (response rate 13/26, 50%). The accompanying table summarizes highlighted benefits and drawbacks of participating in an IP telehealth care

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Benefits and Drawbacks of Telehealth	
Benefits of Telehealth	
Theme	**Quote**
Communication with patients is preserved	"Makes it easier to follow up with the patients frequently" (T) "Has increased my extern's volume of patient contacts" (F)
IP perspectives and communication are maintained with real-time communication	"Able to task interprofessional team or have them in our Microsoft Teams chat" (T) "Learners can be physically located anywhere" (F)
Appreciation is developed for the home situation of the patient	"Can see the home setting and have their medications handy, have more appreciation for social drivers, safety" (F)
Patient safety during a pandemic is prioritized and barriers to physical appointments are overcome	"Learners can be physically located anywhere" "Access to patients that may not have otherwise made the appointment (due to distance, personal issues, etc)" "Minimized physical risks" (F)
Drawbacks of Telehealth	
Theme	**Quote**
Delays in communication occur	"Telephone tag with patients, sometimes delays in waiting for other team members to respond" (T) "Once you are off the phone with the patient and discuss the plan with the attending, sometimes it was difficult to get the patient back on the phone" (T)
Visibility of every patient interaction is lacking	"Harder to see the learner 'in action'" (F)
Relationship building is limited	"We don't get to listen to the precepting done by resident(s) after they see the patient and present to the medical attending" (F)
Performing a physical exam is challenging via telehealth	"Elements of the physical exam not possible" (F) "The obvious issue of not being able to examine in person" (T)
T: trainee; F: faculty	

model. Additionally, one trainee felt that telehealth emphasized history taking, "It really is so much about the story." Trainees and faculty noted that interprofessional communication was maintained, as "the rest of the IP team is still heard." Team members also appreciated the insights into patients' daily lives through virtual visits conducted in patients' homes.

Respondents described several drawbacks as well, including communication technology glitches. As one trainee stated, the "ease of transition between providers in person is not available online." Trainees and faculty noted that maintaining the transparency of interprofessional care for the patient was more challenging on telehealth, as "usually the members of the IP team accompany the provider during the actual visit, which was not available online." Faculty noted that without being present for the actual visit, it was hard to see the learner's individual needs. Additionally, performing physical examination was challenging to perform via telehealth and some supportive services, such as ASL interpretation, were difficult to obtain. Finally, respondents noted that team building afforded through a shared space, "fostering close, collaborative IP relationships," was less feasible in a remote environment.

Respondents provided suggestions for model improvement. Faculty recommended compiling a set of "best practices for a hybrid model." For example, having one telehealth resident and another resident providing in-person care might optimize workflow in a hybrid model. Trainees requested communication skills training specific to telehealth and access to the telehealth platform for all team members as well as patient "tech checks" to limit delays in care. To assist patients with technology problems, one learner recommended a training visit with a standardized patient. Respondents recommended using multi-participant capabilities of the telehealth platform to accommodate team visits where needed.

Discussion

Our interprofessional training practice recreated an interprofessional team structure in a virtual environment during the Spring 2020 phase of the COVID-19 pandemic. Interprofessional huddles, teaching sessions, team discussions, and patient care moved online and included all team members. The team used a variety of technology including videoconference huddles, secure chat, telephone, and telehealth patient visits. We were able to maintain a facile IP team with opportunities for teachable moments for trainees intact during the pandemic lockdown. During evaluation of our pilot proj-

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CLINICAL SCHOLARS IN INFORMATICS: A RESIDENT-DRIVEN APPLIED INFORMATICS PATHWAY

Sean Hernandez, MD; Kirsten B. Feiereisel, MD, FACP; Ajay Dharod, MD, FACP

Dr. Hernandez (smhernan@wakehealth.edu) is a General Internal Medicine faculty member and Clinical Informaticist at the Wake Forest School of Medicine. Dr. Feiereisel (kfeierei@wakehealth.edu) is the section chief for general internal medicine and medical director for ambulatory quality at the Wake Forest School of Medicine. Dr. Dharod (adharod@wakehealth.edu) is the vice chair of informatics and analytics for the Department of General Internal Medicine at Wake Forest School of Medicine.

Information is the currency of high-quality clinical care. To that end, Clinical Informatics (or Clinical Information Science) as a discipline has grown exponentially in relevance as clinical care now requires more reliance on the electronic health record (EHR) and the healthcare delivery systems intertwined with them. Although some studies have noted benefits with EHRs (i.e., decreased costs, fewer medical errors, improved care coordination), other literature suggests increasing burnout attributed to the EHR.[1] Strategies for improving EHR satisfaction and thereby reducing burnout have been identified: (1) physician EHR education, (2) personalized EHR modifications, and (3) improved digital health care services delivery design.[2] Integrating clinical informatics into resident education highlights for learners the magnitude of impact the field can have on clinical care and empowers early career clinicians to affect incremental net positive changes in the health system.

What are synergies or unique intersections of work in Clinical Informatics and General Internal Medicine?

General Internal Medicine is uniquely positioned for systematic profound impact in the domain of applied clinical informatics. As general internal medicine physicians, we tend to think about the patient as a whole—identifying care coordination challenges along with disease processes both mechanistically and socially that impact the whole patient. In a similar vein, clinical informatics as a specialty attempts to address the entire healthcare system in totality to improve care paradigms through digital health and health information technologies.

What role or value does Clinical Informatics have in residency education?

Clinical Informatics has been used to aid in reflection of self-practices, to directly educate residents about evidence-based practices, and to drive quality improvement in patient care. It organically facilitates the "Knowledge to Practice" arm in the Learning Health Systems Model, allowing for evidence-based knowledge to be disseminated and implemented among practicing clinicians and learners.[3, 4]

For example, General Internal Medicine and Infectious Diseases collaborated on a workshop guiding Internal Medicine residents on how to use the an Epic™ EHR self-reporting tool called *SlicerDicer* to assess the volume of patients with the encounter diagnosis of "sinusitis" for whom the residents had prescribed antibiotics (contrary to evidence-based-guidelines).[5] Residents were surveyed after the workshop and 88% of residents agreed or strongly agreed that the workshop improved their understanding of when to prescribe antibiotics and how to practice antibiotic stewardship in the outpatient setting.

Another potential value of clinical informatics in residency education is personified by the Clinical Scholars in Informatics program at Wake Forest School of Medicine. This program directly incorporates the central principles of clinical informatics into resident education as a bridge between direct patient care and applied clinical informatics.

What is the Internal Medicine Residency Clinical Scholars in Informatics Pathway?

The Clinical Scholars in Informatics (CSI) Program, established in 2017, is a novel two-year longitudinal mentorship and education pathway available to Internal Medicine residents.[6] Through a competitive application process, scholars are selected by a committee (representing expertise in clinical, informatics, implementation science and IT domains) in April/May of the PGY-1 year. Applicants are prompted to submit an applied informatics intervention that can leverage health information technology and clinical process quality improvement. The selected CSI scholars work with a specialty-specific mentor (i.e., General Internal Medicine, Cardiology, Rheumatology, Gastroenterology, etc.), an informatics mentor, and the Department of Internal Medicine informatics & Analytics team (including an EHR analyst and biostatistician) to develop, implement and analyze their projects over the two-year period. Furthermore,

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scholars are provided specialized EHR training and granted certain EHR privileges after achieving EHR certification to construct their applied informatics interventions more directly.

The pathway also includes an informatics education curriculum involving journal club discussion of landmark informatics articles addressing topics ranging from workflow analysis, clinical decision support, data standards, change management, basic coding concepts, regulatory issues (HIPAA, HITECH, The Joint Commission, etc.), security and privacy. These are foundational topics that also align with progress that the CSI resident should be making on their applied informatics project.

Since inception, the pathway has been successful, with CSI residents presenting more than 10 poster presentations at regional and national conferences, receiving three grants (one externally funded grant and two internally funded), and publishing abstracts and manuscripts in peer-reviewed journals.

How does the CSI Pathway differ from other training pathways for aspiring clinical informaticians?

This is the first program of its kind to offer Internal Medicine residents an opportunity to receive training in targeted clinical informatics topics and to facilitate further EHR certifications with the goal of developing, implementing, and evaluating an EHR quality improvement project. This is a hands-on learning experience guiding Internal Medicine residents how to leverage the EHR to directly affect patient care.

The CSI program is different from a traditional research program with a stipend. The CSI focuses on designing and implementing an intervention to impact direct patient care. These interventions are often pain points in clinical workflows or where evidence that exists in the literature with intermittent or poor adherence in the real world. As previously noted, CSI residents receive EHR certification and privileges to modify the EHR in collaboration with Information Technology Services. A substantial focus on support and maintenance of the interventions is considered early in the process—an often overlooked component of many projects.

How can members at all career and training stages get more engaged in or learn more about informatics work in SGIM and at their own institutions?

As digital health further permeates medicine, it is important for all clinicians at all stages of training to ascertain basic informatics skills (i.e., data literacy). The SGIM Annual Meeting offered several opportunities to learn more about clinical informatics. Posters and presentations under the category of "Clinical Informatics and Health Information Technology" offered a venue for learners to engage with Informatics GIM faculty across the nation. Several institutions have discovered the benefits of training clinicians in their respective EHRs to implement applied informatics interventions and improvements in healthcare delivery services.

How might the future of clinical informatics education change for students, residents, and fellows?

As medicine becomes further entrenched in digital health paradigms, especially since COVID-19, health systems will focus attention to growing informatics expertise and capacity. Robust informatics education and mentorship for students, residents and fellows is of paramount importance to address the current supply-demand mismatch in the EHR, Health Information Technology, and Digital Healthcare space.

To arm the clinical workforce with the tools to efficiently interact within in-person and virtual patient care environments, training pathways and programs like Clinical Scholars in Informatics can help to address the specialty-specific demands. To that end, CSI functions as internal development and recruitment for broad-based informatics expertise.

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SGIM

THE COMMON ROOTS OF CLIMATE CHANGE AND COVID-19

Eric Balaban, MD; Sanjana Garimella, BS; Cecilia Sorensen, MD

Dr. Balaban (Eric.Balaban@cuanschutz.edu) is a senior resident in the department of internal medicine at the University of Colorado School of Medicine and will attend fellowship through the University of Colorado's Climate Change and Health Policy program starting 2021. Ms. Garimella (Sanjana.Garimella@cuanscchutz.edu) is a fourth-year medical student at the University of Colorado School of Medicine. Dr. Sorensen (Cecilia.Sorensen@cuanschutz.edu) is an Emergency Medicine physician at the University of Colorado School of Medicine and the Colorado School of Public Health.

As the world continues to weather the COVID-19 pandemic, it is incumbent on humanity to learn what we can from this historic challenge. The spotlight has been cast upon topics ranging from the role of healthy lifestyles to the durability of our medical system. However, there is a deeper lesson to COVID-19 that may hold humanity's key to avoiding history or dooming us to repeat it. This lesson calls attention to the insidious connection between deforestation and infectious disease, and it calls upon physicians to combat deforestation as a matter of public health.

Many people correctly understand forests as guardians against global warming, but we must also understand them as guardians against infectious disease as well. By 2015, the World Health Organization (WHO) had already identified deforestation as the leading driver of new disease emergence among humans.[1] The U.S. Agency for International Development further estimated that nearly 75% of new, emerging, or re-emerging diseases affecting humans over the past 20 years are zoonotic[2]—this includes human immunodeficiency virus (HIV), severe acute respiratory syndrome (SARS), Ebola, avian flu, influenza subtypes H5N1 and H1N1, and now COVID-19.

At its core, deforestation portends an increased risk of unleashing zoonotic illnesses. Animals that may harbor novel illness are forced to interface with humans as we either invade their habitats or force them to venture into our communities as we destroy their habitable space. Tragically, humanity's hunger for land and lumber has spurred deforestation at a rate of approximately 12 million hectares of forest every year.[3] (As a point of reference, one hectare is roughly equivalent to two football fields.)

The long-term prognosis of many large forests is even more grim when considering the growing role of forest fires. As trees are burned industrially or naturally, carbon dioxide is liberated and drives global warming.[4] The warmer climate then spurs drought which primes swaths of forest to burn and release more carbon dioxide in turn. The gravity of this positive feedback cycle cannot be more real as we consider the historic wildfires fought from California to Colorado last year alone.

And here of all places, amidst the synergy of a COVID-19 pandemic superimposed on the climate change crisis, we may find a unique opportunity. The importance of preserving forests is not a new notion. However, deforestation remains a global issue and society's attention is all too distractable to its most recent problems. After recognizing the connection between deforestation and infectious disease, then COVID-19 may become our canary in the coal mine.

Tragically, forests have no lobby and no lawyer. As a "renewable" natural resource, there are also no market incentives to slow deforestation. And while green organizations have formed to advocate for nature, the persistence and scale of deforestation show just how outmatched those advocates may be. The onus of revitalizing forest advocacy then falls to us as stewards of public health.

Internal medicine doctors have the unique responsibility of appreciating the interaction between seemingly unrelated organ systems. Moreover, we are trained to understand the broader implications which a focal problem may portend. A societal correlate may very well be our inclination to recognize the global impact of a relatively focal problem such as deforestation.

Our profession has never been more entangled with the conversation of climate health as it should be at this moment. With COVID-19 as an inescapable example, we *cannot* deliver comprehensive preventative health without also addressing deforestation. We must inte-

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many medications on the "do-not-use-list" in pregnancy).

As an internal medicine physician, I see the world in gray much more than black and white that reflects the increasingly complex and tailored approach we take to managing medications in chronic disease. After all, each patient has a unique set of pathologies and circumstances. When faced with the decision of whether to obtain the vaccine for COVID-19, perhaps adding some "gray" to the guidelines could be helpful. For example, having a succinct and specific breakdown of what is reassuring about the COVID-19 vaccine for pregnant persons and what specifically causes concern for risk to the fetus could be very helpful as a decision aid.

After weeks of going back and forth, I decided to consult my own obstetrician who made me feel empowered to get the vaccine at 32-weeks pregnant, given my status as a frontline healthcare worker. I received both shots, felt great, and now am the proud mother of a healthy baby boy who does not seem affected by my vaccination status. In fact, the *American Journal of Obstetrics and Gynecology* (AJOG) published a study in March 2021 showing that both umbilical cord samples and breast milk of vaccinated mothers contain antibodies to COVID-19.[1] Emboldened by my good outcome shortly after vaccinating, I felt the urge to share my experience. However, out of a practical need to preserve my energy for my remaining weeks of work and preparation for baby, I opted to forgo the social media "vaccine selfie" route and signed up for a trial that will follow me and baby post-vaccine and help contribute to the safety data instead.

At the end of the day, I think this could be one of the best things a pregnant person who decides to vaccinate can do for other mothers out there. Pregnant women deserve to have protection from COVID-19, too, and deserve better reassurance than what the current recommendations offer. Even though I am officially past my big "year of firsts," it was fulfilling to start 2021 using my knowledge and resources as a physician and situation as a pregnant person to have the courage to be among the first in the world enrolled in a COVID-19 vaccine trial.

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In this issue, SGIM members share their experiences in their boundary-spanning roles as physician-advocates, physician-educators, and physician leaders. Physicians have multiple identities that are inseparable from their professional identity. When one walks into the hospital, clinic, or nursing home, or dons a white coat of any length, leaving one's non-professional identities at the door is not an option—and we individually and collectively are better for it.

SGIM's physician leaders continue to pave a pathway for the academic general medicine community to evolve and make societal progress together. Monica Lypson, SGIM president, reflects on SGIM engagement as a pathway towards addressing collective burnout. Eric Bass, SGIM CEO, provides a vital update on recommendations from a National Academies of Sciences, Engineering, and Medicine report on high-quality primary care.

Physician-educators Orr, et al, and Achuonjei, et al, describe interprofessional educational programs for learners of different disciplinary backgrounds, aiming also to deliver virtual team care during the COVID-19 pandemic. Physician informaticians Hernandez, et al, describe a unique pathway for residents to develop expertise as clinical informatics scholars. Physician-mother and fellow Mahrer Owen reflects on receiving her COVID-19 vaccination during pregnancy. In the spirit of SGIM *Forum*'s March theme issue on climate change and health, physician-advocates Balaban, et al, offer a reminder of physicians' roles in environmental and climate health advocacy, especially in combination with the ongoing COVID-19 pandemic, to advance population and public health.

At the core of general internal medicine is treating a patient as a whole person, recognizing factors in their lives as the context in which to understand and promote their health and well-being. General internists are constantly translating and bridging boundaries for patients, communities, and systems of healthcare, education, health and public policy. Let us be sure to be the most precise and effective translators that we can be!

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I reiterate our history, mission, and vision for it is the True North that Jean Kutner, Eric Bass, and Kay Ovington navigated with many others to ensure the stability of our organization over the past year. During the pandemic, all our worlds have been and continue to be shaken. Generalists are at the crossroads of justice and equity in our boardrooms, examination rooms, and hospital rooms. Daily, those interactions demonstrate the stark realities of differential access to societal assets and the health outcomes of those disparities.

All levels of inpatient and outpatient clinical infrastructure, in which many of our members are practicing, have experienced upheaval. Our hospitalists and trainees have been on the front lines of care, adeptly jumping from one crisis to another—managing a novel disease in the context of limited treatment options with limited or inadequate PPE, managing or operating with limited staffing support and/or prolonged work shifts, and doing this while also being away from family for work and/or out of fear. Our outpatient clinicians have navigated financial shortfalls, changing clinical paradigms for COVID-19 testing, creating partnership with patients who might demand unproven therapies, and converting instantaneously to telehealth as a means of delivering care. These clinical realities are also situated in a time of societal outcries, violence, and economic uncertainty that are agitating for change. Our trainees at the postgraduate level have felt to brunt of the pandemic, quite literally putting their lives on the line to serve the higher calling of the profession. This was also done while fighting in the streets for social justice and often without additional time off, compensation, or adequate behavioral health support in the moment.

For primary care physician-researchers, an additional reality is that competition for funding to pursue lines of inquiry and discovery is more fierce than ever; at the same time, research funding has been redirected to issues related to the pandemic. It is not clear how the current funding environment will react to our style of discovery. Health services and primary care research championed by our members has longed forged the way for substantial policy changes that improve the health for all.

One can look at our present situation through the lens of collective burnout, the condition in which we are left with depersonalization as an adverse coping skill for emotional exhaustion. I illustrated in this column many of the identified systemic issues that lead to collective burnout. But I do not want to leave us on a sour note. Gagné and Deci were among the first to articulate the factors needed to ensure wellbeing, self-determination and intrinsic motivation in the workforce. In medicine, we have combined wellbeing, self-determination, and intrinsic motivation into one concept of "well-being." Gagne and Deci further articulate that "well-being" is affected by competence, autonomy, and relatedness which are also key factors in addressing our collective burnout: competence (effectiveness in dealing with the work environment), autonomy (control over the course of lives), and relatedness (close affectionate relationships with others).[4,5] For anyone who reads this month's SGIM *Forum*, SGIM provides the antidote to collective burnout.

Competence. Our annual meeting provided the context and tools needed for continuous professional development. The program and the daily work of our members ensure that we all are better prepared to handle the complexity of equity as it relates to climate change, vaccine distribution, or access to care.

Autonomy. As an organization, SGIM acted, instead of bemoaning the state of primary care decline due to the pandemic. In the Q&A with the SGIM CEO, Eric Bass, he announces our organization's co-sponsorship of the National Academy of Science Engineering and Medicine (NASEM) report on "Implementing High-Quality Primary Care." This call for an intensive re-dedication to high-value, high-quality primary care, will undoubtedly lead to investments that enhance our patients' experiences, care quality outcomes, and clinicians' and trainees' satisfaction. In another example of autonomy, the SGIM Health Policy Committee responded to a National Institutes of Health (NIH) "Request for Information (RFI): Inviting Comments and Suggestions to Advance and Strengthen Racial Equity, Diversity, and Inclusion in the Biomedical Research Workforce and Advance Health Disparities and Health Equity Research" with clear tenets for the NIH to adopt to advance these aims.

Relatedness. We have expressed our love and commitment to SGIM through the generosity of our members and supporters. To date, we have 2,899 members who paid their annual dues and the Philanthropy Committee raised $261,830 in donations and pledges since it was established in Fall 2020. As I consider the value of 525,600 minutes of my SGIM annual membership for $1.11 a day, I have the answer: it is the season of love.

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establish a Council on Primary Care to ensure the plan is implemented. SGIM may need to partner with other organizations to urge states to implement primary care payment reform, and to develop a scorecard for monitoring progress in implementing the plan.

To what extent are the NASEM committee's recommendations consistent with the call for fundamental changes in primary care financing?

In December 2020, SGIM joined six primary care organizations in calling for "investment in health as the new paradigm for financing primary care as a public good."[2, 3] The proposed paradigm would enhance the ability of primary care teams to provide comprehensive care and collaborate with community organizations to address social determinants of health. A new paradigm would help support relationship-centered team-based care and ensure appropriate payment for addressing preventive care and social drivers of health.

SGIM's HPC will need to discuss the call for shifting primary care payment toward hybrid (part FFS, part capitated) models that reflect the heterogeneous nature of primary care practice, as this falls short of a more uniform change in primary care financing toward full capitation. Yet, the NASEM report still highlights the corrosive nature of FFS payment on primary care practice, and resultant need for fundamental changes. It will be impossible to implement all the NASEM committee's recommendations without investing more and differently in the primary care system, creating fiscal space for practice and workforce transformation to occur. We hope SGIM's members join their primary care colleagues in advocating for a paradigm shift in primary care financing while also supporting the bold actions recommended by the NASEM committee.

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ect, survey respondents, including a diversity of trainees from different health professions and faculty, indicated that the virtual approach did maintain aspects critical to interprofessional practice. Specifically, these included team communication, IP perspective, patient communication, and patient safety. Pilot participants stated that maintaining clear and frequent communication between team members working remotely is critical to maintaining the quality of training and the patient experience.

Several difficulties noted by respondents are common to telehealth models, including technological problems, limited physical examination, and barriers to observing trainee-patient interactions.

This pilot study had several limitations, including a small sample size, limited response rate, and a single practice studied. Analysis by profession was not performed, which may limit understanding of different health professions' experiences. Staff or patient experiences were also not performed. Future work includes improving the model to address drawbacks, implementing suggestions raised by participants and expanding evaluation to include insights from patients and staff.

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practice. Attending physicians and APPs on service with rotating residents were, respectively, sent surveys after the elective had been running for 18 months. Two study authors subsequently analyzed the survey data utilizing inductive content analysis.

Results

Post-Rotation Survey

Six of 10 residents (60%) completed the open-ended, four question post-rotation feedback survey. Questions included "name three things you intend on doing the next time you work on a hospitalist team or with an APP," "what was most challenging when developing a workflow with APPs," "name two things you learned about the role of APPs on the team," and "how was this rotation unique from other ones you have done?" Key themes from resident reflections included surprise at APP independence and desire for learning (n =6, 100%), the importance of clear expectation-setting for workflow (n = 5, 83%), and the value of independent medical decision-making during residency training (n = 4, 67%). One resident, in particular, noted the complexity of interprofessional dynamics outside the traditional hierarchy of academic medicine: "It was difficult to feel responsible for the workflow and decision-making despite being the 'new kid on the block' and having less clinical experience than both APPs I worked with…. It made delineating tasks more difficult than it usually is with interns."

Elective Follow-up Survey

Three of the four graduated residents (75%) responded to the one-year follow-up survey. All survey respondents agreed that the elective helped them better understand the role of an APP and changed the way they interact with APPs.

APP/Attending Survey

Four out of five APPs (80%) who worked with residents on the elective responded to the 18-month follow-up survey. All APP respondents either agreed or strongly agreed that they felt comfortable giving feedback to senior residents, their autonomy was preserved, they were still able to deliver safe and efficient patient care, and the residents they worked with better understood the role of the APP on the healthcare team after completing the rotation. Three key themes emerged from APP responses. First, respondents noted the value of continuing education from physician collaborators, especially sharing "teaching points" or "clinical pearls on a topic that might be confusing." Second, respondents expressed their desire to increase understanding of the APP scope of practice and how APPs differ from residents. Finally, several respondents shared that teamwork ("things like checking in to see if we need help" or "when you see us overwhelmed, asking if [the hospitalist] can do anything at all helps take the load off") and communication ("if [the hospitalist] made any changes to the plan of care for a patient after we have run the list, please let us know about the changes") are key.

From the attending surveys, all respondents (n=7, 87.5%) agreed or strongly agreed that they wish they had a similar elective in training. Six out of seven respondents reported that working with a resident did not impede their workflow.

Discussion

Through the Transition to Attending Hospitalist elective, residents seemed to have obtained valuable insight into the role of APPs on healthcare teams. Specifically, they reported challenges adapting to the new workflow in an unfamiliar, interdisciplinary model. This model, as noted by one resident respondent, challenges the traditional hierarchy of academic medicine and leads to possible role ambiguity, especially for new hospitalists who may have less experience than their APP partners. As not all residency graduates will go on to refine these skills through a hospital-medicine fellowship, we believe leadership training, communication skills development, and increased exposure to interprofessional models during residency will be imperative to future hospitalist-focused tracks or electives. We also feel that it is important to have APPs lead and mentor some of these interactions to ensure their perspectives are well represented.

In their role as mentors, the APPs in this cohort felt comfortable giving feedback to residents and felt that the rotation positively changed resident knowledge of their role on the team and affirmed their desire to learn from supervising physicians. The surprise expressed by participating residents at the premium placed on teaching by the APPs suggests to us that this space is also ripe for future interventions.

Our pilot study does have significant limitations, including a small sample size at a single institution, lack of a comparator group, and inability to draw any true conclusions due to limited statistics. Additionally, residents at programs with less attending supervision on medicine rotations may not find the autonomy that this elective offers as novel, although they may still benefit from the APP exposure.

Overall, we found that residents seemed to enjoy the increased autonomy and were challenged by balancing their own clinical care while respecting the autonomy of their APP partner. APPs seemed to find this elective was an effective means of educating residents about their role on the team. We hope that the discoveries identified by this collaborative care pilot project encourage additional interprofessional experiences for internal medicine residents and identification of teaming best practices. We feel this rotation is transferable to other institutions and provides a unique and valuable experience for residents going into hospital medicine.

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grate the importance of ecological security in the agenda of public health.

At a fundamental level, we must stand as physicians and acknowledge ecological advocacy as a professional responsibility. The advent of COVID-19 may serve as a mere sample of larger infectious challenges if such a responsibility is neglected. Even without discussing the psychological and wider ecological impacts of deforestation, we simply cannot disentangle the health of our patients from the health of our environment.

Each physician can make a profound impact on our respective communities. We are obligate leaders and are entrusted by our patients to make decisions to safeguard their health. As such, we should feel comfortable, if not obligated, to spread the concern for environmental health to others. From casual conversation to publishing in academic works, physicians should cultivate awareness and engagement in protecting forests and the environment. We should stand ready to support programs that recycle reusable products, responsibly resource materials, and encourage sustainable agriculture.

Lastly, we must not shy away from escalating our leadership to the state and federal levels to discuss legislative action. Across the country, there are already innovative actions being considered. In California, for example, the government is discussing AB-416 California Deforestation-Free Procurement Act this legislative session. If passed, this bill would make it illegal for companies to procure goods that were cultivated at the cost of deforestation.[5] AB-416, and others like it, would be innovative measures, but they are restricted to the state level and must be coupled with more legislation across the country to maximize any impact. These legislative initiatives would normally seem outside of the practitioner's scope. However, we must consider the environment's impact on public health and testify in support of such measures. If meaningful change is to happen, we must guide and drive governmental action.

The COVID-19 crisis has proven itself an unprecedented disaster. It is crucial for physicians to understand not only the disease itself, but the relationship society holds with our environment that may be subjecting the entire globe to undue infectious risk. We must also recognize that the problem is expected to grow as global warming continues. Armed with this knowledge and the position of leadership, it is our duty to intervene upon the cultural and legislative dialogue. We have the responsibility to inform and advocate for programs that reuse materials, restore devastated spaces, and spare overtaxed resources for the sake of our patients and society at large. Ultimately, if we do not heed the warnings of recent zoonotic illnesses such as Ebola and COVID, then we resign ourselves to the next pandemic.

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SGIM Forum
Society of General Internal Medicine
Society of General Internal Medicine
1500 King Street, Suite 303, Alexandria, VA 22314
202-887-5150 (tel) / 202-887-5405 (fax)
www.sgim.org

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