Family Doctor A Journal of the New York State Academy of Family Physicians





Focus: Medical Education



FEATURE ARTICLES:

- Best Practices for Integrating Medical Students into Outpatient Primary Care Practices
- Medical Podcasts for the Family Physician
- Teaching how to Give Effective Feedback: A Review of Best-Practices to Develop Residents Skills in Giving Feedback
- Point-of-Care Ultrasound in Primary Care: Perspectives of Residents and Faculty at a Large, Urban Family Medicine Residency Program
- PNE/PRT: A Practical and Efficacious Method in Addressing Pain Medicine Education in Residencies
- Medical Improvisation



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		One serving of many of the es your body no	YOUR BO of milk contains sential nutrient eeds, including:	s	
	Helps build and maintain strong bones and teeth.	25% DAILY VALUE		Helps your body use carbohydrates, fats and protein for fuel.	20% DAILY VALUE
PROTEIN			NIACIN		
4	Helps build and repair tissue. Helps maintain a healthy immune system.	16%	<i>:</i> ₽;	Used in energy metabolism in the body.	15% DAILY VALUE
VITAMIN D			SELENIUM		
	Helps build and maintain strong bones and teeth. Helps maintain a healthy immune system.	15% DAILY VALUE		Helps maintain a healthy immune system, helps regulate metabolism and helps protect healthy cells from damage.	10% DAILY VALUE
PHOSPHO	RUS		ZINC		
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VITAMIN A			IODINE		
\odot	Helps keep skin and eyes healthy; helps promote growth. Helps maintain a healthy immune system.	15% DAILY VALUE		Necessary for proper bone and brain development during pregnancy and infancy; linked to	60%
RIBOFLAV	N			cognitive function in childhood.	
	Helps your body use carbohydrates, fats and protein for fuel.	30%	POTASSIU	M*	
VITAMIN B	VITAMIN B12 Helps maintain a healthy blood pressure and supports heart health. Helps regulate body fluid balance and helps maintain normal muscle function				
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New York State Academy of Family Physicians

16 Sage Estate, Suite 202 Albany, New York 12204 www.nysafp.org Phone: 518-489-8945 Fax: 518-888-7648

Letters to the Editor, comments or articles can be submitted by mail, fax or email to journaleditor@nysafp.org

Editor: Penny Ruhm, MS

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Vito Grasso, MPA, CAE	vito@nysafp.org
Director of Education:	
Kelly Madden, MS	kelly@nysafp.org
Director of Finance:	
Donna Denley, CAE	donna@nysafp.org
Journal Editor:	
Penny Ruhm, MS	penny@nysafp.org
Director of Marketing,	
Promotion & Develo	pment:
Jill Walls	jill@nysafp.org

For Advertising Information Contact Jill Walls at 518-489-8945 ext.5 or jill@nysafp.org

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From the Executive Vice President

By Vito Grasso, MPA, CAE

Tim Hoff's latest book, *Searching for the Family Doctor*, offers an interesting and provocative assessment of family medicine. Among Dr. Hoff's essential themes are the threat to primary care posed by health care corporations and technology companies, and the absence of support from other medical specialties. He also addresses the diversity of family physicians, the genesis of family medicine and the resulting changes posed for the Academy.

Applying insight from interviews with 55 family physicians at various stages of their careers and his own experience as a health care administrator and academician, Dr. Hoff examines the history of family medicine, identifies challenges concerning his interview subjects and offers recommendations for how to improve the image of family physicians and the effectiveness of the Academy.

His conclusion that the current health care system in inhospitable to primary care is based in large part on the dominance of health care by large systems and the emergence of technology as a resource for the corporatization and monetization of patient information. Indeed, physicians generally, and primary care physicians in particular, have lost independence and stature as hospitals and health care corporations have absorbed private practices and become the principal employers of physicians. Reducing physicians to employees and subjecting the profession to the bottom-line orientation of employers has undermined the physician-patient relationship. Employed physicians have a duty to their employer, which often conflicts, with their obligation to their patients. Employment of physicians also interferes with development of longitudinal relationships with patients and reinforcement of that relationship through application of the broad scope of practice inherent in family medicine training. In many health care corporations, family physicians are used as feeders for specialty care by other physicianemployees of the company.

Dr. Hoff offers ten recommendations for family medicine going forward. Perhaps the most salient is the suggestion that employed family physicians need to organize and address workplace issues collectively with their employers. Although physicians in independent practice are precluded from collectively negotiating with insurance plans, physicians employed by a common employer are able to form a union and collectively bargain with their employer. The idea that physicians are supervisors of other employees and, therefore, are management has been eroded by the realities of delivering health care primarily through health care corporations and hospital systems dominated by business ethics and practices. It is apparent that many Academy members have experienced loss of discretion and independence as a result of their employment by health care corporations. This often causes distress, particularly when corporate policies may conflict with patient interests and perception of the physician's performance could be adversely affected by resistance to corporate practices, which the physician feels might be harmful to the patient. The Academy, like other medical societies, has resisted formation of a union. Employed members, however, should seriously consider organizing on their own, even joining other unions, to exercise their right to collectively negotiate with employers to address all workplace issues including prioritizing serving patients, allowing physician's more professional discretion and implementing compensation policies that do not penalize physicians for devoting time to patients.

Dr. Hoff also has a lot to say about technology. In general, he feels technology is used to standardize care and reduce primary care to allow less trained or skilled personnel to be used to deliver services. There is certainly evidence that technology has been used in various settings to expand the scope of practice of non-physician clinicians to the detriment of primary care physicians and the physician-patient relationship, which is critical for longitudinal care.

continued on page 6

It is apparent that many Academy members have experienced loss of discretion and independence as a result of their employment by health care corporations.

Technology, however, also offers opportunities for physicians to expand and diversify contacts with patients, reinforcing the physician-patient relationship. Incorporation of virtual visits into practice has become more prevalent since COVID and is likely to remain a resource for practices in the future. Dr. Hoff includes adoption of virtual care among his recommendations. Although he notes the importance of adequate payment, he also suggests that telemedicine is important enough to be considered a "loss leader" for primary care. On this point, he is in congruence with established Academy policy.

Dr. Hoff also discusses the need for serious reform of the way physicians are trained, both in medical school and in residency. In his focus on family medicine, he suggests medical school offers little holistic or relational medicine and that residency training for family physicians is inappropriately focused on the hospital setting. He believes the effort to emulate the rest of medicine in designing a residency experience for family physicians was a strategic mistake by family medicine leaders. The recent movement to create teaching health centers and the greater relevance of community based instruction for family physicians in training is evidence that the specialty is also attempting to make residency training more community based and more relevant to the kind of setting in which family physicians actually practice.

Dr. Hoff's work will be scrutinized by many in medicine. There will certainly be many critics as he suggests some significant missteps by family medicine leaders through the years and challenges the notion that the specialty is well positioned to expand and prosper in an increasingly technological and consolidated health care system. It does, however, offer a good source of information and perspective with which to begin self-assessment. Certainly, the challenges posed by employment of physicians, the continued consolidation of health care, and the use of patient data by technology companies and corporate health care are areas where organized medicine must adjust. Dr. Hoff identifies several subtypes of family physicians and raises concerns about the challenges of maintaining relevance of the Academy for such diversified members. In particular, he contrasts the idealistic portrayal of family medicine with the reality of contemporary practice and suggests the need to portray family medicine in a new manner if we are to attract new physicians to the specialty. As the preeminent organization representing family physicians, the Academy, if it chooses to, would do well to consider the findings and conclusions presented in Searching for the Family Doctor.

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President's Post

By Andrew Symons, MD, FAAFP

I am writing having just participated in our Academy's annual "Advocacy Day" in Albany. With the guidance of Marcy Savage, our legislative consultant from Reid, McNally and Savage, forty students, residents and family physicians prepared to discuss issues important to our patients and to our profession with our legislative representatives. Topics included; Medicaid primary care rate increase; prohibiting the sale of flavored tobacco products; support of a tax credit for preceptors, advocating for mandatory reporting of adult vaccines to the NYS immunization registry; support for primary care workforce programs like Doctors Across NY (DANY) and Area Health Education Centers (AHEC); protection for physicians providing abortion services; health insurance standardization and simplification; and support for universal health care coverage through a single payer system. We converged on Albany and visited our legislators in small groups. The representatives were welcoming, appreciated our perspectives and our input, and are particularly interested in hearing the perspectives of our students and residents.

My "day job" is as Vice-Chair for Medical Student Education in the Department of Family Medicine at the University at Buffalo. I direct the first-year clinical skills course and the family medicine clerkship. In that role, I am beholden to, and grateful for community preceptors. We cannot teach our students without their help. I was very pleased that our Academy stepped up and advocated for passage of a bill that would provide recognition in the form of a state tax credit to primary care preceptors. It represents just a fraction of the "value" of their contribution, but hopefully a first step in strengthening the pool of family physicians who are willing to train our students to care for our patients and communities.

Aside from advocating for the issues themselves, most impressive to me about our advocacy day was the enthusiasm our students and residents have for family medicine and for the concerns of our profession and our patients. During my family medicine clerkship orientation, I tell the students that one of the roles of family physicians is to "advocate" for our patients. For years, I have given examples such as advocating to insurance companies for coverage of medications and diagnostics for individual patients, or advocating for a patient to be seen expeditiously by a sub-specialist. While advocating for the needs of individual patients will always be important, recently, a "light-bulb" went off, and I realized that encouraging students to join forces with like-minded family physicians, residents and students was the best way to encourage them to extend our advocacy beyond the walls of our clinical offices. I am proud that perhaps I struck a chord, and several students from our school joined us on our advocacy day. I want to increase my own efforts at bringing students and residents into our advocacy efforts.

In the fall, I had several other opportunities to celebrate our future family physicians. With the support of NYSAFP, several local chapters held "resident meet-and-greet" programs, bringing together family medicine residents interested in practicing in a specific area with employers potentially interested in hiring them. I attended events held in Buffalo, Albany, Long Island, and the Southern Tier (Tioga). The "employers" were not national recruiters, but rather representatives of local practices and hospital systems interested in offering our residents an opportunity to stay in our communities and practice family medicine. The events were imbued with the warmth of welcoming our future colleagues to our practices, and the local "recruiters" were very appreciative for the opportunity to meet our residents in person. I know that several employment relationships sprung from those events. We look forward to expanding these resident meet-and-greets to other areas throughout the state.

The current issue of Family Doctor is devoted to medical education. There is nothing more gratifying and energizing than working with students and residents, mentoring them as they pursue their journey to becoming competent and compassionate physicians, and demonstrating to them the fulfilment they can experience as family physicians. I am grateful to all of our members who take the time and devote the effort to working with our students and residents. I hope the resources provided in this issue will help and inspire you as you continue to fulfil the role of training our next generation of family physicians.

There is nothing more gratifying and energizing than working with students and residents, mentoring them as they pursue their journey to becoming competent and compassionate physicians...

Albany Report

By Reid, McNally & Savage



Successful 2023 NYSAFP Advocacy Day

We want to give a special thanks to over forty family physicians, residents and students who joined us at the State Capitol in Albany on Monday, February 27th for NYSAFP's annual Advocacy Day. Led by President Dr. Andrew Symons, President-elect Dr. Heather Paladine, Advocacy Chair Dr. Jiana Menendez and EVP Vito Grasso, six regional teams met with nearly fifty legislative offices, as arranged by our firm, to advocate for their support of the 2023 budget and legislative priorities of NYSAFP. Special thanks to Donna Denley, Director of Finance for NYSAFP for her assistance with planning and executing the Advocacy Day.



Members discussed several budget priorities included in Governor Hochul's executive budget, released on February 1st, that will promote primary care and prevention for New Yorkers. Proposals supported by NYSAFP are outlined below.

The SFY 2023-24 executive budget (per the Medicaid scorecard) provides \$17.7 million for SFY23-24 and \$35.3 million for SFY24-25 to increase Medicaid fees for primary care to 80% of Medicare. The benefits of investing in primary care are well documented and this proposal will improve clinical outcomes, avoid preventable tests, hospitalizations and referrals, and stabilize primary care medical practices which have served the Medicaid population for too long without receiving adequate payment to cover their overhead costs.

The executive budget also provides funding for the Doctors Across New York (DANY) program at a level of \$15,865.000. With this funding, the state would be able to continue to support approximately 150 physicians going into primary care specialties to relieve educational debt and to assist with joining or establishing practices in underserved areas where they will work for at least three years.

Further, the executive budget includes state funding for the Area Health Education Center (AHEC) system. Due to the Legislature's past leadership and support, \$2.2 million in AHEC funding was restored in the final SFY 2023 budget, and this amount is now in the Governor's budget for the upcoming fiscal year. AHECs provide essential programming all across New York focused on addressing healthcare workforce shortages through pipeline and other initiatives and addressing health disparities and equity challenges in urban and rural areas. For over twenty years, AHEC had received state funding, which is critical to the minimum 1 to 1 match of federal HRSA funds that AHEC receives to do this much-needed work.

The executive budget also includes proposals to end the sale of all flavored tobacco products, increase the state cigarette tax by \$1 and close existing loopholes in the law related to restrictions on the sale of flavored e-cigarettes to ensure compliance. Flavors like cherry, cotton candy, menthol and others have been used as a marketing weapon by tobacco manufacturers to make the use of tobacco products more attractive and leading many young people to a lifetime of addiction. Tobacco manufacturers have also targeted Black and Brown individuals and the LGBTQ+ communities with menthol products, leading to an unequal burden of death and disease.

Further, increasing the cigarette tax by \$1 per pack to \$5.35 per pack, as proposed, is projected to generate significant public health benefits for New Yorkers including a decrease in youth smoking by 8.2 percent. It is also estimated that 44,800 adults who currently smoke will quit smoking. The projected reduction in youth smoking and cessation of smoking by adults would save over 15,300 lives. We estimate that this \$1 increase will generate approx. \$51 million in revenue for the state which could be applied to support other healthcare needs including additional funding for tobacco cessation. The State spends \$9.7 billion every year in healthcare costs associated with treating tobacco-related illnesses.

Despite the many positive proposals in the executive budget, NYSAFP is opposed to a proposal to authorize the independent practice of physician assistants (PAs). The proposal would allow PAs to practice without the supervision of a physician under the following circumstances:

- Where the PA has practiced for more than 8,000 hours and has completed a DOH approved program and also meets one of the following criteria:
 - Is practicing primary care (non-surgical care in the fields of general pediatrics, general adult medicine, general geriatric medicine, general internal medicine, obstetrics and gynecology, family medicine);

OR

Is employed by an Article 28 health system or hospital that determines the PA meets the qualifications of the medical staff bylaws and gives the PA privileges. Additionally, the proposal authorizes PAs to prescribe, dispense, order, administer, or procure items necessary to commence or complete a course of therapy. This includes the prescribing of controlled substances. PAs would also be permitted to prescribe and order a patient specific order or non-patient specific regimen for administering immunizations.

NYSAFP is concerned that this proposal would make a very significant change to the care model in New York without evidence that independent practice would not undermine quality or increase costs. Members asked legislators to reject this proposal in the final state budget. Additionally, they recommended that an objective study be done to compare performance of PAs practicing without supervision with performance of PAs working under the supervision of physicians, and ensure that patient quality of care is not compromised.

While in Albany members also urged legislative support for the following stand-alone bills:

- Creating a <u>Clinical Preceptor Tax Credit program</u>; NYSAFP is seeking a "legislative add" in the State budget this year of \$3 million to create this program
- Requiring all <u>Adult Vaccines to be reported</u> to the State/NYC vaccine registries moving from an opt-in to opt-out for patient consent law in NYS
- Authorizing NY physicians to provide <u>Abortion Services via</u> <u>Telemedicine</u> for those located outside NYS
- Authorizing Medical Aid in Dying
- Establishing a Single Payer Healthcare System, legislation to be reintroduced by Senator Rivera and New Assembly Health Committee Chair Assembly member Paulin
- Making recommendations for Insurance Administration Simplification and Standardization (no legislation yet)

The day after the Advocacy Day, NYSAFP submitted testimony for the February 28th Health/Medicaid Joint Legislative Budget hearing to make lawmakers aware of the budget priorities. We expect both houses will release their own one-house budget bills on or around March 13th in response to what the Governor proposed, as well as their own priorities. Then three-way negotiations will commence with the Governor and Legislature to reach a final agreement for a SFY 2023-24 budget due April 1st. For more information on the Governor's budget proposals in the Health/Mental Hygiene sectors, please review our comprehensive <u>HMH Executive Budget Update</u>.

NYS Senate Passes Telemedicine Abortion Legislation

With NYSAFP support affirmed in a COD resolution last June, the Academy worked throughout the summer and fall to build support

2023

Upcoming Events

May 20-21 Congress of Delegates Albany

August 5-6 Summer Cluster Edith Macy Center – Briarcliff Manor

November 5 Fall Cluster (NYSAFP Board meeting only) Albany

2024

January 12-14, 2024 Winter Weekend and Scientific Assembly location TBD

February 25-26, 2024 Winter Cluster and Advocacy Day Albany

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for legislation to enable NY physicians and other authorized clinicians to assist individuals in prohibitive states with reproductive healthcare access using telemedicine and medication abortion, following the overturning of Roe v. Wade.

When the session started in January, we were able to quickly secure the introduction of the bill by Senator Mayer (S1066A) and its passage in the Senate as part of a reproductive healthcare package. We then immediately turned our attention to the Assembly. Assembly member Reyes has introduced the bill (A1709A) and it has been referred to the Assembly Codes Committee. NYSAFP is working in a coalition of many other medical, reproductive health and legal advocacy organizations and individuals to advocate for its swift advancement. We are working to grow the co-sponsorship list and other support and prioritized the bill through the Academy's Advocacy Day to continue education efforts with Assembly members, as well as to overcome legal and licensure concerns raised by Assembly central staff. Special thanks to NYSAFP Advocacy Chair Dr. Jiana Menendez and members Dr. Linda Prine and Dr. Maggie Carpenter for championing these efforts along with other NYSAFP leaders.

Governor Hochul Vetoes 2022 Wrongful Death Legislation

Lastly, just in time for the January 30th deadline, Governor Hochul vetoed the Wrongful Death Legislation (S74-A/A6770 -2022), bringing an end to months of advocacy by the Academy and others in the medical and business communities. In an op-ed in the NY Daily News Governor Hochul stated *"experts bave bigblighted concerns that the unintended consequences of this far-reaching, expansive legislation would be significant. It is reasonable to think that the legislation as drafted will drive up already-bigh health insurance premiums, adding significant costs for many sectors of our economy."*

<u>This legislation</u> would have allowed more individuals to file lawsuits and seek emotional damages in wrongful death cases and

expand the statute of limitations for such claims from two years to three-and-a-half years. This legislation would have greatly expanded the possible damages in a wrongful death action, exponentially increasing New York State's already high medical liability insurance premiums. While estimates vary, one actuarial estimate found that passage of this legislation could further increase premiums by nearly 50%. This translates into tens of thousands of dollars in new costs for physicians and could make it impossible for many physicians to stay in practice.

NYSAFP strongly opposed this bill and advocated for its defeat throughout the 2022 session, and during the summer and fall once both houses passed it. Efforts included an advertisement (below) in Empire Report NY, which ran for over four weeks and was sponsored jointly with other medical specialty societies. The Academy conducted meetings, sent letters from President Dr. Andrew Symons, mobilized the membership and worked in a broad coalition to convey its concerns and opposition to this legislation to the Governor's office seeking Governor Hochul's veto of the bill.

In her veto message, Governor Hochul recognized the severe consequences this legislation would have, including overburdening an already overwhelmed healthcare system. Rather than enacting legislation that will drive more doctors out of New York State, Governor Hochul suggested a focus on implementing reforms that would bring about a more fair and balanced liability system. The Academy will continue to advocate for medical liability reform to assure patients do not lose access to medical services and care. Thus far similar legislation has not been introduced, but we remain vigilant as the 2023 session continues.

We thank you for your interest in NYSAFP advocacy efforts on behalf of members and your patients. We encourage all to get be involved through the COD, annual Advocacy Day and by taking part in opportunities throughout the year to reach out to your state legislators to ask for their support of family medicine!

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IN THE SPOTLIGHT

To the Graduates

By Robert Bobrow, MD

As you transition from medical school to residency, to fellowship or into practice, ahead of you lie many unique successes as well as some failures. I would like to share one of my failures and two of my successes with you, gleaned from 50 years in practice.

It was an unusually hectic Saturday morning in my solo private practice. The phones wouldn't stop, patients were standing in the packed waiting room and I was feeling the stress. Into this scenario walked a regular patient of mine, a 60-year old man with chest pain. The staff called me and I took him aside. It was obvious he was in the throes of an acute coronary syndrome and I told him he had to go to emergency room (which was right across the street) immediately, that he was having a heart attack and needed to be tended to right now. *"Will you meet me in the emergency room?"* he asked, adding he would only go if I would meet him there. I was not on call for my group that weekend and needed only to inform my on-call colleague and involve a cardiologist, but I told him I would make every effort to get there after I was finished in the office. I again impressed upon him the dire necessity of his getting to the ER right away, that his life could depend on it, but for some reason, in my stressed-out state, I stopped short of saying *"Yes, I will meet you in the emergency room."* As a result, he did not go to the ER. He went home. And died.

The next case concerns a one-year old boy, brought by his mother into a public, general medical clinic, where I was the medical director at the time. The child had a tumor on his left forearm the size of a tangerine, and the mother explained it was a cancer that had metastasized to his lung, and he was getting treatment at a special facility in the Bahamas with some sort of blood-derived product given parenterally, whose formula was a secret. This clinic had biopsied the mass and found it to be malignant, and their chest x-ray showed metastases to the lung. The treatments were quite expensive, which she could ill afford, but they were keeping him alive and she was saving up until she could return. In the meanwhile she wanted him to have whatever routine care and immunizations were required. I found her to be an intelligent person but with an instinctive mistrust of government and its institutions. She was obviously a devoted mother, who would do anything for her child.

I listened attentively and non-judgmentally as she told me about the off-shore medical facility. I did have some interest in alternative medicine, which I mentioned. The boy himself was a normal-appearing one-year old meeting appropriate milestones and with full use of his left hand despite the obvious tumor. His mother, suspicious at first, gradually started to become comfortable with me. I noted that the child had been born at our local hospital, where I had privileges, so I went over and pulled his birth records. The mass had been present at birth and was biopsied then and found to be benign. I shared this information with the mother, who remained skeptical. After another few visits, as our relationship developed, I persuaded her to let me order another chest x-ray. When it was negative, I handed her the report; she stared at it in disbelief. Finally she agreed to let one of the local surgeons re-biopsy the mass. It was indeed benign. She had not gone back to the Bahamas since she came to our clinic, and never did return.

This was in 1984. The first cases of an unusual atypical lymphoma had been reported, and a novel blood-borne virus was emerging as the cause. The "secret formula", a blood product, was found to be contaminated with this virus, and the government ultimately shut the place down. Had the boy continued to receive treatment there (for a cancer he didn't have) there is a very real chance he would have become infected with what came to be known as HIV, and which was almost always fatal at the time.

The mass was removed uneventfully by a local surgeon. The family became my patients when I left the clinic and went into private practice. I followed him into late childhood, and he remained healthy, with full use of his hand.

The third instance concerns a two-year old boy, brought to the same public clinic with a sore throat. Our pediatrician saw him, and did a throat culture. It was positive for Neiserria gonorrheae. The county health department immediately became involved. Twelve people – three generations of an extended Latino family - lived in the house. The health department wanted all of them to be cultured, genitally, orally and rectally, to see how the child could have become infected. Needless to say, child protective services was also called in. I took a step back and wondered what a child from an intact family, who didn't look that sick, would be doing with pharyngeal gonorrhea. So I checked to see which commercial lab had done the culture, called them and requested the bacteriology department. I asked them to take another look at the culture. Well, it was a Neisseria species, but on second look, not N. gonorrheae. In fact, it was normal flora. The county's venereal disease control program actually suggested we go through with the rigmarole anyway, to save face, but I summoned the family patriarch as quickly as I could and told him it had all been a huge mistake, and that his child never had a sexually transmitted disease. He could not have been more relieved if I had told him a large mass we thought we saw in his lung was an artifact. I saved the family years of doubt and suspicion, not to mention entanglement with local social services and possibly law enforcement.

The reason I share this with you, you who are proceeding to the next level in your professional journeys, is that I know one of your greatest fears is that you simply don't know enough medicine, don't have enough experience, lack sufficient expertise to be fully competent. But you may note in the first two vignettes, medical acumen was barely involved. I had only to recognize a heart attack and obvious quackery. A life was lost or saved due to aspects of my personality: an inability to handle stress in the first instance, and a willingness to be patient and empathetic in the second. Even in the third case, I only had to realize that a lab result wasn't compatible with a clinical picture, and take the time to pursue it.

Often, you see, it's not what you know, but who you are.

Robert Bobrow, MD has practiced all aspects of family medicine for 50 years. He has held numerous academic appointments and is widely published. He is a former editor of Family Doctor.

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Best Practices for Integrating Medical Students into Outpatient Primary Care Practices

By Janice C. Lau, MD; Nina Piazza, MD and Elizabeth Brown, MD, MPH

Spending time with family physicians in outpatient clinics is a key component of undergraduate medical education, allowing medical students the chance to learn about the team-based care approach to primary care, understand the power of continuity of care, counsel patients in preventive medicine and motivational interviewing, and practice evaluating and managing common outpatient diagnoses.

In general, medical students are expected to interview patients independently, present to a physician preceptor (usually a family medicine attending or resident), and write notes. Due to the diversity of primary care offices and clinic models, it can be challenging to integrate medical students effectively into diverse primary care offices without disrupting patient care while making it an educational experience. Due to the time constraints that many family physicians already face in the outpatient setting, there may be a perception that the addition of medical students may harm efficiency and the overall established office workflow. In a 2011 survey, preceptors reported a "negative impact of medical student interactions on patient flow, work hours, and income."1 "The majority of primary care physicians...are under pressure to increase their relative unit (RVU) production"; however, research has shown that there is no reduction in RVUs per session when a preceptor has a student compared to when the preceptor does not have a student.²

Based on what has worked well in our institution, as well as what has been proposed in the literature, we provide a detailed framework on how to create a welcoming and educational environment for medical students in the primary care office.

Preparing for a Clinic Session

Creating a safe learning environment and establishing the clinic workflow can set the tone for a student's rotation and allow them to be successful and efficient throughout the course of their clerkship. At the beginning of each rotation, students should be oriented to the clinic as soon as possible to ensure that they are comfortable navigating around the clinic (i.e. know locations of the patient rooms, clinician work room, nursing stations, restrooms, supply closet, break room, parking location, etc.) and have familiarity with the electronic medical record.³

Prior to each clinic session, it is strongly recommended to set aside time for medical students to discuss their learning goals for both the rotation and for the day's session with their preceptor to help guide their experience. Using tools such as the "One Minute Learner Pocket Card" can help facilitate doing so consistently and efficiently.⁴ For example, if a student wishes to improve their skills in generating differential diagnoses, then the preceptor could focus on teaching and assessing the student about that particular aspect for the day.



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It is also important to review the clinic schedule and discuss which patients would be educational for the medical student to see. Experienced students should be expected to see two to four patients each day for quality learning, but for new learners at the beginning of a rotation, it may be more reasonable to start with one or two patients. The selection of patients can be tailored to the student's interests, such as a particular patient population or focusing on a specific physical exam skill. With each patient encounter, it is vital to provide clear guidance on the specific elements that a student can focus on, such as the physical exam portion, medication reconciliation for a new patient visit, or motivational interviewing related to nutrition and exercise for a patient with diabetes. Moreover, for each patient that the student will be seeing, briefly discuss the patient's medical history and any relevant social history, and allow the student to have the opportunity to review the patient's medical chart so that they can have a better understanding of the patient prior to the encounter.

Seeing Patients

Before the student begins seeing patients, it is important to establish a system during the rooming process for patients to determine if a patient is willing to meet with a medical student prior to meeting with the preceptor. Either the preceptor, nurse, or the medical assistant who rooms the patient can ask the patient for permission to work with the student. To foster high success rates, it can be beneficial to inform patients that the preceptor works with medical students and offer patients the chance to opt out, rather than in; this can help set the standards and ultimately encourage patient participation.⁵

Additionally, it is also important for preceptors to communicate their expectations to the students ahead of time, including the amount of time that a student has with the patient before the preceptor joins the visit, the format of the patient presentation and whether this would take place in front of the patient or outside of the patient room, and the expectations regarding note writing.⁴ Preceptors may consider having students present to them in the room with the patients, rather than spending additional time discussing outside the room. Not only does this save time, but also allows for patient input and shared decision-making.⁶

Note Writing

Prior to each patient encounter, clarify with the student whether they are expected to write a note for that patient and whether a specific note template is preferred. There may be certain visit types where it is appropriate for either the preceptor or the student to act as the scribe. For instance, the preceptor can act as the scribe and complete the notes while the student takes the history during annual preventive visits, annual gynecological visits, and well-child checks. Conversely, in other situations where the preceptor is interviewing the patient or is wrapping up the visit, the student can act as the scribe. To ensure abundant time for completion of notes and feedback, it is recommended that students stop seeing patients approximately one hour before the end of the clinic session. Preceptors are able to use medical student notes as the billing note and need to add an attestation; each institution has specific policies regarding this, but many across the country have easily integrated this workflow, which helps to reduce documentation burden on preceptors and increase student autonomy.

Ways Students Can Add Value

Once medical students learn the workflow and become more comfortable in the clinic, they can contribute to office productivity. Students can spend additional time with patients, especially with motivational interviewing for patients with diabetes, tobacco use, obesity, and substance use disorders. They can collaborate with the nursing staff in giving immunizations or medications when appropriate.

Once they are proficient with the electronic medical record, they can update problem lists and medication reconciliations, assess for medication interactions, and pend orders to be signed by the preceptor.¹ They can compose return-to-work or school letters, write the after-visit summary, review information handouts, review medication side effects, and provide additional information to patients when applicable, such as phone numbers for specialists and directions to clinical labs and imaging centers. When appropriate, students can also make follow-up phone calls to check in on patients regarding symptom progression, new medication management, smoking cessation support, etc.³ While each office setup varies, ensuring that students have access to a computer during clinic sessions can provide them with opportunities to perform some of these tasks, which can greatly improve efficiency.

Feedback

At the end of each clinic session, be mindful of allowing sufficient time for the preceptor to debrief and wrap up with the medical student. This allows students to ask any clarifying questions that they may not have had the chance to ask during the visits. More importantly, this serves as an opportunity for preceptors to provide students with formative feedback and discuss what skills can be improved upon at future clinic sessions.

Additionally, having this allotted time also allows students to reflect on their experience, including what they learned during the session, what they learned about themselves, and whether they were successful in achieving their goals for the session.⁵ Providing in-the-moment feedback can help students make tangible improvements each day, rather than waiting until mid or end-rotation feedback sessions. Christen et al. notes that "the more students contribute, are assessed, and receive feedback, the more the preceptor-patient-student team should benefit and integration process should become easier".¹

Telemedicine

With the COVID-19 pandemic, clinical practice has been changing, including incorporating more telemedicine visits. As a result, clinical teaching of students in outpatient settings has also evolved to include telemedicine visits as part of their clinical experiences. Teaching students with telemedicine visits is very similar to teaching with in-person visits. The process can be facilitated with a few additional steps.

If the preceptor and student are in different locations when conducting the telemedicine visit, it would be beneficial for them to communicate by phone or video and discuss the day's agenda and expectations for the video visits. To maximize efficiency and to orient the student, it would also be helpful to discuss the technological logistics. This would also be an opportune time to determine how the student can be involved in the patient interview.

The Society of Teachers of Family Medicine recommends three options:

- (1) Both the preceptor and patient are on the video call and the student conducts the majority of the visit, including taking the history and presenting the assessment and plan, while the preceptor writes the note and places orders;
- (2) The student meets with the patient on the video call alone to take the history and the preceptor joins at a later time, listens to the student's presentation, and concludes the visit;
- (3) The preceptor conducts the visit while the student observes on the video call.⁷

Regardless of the chosen method, it is recommended that the student and preceptor debrief either after each patient or after the clinic session in a private phone or video call to allow opportunity for discussion and feedback.

While primary care offices and their clinic sessions can vary widely in practice and scope, medical students can be integrated effectively into the outpatient experience. Whether the setting is in an in-person experience in an outpatient clinic or via telemedicine, the above methods strive to create a positive and rewarding educational experience for both medical students and precepting physicians. When student roles are well defined and expectations are communicated clearly, medical students offer many valuable skills and have the ability to perform numerous tasks that contribute to overall clinic efficiency and office productivity.

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Janice Lau, MD is a 2nd-year resident at the University of Rochester Family Medicine Program.

Nina Piazza, MD is a faculty physician at the University of Rochester Medical Center.

Elizabeth Brown, MD, MPH is a faculty physician at the University of Rochester Medical Center.



Medical Podcasts for the Family Physician

By Abisha Dowla; Justin Ongkingco, DO; Hanna Ro, DO and Jonathan Brach, DO

Introduction

It could be argued that the technology for the basis of podcasts originated prior to the early 2000s. The distribution of cassette tapes or MIDI files of pre-recorded radio programs was available as early as the 1980s.¹ However, the creation of what is known in modern times as "podcasts" formally started at the turn of the 21st century.² The "pod" in podcasts is a callback to the technology that initially housed them. Apple introduced the IPod, a portable media player, in 2001.³ During the early 2000s, the internet was still a relatively new phenomenon. Download speeds in the era of dial-up modems were incredibly slow, which made file sharing an issue. David Winer, a software developer who is credited as one of the pioneers of podcasting, had been working on a solution to this issue. He created an aggregator software called Really Simple Syndication (RSS).⁴ This software regularly

updated users with newly published information from websites and if enabled, allowed users to automatically download audio files onto their computers. Previously, files had to be manually downloaded; an RSS feed allowed that process to become automated. He first utilized his software to add MP3 files to his RSS feed in 2001 and formalized the software in 2003.⁴ One year later, Winer worked with Adam Curry (a former MTV video jockey) to create a program called "IPodder".5 This program allowed users to download audio blogs onto their IPods. The same year, journalist Ben Hammersley published an article on the booming industry of online radio and coined the term "podcasting".⁶ Soon, the first online podcast provider Libsyn.com (Liberated Syndication) was made.¹ In 2005, New Oxford dictionary named "podcast" word of the year and that same year ITunes formally updated their software with native support for podcasts.^{1,7} Since then, the production and consumption of podcasts has exponentially increased.8 Infinite Dial, an ongoing research survey examining the digital media consumption of Americans, recently published their 2021 data which estimated 162 million Americans have ever listened to a podcast and 116 million listen to a podcast monthly.9 The podcast industry is projected to continue to grow and generate \$4 billion in revenue by 2024.¹⁰

When the authors did an informal survey of medical students, residents, and faculty at our clinical site in Batavia, NY, they found that many regularly listened to medical podcasts during their daily commutes and at other times. In this article we review podcasts that are medically up-to-date, cover

practical information and that fall under the broad scope of family medicine. Here are some podcasts worth a listen in family medicine, internal medicine, pediatrics, OB/GYN, surgery, mental health, and academic medicine.

> The podcasts are categorized as appropriate for specific audiences as follows: M – Medical Student; R – Resident;

> > A – Attending

Family Medicine

AFP Podcast (M, R, A)

This podcast has a more informal tone but it is still a useful, quick review of the AFP monthly journal. The more informal tone does help to keep the podcast interesting and makes it feel like one is in a journal club with fellow residents. This podcast is especially useful for keeping up with current literature when short on time. New in 2023 is the first American medical journal podcast produced in Spanish, *Revista Médica AFP Podcast*.

The GenerEhlist (M, R, A)

This podcast is a Canadian-based podcast, therefore some of the names and abbreviations may be unfamiliar to American clinicians, but overall it is a useful review of some high-yield topics. It can be a bit dry at times, but the information still provides a useful guide for clinical practice and helps by giving scenarios that one may encounter in clinic. One particularly notable aspect about this podcast is that it reviews low-risk obstetric topics and some gynecologic topics that are common in family medicine but that are not often encountered, such as contraception counseling and breast lumps. Even with the slight differences between Canadian and American medicine, most of the information given can still be utilized in the U.S.

The Curbsiders Addiction Medicine Podcast (M, R, A)

This podcast takes an insightful, deep dive into various aspects of addiction medicine, which has become a big component of family medicine. There was a particularly interesting episode that discussed the many nuances surrounding smoking

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cessation from a pulmonologist/critical care specialist. This podcast will likely continue to stay relevant in the coming years.

Internal Medicine

Curbsiders Internal Medicine Podcast (M, R, A)

The Curbsiders IM podcast is hosted by several board certified internists who invite expert guests to discuss various topics, examine pertinent factors related to those topics, and provide diagnosis and management advice that can be used by the practicing internist. This podcast has a very systematic approach to their topics, while keeping it lighthearted. The hosts always make it a point to ask questions to learn more about their guests such as a book or band they would recommend. The summary of practice recommendations at the end of each episode is a great takeaway.

Core IM (M, R, A)

Core IM encompasses several internal-medicine specific podcasts as part of a larger online medical education community. It includes segments such as "5 Pearls," a short 15-20 minute episode covering five evidenced-based pearls on a specific IM topic. And "Mind the Gap," in which specific aspects of internal medicine (IM) are discussed and the evidence for and against them is examined. This is a great podcast for learners seeking a quick breakdown of IM topics in a reasonable amount of time. The "Mind the Gap " segments are an especially great way to learn more about certain dogma, such as why you might (or might not) want to do a paracentesis for a cirrhotic patient.

Clinical Problem Solvers (M, R)

Podcast episodes are one of many learning tools provided by the CPS team. They have a variety of resources to choose from including a series of unknown mystery cases presented to a clinical expert and a live Virtual Morning Report where CPSolvers team members discuss a case in real time. These virtual sessions have a chat feature in which participants are encouraged to weigh in on the case. The podcast episodes also go beyond basic pathology to cover social topics, such as antiracism in medicine. While the podcasts are a great review for learners at any level, students should be encouraged to check out the schema episodes which break down diagnostic approaches to common topics.

The Intern at Work (M, R)

This is a pan-Canadian learner-generated internal medicine podcast written by residents for residents. Episodes cover practical approaches to common IM problems and range in length from under ten minutes to half an hour of review. While the podcast episodes cover the topic at hand in depth, the website also offers infographics for certain episodes. The infographics quickly summarize the subject's pathophysiology, exam findings, labs and treatment options in a way that is easy to follow for any student or resident.

Pediatrics

Pediatrics On Call (M, R, A)

This podcast is an official podcast from the American Academy of Pediatrics. The co-hosts, Dr. David Hill and Dr. Joanna Parga-Belinkie, interview experts in the field on new research and hot topics in the field of pediatrics. The target audience is health professionals who serve children as well as parents and caregivers.

Cribsiders (M, R, A)

This excellent podcast is the pediatric counterpart to the Curbsiders. Organized by Dr. Christopher Chiu, Dr. Justin Berk, and Dr. Matthew Watto, the hosts cover a variety of relevant topics from household food insecurity and food policy research to reflux disease discussed with the chief of gastroenterology at Nationwide Children's Hospital.

That's Pediatrics (M, R, A)

This podcast is run by the University of Pittsburgh Medical Center Children's Hospital. Started in 2018 the series has had a number of expert specialists chime in on various topics from bone marrow transplantation and pediatric ophthalmology to one of their newest episodes on supporting women in science and medicine.

Pedscases (M, R, A)

This podcast is a valuable resource for medical learners and family medicine physicians. They addressed a need that many students felt that they were not getting enough exposure to pediatrics cases. Started in 2008 by medical students in Alberta, the podcast is meant to be interactive and help supplement education. With over 400 episodes, various medical students interview a plethora of pediatric specialists.

OB/GYN

The Ob/Gyn Podcast (M, R, A)

This podcast does a thorough job of teaching about various topics in obstetrics and gynecology. It can be challenging to get through episodes due to the depth of the information at times, but the podcast does help the listener to understand some of the tougher obstetrics and gynecology topics that physicians may encounter. One episode of note was a two-part episode on PCOS that delved into the history and proposed pathophysiology of PCOS to help understand why current treatments exist and why patient presentations can vary so much. This podcast would be recommended for those who would like to have a more in-depth understanding about obstetrics and gynecology topics they may encounter in practice.

CREOGs Over Coffee (R, A)

This podcast gives a quick, but still detailed review regarding a wide variety of obstetrics and gynecology topics. It was designed by obstetrics and gynecology residents for residents, so the podcast helps to do a quick walk through of topics from diagnosis to treatment. It is a useful podcast to review obstetrics and gynecology when one would like a refresher on some of these topics.



Surgery

Surgery 101 (M)

Surgery101 is an educational podcast from the University of Alberta that has 10-20 minute podcasts that provide a brief overview of surgical topics for medical students. The big picture approach they take to describe the procedures can be very useful to learners during their surgery rotation. Episodes are short and to the point without a ton of filler or exposition. The information covered in the podcast episodes reviews common topics surgical attendings will ask residents and students about. That alone makes the podcast a winner for any learner who wants to thrive (and not just survive!) their surgical rotation.

Behind the Knife (M, R)

Behind the Knife offers an informal discussion and interview-based approach to covering general surgery topics with a "behind the scenes" look into the work of some key players in the field of surgery. The episodes cover diverse topics and branch out to include reviews of recent literature, episodes aimed specifically at exam review, and "crash course" styled episodes on cardiac surgery. The explanation of hemodynamic monitoring for ICU patients and post-op cardiac surgery helps clear up a topic that would have been overwhelming to the student learner otherwise.

Legends of Surgery (M, R, A)

Legends of Surgery offers listeners entertaining and educational looks into the stories and people that make up surgery as we know it today. Episodes cover topics such as the origin of Botox or people such as Claudius Galen, a Greek physician and surgeon. For those who enjoy medical history or just want an advantage at trivia, this is an entertaining podcast. It is easy to forget that a dynamic field such as medicine has such a rich history. But, if one has half an hour to spare, they will walk away with a new fun fact for colleagues.

Mental Health

Psychiatry and Psychotherapy (M, R, A)

This podcast from Dr. David Puder discusses common psychiatric topics such as obsessive-compulsive personality and long-acting injectables. It also covers interesting history topics, such as how methamphetamines influenced World War II. Each episode link on the website has cited studies and analysis of relevant literature attached to podcast. With over 160 episodes there are also over 170 potential CME units available.

PsychEd (M, R)

This psychiatry podcast was created by medical learners for medical learners. A common psychiatric condition is selected and the diagnosis and treatment are analyzed by staff members from the Department of Psychiatry at the University of Toronto. Guests from various institutions have discussed topics such as the history of psychiatry, psychedelicassisted psychotherapy, and assessing dementia.

Psychiatry Unbound (M, R, A)

This podcast is hosted by Laura Weiss Roberts, MD of Stanford University School of Medicine. It is a podcast from the America Psychiatric Association. It delves into topics such as women's reproductive mental health, physician suicide, LGBTQIA+ mental health, and neurodiversity. Most episodes are under 40 minutes and could be a useful resource for family medicine physicians interested in how to better understand psychiatry.

Healthy Gamer (M, R)

A physician who has appeared on podcasts, but also has been able to use social media to connect with the internet-generation is Dr. Alok Kanojia, co-founder of *Healthy Gamer*. He is a psychiatrist who has used Twitch, Discord, and Youtube as platforms to discuss relevant topics, such as what to do when you get laid off and how comparison ruins your mental health (and how to stop). His company *Healthy Gamer* focuses on how to create accessible and empowering communities connected with mental health resources readily available to help people find peace and purpose through content, community, and coaching.

Academic

STFM podcast- Academic Medicine Leadership Lessons (M, R, A)

This podcast gives great insight into topics such as leadership development and growth through a series of interviews with influential leaders in family medicine. It also covers other interesting areas, such as various systemic issues in medicine. There is one episode in particular that was especially useful that discussed how to plan a career in medicine. It was a great reminder that careers are always changing and that there is not one set path to achieving career goals.

Talk2MeDoc (M, R, A)

This podcast has a central theme of improving communication in healthcare across all areas. Dr. Andrew Tisser, an emergency medicine physician, has a wide array of guests from different areas and positions in healthcare that give insights on how we can better communicate with each other and with patients. Dr. Tisser also discusses various topics not directly related to patient care, but are still important to physician well-being. The podcast is easy to listen to and can be appreciated by all listeners.

The Curbsiders Teach (R, A)

This podcast, while designed for internal medicine, is still a very useful guide for being a medical educator. The episodes are on the longer side, but it gives very useful tips and advice about being a medical educator and ways to approach different techniques of teaching. For instance, in one of the episodes, the hosts went over teaching physical exams. That host, who was teaching physical exams, would have a fellow physician who was just as enthusiastic about physical exams come with him to examine patients in order to confirm his findings. This podcast is useful for both residents, especially if they are newer to teaching, and attendings, who can discover new ways to teach medical students and residents.

Hot Topics in MedEd (JGME) (M, R, A)

This podcast gives some very interesting insights into graduate medical education. There is a particularly interesting editorial about what graduate medical education will look like in the future, circa 2030. It speaks to how much graduate medical education has changed over time and especially how much we have had to adjust in the ever-changing world of COVID and increasing telemedicine. As a whole, this podcast is a good resource for anyone who either may already be in graduate medical education or for those who are considering becoming involved in graduate medical education in the future.

Conclusion

The introduction of podcasts over the last couple of decades has provided countless hours of education and entertainment for people everywhere and has helped disseminate medical knowledge. Our suggestions have hopefully helped narrow down the wide selection of podcasts by categorizing them by level of expertise and a descriptions to help the reader determine what is most relevant to them. A majority of the podcasts are free to listen to on Apple podcasts, Android, their respective websites, and YouTube. Accessibility to many passionate experts will hopefully increase healthcare literacy and provide reassurance to both patients and providers. These resources have helped parents ease their minds on common ailments of their children and helped medical students learn relevant topics needed for their clinical rotations. Family medicine physicians can learn about the latest journal topics in an efficient manner, and while not as thorough as reading journals, they can still introduce clinicians to new topics and knowledge. With this review, we hope to better equip readers with a guide to navigating which podcasts can enrich their learning and understanding.

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Abisha Dowla is a third-year medical student attending LECOM and completing her clinical rotations in the greater Rochester area.

Justin Ongkingco, DO is a first year resident at the Family Medicine Residency at United Memorial Medical Center/Rochester Regional Health in Batavia, NY. He completed medical school at New York Institute of Technology College of Osteopathic Medicine.

Hanna Ro, DO is a second year resident at the Family Medicine Residency at United Memorial Medical Center/Rochester Regional Health in Batavia, NY. She completed medical school at LECOM.

Jonathan Brach, DO is an Associate Program Director and recent graduate of the Family Medicine Residency at United Memorial Medical Center/ Rochester Regional Health in Batavia, NY. He completed medical school at LECOM.

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Teaching how to Give Effective Feedback: A Review of Best-Practices to Develop Residents Skills in Giving Feedback

By Kathyrn Skolnick; Eunice Choe; Lauren Woolhiser; Ramandeep Mangat, MD; Tanzeel Awadalla, MD and Jocelyn Young, DO, MSc

Introduction

Effective feedback is critical to medical education. However, learners often perceive feedback to be inadequate, unactionable, and untimely, leading to missed learning opportunities. The presence of high-quality, timely feedback has been shown to improve trainee performance.¹ In contrast, the lack of such feedback often leaves medical students feeling unprepared as they transition to post-graduate training.² Receiving feedback provides insight into competency and ability level, which is important for awareness of areas for improvement. Medical residents have been shown to overestimate their abilities compared with attending evaluations.³ Residents are often expected to participate in teaching teams and are accountable for supervising, providing feedback to, and assessing clinical students and junior residents. The ACGME Common Program Requirements include the ability to educate students, residents, and others as a core competency that residents must demonstrate.⁴ Developing residents' skillsets in providing effective feedback is critical as they have a substantial amount of interaction with trainees and are positioned to provide timely and constructive feedback. This skill will continue to be important as they become attending physicians with more teaching responsibilities. These best practices can provide insight for family medicine attendings to improve the feedback they give learners, as well as help support trainees in learning necessary skills.

Understanding the nuances of how feedback is best approached, delivered, and received is important for residents as they learn to give feedback. A recent article focused on the importance of generational considerations and suggests ways to best give feedback to millennial learners.⁵ For this generation the key points are having clear expectations set up front and receiving frequent and individualized feedback. Other studies have examined the impact of feedback timing, how relationships and trust between individuals affects feedback receptivity, and the quality of feedback. One study found that the majority of end-of-rotation evaluations provided inadequate feedback; and over half of the respondents reported that evaluations were rarely or never filled out in a timely fashion.⁶ In addition, new feedback delivery systems have been developed with the progression of educational technology, which may help ease the process of tracking progression and exchanging feedback.⁷

One common method residency programs use to teach residents to give feedback is through resident-as-teacher curricula, which is gaining traction across the United States. As of 2017, over 80% of residency program directors who responded to a survey reported implementing a resident-as-teacher curriculum.⁸ Newer methods include Objective Structured Teaching Encounters^{9,10} which are similar to encounters with standardized patients. Although no studies have been done looking specifically at resident peer feedback as a method to improve feedback skills, studies have been done on the effect of peer- and near-peer feedback on attending teaching skills which have positive effects on outcomes.¹¹

While many studies have been conducted to assess feedback quality, delivery, and impact, no reviews have been published focusing on the development of resident feedback skills. Through this review,

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we examine existing literature on the development of resident feedback skills, discuss important factors affecting delivery and quality of feedback, and extrapolate the findings to attending physicians who work with learners in medical education.

Methods

Literature in this review was acquired through searching the PubMed database for the past 10 years. The search criteria included the term '(medical student resident teaching feedback) OR (resident teacher feedback).' Filters included free full text and English language. This resulted in over 450 citations from across the globe. Articles were then included if they were research or review articles that addressed resident, attending, or medical student feedback. Articles were also included if they discussed feedback in other health professions training. Both qualitative and quantitative studies were included. Articles were excluded that did not address the topic of giving, receiving, teaching, or evaluating feedback. In total, 38 articles were selected for this review. These articles were then analyzed to identify common themes and findings. Ultimately, themes were reduced into 6 categories: quality of feedback, timing and initiation of feedback, trust and relationship in receptivity to feedback, tools and methods to provide feedback, educational methods for teaching how to give feedback, and the approach to written feedback.

Quality of Feedback

A common theme among the studies reviewed is, for feedback to be useful, it must be honest, regular, high-quality, and actionable such that learners can act on it.¹²⁻¹⁷ Repetition is believed to be helpful based on a study of residency programs in Lithuania which found that reminding trainees of previous feedback allowed for better implementation.¹³ Despite the need for feedback, it is often perceived as unsatisfactory.¹⁴ A study was done to attempt to elucidate a difference between resident and attending perception of useful feedback through written case studies. Participants were asked to identify the case studies in which effective feedback was provided. Notably, there was no significant difference between the two groups, which adds to the challenges in determining the ideal pedagogy for teaching how to provide feedback.¹⁵ Researchers at the University of Chicago examined barriers to giving and receiving effective feedback through resident focus groups; and feedback content, specifically nonspecific feedback, was one of the five major barriers identified.¹⁶ Another study of internal medicine residents highlighted that narrative feedback is perceived to be of higher quality and usefulness than numerical styles.¹⁷ This same retrospective study found that specific and actionable feedback was rarely documented even though both residents and attendings perceive this style of feedback to be crucial for development.

Timing and Initiation of Feedback

The literature review finds a common theme that learners respond positively to frequent, timely feedback. This involves real-time feedback that corrects mistakes and praises positive behaviors, which goes beyond formal end-of-rotation feedback which outlines broad areas of improvement.¹⁸ Unfortunately, end-of-rotation evaluations are often not filled out in a timely fashion. In a survey of orthopedic surgery residents at one institution, 58% of them reported end-ofrotation evaluations were filled out late by preceptors, and an internal audit confirmed that 30% of these evaluations were completed over a month late.⁶ When evaluations are delayed, the usefulness of feedback is limited, so best practices indicate that feedback should be frequent and well-timed as this will maximize educational benefit.^{6,19} When feedback is expected and normalized, the learner's anxiety around feedback is reduced, which may promote increased learner initiation in seeking feedback.¹⁹ Residents have repeatedly indicated that their most effective teachers provide real-time feedback, but time remains an obstacle in many clinical settings.²⁰ One study found that 76% of clinical teachers surveyed reported forgetting to provide feedback due to concentrating on their own work.¹⁴ This loss of dialogue takes away key learning opportunities for learners. Interns at a residency program were asked to articulate qualities they liked in their senior residents which made them effective teachers and leaders. The results showed that setting clear expectations and giving timely and specific feedback were the two most critical factors.

Knowing this barrier to effective feedback, it is important to creatively and intentionally approach feedback in the clinical environment. One qualitative study provided specific examples of integrating real-time feedback into everyday clinical practice.²¹ Examples included feedback given during bedside encounters, immediately following bedside encounters, after bedside rounding, and during mid/end of rotation evaluations. Each of these contexts and timing of feedback provide the opportunity for diverse learning. For example, giving feedback during bedside encounters allows for physical examination correction and positive feedback on clinical reasoning or case presentation. Feedback immediately after the encounter facilitates reflection with the team and provides opportunity to suggest areas of improvement with patient communication. Residents and attendings in inpatient and outpatient settings can utilize these methods to implement more timely feedback for their learners. Cumulative review of skills and assessment of core competencies can then be saved for the more formal end of rotation evaluations.²¹

One factor affecting the timeliness of feedback is in the identification of who is responsible for the initiation of feedback. Studies show that trainees depend on and expect clinical teachers to initiate feedback.^{14,17} This could be due to fear of negative feedback or not feeling they know the teacher well enough. Interestingly, another study found that preceptors feel residents should be initiators, but they also raised the concern that "full autonomy would result in residents targeting assessors who provide only positive feedback." This suggests that perhaps the best approach is a balance of learner-driven seeking of feedback combined with scheduled and required assessments from preceptors.¹⁷ For residents and attendings, recognizing that the student may be expecting the educator to initiate a feedback conversation may change one's practice.

It is important to note that feedback should be provided for both clinical and teaching skills. One study investigated rapid feedback from medical students to residents, which showed a positive response from residents to change their teaching methods. Again, this may indicate that residents desire timely, ongoing feedback.²² Our literature review displays that best practices of feedback for medical learners requires not only a look at the content of the feedback, but also the timing of giving and receiving feedback.

Trust and Relationship in Feedback Receptivity

Relationship and trust between the feedback giver and receiver are crucial to feedback receptivity. In trusting relationships, feedback is viewed as valuable and constructive. Whereas in strained relationships, feedback is perceived as biased or unfair. An effective feedback giver establishes trust with the receiver by being authentic, non-judgmental, respectful, and clear about their intentions and the purpose of the feedback.^{16,23,24} Additionally, the giver can ask for the receiver's perspective and be open to feedback themselves.

In a multicenter online questionnaire study exploring the perceptions of clinical feedback in emergency medicine residents and attending physicians, the relationship between both parties was reported as one of the most influential factors in the feedback process.¹⁴ Another study examined this relationship by looking at how medical students perceive supervisors' trust in them and the impact it has on their learning.²³ In this study, medical students defined trust as high levels of support; with close guidance and coaching resulting in student motivation to learn, sense value as part of the team, and perceived benefits to patients. Over-trust was perceived as a task assigned without clear instructions, supervision, or feedback. This scenario prompted student anxiety, stress, and potential patient harm. Under-trust involved lack of clarity about the student role, resulting in frustration, dissatisfaction, and an unclear impact on patients. This study highlights the importance of teaching residents to set expectations and provide feedback to the learners working with them.

Additional research has looked at factors affecting receptivity to feedback. Barriers in the feedback process included unapproachable attendings, time pressures, and discomfort with giving negative feedback.¹⁶ Increasing resident and attending comfort in providing feedback is a positive factor in the process. Notably, the major facilitating factor affecting receptivity to feedback was learner engagement. Among resident teams, interns that felt empowered by residents reported increased trust over time.¹⁸

Our literature review shows that trust and a positive relationship between clinical educators and trainees are crucial for effective feedback. Exploring all these factors and barriers can help bridge the gap. Initiatives can be created to improve trust and relationships between trainees and those supervising them. One example of this is a combined resident-faculty workshop where each group shares and explores the challenges faced in giving and receiving feedback.²⁵ Sharing perspectives can lead to strengthened relationships and trust. By creating a safe and supportive environment, building rapport, fostering open communication, encouraging self-reflection, and providing timely and specific feedback, clinical educators can promote a culture of continuous learning.

Tools and Methods Studied to Provide Feedback

There have been a variety of models to provide feedback that have been developed and studied. See Table 1. More traditional methods, such as the feedback sandwich, have fallen out of favor in more recent literature.²⁵ While developed prior to our search parameters, the ARCH model, developed in 2003, warrants recognition as one of the well-studied structures of feedback in family medicine education.²⁶ ARCH stands for: Allow/Ask for self-assessment, Reinforce what is being done well, Confirm what needs correction or improvement, and Help the learner with plans for improvement. Key components of this model include that it is learner centered, allowing for the learner to deliberately set goals, and encourages creating a follow- up plan. This model is particularly helpful for mid-rotation feedback as it gives the learner an opportunity to implement change.

Another model introduced in 2015 is the CAST method, in which the authors sought to build from traditional feedback methods.²⁷ This is also a four part feedback method with the following steps: Continue to do these things, Alter these behaviors, Stop doing these things, Try this approach next time. This method of feedback shifts responsibility for the feedback from the learner to the educator. Literature supports that the model is easy to use, flexible, and can be implemented in a variety of settings.

Table 1 – Models for Providing Effective Feedback

ARCH ²⁶	CAST ²⁷
 Allow/Ask for self-assessment Create a safe space Ask for very specific self- assessment of something being done well and something needing improvement 	Continue to do these things — Positives to maintain doing
 Reinforce what is being done well Address self- assessed strengths prior to adding strengths you identify Be descriptive and specific 	Alter these behaviors — Address things that are not yet strengths but could be
Confirm what needs correction or improvement — Address self-assessed areas prior to sharing areas you identify	 Stop Discontinue the activities that do not add value Discontinue concepts that are erroneously applied
 Help the learner with plans for improvement Ask how they might proceed with improving first Set goals together Have the learner verbalize the plan to you and consider writing it down 	Try this approach next time — Offer a new skill to apply and practice

Another methodology studied for providing feedback is direct observation of skills with follow up feedback. One study implemented an 'active feedback program' which is a framework for inpatient rotations that immerses medical students in clinical activities with an attending physician providing mentorship and feedback.²⁸ The program highlighted setting expectations on day one for the students. The students were given feedback on their oral reports immediately following presentation during rounds, with no more than two items identified for them to correct. Attendings were also asked to add one specific item the student did well. In addition to immediate feedback, formal individual feedback was provided twice during the rotation. In these sessions, attendings were asked to request student or resident self-evaluation, provide feedback to the trainee, ask for feedback from the trainee, and finally answer any remaining questions and provide encouragement.²⁸

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Another method of direct observation asked medical students to provide supervisors with a Structured Patient Care Observation (SPCO) form on various rotations.²⁹ The SPCO tasked supervisors with observing the student for only as long as it took to identify three points of feedback, positive or constructive which should take about five minutes and that any type of encounter could be observed. From this intervention the authors were able to provide actionable feedback to the students in real-time and also have a written version for the needs of the training program.

Finally, family medicine training programs in Canada have implemented the use of field notes to document the feedback that educators provide verbally in the clinical setting.¹⁹ This allows stakeholders to receive written versions of feedback for tracking requirements while allowing for timely verbal feedback at the time of the encounter. This form consists of addressing things to continue doing, things to change (or do less of), and things to consider (next steps). Ideally this is completed on the same day and submitted to program leadership for review at the time of summative evaluation.

Each of these methods promotes a structure or a template for educators to use when giving feedback themselves. They can also be teaching points when instructing a trainee in how to give more effective feedback.

Approaches to Educational Methods for Teaching Feedback Skills

The literature describes multiple methodologies that have been used to teach students, residents, and attendings how to give or how to improve the feedback they give to learners. These include Resident as Teachers curricula (RaT) and standardized encounters.

RaT curricula aim to equip residents so they can effectively teach peers, medical students, patients, and patient families. One teaching skill that is emphasized in RaT curricula is learning how to give timely and constructive feedback. A survey of 221 US-based residency program directors across specialties found that learning to give feedback was one of the top three targeted skills in their RaT objectives.8 Our literature review revealed that RaT curricula are either implemented as one time workshops or longitudinal programs. Two studies were reviewed that shared details of workshops that were conducted for residents. One workshop consisted of resident peers giving each other feedback after trauma simulations³⁰ and the other looked at family medicine residents developing teaching skills to be used with medical students.³¹ Notably, in both workshops the residents were primed through presentation of information about creating safe learning environments and given a structured method to give feedback. The workshop with family medicine residents employed the ARCH model. Feedback from the workshop was positive for residents feeling better prepared to give feedback to medical students.

In contrast to workshops, longitudinal didactics have also been used. One institution implemented a three year curriculum for internal medicine residents. Skill-based workshops were built into the curriculum once every ten weeks where residents could practice a skill and then receive feedback on that skill. One of the workshops focused on learning how to give effective feedback. In contrast to the other workshops, this workshop spent time defining effective feedback, understanding the reasoning for providing feedback to learners, identifying obstacles to offering feedback, and practicing feedback delivery. After completing the longitudinal program, residents reported the ability to "clearly communicate information about student performance during rotation" and "give frequent, constructive feedback."³²

Another mechanism to develop feedback skills for medical trainees and attendings is the use of standardized or observed encounters, which have been used in medical education in a variety of domains. Two recent studies investigated the use of standardized encounters to improve or instruct in skills around providing effective feedback. One provided medical students with a framework for providing peer feedback and then asked the students to observe a peer performing a clinical visit with a standardized patient and give feedback.³³ Qualitative results from this study showed that students both liked giving each other unsupervised feedback and they felt doing so helped them assess their own skills clinically.

In another study, family medicine residents completed a standardized encounter in which they needed to give feedback to a challenging medical student, and were observed and given feedback by a peer.³⁴ These authors did not comment on the use of a particular framework for providing feedback. The intervention was less successful and the residents reported being unlikely to change things about their teaching style based on the experience.

Overall, the literature surrounding standardized learner or patient experiences and best practices with feedback is lacking. This is an area that requires high infrastructure and time commitment. Further studies are needed to find a style of intervention that would make this project useful for feedback skills.

Written Feedback

While there is a large volume of literature related to best practices for verbal feedback, the ideal characteristics of written feedback have been less frequently published. There is also a lack of recent literature investigating ways to teach how to write effective feedback. However, written feedback is commonly used in medical education for grade calculations in medical school and progression in residency and fellowship training.

Known best practices for providing effective written feedback require that it is specific, behavior-focused, and provides reasons for improvement with concrete next steps.³⁵ One published mechanism to improve written feedback involves a one hour faculty development session to present a framework for effective feedback followed by the presentation of a practice case for comments. In this model, the key points are as follows:

- 1. What did you observe the learner do
- 2. Of those, what do you want them to do more of, less of, continuing doing, stop doing
- 3. What are the next steps to do this
- 4. What are the specific outcomes you want to see for this learner
- 5. Why do you want to see these outcomes

This model or variations of it could be utilized by residents and attendings who are frequently asked to complete written evaluations.

A newer method to track collected written feedback on a trainee is through an Entrustable Professional Activity (EPA) based e-portfolio system.⁷ This system allows trainees to more readily catalog, process, and reflect on feedback that is focused on EPAs. Modifications can be made to e-portfolios to allow discussions on written feedback, which can enhance how feedback is interpreted and applied. This methodology can be applied to ACGME milestones for resident education. There is an ongoing need for research into effective methods for increasing and improving written evaluations as well as how to teach others to write useful evaluations.

Application to Attendings

Although this review focuses on residents learning to give feedback, it is also important to understand how attendings play a role in this process, contribute to the learning culture, and improve their own feedback abilities. Attending feedback is highly valued by trainees and is important for improving resident competency and confidence in multiple settings, such as procedural skills and during morning report.^{1,20,36-38} One study found that emergency medicine residents at a program in Connecticut evaluated themselves more highly than attending assessments on ACGME milestones.³ A study performed at an Iranian teaching hospital showed that nearly 80% of respondents reported that highly competent, up-to-date general practitioners should be involved in teaching teams.³⁹ Another study in an orthopedics residency program at an academic medical center found that most end-of-rotation evaluations by attendings provided inadequate feedback, and over half of respondents reported that evaluations were either rarely or never filled out in a timely fashion.⁶ This emphasizes the need for attending awareness to institutional evaluation practices and improvement in feedback quality.

Physicians have fewer opportunities to receive feedback after graduating residency, which could be a solution to improving feedback skills. One way in which feedback skills could be improved is by peer feedback through a standardized tool. One study found that the repeat observation of teaching hospitalists after they had received peer observation and feedback led to improved learning climate and promotion of understanding and retention.⁴⁰

Conclusion

Effective feedback is honest, constructive, specific, actionable, frequent, timely, and given within trusting relationships between observers and learners. A combination of frequent, learner-initiated feedback and regularly scheduled, formal evaluations is recommended, and the ARCH and CAST models provide an effective framework for residents and attending physicians.

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Kathryn Skolnick is a 4th year medical student at the SUNY Upstate Medical University and is pursuing family medicine residency training.

Eunice Choe is a 4th year medical student at the SUNY Upstate Medical University and is pursuing family medicine residency training.

Lauren Woolhiser is a 4th year medical student at the SUNY Upstate Medical University and is pursuing family medicine residency training.

Ramandeep Mangat, **MD** is a first year resident at the United Health Services/Wilson Family Medicine Residency Program in Johnson City, NY.

Tanzeel Awadalla, MD is a second year resident at the United Health Services/Wilson Family Medicine Residency Program in Johnson City, NY.

Jocelyn Young, DO, MSc is core faculty at the United Health Services/ Wilson Family Medicine Residency Program in Johnson City, NY. She completed family medicine residency at the University of Rochester and earned her Masters degree in Health Professions Education from the University of Rochester Warner School of Education.

Point-of-Care Ultrasound in Primary Care: Perspectives of Residents and Faculty at a Large, Urban Family Medicine Residency Program

By Dominick DeFelice, MD; Mark Mirabelli, MD; Brian Smith, MSW; Mechelle Sanders, PhD and Stephen Schultz, MD

Abstract

Point-of-care ultrasound (POCUS) is a relatively new but versatile, safe, and fast diagnostic tool increasingly finding its way into primary care. Incorporation of POCUS curricula into postgraduate primary care training has been limited but is expanding nationally, in part due to recent ACGME recommendations. In preparation for implementing a POCUS curriculum at our family medicine (FM) residency program in Rochester, NY, we surveyed residents and faculty on their experience with and views of POCUS. Our objective was to evaluate resident and faculty use of POCUS, interest in starting a formal training curriculum, and planned future use of POCUS.

In 2019 and 2020, a survey was administered to assess the above topics at our large, urban FM residency program. Of the 72 participants, 23 of 36 residents (63.9%) and 22 of 36 faculty (61.1%) completed the survey for a response rate of 62.5%. Most (82.61%) residents had "no" or "minimal" prior POCUS training but a nearly equal majority (73.9%) thought it important for our program to expand our curriculum. Similarly, 86.4% of faculty had "no" or "minimal" POCUS training but 77.3% said it was important to add to our program. Residents have an interest in using POCUS now and in the future and faculty are interested in learning enough to teach it. Our findings demonstrate a training gap at our program that likely exists at many other family medicine programs around the state and country. Our study will help us develop our POCUS curriculum and offer insights that may benefit other similar programs.

Introduction

Point of Care Ultrasound (POCUS) is a clinical tool that historically has been used in specialty care (cardiology, OBGYN, critical care) but has increasingly become more common in primary care. The current literature contains numerous applications of POCUS in the primary care office including screening for abdominal aortic aneurysms (AAAs), diagnostic musculoskeletal (MSK) ultrasound, right upper quadrant ultrasound, and obstetrical exams as just a few examples.¹⁻⁴ For certain applications, generalists have proven to be just as accurate as specialists¹ and there is evidence that shifting some sonographic exams to the primary care office is a healthcare cost-saver.⁵ Another benefit is the hands-on nature of the test and immediacy of results increasing patient satisfaction.⁶ A potential application of POCUS is the evaluation of certain conditions in resource-limited settings, and it is estimated that two-thirds of all diagnostic imaging can be done with plain radiographs and ultrasound examinations.⁷ Multiple family medicine residency programs and undergraduate medical schools now have POCUS curricula.5,8,10-13

Despite its varied applications, proven accuracy, and potential monetary benefit, use of POCUS by primary care physicians in the

United States is minimal. A recent study of US family medicine residency program directors found the three most common barriers to widespread POCUS training in residency to be:

- 1) Lack of appropriately trained faculty
- 2) Lack of access to adequate equipment, and
- 3) Clinician discomfort interpreting images without radiologist backup

However, the same study found that a majority (53%) of FM residency programs already had an established POCUS curriculum or were in the process of creating one. A small minority (11%) had no plans to add POCUS to their curriculum. These numbers are improvements from five years prior.⁹ A survey of family medicine residency program directors in Canada yielded similar results in terms of interest level and perceived barriers.¹⁴

The purpose of our study was to evaluate current resident and faculty use and opinions of POCUS at our large, urban FM residency program. Since POCUS has many applications, we were interested in finding the specific modalities providers at our program wanted to learn. We were also interested in how to best incorporate such training at our program. The results of these surveys will help guide the creation of an ultrasound training curriculum at our residency program and could help other programs in their efforts to expand their POCUS curricula.

Methods

Our study design was submitted for IRB approval and was certified as exempt, after which initial paper surveys were administered separately to residents and faculty during the winter of 2019 into 2020. The residency survey was seventeen questions assessing demographics and POCUS training to date as well as thoughts on 1) the most important POCUS applications in primary care, 2) current comfort level in using POCUS, 3) how to incorporate it into residency training, and 4) plans to incorporate it into practice after training.

The faculty survey totaled fourteen questions and assessed demographics and POCUS training to date. It further assessed 1) thoughts on the most important POCUS applications in primary care, 2) current comfort level using POCUS, and 3) interest in learning enough POCUS to teach and precept residents in its use.

After two weeks, non-responders were e-mailed an electronic survey in an attempt to maximize our responses. Descriptive analyses were performed on resident and faculty demographics and responses to our questions and a brief non-responder analysis was performed.

Results

A total of 45/72 individuals completed the survey. The overall completion rate was 62.5% (45/72) with 23 of 36 residents (63.9%) and 22 of 36 faculty (61.1%) completing the survey. In our study, we did not attempt to detect any statistically different findings between residents and faculty, among different ages or genders, or any other subgroups. In our estimation, the number of participants did not offer enough statistical power to make comparative analyses meaningful or free from bias.

Demographics and Prior POCUS Education

Residents were an average age of 29 years old and were 26% (n = 6) male and 74% (n = 17) female. There was a roughly even split between post graduate year (PGY)-1 (30.43%, n = 7), PGY-2 (29.13%, n = 9), and PGY-3 (26.09%, n = 6) residents with one additional response coming from a PGY-4 chief resident. Faculty were an average age of 45 years old and were 32% (n = 7) male, 63.5% (n = 14) female, and 4.5% (n = 1) non-binary. There was a roughly

even split of faculty who had been in practice less than ten years (45.5%, n = 10) and longer than ten years (54.5%, n = 12).

As far as prior POCUS training, 82.6% (n = 19) of residents reported "no" or "minimal" POCUS education in medical school. Just 17.4% (n = 4) had a "moderate" or "extensive" amount of training. Among faculty, 86.4% (n = 19) reported "no" or "minimal" formal POCUS education at any point in their training. Just 13.6% (n = 3) had a "moderate" amount of POCUS training or were certified/credentialed.

Comfort With and Current use of POCUS

Using a standard Likert scale, residents and faculty were each asked 1) how confident they were in using POCUS for examination and diagnostic purposes and 2) how comfortable they were adjusting different settings on an ultrasound machine. The results of these questions are summarized in *Table 1*, but both groups overall indicate a low comfort level using the machine and examining and diagnosing patients. *Table 2* displays how frequently residents and faculty use POCUS outside of obstetrical indications. Overall use is low.

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(NC =	(NC = Not at all confident, MC = Minimally confident, SC = Somewhat confident, C = Confident, EC = Extremely confident)								
Item			NC	MC	SC	C	EC	М	SD
Faculty	How confident are you performing POCUS for examination and diagnostic purposes?	(N=22)	15 (68.2%)	4 (18.2%)	2 (9.1%)	0 (0.0%)	1 (4.5%)	1.55	1.011
· · · · · · · · · · · · · · · · · · ·	How confident are you using different settings on the US machine?	(N=22)	15 (68.2%)	4 (18.2%)	1 (4.5%)	1 (4.5%)	1 (4.5%)	1.59	1.10
Residents	Residents How confident are you performing POCUS for examination and diagnostic purposes?		17 (77.3%)	2 (9.1%)	2 (9.1%)	1 (4.5%)	0 (0.0%)	1.41	0.854
	How confident are you using different settings on the US machine?	(N=23)	19 (82.6%)	2 (8.7%)	1 (4.3%)	0 (0.0%)	1 (4.3%)	1.35	0.935

Table 1: Faculty and resident responses to confidence performing POCUS and using the US machine

Table 2: Frequency of utilization of US Machine outside of OBand labor and delivery					
	Frequency	N	%		
	Never	16	(72.7%)		
Escultu	Rarely	3	(13.6%)		
гасину	Weekly	1	(4.5%)		
	Just about every session	1	(4.5%)		
Residents	Never	15	(65.2%)		
	Rarely	6	(26.1%)		
	Monthly	1	(4.3%)		
	Weekly	1	(13%)		



Perceived Importance and Potential uses of POCUS

Both residents and faculty at our residency program view POCUS as extremely important. Using a standard Likert scale with a score of 1 meaning "unimportant" and a score of 5 meaning "critical," 73.9% (n = 17) of residents answered a four or five when asked how important it is for our program to expand its ultrasound curriculum. For the same question, 77.3% (n = 17) of faculty answered a four or five. Although formal statistical analyses were not performed, the amount of prior training in POCUS did not seem to correlate positively or negatively with perceived importance of future POCUS training for residents or faculty. *Table 3* displays resident and faculty opinions on the most important office-based uses of POCUS. Interestingly, both groups agreed on the top three most important indications but in different orders: MSK, OB, and skin/soft tissue (SST).



Table 3: Rank order of training importance by faculty and resident respondents *Note that sums do not add up to total sample due to missing responses for some rank

"Note that sums do not add up to total sample due to missing responses for some ranks							
	Indication	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
- I.	ОВ	N=13 (61.9%)	N=4 (19.0%)	N=1 (4.8%)	N=1 (4.8%)	N=1 (4.8%)	N=1 (4.8%)
	MSK	N=5 (26.3%)	N=7 (36.8%)	N=3 (15.8%)	N=3 (15.8%)	N=1 (5.3%)	N=0 (0.0%)
	Abd	N=0 (0.0%)	N=3 (15.8%)	N=3 (15.8%)	N=7 (36.8%)	N=3 (15.8%)	N=3 (15.8%)
Faculty	Cardiology	N=1 (5.9%)	N=2 (11.8%)	N=3 (17.6%)	N=4 (23.5%)	N=3 (17.6%)	N=4 (23.5%)
	Pulmonary	N=0 (0.0%)	N=0 (0.0%)	N=2 (12.5%)	N=1 (6.3%)	N=7 (43.8%)	N=6 (37.5%)
	SST	N=0 (0.0%)	N=5 (23.8%)	N=S (38.1%)	N=3 (14.3%)	N=2 (9.5%)	N=3 (14.3%)
	ОВ	N=10 (45.5%)	N=5 (22.7%)	N=4 (18.2%)	N=0 (0.0%)	N=2 (9.1%)	N=1 (4.5%)
	MSK	N=7 (31.8%)	N=8 (36.4%)	N=1 (4.5%)	N=4 (18.2%)	N=1 (4.5%)	N=1 (4.5%)
Residents	Abd	N=0 (0.0%)	N=1 (5.0%)	N=4 (20.0%)	N=4 (20.0%)	N=3 (15.0%)	N=8 (40.0%)
	Cardiology	N=2 (10.0%)	N=1 (5.0%)	N=4 (20.0%)	N=1 (5.0%)	N=8 (40.0%)	N=4 (20.0%)
	Pulmonary	N=1 (5.0%)	N=5 (25.0%)	N=2 (10.0%)	N=4 (20.0%)	N=4 (20.0%)	N=4 (20.0%)
	SST	N=2 (9.1%)	N=2 (9.1%)	N=7 (31.8%)	N=7 (31.8%)	N=2 (9.1%)	N=2 (9.1%)

Interest in Learning More POCUS and Future Use

Residents and faculty were asked slightly different questions about their interest in learning more POCUS and thoughts on their future use of POCUS. We wanted to assess how often residents thought they would use POCUS for diagnostic purposes if it were more available. We were also interested in gauging faculty interest in teaching and precepting residents in POCUS.

If it were readily available, 47.84 % (n = 11) of residents said they would use it at least weekly and 95.65% (n = 22) would use it at least monthly. Similar numbers were found when residents were asked how often they envisioned using POCUS after residency: 45.45% (n = 10) at least weekly and 72.72% (n = 16) at least monthly.

We asked faculty two direct questions here, 1) "how interested are you in learning enough POCUS to precept residents?" to which 54.55% (n = 12) responded "extremely interested" and 2) "how interested would you be in leading POCUS teaching sessions for residents?" to which 40.91% (n = 9) said "extremely interested."

Non-responder Analysis

In recognizing that our rate of response was less than 65%, we performed a non-responder analysis of the data. Thirteen residents did not respond, including again a fairly even split amongst PGY-1 (n=3), PGY-2 (n=4), and PGY-3 (5) residents. One of the PGY-4 chiefs did not respond (n=1) out of a total of two such participants. Resident non-responders were 30.7% male (n=4) and 69.3% female (n=9). None of these demographics were significantly different when compared to responders, though the differences were not formally analyzed.

Among the faculty there were fourteen non-responders. Three did not end up receiving the paper or the electronic surveys. Of the remaining eleven, 36.4% (n=4) were male and 63.6% (n=7) were female. They had a roughly even split between those in practice less than 10 years (45.5%) and those in practice longer than 10 years (54.5%). Again, these numbers did not differ significantly compared to responders.

Discussion

Our findings show minimal prior training in and low current use of POCUS among resident and faculty providers at our large, urban, family medicine residency training program. At the same time there is a high level of interest in learning POCUS and using it in future practice. This training gap is what we hope to help address at our program. The recognition of POCUS as an important clinical skill and desire for expanded training during residency is reported elsewhere.⁸

Given that both groups agree on the top three modalities that should be taught, efforts at our program and ones similar to ours should be focused here: OB, MSK, and SST. Examples might include pregnancy dating, assessment of placental location, and determining fetal cardiac activity for pregnant patients as well as evaluation of common MSK/SST complaints such as myofascial and joint pain, soft tissue masses, and possibly procedural guidance.

Although there is only one faculty member extensively trained in ultrasound at our program, there is evidence that trainees can effectively learn POCUS with simulation training.¹⁵ Those that have learned POCUS could also in turn teach others,¹⁰ and this may be pursued at our program. Additionally, there are extant, proven effective curricula for training family medicine residents in POCUS that we may consider incorporating.¹¹

Limitations in our study include small sample size, intermediate response rate, and potentially limited external validity. We involved only one residency program site and had only a limited number of residents and faculty who participated. Our small sample size did not allow us to perform in depth statistical analyses of our data. A study of many residents and faculty across multiple residencies, and with a higher response rate, would address these concerns. Our program is also large, urban, northeastern, and relative obstetrics-heavy. Therefore, our results may not apply well to dissimilar programs, but might be of significant interest for similar programs.

As for future areas of investigation, measuring the current use, perceived importance, and planned future use of POCUS among many more family medicine residents and faculty across the country would be extremely valuable. Further development of effective POCUS training programs that do not rely on numerous trained faculty would also be of benefit to programs looking to expand their POCUS use.

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Dominick DeFelice, **MD** completed bis medical school education at the University of North Carolina at Chapel Hill and family medicine residency at the University of Rochester Medical Center (URMC). He is currently enrolled in primary care sports medicine fellowship where be continues to use POCUS and pursue its expanded implementation in medical education.

Mark Mirabelli, MD completed bis medical school education at New York Medical College, family medicine residency at the University of Michigan Medical Center, and primary care sports medicine fellowship at the Cleveland Clinic. He practices both family and sports medicine as URMC faculty and is the program director for the primary care sports medicine fellowship at URMC.

Brian Smith, **MSW** is an employee in the School of Nursing at the University of Rochester with special training in statistical analysis.

Mechelle Sanders, PhD is a doctoral researcher within the Department of Family Medicine at URMC. She has special interest in topics related to health equity, postgraduate medical training, and quality improvement, among others.

Stephen Schultz, MD completed bis medical school education at Brown University, family medicine residency at URMC, and served for 20 years (2002-2022) as the program director of the URMC Family Medicine Residency Program. He is currently faculty in the family medicine department at URMC and bas interests in POCUS, global bealth, and medical education.

PNE/PRT: A Practical and Efficacious Method in Addressing Pain Medicine Education in Residencies

By Yuki Takeuchi, MD; Sandy Wang, MD, MPH; Emily Triplett, MD and Sachiko Kaizuka, MD

Introduction

Chronic pain is a complex process involving biopsychosocial factors¹, thus requiring an interdisciplinary approach. Even when clinicians are willing to put in the time and effort needed. chronic pain management in clinical practice can be complex and difficult. The complexity comes from multiple factors. First, many chronic patient patients are dissatisfied with their care due to a combination of providers' inability or conflicting explanations for the origins of their pain and lack of instructions or follow up directions.^{2,3} These negative cognitions are worsened by patients' expectations for their providers to "fix the pain" when this often does not match reality. As patients run out of prescription and procedural options, they become frustrated with their chronic pain management especially when other recommended options are often expensive. Thus, many chronic pain patients suffer from a combination of emotional disorders, maladaptive thinking worsened by poor coping mechanisms, physical deconditioning due to fear of re-injury, and nociceptive dysregulation.4

Unfortunately, prevalent negative attitudes towards pain management in healthcare professionals exacerbates chronic pain mismanagement. These attitudes are a result of multiple factors, including inadequate training in this area, contributing to many family physicians forming preconceived notions that chronic pain patients are demanding and time consuming. Some, in extreme cases, find these patients exploitive, drug seeking, impossible to please, or even manipulative.5 This mindset stems early on in medical schools where many medical students perceive chronic pain as being very difficult to treat.⁶ Graduating from medical school not fully prepared eventually leads to over 80% of primary care residents reporting their chronic pain management education insufficient.7 Many trainees struggle with uncertainty over etiology (biogenic vs. psychogenic), as most of their medical education focused on the biomedical approach to diagnosis and treatment. There are also personal characteristics that make chronic pain management challenging such as need for

structure, authoritarianism, intolerance for uncertainty, and self- esteem.⁸ As trainees progress through residency and even into independent practice, chronic pain management becomes more challenging, emotional, stressful, and time consuming leading care.⁷

Chronic pain education can seem daunting and often overwhelming, however, it is imperative that residency programs continue to seek ways to improve and collaborate so that primary care physicians can prepare for the psychosocial component of chronic pain management in their future patients.⁹ Our team referenced Evans et al's team⁵ where residents in the department of family medicine in Texas Tech participated in dedicated chronic pain clinics for one month. They took pre and post tests on attitudes towards chronic pain patients and found there was a significant improvement in these attitudes.

In this paper, we seek to propose an additional method of chronic pain management in addition to Evan's work, while addressing their limitations on financial and operational feasibility. We propose a series of workshops in hopes of halting what the literature suggests is an inevitable process of developing negative attitudes towards chronic pain patients. We recognize that it is often difficult to integrate chronic pain treatment into full service primary care, but we propose that chronic pain teaching can still be taught effectively in mini sessions over time, for both residency programs and those already in practice. We discuss a two-part chronic pain treatment model called pain neuroscience education (PNE) and pain reprocessing therapy (PRT), that retrains the brain to interpret and respond differently to signals from the body¹⁰ and has been shown to significantly reduce pain. One of the authors has implemented this PRT/PNE teaching and training for the family medicine residents in smaller but still efficacious sessions, and the pilot study has shown a decrease in the scores in the Orientation to Chronic Pain Patients Scale (OCPPS) before and after a series of lectures. This suggests this teaching may improve family medicine residents' attitude toward chronic pain patients.



Assessment for the Etiology of Chronic Pain

Pain can be differentiated into two categories: one, by the degree of involvement of the central nervous system (CNS) or two, the peripheral somatosensory system (PSS).¹¹ We are most familiar with peripheral somatosensory pain, caused by true structural abnormality such as tissue damage or inflammation.^{11,12} However, CNS pain plays a large role in chronic pain as it exacerbates the perception of pain or noxious stimuli, which is also called "neural circuit pain" since it involves the brain. One can suspect a CNS process is involved in a patient's illness narrative when the findings below in Table 1¹¹ are involved. Once a CNS type of pain has been identified, PNE and PRT can be implemented into treatment.

Table 1. Assessment of Centralized (Neural Circuit) Pain¹¹

1. Pain Patterns:

- a. Begins either without injury or persists well after normal healing has occurred
- b. Has a distribution that is inconsistent with a structural disorder
- c. Shifts from one location in the body to other locations or spreads from one area to adjacent regions over time
- d. Varies with time of day, place, or activity in patterns related to certain triggers, such as movements, sensory input, environments, interpersonal interactions, or stress related emotions

2. Psychosocial and Medical History:

- a. Significant adverse childhood experiences
- b. Internal conflicts that create anxiety, such as excessive worry about being judged, a strong desire to please others, perfectionism, and self-criticism
- c. Pain onset or exacerbation associated with events that cause people fear, anger, grief, or guilt
- d. Changes in pain that occur when stressful experiences or conflicts are explored

3. Physical Exam and Review of Scans:

- a. No objective findings instead often finds paresthesias, allodynia, hyperalgesia in response to touch or pressure on various parts of the body
- b. Exclude nociceptive or neuropathic pain, but should be cautious attributing pain to abnormal imaging results in the absence of clear pathological findings such as inflammation, fracture, or tumor. Nonspecific findings, such as degenerative disc disease and bulging discs, are normal in the adult population

Pain Neuroscience Education (PNE)

The first step in implementing chronic pain management is to educate a patient about pain. There may be a chance that no clinician has ever paused to explain pain, while instead, jumping to treatment. This again falls into the biomedicine fallacy that does not allow patients to understand their own narrative, instead worsening pain and the potential relationship with their clinician. Table 2 shows the steps of PNE. However, studies have shown that pain neuroscience education alone is limited in its reduction of chronic pain¹³, while PRT, discussed in the next section, has demonstrated significant and lasting pain relief.¹⁰

Table 2^{10,11,14-20}

	PNE Steps
1. Validate the pain	 Introduce the idea that pain is central rather than peripheral process^{11,14}
2. The brain can generate pain even in the absence of pain	 Explain that pain is modulated through conditioning, cognitions, and emotions Centralized pain is attributed to activation of the brain's "danger alarm system" – a system that creates pain in response to danger signals including not only injury, but also stress, and emotions, and persists due to the activation of neural pathways (Figure 1) Stress stimuli can activate pain to protect the body even if no structural abnormality is happening Example script: The alarm is really going off (your pain is totally real), and at the same time, there really is no fire (your body is not injured)."¹⁰
3. Predictive coding – how acute pain becomes chronic	 The brain constructs the interoceptive experience of pain based on its predictions of pain and previous acute pain episodes shape strong expectations^{15,16,17} Unfortunately, the more the accompanying neural pathways are activated, the more they become normalized as default pathways¹⁸ Example: Back pain patient's back pain worsened when he thinks of original injury mechanism even if not actually actively bending back¹⁸
4. Vicious cycle of chronic pain	 Pain triggers feelings of fear The fear puts the brain on high alert which causes more pain Which leads to more fear Which leads to more pain^{10,19}
5. Adverse life experiences and psychological conflict matter	 After experiencing a trauma, one continues to view new situations in their life through their distorted traumabased lens, interpreting subsequent events as dangerous, even if they're unrelated to the initial events²⁰ People who have had adverse childhood events are hyper vigilant to danger signals, and more likely to develop neurocircuit pain in their later life Addressing their emotionally difficult life experiences helps patients recover from neural circuit pain and syndromes
6. Chronic pain can be possibly reduced, or eliminated	 Possibility of reversing pain via psychological change, because adaptive learning allows patients to disengage the danger alarm mechanism, and reduce emotion and cognition-generated pain activation¹¹

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Pain Reprocessing Therapy (PRT)

Once a patient has a better understanding of pain (PNE), pain reprocessing therapy (PRT) builds on education by providing an actionable format to reframe both the thoughts around and the experience of pain.¹⁰ Table 3 discusses the steps to PRT.

Table 3 ¹⁰						
5 Steps of PRT						
Step	Intervention					
1. Education	 Use of above PNE and defining pain 					
2. Gathering and reinforcing evidence	 Help patients to collect data supporting the idea that their pain is due to a central process rather than tissue injury This may be accomplished through the review of prior workups and thoughtful consideration of indicators of centralized pain, including origin without injury or around a time of stress and inconsistent or widespread presentation 					
3. Reappraise the pain through lens of safety	 "Somatic tracking" is a central technique in PRT This relies heavily on the previously gathered evidence against tissue injury in order for patients to commit to a message of safety 					
4. Addressing other emotional threats	 Dull the danger response, by addressing psychologically destructive thoughts and behaviors, emotional and relationship trauma and other sources of fear and stress 					
5. Gravitating to positive feelings and sensations	 Encourage attention to positive sensations as well Encourage patients to reframe more experiences in a positive light so they are better equipped to move from "danger mode" into "safety mode" 					

Putting it all Together: Medical Education Intervention

Despite the density of the previous topic, chronic pain does not have to be taught in one sitting. Rather, repetition and small sessions can potentially change the dialogue of chronic pain management for learners. Opening a conversation and approaching a chronic pain patient is often daunting and can cause anxiety for most trainees. Thus, the main goal of our team's work is to raise awareness and start a paradigm shift early in medical education so that early learners are introduced to this type of thinking in conjunction with their heavy biomedical education. PNE/PRT is cost effective as it requires multiple sessions to move through the steps with patients, thus building rapport and trust for both the physician and patient. Moreover, these steps can be addressed alongside other primary care issues, such as hypertension or diabetes in a single visit over time as patients and physicians work together through health issues.

One of the authors has been teaching PNE for several years and PRT for the past year to our family medicine residents and medical students. This has been through didactic lectures, case presentations (mystery case), workshops (inviting multiple speakers who understand and practice the biopsychosocial approach to chronic pain), hospital grand rounds, and individual teaching during clerkships for medical students and elective rotations for residents. PNE alone generally has helped residents' understanding of the biopsychosocial nature of chronic pain, and adding PRT has enhanced their ability to start working with their patients during their clinic sessions.



In our recent pilot of 6 second-year family medicine residents on a psychosocial medicine rotation, we collected before and after survey data from three 90-minute lectures/discussions of PNE and PRT (first session for PNE, second for diagnosis and exams, the third on simple PRT techniques). OCPPS scores indicate the residents' levels of negativity toward chronic pain patients. We found the scores decreased from 48.3 to 36.2 at the end of the series. Below, Table 4 shows the components of the 3 sessions.

Table 4		
Session	Title	Content
#1	Pain Neuroscience Education (PNE)	Watching short videos and discussion All pain is an output by brain for "danger" – predictive coding, roles of fear response, stress, difficult emotion, past trauma
#2	Diagnosing neural circuit symptoms	Ruling out structural disorders, ruling in neural circuit symptoms, FIT criteria, provocative testing, circumstantial evidence
#3	Pain Reprocessing Therapy (PRT)	Patient education and importance of validation, PRT (affirmation, somatic tracking, outcome independence, graded exposure, positive experiences with positive expectations, self-compassion)

The results of this work may have implications for residency and even medical student education around the treatment of chronic pain; certainly, we hope to add to the literature an additional methodology alongside our other colleagues' works. While this is a small sample size, it is a promising start that a limited amount of chronic pain teaching can be instilled and still provide improved teaching. A larger replication study is underway to see if there is a significant difference. Feedback gathered from trainees showed that residents reported the desire for more role playing activities to finesse skills. Interviews with graduating residents showed that overall, there is an improvement in attitude towards chronic pain patients well into their careers, if not at least a change in approach and dialogue with this unique population.

Conclusion

Chronic pain management plays an important role early in primary care physicians' training as negative attitudes towards chronic patients stem early in medical education from a combination of experiences, lack of training, and challenges to the usual biomedical approach to illness. It is important to emphasize a psychosocial approach to this complex illness to decrease negative attitudes toward chronic pain patients and improve the quality of treatment. This paper discussed the combination of PNE/PRT as a step by step approach to starting chronic pain management dialogue for healthcare providers as well as with their patients. We acknowledge that the topics addressed here certainly require multiple papers, as each step itself is complex and in reality, often occurs across multiple visits. Chronic pain patients require much follow up, and implementing small amounts of PNE/PRT alongside primary care can slowly build physician patient trust as well as decrease the mental and emotional stress attributed to dedicated chronic pain clinical sessions alone. Certainly, there will be some sessions that require the entire visit dedicated to work on a particularly difficult step, but by having multiple steps, clinicians and patients have a more guided and confident approach, which would help alleviate patients' uncertainty and clinician's intolerance of it.

Our paper addresses the previous work done with residencies in larger clinical settings by Evans et al.⁵ However, it was acknowledged that not all clinical settings are able to have dedicated chronic pain sessions, and thus we seek to propose additional methodology in chronic pain medical education. PNE and PRT can be implemented practically in small doses in busy office sessions and taught to residents and medical students, who are new to the concept and application.

Successful implementation aims to break the cycle of chronic pain and other symptoms caused by central sensitization. This can address patients' underlying fears about their symptoms and diagnoses, and also help patients have an appropriate expectation toward psychological treatments, if they are ready to receive them. It is yet to be determined if these methods will be practical in helping with the experience of chronic pain, as well as impacting long term outcomes, but it nevertheless shows improvement in attitudes towards pain patients from resident physicians. Perhaps this is the most important goal; to emphasize the need for medical education to start early in training.

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Yuki Takeuchi, MD is a family medicine resident at the University of Rochester/Highland Hospital Department of Family Medicine Residency Program. His professional interests include medical education, psychosocial medicine, and motivational interviewing.

Sandy Wang, MD, MPH is a family medicine physician who works in the urgent care setting. Her professional interests include academic medicine and integrative medicine.

Emily Triplett, MD is a family medicine resident at the University of Rochester/Highland Hospital Residency Program. Her professional interests include full spectrum practice with an emphasis on integrative and psychosocial medicine.

Sachiko Kaizuka, MD is an assistant professor of family medicine. She is board-certified in family medicine, integrative medicine, and medical acupuncture. Her special interests include biopsychosocial medicine and integrative medicine, especially for chronic pain, mental bealth, and addiction.

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Medical Improvisation

By Raymond L. Ebarb, MD, FAAFP

"Those who have learned to collaborate & improvise have prevailed." - Charles Darwin

Introduction

I have learned in my 35 years of clinical practice that every day with patients is unique. As a clinician, especially as a family physician, each day in practice brings its own challenges. Just as every patient is different, so is the manifestation of the same disease-state in various individuals. All the years of scientific study will not fully equip medical students to manage the collage of patients and clinical conditions presented to them, not to mention the non-clinical challenges in the treatment of patients. These include but are not limited to the availability of resources and ancillary services, administrative challenges, and needless to say, IT glitches. It is impossible to teach medical students as well as practicing physicians how to handle every scenario presented. Physicians must develop the mental agility to think creatively and recognize patterns in rapidly-changing circumstances, all while maintaining professional composure under stress. These are the same skills needed to engage in improvisation. The training techniques learned in improvisation can also help prepare medical students to acquire the skills needed in treating patients. This is where the teaching of medical improvisation comes into "play."

Definition

COLLABORA

MEDICAL

Medical improvisation (improv), defined in 2016, is the "the adaptation of improvisational theatre principles and exercises to enhance such medical skills as communication, teamwork, and cognition." Improvisation is defined by the Merriam-Webster Dictionary as "the act of composing, reciting, playing, or singing

TRICAL

INPROVISATION

ATTUNEMENT

extemporaneously." Additional definitions include "the act of making, inventing, or arranging offhand or making of or the fabricating out of what is conveniently on hand." The first known use of this word was in 1788. It is best known for its application in the theatrical genre. Even though it is best known in the world of comedy, the primary goal of improv was collaborative storytelling.^{11,17,33} It then began to be used as an educational tool in the early 1920's. Improv was later adapted as a technique using "play" as a means for teaching children and was used in theatre education for adults and children.

Background

APPLIED

Improvisation can be divided into 3 types: theatrical, applied and medical.

Theatrical improvisation is the intuitive and honest reaction or behavior to unscripted circumstances for the purpose of entertainment, often in the comedic genre. This is the most common use of this term.

Applied improvisation, developed in the 1990's, is the adaptation of theatrical improv training for use in training of nonperformance disciplines. Such disciplines include but are not limited to business, education, science, engineering, international conflict resolution, humanitarian work, and one's own daily life.^{2,3,16,18,21-24} Applied improv techniques are taught at the Alan Alda Center at Stony Brook, New York, as well as at business schools such as Stanford, Duke, and MIT7,8,15,27 for teaching creativity, teamwork, and communication.

Medical improvisation used in medical education first appeared in the literature in 2007. It is a newer form of applied improv and includes studied disciplines such as medicine and medical subspecialties, nursing, occupational therapy, and pharmacy. Publications describing improv

courses are mostly pilot studies describing a small number of learners and/or a one-time intervention. There are exceptions which include Watson who describes a 10-hour improv-only elective curriculum for first and second-year students at the ADVANCEMENT Northwestern Feinberg School of Medicine, assessed over a 10-year study period (n=87).³³ Boesen presents a required 12-hour improv curriculum integrated into a larger communication skills AFFIRMATION course for the first students in the University of Arizona pharmacy school, over a study period for 4 years (n=80-90).6 Kaplan-Liss discusses an 18-hour communication skills elective for interprofessional students at Stony Brook University, assessed over a 2-year period (n=76).¹⁸

The majority of the articles about medical improv courses found that learners had positive perceptions of the educational experience.^{6,14,18,21,27-29,31,33} Only one article reported that learners expressed ambivalence.⁹ Only Boesen, measured outcomes beyond self-assessment, reporting that pharmacy student performance on standardized patient examinations improved after learning improvisation skills.

In 2016-2017, Zielinski et al, piloted a 15-hour course to teach interprofessional empathy to health profession students at the University of Wisconsin-Madison using improv techniques. The authors used a convergent mixed-methods design to evaluate the course's impact on interprofessional empathy. Students enrolled in the course (intervention group N=45) and a comparison group (n=41) completed 2 validated empathy questionnaires (Interpersonal Reactivity Index [IRI] and Consultative and Relational Empathy [CARE] measure) and a facial expression recognition task to measure empathy in the pre- and post-intervention periods. Differences were examined using paired t tests. The intervention group's mean scores on 5 CARE items improved significantly: ease, care, explain, help, and plan. On the IRI, personal distress levels decreased significantly in both the intervention and comparison groups. Eight participants were interviewed and reported positive impact on their interprofessional relationships and on their ability to think on their feet. They also reported improv influenced other areas of their lives, including patient care and interactions with people outside their work life.

In addition, medical improvisation is being taught at The Cleveland Clinic, the National University of Health Sciences, the UCLA School of Dentistry, Virginia Commonwealth University School of Medicine and at the American Academy of Pediatrics National Conference.

Framework

Medical improv courses engage learners in exercises to acquire SKILLS that embody PRINCIPLES. SKILLS are specific abilities, whereas PRINCIPLES establish more general concepts of value, purpose, and intention.

The core skill groups of medical improvisation are: 1) attunement, 2) affirmation, and 3) advancement

- 1. Attunement is the ability to know others, self, and situation.⁵ The 'micro skills' needed to achieve attunement include self-awareness, listening, perception, attention, and recognition of cues which often offer more information than what is said in the exam room and critical in the management and treatment of patients.
- 2. Affirmation is the ability to validate others and self.⁵ The micro skills needed to achieve successful affirmation include acknowledgement, acceptance, collaboration, trust, empathy, support, and comfort with error. In affirmation, the clinician acknowledges what they have perceived, seeking confirmation that they heard the patient and allowing room for the patient to correct these perceptions. This builds rapport by acknowledging that a person has been seen and heard.

3. Advancement is the ability to enrich others and self, through the creation and delivery of ideas.⁵ The micro skills needed for successful advancement include the skills of spontaneity, adaptation, clarity, durativity storytelling, presence, and modulation of verbal and nonverbal cues.

It is essential to appreciate all three components for optimal communication. Attunement must precede successful affirmation and advancement. If the clinician does not make specific observations of the patient, then their attempts at affirmation may be either meaningless or simply absent. Each of these skills is learned through improvisation exercises or communication drills, and many are already taught at the undergraduate, graduate, and continuing educational level. The key word here is "taught," not necessarily "learned or acquired," and certainly not refined prior to putting them into practice. All the medical improv texts describe active participation and exercises as the primary method by which this skill is taught and learned. Improv exercises consist of designed experiential activities, including physical and verbal tasks, memory exercises, storytelling, and improvised scenes, performed in small learning groups. The exercises are adapted to the clinical context by tailoring the discussion before and after each exercise to address relevancy to medicine, by adjusting exercises to incorporate medical elements, or by the creation of new exercises. They bridge the gap between classroom learning and practical application in a safe learning environment.

Improvisational exercises come with rules that apply throughout. One of the main concepts is "go with the flow." The exercise that best exemplifies this is "yes, and..." In this exercise, a participant establishes a scenario (an activity, action or place) and the other participants affirm it by saving "yes, and..." then building on it. This can be done in a group circle or one-on-one and is an example where participants listen, process, and verbalize. The purpose is to build on the scenario appropriately, tap into the imagination then set it up for the next participant. No questions are allowed within the exercise with the assumption that you know everything and have everything you need. This is designed to be aware of who you and other participants are, what is going on within the scenario and where you all are. One of the purposes of "yes and..." is to exercise the imagination, practice listening, observing people and the environment, using physical and verbal clues and being a good team member by making a smooth transition to the next participant or team member. An example: first person (or person A) may say: "This is such a beautiful day," second person (or person B): "Yes, and there is not even a cloud in the sky," third person (or person A again): "Yes, and it is nice and warm," next person (or person B): "yes, and it is warm enough to ride a bicycle" etc., etc. This may seem simple but try doing it for 5 minutes!

Empathy and Physician Wellness

One of the micro skills mentioned above, that adds significant value to the patient's experience, is the perception by the patient of physician empathy. Many physicians are naturally empathetic, however for others, empathy or the showing of empathy does not come as easily. Merriam-Webster defines empathy "as the action of understanding, being aware of, being sensitive to, and vicariously experiencing the feelings, thoughts, and experience of another of either the past or present without having the feelings, thoughts, and experience fully communicated in an objectively explicit manner." Studies of verbal and nonverbal communication have identified behaviors (e.g., duration of eye contact, vocal tone, pace of speech, expression of negativity) that may affect patient perceptions of provider empathy and thus may be correlated with outcomes such as patient satisfaction or frequency of lawsuits.^{1,13} Improvisational training directly addresses the different aspects of verbal and nonverbal communication behaviors in interpersonal interactions and can be an effective component of empathy training.

One of the challenges that can be addressed by medical improvisation is physician burnout. With the rising issue of physician burnout, a discipline that engenders emotional attunement, validation of self, gratitude mindset and supportive relationships, could help promote individual and collective well-being.^{4,32} As educational institutions, healthcare systems and physician groups/societies/ academies develop strategies to stave off burnout within their staff and among their membership, improvisational training could be an important component.^{12,20} In addition, medical improv has been described as an enjoyable and playful experience; the laughter and positive sentiments generated through the experience may itself be an avenue toward wellness.^{25,26,33}

Additionally, the value that improvisation places on affirmation, helps foster a collaborative culture within communities. This is a teaching method that reinforces collaborative behaviors among learners and can be used to foster a culture of safety on a larger scale, whether residency, clinic, department, or hospital.

Future Opportunities

There are several potential research opportunities within medical improv. Since improvisational theatre has historically relied more on experiential (rather than written) learning, there are few texts that provide detailed instructions on how to facilitate exercises.^{10,19,30} Future research could study which exercises are most effective for teaching certain skills. Detailed evaluation methods and validated measurement tools must be developed such that the literature can extend past self-assessment reports into measurable and observable learner, teacher, and patient outcomes.

Medical improvisation has been taught as a humanities elective at the Feinberg School of Medicine at Northwestern University in 2-hour weekly sessions for 5 weeks for a total of 10 hours.³³ The optimal size group is 8-12 participants, and this technique can be applicable in school settings, for faculty development, wellness seminars or team building activities. In evaluating this modality, it is important that the evaluator experience a session as opposed to simply observing from the back of the room.

Conclusion

The preparation and education of future physicians is heavily focused on the learning of scientific data, disease states and clinical management. While this style of education is critical to solving disease states, it is not nearly enough to treat patients effectively and meaningfully. Patients who feel their concerns are heard and feel their physician is empathetic to their needs, have a greater sense of participation in their healthcare and experience overall better outcomes. There are well-documented instances where a wellcoordinated collaborative effort on the part of the medical team also produces better outcomes. Whereas institutions have established programs to "teach" skills necessary to promote empathy and collaboration in attempts to optimize the patient-physician relationship, medical improvisation uses exercises or drills as a "safe" training ground. This scenario allows the student to test and hone their interpersonal and collaborative skills which will serve them well when treating patients, as a resource to help manage stress and burnout and in relating to family and friends in their personal lives.

The take away message for practicing physicians is that effective patient-physician interaction is a multifaceted skill that should not be taken for granted, no matter the number of years in practice. Like any skill, it needs to be periodically reevaluated and purposefully refreshed and practiced. It is work, but well worth the reward for both patient and physician in gratification and satisfaction of quality healthcare delivery.

Additional Resources

If anyone is interested in finding out about taking a medical improvisation course, or simply learning more about it, the websites below may be useful: http://www.medicalimprov.org/ http://www.improvdoc.org/library https://www.stonybrook.edu/aldacenter/professional-development/index.php

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Raymond Ebarb, MD, FAAFP is a past president of the NYSAFP and presently an AAFP Delegate. He is a native of Brooklyn, NY and completed bis family medicine residency at Southside Hospital in Bay Shore, NY. He co-founded a private family medicine practice in West Sayville, NY on Long Island in 1987, and practices in the same community where he raised his family. Dr. Ebarb is the Medical Director for the Association for Habilitation and Residential Care (AHRC) day programs, as well as multiple residential facilities for special needs adults. He has been an instructor of family medicine for both students and residents in inpatient and outpatient settings over the years, and presently has an appointment as Clinical Assistant Professor at the Zucker School of Medicine at Hofstra/Northwell.



How to Procure a Cadaver

By Thomas C. Rosenthal, MD

Only those with a talent for integrating medical science with human nature will thrive as family doctors. Today, students enter highly delineated programs of gradual advancement leading to the DO or MD degree. In the early 1800s, most any student willing to pay for medical college lectures and apprentice with a noted physician could become a doctor. Nearly one-third of practitioners hung a shingle and practiced medicine without the benefit of either apprenticeship or lectures. However, only those who continuously sought knowledge, aggressively acquired exceptional experiences, and listened to their patients in the context of community became celebrated physicians.

Students choosing medical college were expected to sit through two semesters of lectures, each semester a repeat of the first. During their two or three-year apprenticeship, they likely saddled their preceptor's horse and split firewood, but good preceptors provided them with a wide range of patients. Their training was based on a see-one/do-one philosophy, so they needed to be active participants.

Nineteenth century American society was organized around small villages. Half of the 100 American medical colleges at the opening of the Civil War were in small towns, generally called 'country medical



colleges.' Often started by practicing physicians interested in a little added income, many offered practical lectures by faculty who later moved up to some of the nations' most prestigious universities. Some had rigorous admission criteria that included a working knowledge of Latin and Greek, others accepted any student able to pay for lectures.

Students learned how miasmas given off by foul water or decaying vegetable material weaken the heart, diminished the pulse, enfeebled capillary circulation, and caused an accumulation of blood in the vena cava. Congestion was the essential phenomenon of disease, impairing the body's functions and altering the production of bile by the liver. Bleeding and purging reset the imbalance. Progressive colleges might include an epidemiology lecture or present theories describing the healing powers of pus and the spontaneous generation of the bacteria found in pus. Much of the curriculum was dedicated to materia medica, in which students learned how to compound drugs to remedy imbalances.

Then, as now, any student serious about a career in medicine also sought access to human dissection.

Physicians with a special interest in surgery taught anatomy. The Greeks outlawed human dissection, but since Roman times, human dissection has been a distinguishing feature separating the regular doctor from lesser-trained sectarian followers of botanicals or homeopathic dilutions. Despite this, few medical college catalogues mentioned human dissection. The challenge of securing an adequate supply of cadavers created anxiety among faculty, medical college neighbors, and village constables. Though grave robbing was a felony in every state, many laypersons believed there was no legal way to get a cadaver.

There was a legal cadaver market. It thrived near seaports and prisons where unclaimed bodies were acquired by middlemen who packed them in barrels of brine labeled 'pork' and 'ship immediately.' Decomposition had usually begun by the time the body reached the medical college. So, dissection began on the day a new cadaver arrived and was often conducted through the night by oil lamp. It was dangerous work. In the first half of the nineteenth century, forty students at St. Bartholomew Medical College (aka St. Barts) in London died from self-inflicted injuries during careless dissection.

The customary \$15 fee (Over \$500 today) for a cadaver in a brine barrel was beyond the reach of many medical students. Grave robbing happened.

Castleton Medical College, Castleton, Vermont

An 1830 Rutland, Vermont newspaper describes one episode of grave robbing that gained national attention. Castleton Medical College, Castleton, Vermont, was one of New England's better country medical colleges. Loosely affiliated with Middlebury College, it graduated more men in the years from 1820 to 1861 than any other medical college in New England. The entrepreneurial Dr. Selah Gridley, licensed by Connecticut and apprentice trained, had been a popular preceptor for apprentices for several years when he founded his college. He was also the village postmaster and ran a general store.

In Hubbardton, seven miles from Castleton, a respected mother and wife was buried in the village graveyard on a Saturday in late November. The cemetery manager took the usual precautions of marking the soil around the grave so he could quickly detect any disturbance. Sunday morning it was obvious the markings had been disrupted, and an hour of digging confirmed an empty grave. Immediately he notified the Hubbardton sheriff who, by dawn on Monday, had gathered a posse of three hundred men to march on the Castleton Medical College. By 9 am, a mob of men with torches surrounded the medical college building.

The Castleton Dean had long ago learned not to question the source of a cadaver. Now, confronted with a genuine threat to his college, he remained calm while assuring the sheriff there must be a misunderstanding. Steadfastly, the sheriff assured the Dean that an inspection would remove all doubt. At this point, the Dean apologized. He had foolishly left his key to the main building at home, but would immediately send a messenger to fetch it. While waiting the Dean explained the college's strict ban on grave robbing and the sheriff reminded the Dean about felony laws in Vermont.

The Dean's stalling tactic gave students already in the building, time to hide the dissected body between floor joists in the surgical lab. They were near panic when the body would not fit the space, but quickly decapitated the cadaver, deciding it would also make the body more difficult to identify.

Agreeing that three hundred men could not help but cause damage to the college building, the Dean convinced the Sheriff to select a committee to conduct the inspection. Meanwhile, a student casually sauntered through the crowd with no notice paid to the large bundle under his overcoat.

At first, the inspection went well. The Dean distracted the inspection team by proudly pointing out the many advances in medicine on display. As the group was leaving, one Hubbardton inspector noticed a loose nail in a floorboard and soon discovered the headless body. Of course, the search committee demanded the missing head. Now contrite, the dean negotiated a promise that if the head could be 'discovered' the sheriff would guarantee there would be no arrests. With that, the overcoat student returned to the neighbor's haymow where he had deposited his bundle, and 'discovered' the woman's missing head. Reunited, head and body were reburied and the event was dubbed the "Hubbardton Raid" in newspapers across America.

The Dean expelled two medical students involved directly in raiding the grave. One changed his career path, but the other received glowing recommendations from the faculty and graduated from another medical college. Though Castleton did not dwell on the specifics of the event itself, every November they hosted students at an oyster dinner with an after-dinner speech reminding them that only proper procurement of cadavers would be tolerated. At a less formal event each year, a local physician read a poem about the Hubbardton Raid. The poem is nearly five hundred lines, written in the meter of Longfellow's Hiawatha. Today, the original manuscript of his poem is at the New York State Library in Albany.

Castleton Medical College closed in 1868. Every year until the school's closing, the Rutland newspaper published an account of the Hubbardton Raid as a warning to each entering class.

It would be 1913 before it was legal in every state for medical colleges to acquire bodies for dissection. The privilege of human dissection remains a trans-mutative experience conveying the prestige of anatomical authority to the well-educated physician. In recent years virtual dissection technology has allowed students to not only dissect, but also to reverse dissect a simulated representation of the human body. Educators need to ask what impact taking the scalpel out of the student's hand will have on training and career choice.

(From *Bloodletting and Germs: A Doctor in Nineteenth Century Rural New York* by Thomas Rosenthal MD)

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Thomas Rosenthal, MD is the author of Bloodletting and Germs: A Doctor in Nineteenth Century Rural New York (Awarded the 2022 Gold Medal for Cultural Fiction from Reader's Favorite; Amazon rated 4.8/5). He is Professor and Chair Emeritus of Family Medicine at the University at Buffalo.

The Importance of Goals of Care Discussion Training in Family Medicine

By Perihan El Shanawany, MD; Christopher Awwad, DO; and Alexandra Marcy, MD and Georgia Botoulas, LMSW

Introduction

Within the United States, the population aged 65 and older has grown by more than a third between the years 2010 and 2020, according to the U.S. Census Bureau.¹ While this is due both in part to the baby-boomers entering this age range as well as advancing medical interventions, it brings with it a growing older population with multiple comorbidities and increasing medical needs. This circumstance underscores the need for and value of conversations surrounding goals of care and advanced directives between aging patients and their providers.² Goals of care refers to the overarching aims of medical care a patient has, based on their underlying values and priorities, which will guide the decision making of the use or limitation of specific medical interventions.³ Advanced directives refers to the legal documents outlining these wishes.

Resident physicians are frequently first-line in discussing goals of care and advanced directives with their patients.⁴ This can occur within their roles in both outpatient and inpatient settings. Unfortunately, residents have reported minimal training, both in medical school and in residency, in carrying out such discussions; thus, they lack the confidence and skill required to do so.⁵ Without adequate opportunities to guide goals of care discussions, resident physicians often fail to master this skill. Research has shown that providing education and training in goals of care conversations enhances residents' confidence and skill in conducting such discussions in actual patient encounters.⁶

Methods

By leveraging a pre-existing health system training program GoCCEP[™] (described in detail below), we implemented a combination training program including additional in-hospital components with the aim of improving resident awareness, confidence, and frequency of goals of care conversations at Northwell Health-Plainview Hospital, an acute care, 204-bed community hospital that treats patients with a wide range of medical and surgical conditions in Long Island, New York.

Subjects

In the initial phase of our investigation, 22 family medicine residents of varying post-graduate year levels (1-3) completed our training. The program has since been integrated into the resident curriculum as a longitudinal experience for residents of all PGY levels.

Intervention

The Goals of Care Education Program at Plainview Hospital was first implemented in November 2021. First, residents complete a self-

assessment survey, evaluating their knowledge and comfort level in goals of care discussions. The self-assessment is adapted from a survey used at the annual meeting of the American Society of Clinical Oncology in Louisiana in May 2000, and asks providers about their experiences in breaking bad news, their opinions as to its most difficult aspects, and their self-perceived abilities to conduct goals of care conversations. Residents then complete a one-on-one session with a palliative-care trained physician, who first introduces them to the SPIKES protocol, a structured, 6-step communication strategy for disclosing unfavorable or upsetting information to a patient.⁷ See Figure 1. During this session, the resident leads a goals of care conversation under the supervision of a palliative care physician and is provided with feedback immediately thereafter.

Figure 1: SPIKES Protocol⁷



Subsequently, residents are provided with protected time to complete a 5-hour interactive online educational and skills session through Northwell Health's Goals of Care Conversation Educational Program (GoCCEPTM). GoCCEPTM is intended for clinicians in multiple disciplines and is not limited to physicians in training. The course includes pre-readings on goals of care discussions, a short didactic session, and then two specialized standardized patient encounters, followed directly by debriefing and feedback, all conducted online via a web-based platform. The simulation exercises afford the learners an opportunity to apply the knowledge gained in a safe and controlled environment, and to receive immediate patient/family feedback.

Following completion of the GoCCEP[™] course, each resident again conducts a goals of care conversation with a patient under the

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supervision of a palliative care physician. Following this patient encounter, residents once again complete the self-assessment survey that they completed at the start for comparison.

Data Collection/Analysis

Assessment of the study is based on pre-training survey and post-training survey results, and by quantitative data pulled from the hospital's advanced illness metrics dashboard. Data for 4 residents was excluded due to lack of completion of post-test (2) and completion of training course prior to completion of pre-assessment (2).

Results

Pre and Post Survey results for each question are detailed below:

In the average month, how often do break bad news to a patient?

On the pre-training survey, 17 residents (77%) reported breaking bad news less than 5 times per month and 5 residents (23%) reported breaking bad news 5-10 times per month. Following training, the number breaking bad news less than 5 times per month dropped to 8 residents (36%). The number of residents breaking bad news 5-10 times per month rose to 11 (50%), and the number reporting breaking bad news 10-20 times per month rose from 0 residents to 3 residents. (0% to 14%).



How do you feel about your own ability to break bad news?

Pre-training, only 2 residents (9%) rated their ability to break bad news as "Very good" or "Good", whereas 20 residents (91%) rated their ability to break bad news as "Fair", "Poor", or "Very Poor". Following training, 8 residents (36%) rated their ability as "Very good" or Good", and the number rating their ability as "Fair", "Poor", or "Very Poor" dropped to 14 (64%).



How do you rate your comfort level with dealing with patients' emotions?

Pre-training, 7 residents (32%) considered themselves quite comfortable with dealing with a patient's emotions, 14 residents (64%) considered themselves not very comfortable, and 1 resident (4%) considered themselves uncomfortable. After training, 12 residents (56%) considered themselves quite comfortable, 8 residents (36%) considered themselves not very comfortable, and 2 residents (9%) considered themselves uncomfortable.



Pre and Post Training Goals of Care Conversations across the Hospital

Following the intervention, residents were encouraged to conduct goals of care conversations, when appropriate, with the guidance of hospitalists and faculty members. The number of goals of care conversations documented in the electronic medical record across the hospital were reviewed in the advanced illness dashboard, and the results were compared for October 2021 (the month prior to beginning training sessions) and January 2023 (the month after training sessions ended). For the month prior to start of training, the dashboard demonstrated 6% of goals of care conversations were conducted by residents (12 conversations). For the month following the end of training, the dashboard demonstrated 23% of goals of care conversations were conducted by residents (73 conversations), representing a 600% increase in the number of goals of care conversations conducted by residents.

Discussion

Family medicine physicians are oftentimes the point-person in initiating goals of care conversations with aging patients. Therefore, in a nation in which the average lifespan continues to rise, it is important that physicians-in-training receive the education necessary to conduct these difficult conversations to ensure that patients receive care congruent with their goals. Research suggests that conducting these conversations in a skillful and compassionate manner improves patient satisfaction, their quality of life, and decreases the stress and anxiety in their family members.⁸⁻¹⁰

Given the results from the first cycle of our goals of care conversation education initiative, we are hopeful to see a sustained change in resident confidence level in conducting goals of care conversations with patients. We believe that integrating this program into our family medicine curriculum will strengthen resident competency in this field, and in turn improve attending physician comfort level with these discussions.

We are at a pivotal point in time in which our elderly population is at an all-time high; their wishes and values surrounding their ongoing medical needs should be held in the highest consideration by the healthcare professionals providing their medical care. For this to hold true, residency programs should consider allocation of additional funding for and implementation of goals of care discussion training, in efforts to better prepare family medicine residents to undertake these challenging, yet essential conversations.

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Periban El Shanawany, MD is a family medicine physician. She is the Northwell Health Eastern Region Director of the Division of Geriatrics and Palliative Care, and also serves as Director of Geriatrics and Palliative Care and Co-chair of Biomedical Ethics at both Plainview and Syosset Hospitals.

Christopher Awwad, DO is a family medicine physician. He serves as the Associate Director of Hospital Medicine and the Program Director for the Transitional Year Residency Program at Plainview Hospital.

Alexandra Marcy, MD is a second-year family medicine resident at Plainview Hospital. She received her medical degree from New York Medical College, and is interested in pursuing palliative care fellowship training following completion of her residency training.

Georgia Botoulas, LMSW is a social worker in the Division of Geriatrics and Palliative Care at Plainview Hospital.



Development of a Primary Care Obstetrics Concentration in Family Medicine Residency Training to Increase Maternity Care Access in Rural and Urban Underserved Areas

By Jennifer Corliss, MD, FAAFP and Demetra McIlwain, MD

Since the start of family medicine training in 1969, obstetrics has remained an important component of the family-centered model of care. The number of family medicine physicians providing highvolume obstetric care (defined by the American Academy of Family Physicians as greater than 50 deliveries per year) continues to decline. The American College of Obstetricians and Gynecology has projected a shortage of 9,000 obstetricians by 2030.1 This combination reduces access to care for pregnant women, especially in rural and urban underserved areas.² At the national level, discussions to address this issue have included collaboration between primary care physicians and obstetricians, decreasing credentialing barriers, and development of practice incentives for family physicians to continue to practice obstetrics. Innovations in graduate medical education are another important route to provide family medicine trainees with the necessary experience to practice full-spectrum family medicine with obstetrics and to help address the increasing need for access to maternity care.

The American Academy of Family Physicians (AAFP) and the American College of Obstetricians and Gynecologists (ACOG) developed a joint statement in 2019 on cooperative practice and hospital privileges, acknowledging the public health concern for access to maternity care. The organizations reiterated that comprehensive perinatal care to a diverse patient population requires



a cooperative relationship between health professionals, including collaboration between family physicians and obstetricians. The joint statement called for the need for standards of care, a cooperative working environment, and the shared goal of providing the highest quality of patient care.³

During the past decade, there have been multiple discussions on the decline of family medicine physicians practicing obstetrics, the role of family medicine physicians in pregnancy-related care, and the training required for family medicine residents to competently perform high quality maternity care.⁴ The training that a resident receives directly influences their future practice. In 2013, the Council of Academic Family Medicine Educational Research Alliance (CERA) performed a nationwide survey of family medicine residency program directors to assess obstetric training in residency and rates of graduates performing obstetrics. Multiple factors were found to increase the likelihood of family medicine residents to practice obstetrics after completion of training, including overall number of deliveries, clinical education from family medicine faculty who perform deliveries, maintaining sufficient panels of continuity maternity patients, and the perception of trainees' autotomy during labor and delivery rotations. Residents who performed 41-80 deliveries and those who performed greater than 80 deliveries during training were 19.8 times and 270 times more likely to continue to practice obstetrics after graduation than those who performed less than 40 deliveries. Residents who had more than 40% of vaginal deliveries supervised by family medicine physicians were 3.2 times more likely to continue to practice obstetrics after graduation. Residency programs who emphasized continuity (set a minimum of 10 continuity prenatal patients, included continuity prenatal patients in the resident patient panel, and adjusted resident schedules to ensure attendance at continuity deliveries) were associated with higher rates of graduates performing obstetrics. In the CERA survey, residency program directors utilized a rating tool to score the level of independence that was granted to residents during obstetric rotations. Those who reported medium and high levels of independence were 4.6 times and 13.2 times more likely to have residents who graduated from their program continue on to practice obstetrics versus those who were rated with low autonomy.5

Family medicine physicians, including trainees, note multiple barriers to practicing obstetrics, which may make them hesitant to seek out positions with pregnancy-related care after completion of training. These obstacles include low numbers of deliveries performed during residency training, concern for challenges with work/life balance and burnout, and difficulty obtaining hospital privileges in their desired geographical location after completion of

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training.^{6,7} Multiple organizations have acknowledged these barriers and have sought ways to overcome them. In recent years, the Society of Teachers in Family Medicine (STFM) annual spring conference hosted workgroups of family medicine practicing physicians, residents, and medical students focused on discussing the barriers to providing maternity care and sharing best practices to overcome these challenges. Discussions on the length of family medicine residency training, particularly for trainees who plan to pursue wide-scope practice, such as family medicine with obstetrics, has long been discussed and even piloted with four-year family medicine residency training programs during the past decade.⁸ A study on these innovative residency programs showed that residents who took part in P4 (Preparing the Personal Physician for Practice), and the length of training innovations impacted these physicians to perform a broader scope of practice. P4 graduates were more likely to perform vaginal deliveries than a national comparison group from traditional family medicine residency training (19% versus 9%).⁹

Despite the potential barriers and the nationwide trend of family medicine physicians opting out of obstetrics, there remains a subset of family medicine residents who desire to practice full spectrum family medicine with maternity care and deliveries. The limited amount of required obstetric training during family medicine residency (currently set at 200 hours or two months of obstetrics rotations, without a requirement for minimum number of deliveries performed) is often insufficient for those who wish to practice obstetrics. This often requires residents to dedicate a significant portion of their elective time to obtain more deliveries and to create additional obstetric experiences, at times without much support from their training program. For those residents who wish to pursue a one-year post-residency fellowship in obstetrics after family medicine residency, a strong background in maternity care and a high number of deliveries (often over 100 deliveries) are required to remain a competitive applicant.

The Accreditation Council for Graduate Medical Council (ACGME) recently addressed these training barriers with the announcement of major revisions to the requirements for family medicine residency training that will go into effect in July 2023. Under these new requirements, family medicine residents who plan to practice obstetrics after completion of training must perform a minimum of 80 deliveries and complete at least four months of labor and delivery rotations.¹⁰ This change represents a significant increase in required labor and delivery rotation time required for those residents who wish to practice obstetrics and returns back to clear guidelines on delivery numbers. In 2014, the ACGME updated family medicine training requirements to a minimum of 200 hours (or 2 months), while eliminating the previously held requirement of 40 deliveries. The goal of this shift was to move from volume-based to competency-based obstetric education. Looking at a comparison survey between 2013 and 2019 CERA reports, after the 2014 ACGME family medicine requirements update, the majority of family medicine residency graduates were found to have fewer deliveries with less overall delivery experience, and family medicine residency programs were found to have less emphasis on continuity prenatal care and deliveries.¹¹

In 2019, the University at Buffalo Family Medicine Residency Program considered innovative ways to increase obstetric experience and delivery numbers for family medicine residents. Resident graduation survey data coincided with national data, which showed a steady decline in the number of University at Buffalo family medicine residents who practiced obstetrics after completion of residency training. Considering this information, the University at Buffalo Family Medicine Residency Program developed a specialized family medicine/obstetrics (FM/OB) training concentration for interested residents. The two-year curriculum includes dedicated clinical rotations in rural and urban underserved maternity care settings, working directly with family medicine physicians who perform high volume obstetrics (greater than 50 deliveries per year). The concentration is focused on increased clinical experience, education and scholarship in maternity health.

Residents in the FM/OB concentration complete a rural maternity care rotation in Olean, New York, a small town located 70 miles south of Buffalo and the site of the University at Buffalo Rural Family Medicine Residency Program. The perinatal care and deliveries during the rotation are supervised by obstetric-fellowship trained family medicine faculty physicians who perform high-volume obstetrics (greater than 50 deliveries per year), including vaginal deliveries, vacuum-assisted deliveries, and cesarean sections. Free housing from the hospital or a housing stipend by the residency program is provided for the family medicine residents during allocated modules to allow them to spend the majority of the week performing maternity care in Olean. They return to Buffalo each week for didactics and continuity clinic obligations.

The FM/OB concentration residents also have clinical experience with urban underserved patients through collaboration with Jericho Road Community Health Center, a Federally Qualified Health Center in Buffalo with a significant refugee patient population and family medicine faculty who perform high-volume obstetrics. Deliveries for these patients range from low risk vaginal deliveries to high risk care including grand multiparous deliveries, trials of labor after cesarean sections, and deliveries of patients who have previously undergone female circumcision. Many of these patients are non-English speaking and are unfamiliar with the healthcare system in the United States. Doulas and other Jericho Road support staff are involved throughout the pregnancy and delivery. All family medicine residents at the University at Buffalo complete obstetric rotations with the Jericho Road faculty. On outpatient-based rotations and elective modules, the FM/OB concentration residents have the opportunity to further collaborate with obstetric coverage for Jericho Road patients, often completing labor triages and deliveries on Friday nights and Sundays, while assisting junior family medicine residents on the rotation. All call schedules are reviewed prior to the start of each module to ensure duty hour compliance.

In addition, through collaboration with the University at Buffalo Obstetrics and Gynecology (OB/GYN) Department, residents in the FM/OB concentration provide labor and delivery coverage one morning per week while the OB/GYN residents attend didactics. During this time, the FM/OB concentration resident also provides support and education to the first-year family medicine resident on the rotation. Deliveries are directly supervised by the OB/GYN faculty physician. The frequency of this coverage varies so as not to disrupt the FM/OB residents' other core obligations, such as inpatient adult medicine rounds or continuity clinic, and is scheduled during at least 3 four-week modules per academic year.

Residents in the concentration complete the AAFP ALSO (Advanced Life Support Obstetrics) instructor course as a PGY2, with the

requirement to teach at the ALSO course arranged annually for first-year family medicine residents. This skillset is also utilized to teach workshops on basic and emergent obstetric management to incoming family medicine residents during their first month of residency, covering topics such as OB ultrasound and intrapartum pain management.

All FM/OB concentration residents are provided with a membership to ACOG. They also develop a longitudinal educational series that is presented to all family medicine residents during grand rounds sessions. During the past year, this included presentations on clinical topics such as OB triage and intrapartum fetal heart tracing, workshops, and journal club. This interprofessional series also included OB-related presentations and case discussions with OB/GYN faculty, clinical pharmacists, and review of maternal mortality data by University at Buffalo research faculty.

The UB family medicine/obstetrics concentration was established in 2020 and included funding for two interested residents per year. Due to the COVID19 pandemic and shift to a virtual interview season, recruitment funding was reallocated to other recruitment initiatives, including this FM/OB concentration. In June 2022, the first two residents successfully completed this two-year training program and were recognized at the residency graduation ceremony for their clinical obstetric work as well as their role in the development of this track. Both graduates are now practicing full-spectrum family medicine with obstetrics in an urban underserved setting, providing care to a marginalized community with a high population of refugee patients. They obtained hospital privileges to deliver at Oishei Children's Hospital of Buffalo, a regional children's hospital with a Level III NICU, and are performing low risk vaginal deliveries as well as co-managing high risk obstetrics patients with assistance from OB/GYN colleagues.

The development of the FM/OB concentration also created additional interdisciplinary opportunities focused on improving maternal health care and access. There is now an annual ALSO course in Olean for rural primary care physicians as well as for all nursing staff involved in maternity care. In addition, the University at Buffalo Preventive Medicine Residency Program now has specialized rotations in maternity care at Jericho Road Community Health Center and Olean General Hospital, with a focus on improving maternal care and outcomes.

Providing residency program support and clinical experiences to interested trainees with a passion for maternity care provides family physicians with the skillset needed to meet the needs of the communities that they serve. The FM/OB residency concentration may be used as a framework for other training programs as they move forward with developing ways to meet the updated ACGME family medicine training requirements and to better meet the needs of their patients. Residents with enhanced clinical experience are better prepared to manage obstetric patients and perform deliveries, potentially eliminating the need for an additional year of training via an obstetrics fellowship. This allows physicians to sooner meet the needs of the community with the skillset they achieved during residency training. For residents who want more specialized obstetric skills, such as the ability to provide cesarean sections, completion of the FM/OB concentration during residency prepares them with a solid clinical background in obstetrics. If they choose to also complete a year-long surgical obstetrics fellowship, they are prepared to care for even higher risk patients in rural and urban underserved areas who often most need these services. In addition to increased clinical experience in residency training, crucial next steps to help close the gap in maternity

care needs in underserved settings include prioritizing relationships between family physicians and obstetricians, maintaining sufficient numbers of family medicine physicians who perform obstetrics within residency faculty, and continuing to support innovative ways to improve access to maternity care in underserved settings.¹²

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Jennifer Corliss, MD, FAAFP was the Residency Program Director at the University at Buffalo Department of Family Medicine from 2018 to 2022 and practiced full-spectrum family medicine with obstetrics. She is AAFP ALSO advisory faculty, and currently faculty with the University of Colorado Department of Family Medicine and practices in Denver, Colorado. Dr. Corliss has significant experience in family medicine, women's health, outpatient procedural care, and global health.

Demetra McIlwain, MD was a PGY2 family medicine resident at the University at Buffalo who co-developed this concentration with Dr. Corliss in 2020. Dr. McIlwain completed residency training in 2022 and now practices full-spectrum family medicine with obstetrics for urban underserved patients in Buffalo, New York. Dr. McIlwain received a social justice and equity award from the University at Buffalo for her work on this concentration and her dedication to improving maternal health care disparities.

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