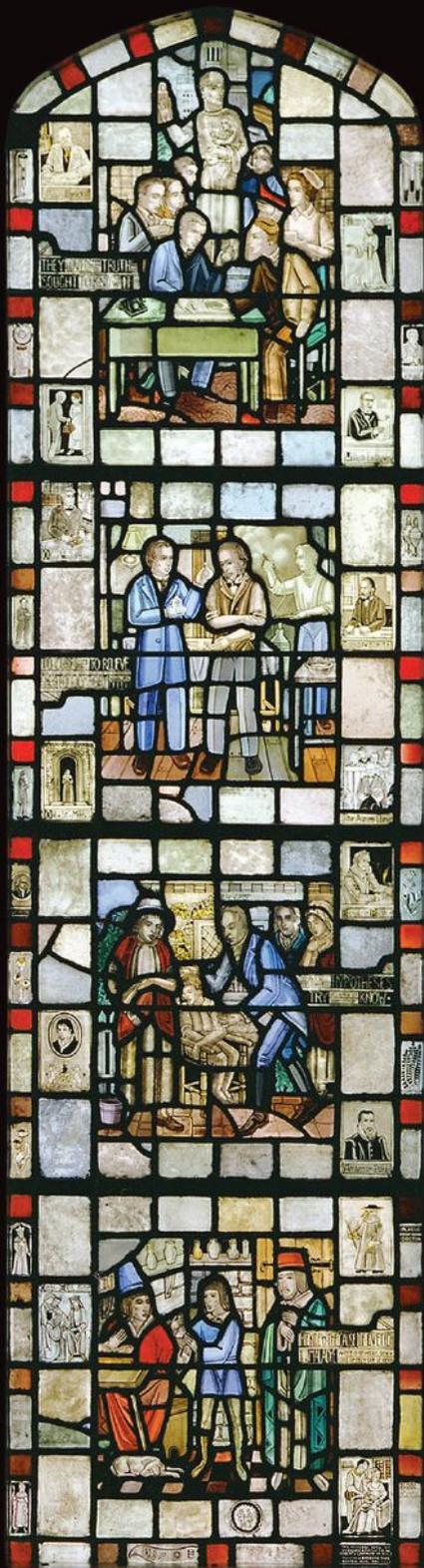


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HISTORY IN STAINED GLASS

Mayo Foundation House window illustrates the eras of medicine

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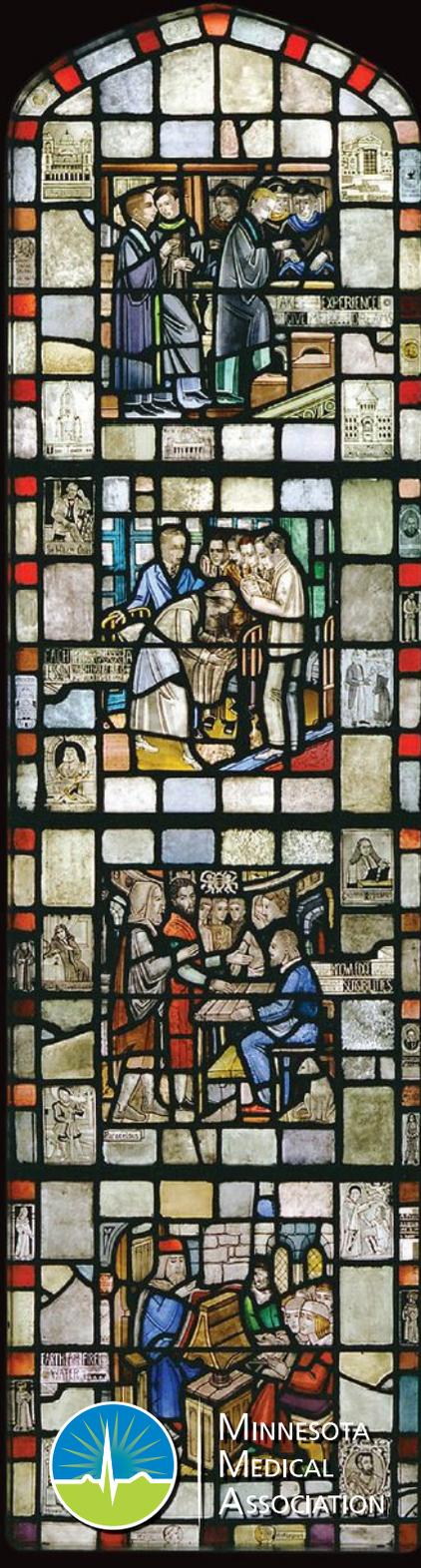
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Dr. Crutchfield regularly gives back to the Twin Cities community including sponsoring academic scholarships, camps for children, sponsoring programs for children with dyslexia, mentoring under-represented students from the University of Minnesota, and establishing a Dermatology lectureship at the University of Minnesota in the names of his parents, Drs. Charles and Susan, both pioneering graduates of the U of M Medical School, class of 1963.

As a professor, he teaches students at both Carleton College and the University of Minnesota Medical School. He lives in Mendota Heights with his wife Laurie, three beautiful children and two hairless cats.



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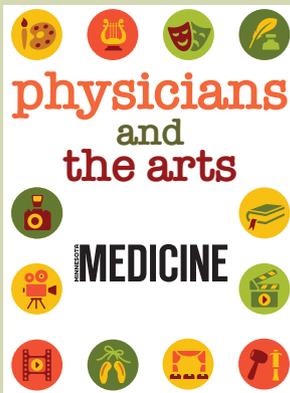
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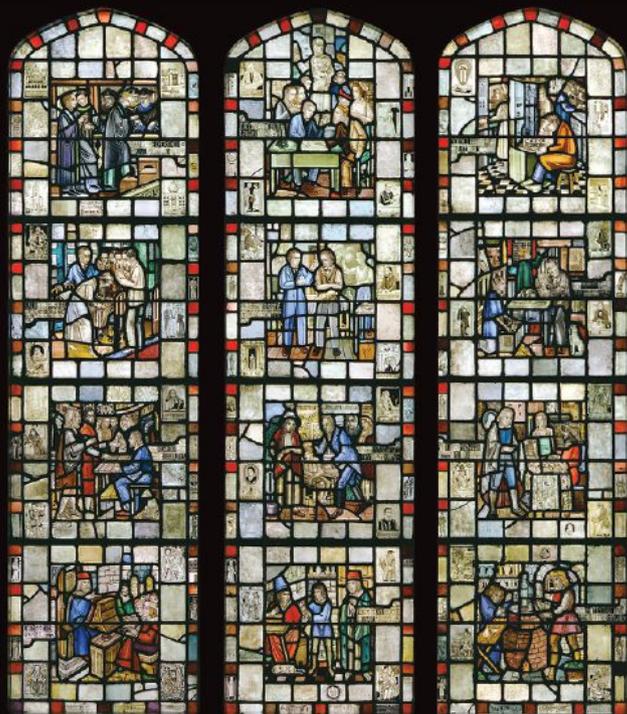
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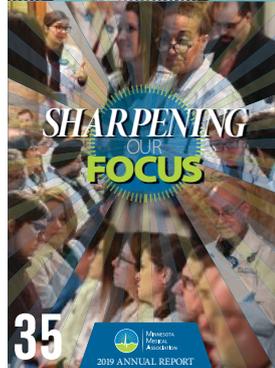
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Contact the editor at mm@mnmed.org.

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Zeke J. McKinney, MD, MHI, MPH

The challenges of team-based care

Many of us need guidance for just how to create team-based care that works for practitioners and, most of all, for patients.

My practice is one of the only environmental toxicology practices in Minnesota and it's expanding as more and more patients, clinicians, companies and insurers discover that such a clinic exists. This increasing demand and the administrative challenges of the complex assessments needed for each patient mean that I simply can't see everyone in a timely fashion.

One solution might be adding a physician assistant or nurse practitioner to my practice to address patient needs that don't require my expertise. Ideally, that would mean I can increase access to my clinic without being overwhelmed with clinic documentation. But I'm still struggling with questions of how to provide care by practitioners with varying degrees of specialty expertise—and I'm finding little guidance:

- What can I appropriately have other practitioners do? Some follow-up evaluations and administrative duties definitely can be tackled by others, but new consultations, medicolegal reports and complex diagnostic evaluations can't be easily handed off.
- How do we train practitioners for our practice? Most non-physician clinicians do not undergo specialty-based training, other than on-the-job training. That allows them—and the health care system—more flexibility to transition between specialties. But it means we need to be prepared to train someone who has no familiarity with our kind of medicine.
- How do we establish a team that allows everyone on it to work to the top of their license? Clinics like mine are interested in adding non-clinician services, but it's not clear how to start that process. Knowing the ways in which to establish team-based care will be increasingly valuable moving forward.

One of my colleagues, a transplant surgeon, says using physician assistants and nurse practitioners has allowed him to expand his availability so that it's almost as if he is in many places at once; he says it's similar to working with resident physicians. Simple patient needs can be easily met by non-physician practitioners and he can drop in for shorter face-to-face visits when needed. For his practice, there is a complex balance of increasing patient volume while decreasing billable physician time when there is increased non-physician time.

Shortages of clinicians, particularly of physicians, exist nationwide and are especially noticeable in underserved areas—geographically, racially and ethnically, socioeconomically and even within certain specialties. Non-physician practitioners, such as nurse practitioners and physician assistants, can help fill the gaps in health care for underserved areas. But many of us need guidance for just how to create team-based care that works for practitioners and, most of all, for patients.

Individual clinics and health care systems have developed ad hoc solutions for how practitioners work together, but there is no roadmap for success that others can follow. Some surgical and procedural specialties have found a successful balance of combining physicians and non-physician practitioners but, in general, there is a lack of system-level collaboration between licensing boards and clinicians with varying degrees of licensure. One reasonable solution is to establish a multidisciplinary advisory committee that can evaluate present practice patterns and recommend collaborative clinical care that is financially viable. **MM**

Zeke J. McKinney, MD, MHI, MPH, is the chief medical editor of *Minnesota Medicine*.



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- Music or video—send a link to YouTube or other hosting site.

For the past few years, the July/August issue of *Minnesota Medicine* has focused on physicians and the arts, with the centerpiece of the magazine a contest for photography and a contest for writing. We've published some lovely photos, poems, stories and essays.

But the artistic work of physicians is not restricted to photography and writing. There are physicians on stage or throwing pots or painting or making quilts or composing music ... and so much more.

This year, we'd like you to share the art that's important to you—whatever it is. **We'll publish photos and writing and provide links to your videos or music in the magazine and on the MMA website.**

There will be no winners or losers; it's not a contest. It's simply an opportunity to share something you enjoy—and are proud of—with other physicians.





Joint mission teams from Medical Volunteers International and another mission group left the campus in Port-au-Prince, Haiti, 2018.

Making the most out of your international medical mission

BY STEVEN SHU, MD, MBA

Every mission I've made to Haiti, the Philippines and Cambodia has been greatly rewarding. It fills me with joy, pride and awe every time I connect with local collaborators, nurses and former volunteers. The deep friendships forged during the course of each trip, as well as the changes our teams brought to the local communities create memories that will last a lifetime.

For most of us, getting proper care when we're sick or injured is a luxury we

can take for granted, but for roughly 1.2 billion people around the world, access to life-saving medical treatments is not an option. To help provide affordable and safe treatment options to these communities, medical mission groups work to improve health care conditions and prevent unnecessary deaths.

I've been fortunate in being able to make 13 mission trips and I've learned a few things—sometimes the hard way—that can help you decide whether you would

like to donate your services and then to cope with some of the difficulties you might encounter.

The goal of medical missioning—by both faith-based and non-faith-based groups—is to provide accessible health care to those most in need. While trip length varies by organization and trip locale, most require about one to two weeks. Projects that require pre-trip service lengths of six months to a year, such as Doctors Without Borders, are more suitable for doctors with flexible schedules or those

taking sabbatical leave.

The main draw of joining a trip is to make a difference—even if it's just for one person. While a single trip cannot address the needs of an entire country, mission trips were never intended to fix a problem overnight. Being able to provide aid to even a few individuals should be seen as a success.

A mission trip can also help you refocus your perspective—witnessing the circumstances of those in need can greatly change how you approach your own life. On my past trips, my colleagues and I were forever changed by our experiences, and the strength we gained encouraged us to continue on our path of helping others.

Finding the right medical mission for you

Whether you find a medical mission team through the local faith community, a national medical mission organization or a city-based project, always choose an organization that fits with your ideals and personal circumstances. For example: I've grown accustomed to Midwestern winters, so I joined October-December projects in

Haiti in order to avoid the country's extreme summer heat.

If cost is a concern, many nonprofit programs require participants to pay only for their own travel expenses, without any additional donation.

It's crucial to evaluate and decide if a mission trip is right for you. Along with harsh, physically-draining environments that may lack electricity, running water and communication with loved ones, trips also involve adjustment to a new culture and its customs. I've found that the most difficult obstacles to overcome are lack of sleep, extreme weather, neck and back pain caused by long surgery hours, time zone differences, lack of internet/Wi-Fi access and staying strong mentally.

- **Lack of sleep.** The new environment may expose you to extreme heat, mosquitos and noise from the indoor air conditioning or from outside. All of these factors may hinder your ability to sleep, so it is important to bring ear plugs and sleep medication.
- **Extreme weather.** Many common destinations for medical mission trips are areas that are close to the equator and that have very hot weather at least part of the year. It's important to drink water constantly to prevent dehydration. We typically bring water from our hotel in the morning and buy bottled water off the street in the afternoon. It is also advisable to bring a water filter for your refillable water bottle (LifeStraw is one brand).
- **Neck and back pain caused by long surgery hours.** Make sure you are tak-



Steven Shu, MD, did an ultrasound examination of a patient with a large, chronic facial abscess caused by actinomycosis in a 2018 Haiti mission.

ing multiple small breaks throughout the day so as not to overly strain your neck and back. Try to keep yourself in an ergonomic position while doing surgeries. You may also consider bringing a travel-size massager to help relieve muscle strain.

- **Time zone differences.** Haiti has a similar time zone to the United States, so we don't have much jet lag when we travel there, but countries in Asia and Africa have completely different time zones that can be 10-13 hours ahead of the United States. You can find plenty of advice online about how to deal with jet lag; personally, I find Ambien and melatonin to be effective.

- **Lack of internet/Wi-Fi access.** The internet available in hotels may not be reliable due to power outages; even when it is working, it can be very slow. Typically, there is no Wi-Fi available in the hospitals and clinics. The best solution is to switch your phone carrier to T-Mobile, which is available in more than 200 countries. Internet speed will still be slower than usual, but it's better than having no service at all.
- **Staying strong mentally.** One of the most difficult parts of being on a medical mission trip is staying optimistic. You may find yourself with depressing thoughts and feelings due to the brutal reality of the situation at hand and the limited help that can be provided. I've witnessed some doctors quit after a couple trips because of the hopelessness and despair they felt while working in Third World countries. To combat these feelings, focus on the individuals and families you're working with, so you can see how much of an impact there is on their quality of life. In addition to medical care, we also bring our love to the local patients. If you believe in God,



Doctors from the United States, Canada, United Kingdom and Poland examined a patient in a 2015 Philippine medical mission.

your relationship with a higher power may help you overcome this mental barrier as well.

Preparing for your trip

The easiest way to prepare yourself is to consult with former mission trip volunteers and the organizer of your mission group. Ask about everything from the program's background to the nitty gritty of trip expenses, what to pack and tips for getting around the area you'll be in. Make sure you are 100 percent clear on the program's expectations—what you should expect from the organization, as well as what the organization will expect from you.

- **Documentation.** While a U.S. passport allows entry into nearly every country, Brazil, China, Russia, India, Vietnam and most countries on the African continent require their own visa for entry. The passport application process typically takes four to six weeks, although some countries may require months for final approval and processing. Many countries also require medical mission participants to apply for a doctor's temporary practice permit prior to arrival; your organization should be able to assist you with that.
- **Immunizations.** Your program should be able to present you with a full list of required immunizations. The Centers for Disease Control and Prevention (CDC) is an excellent source for immunization requirements, information on regional diseases and tips for staying healthy abroad. Another source is your closest travel clinic, which can provide helpful consultations and immunizations. For information on a host country's potential travel restrictions or warnings, please visit the U.S. Department of State website: <https://travel.state.gov/content/travel/en/international-travel.html>. Remember: Immunizations and prophylactic drugs are not 100 percent effective in preventing disease.

What to bring

Think about the location, climate and duration of your trip when packing. Avoid

bringing expensive or valuable items. Prepare a list of supplies to get in advance, rather than relying on buying locally when you're at your location, as local prices can



Ramon Suares, MD, and Tim Zola, MD, were exhausted and fell asleep after traveling to their second clinic in 2017 Haiti mission.

be unpredictable.

- **Personal use.** Recommended items for your personal use include: travel-size toiletry bottles, mouthwash, anhydrous (no water) hand sanitizer, wet tissues, your current medications, a portable first aid kit (antihistamine, Prednisone, antacid, commonly used antibiotics, painkillers, sleeping aids, antidiarrheal and antiemetic medications, antibiotic ointment, bandages), toilet paper and vomit bags.
- **Medical supplies.** The fundamental rule for traveling to any Third World country is the same: If you need it, you'd better bring it, as medicine and supplies are usually expensive. Your medical team should expect to bring all needed supplies, from surgical devices and anesthetics to batteries and sterile gloves. If cost is a concern, there are a number of ways to get free or low-cost medication:
 - Contact the pharmaceutical company's representative.
 - Apply for free medications through nonprofit organizations supporting the medical mission.
 - Use nearly expired drugs.
 - Purchase from private pharmacies or clinics at wholesale prices.
- Be sure to evenly pack different back-up drugs in a few separate boxes, in case

luggage arrives late or is lost. Clearly label boxes as to which supplies are in them. During a trip to Haiti, one of my team members couldn't find the bottle of anesthetic before surgery. As you can imagine, lacking anesthetic can put a halt to any and all surgery plans. Luckily, it was a false alarm and the anesthetic was found in time.

Local culture

You need to learn about and adjust to the culture of the country you're traveling to before and during your time there. You will understand your surroundings better and, more importantly, you will be less likely to offend the local community you're trying to help. Familiarizing yourself with customs and rituals will increase your chances of being accepted by the local people and, in turn, allow you to help in a more efficient manner.

Other precautions

- **Assume fertility.** At many mission trip sites, birth control is limited or nonexistent. It's safest to assume that all women of childbearing age may be pregnant, until proven otherwise. Don't use Class C and Class D drugs with a female patient, unless she is postmenopausal or has had a tubal ligation or hysterectomy.
- **Local food.** In Haiti and many parts of Africa, volunteers are asked to abide by this crucial principle: "Boil it, peel it or forget about it." Apart from hotel food or food you bring yourself before arrival, you should not consume anything given to you. Even when eating hotel food, it's best to avoid cold dishes.
- **Free time.** Medical workers are usually on their feet for many hours and too busy to eat meals on time. Working in hot weather without eating properly can take a toll on you. Bring protein bars, trail mix and other pre-packaged snacks that are nutritious and easy to carry.
- **Tipping.** Bring a generous amount of one-dollar bills with you. For many local residents, a dollar is a generous tip. **MM**

Steven Shu, MD, MBA, is a laser surgeon at Procedure Clinic, Edina.

Reducing stress in a clinical practice

Can a scribe help?

BY KEVIN DONNELLY, MD

Apparently, physician burnout looks just like me. I am a 54-year-old family physician in Saint Cloud. My negative attitude was hidden from my patients but was noted by co-workers and led to a solution that worked for me—and helped me regain not only time with my patients but the joy of being a physician.

The rapid changes in health care practice put a strain on all physicians. We are pulled in many different directions during our busy days so that staying focused on our patients is harder.

I remember fondly the days of dictating notes that were typed in excellent fashion by transcriptionists. The notes were easy to read and rarely had errors. As computers arrived, we were asked to try Dragon transcription or to simply type and edit notes ourselves.

In my physician-owned primary care clinic, more sacrifices followed. To pay for the computers and the electronic record, we needed to reduce overhead, so transcriptionists were slowly eliminated, resulting in much lower quality notes. I was embarrassed to read my notes or those of colleagues that were much less detailed than they had previously been and littered with errors.

Although making clear and complete records of our interactions with patients is clearly important to the practice of medicine, I was frustrated by the increasing requirements on me—and the increasing limits on my time, both with patients and in my personal life.

I was approached by one of our lead physicians and the administrator seeking a way to help me by offering use of a scribe. My mood had become enough of a

problem that I was moved ahead of other physicians who wanted a scribe. I am not advocating grumpiness as a way to get ahead, but I did say yes.

Since April 2018, I have been working with a tele-scribe living in Miami whom I wheel into the room on an iPad. With the scribe taking notes, I'm able to focus my attention on the patient and their concerns in the moment. When I am in the room now, I am fully attentive to my patient and no longer focused on data entry. Listening and problem-solving are what I am trained to do—and what give me joy and purpose.

There are physicians who are much more adept at typing and use of Dragon than myself, so a scribe may not be right for them. Having a scribe does not mean I stop typing, editing and using Dragon as I finalize the notes the scribe has prepared, but I would estimate my end-of-the-day documentation has dropped by 25 percent. With our tele-scribe system, an experienced scribe works with new scribes before they “enter” the practice setting. Our previously physician-owned practice is now part of a larger health system, which covers the cost of the tele-scribe.

Do patients want us to be transcriptionists and data entry clerks? Or do they want us to focus our full attention and mental efforts on their health and health concerns? The answer is obvious.

But equally important, when we find ways to reduce even a small amount of the administrative stresses in our work, we can remember just why it is we went into medicine—and how much joy it brings us as we interact with and help our patients. **MM**

Kevin Donnelly, MD, is a family medicine physician with CentraCare in St. Cloud.





Should the physician apologize when a diagnosis is missed?

Robert Smith, MD, is a primary care physician at a local clinic. One afternoon, Smith saw a 51-year-old man with right knee pain. The patient said he was cleaning up scrap metal at work and fell, twisting his right knee. The patient has diabetes mellitus type 2, treated with oral medications, and also is treated for hypertension. The patient is obese (estimated BMI of 33). Smith saw cuts and bruises on both the patient's legs, but the man said he didn't have pain from those. The patient's right knee was swollen. Smith focused on the knee pain and referred the patient to ortho, making sure the appointment was made before the patient left his clinic. Five days later, the patient came into the emergency department with a high fever and high blood pressure. The ED physician saw that one of the cuts on his left leg was infected and admitted the patient to the hospital, where he ended up having the leg amputated. Should Smith disclose his potential diagnosis error to the patient?

NO

Many factors contribute to an adverse outcome

EMILY SADECKI

There are many spaces where it is clear that an apology or disclosure of wrongdoing is the right thing for a provider to do. As Minnesotans, our default setting is to apologize, no matter what the context. In this case, I think there is value in examining the potential unintended consequences of that reflex for both the provider/patient relationship and the broader medical community.

First, on an interpersonal-level, time spent agonizing over who is to blame detracts from energy that could be spent providing the patient with tools to prevent further complications. For this patient, a discussion about barriers to diabetic control would be much more fruitful than expressing regrets. Some level of admitting to mistakes can build trust between providers and patients, but repeatedly ruminating on things that the provider could have

YES

Patients deserve to have full disclosure

KATE HANSON

A physician's ethical default should be to admit to errors, apologize to patients when necessary and make every effort to correct the patient's treatment course.

Smith's actions may not have constituted an "error," but incentivization of good communication is best served by an inclusive definition of an "error." National guidelines recommend disclosure for any unanticipated outcome requiring considerable escalation of care. In this case, an infection that may have resolved with antibiotics has instead resulted in an amputation. Despite the ambiguity of the clinical context, the unanticipated outcome should serve as a trigger for further discussion with the patient. This is not meant to suggest Smith is required to admit fault, or to describe a clear error where there was not clarity. Rather, he

NO (continued)

done to prevent an adverse outcome could have the opposite effect, reducing a patient's confidence in their provider.

Second, there are many factors that contribute to an adverse outcome like the one posed. Yes, one piece of the puzzle may be the provider in the narrative who did not fully address the patient's wounds, but there are also systemic factors at play in the progression of the patient's wound to a critical illness. The goal is not to excuse a provider from providing quality, comprehensive care to patients, but rather to understand their role in the larger narrative. If we are putting the moral onus on individual providers, we may be missing the larger picture and fail to acknowledge the contributions of things like social determinants of health. In this case, the patient's diabetes-related complication may be more related to a lack of insurance than a single interaction with a provider.

We should not be afraid to tell patients when we make mistakes, but it is important to think critically about when apologies are counter-productive. A patient-centered approach to addressing adverse events should focus on identifying and addressing root causes, which does not always necessitate a direct apology by an individual provider.

Emily Sadecki, is a third-year student at Mayo Clinic Alix School of Medicine.

YES (continued)

should be honest about the circumstances surrounding the potential signs of infection.

This case highlights the murky threshold between thorough clinical decision-making, with its inherent variable outcomes, versus incomplete or mistaken clinical judgment. In truth, either of these may be appropriate to disclose, not necessarily as an admission of fault but instead an effort at clear communication with patients. In cases where the threshold is especially unclear, the tiebreaker should be the oft-cited principles of justice, autonomy, beneficence and non-maleficence, which seek to optimize patients' health outcomes as well as their subjective experience of medical care.

The focus should be on what would best facilitate ideal care for this patient moving forward—and evidence shows that patients desire disclosure. Furthermore, patients may perceive poor communication or limited disclosures as compounding the original error. **MM**

Kate Hanson is a third-year medical student and a law student at the University of Minnesota.

Emily Sadecki and Kate Hanson are both student members of the MMA's Ethics and Medical-Legal Affairs Committee. Although physicians normally respond to the ethics questions presented, the committee wanted to get a fresh perspective on handling medical errors and asked its two youngest members to provide responses for this column.

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HISTORY IN STAINED GLASS

Mayo Foundation House window illustrates the eras of medicine

BY MICHAEL CAMILLERI, MD, AND CYNTHIA STANISLAV, BS





Doctors and investigators at Mayo Clinic have traditionally embraced the study of the history of medicine, a history that is chronicled in the stained glass window at Mayo Foundation House.

Soon after the donation of the Mayo family home in Rochester, Minnesota, to the Mayo Foundation in 1938, a committee that included Philip Showalter Hench, MD, (who became a Nobel Prize winner in 1950); C.F. Code, MD; and Henry Frederic Helmholz, Jr., MD, submitted recommendations for a stained glass window dedicated to the history of medicine.

The window, installed in 1943, is vertically organized to represent three “shields” from left to right—education, practice and research—over four epochs, starting from the bottom with the earliest (pre-1500) and ending with the most recent (post-1900) periods. These eras represent ancient and medieval medicine, the movement from theories to experimentation, organized advancement in science and, finally, the era of preventive medicine. The luminaries, their contributions to science and medicine and the famous quotes or aphorisms included in the panels of the stained glass window are summarized. Among the famous personalities shown are Hippocrates of Kos, Galen, Andreas Vesalius, Ambroise Paré, William Harvey, Antonie van Leeuwenhoek, Giovanni Battista Morgagni, William Withering, Edward Jenner, René Laennec, Claude Bernard, Florence Nightingale, Louis Pasteur, Joseph Lister, Theodor Billroth, Robert Koch, William Osler, Willem Einthoven and Paul Ehrlich.

This stained glass window at Mayo Foundation House serves to remind students, practitioners and investigators of the contributions upon which advances in medicine are based.

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continued on next page



COLUMN 1

Medical education

Panel 1 shows a lecture room in a medieval medical school; a professor (with assistant to the left) reads ancient medical writings preserved during the Middle Ages, and the students listen. Ancient medical text is represented in two small blocks (Hippocrates of Kos and Galen) and, consistent with medical practice of the Middle Ages, a priest is shown exorcising a leper. The borders show images of Hygeia, Asklepios, Celsus and Saints Cosmas and Damian.

The inscription in Panel 1, “Earth, Air, Fire, Water,” represents the four elements of the cosmogonic theory of Empedocles, the Greek (Sicilian) philosopher. These elements converge with the Hippocratic treatise, “On the Nature of Man,” describing the medical theory of the four humors believed to exist within the body and to determine the behavior of all created things: black bile with earth, phlegm with water, blood with air and yellow bile with fire. These were also enacted in Shakespearean cosmology, respectively, as melancholic, phlegmatic, sanguine and choleric.

Panel 2 reflects the arrival of the Renaissance period (14-17th century in Europe) and the groundbreaking medical publication “De humani corporis fabrica libri septem” by Andreas Vesalius, which introduced the renaissance of medical and scientific thought. The dominant theme of Panel 2 shows Vesalius conducting dissections. Three smaller blocks represent Paracelsus, Antonie van Leeuwenhoek and Giovanni Battista Morgagni, reflecting the establishment of disease observations with histology and pathology, and explanation of the etiology of diseases and selecting treatments.

The borders of Panel 2 include two (unidentified) physicians of the period and Hieronymus Fabricius. The emphasis on observation and examination is reflected in a quote from Leonardo da Vinci, “All our knowledge originates in our sensibilities.”

Panel 3 emphasizes the importance of bedside teaching in the education of the modern physician, and shows the team of professor, trainees and nurse administering to the needs of a patient. Pride of place is given to Sir William Osler, who was well acquainted with the Mayo Clinic and the author of the inscription for the window, “Each case has its lesson; a lesson which may be, but is not always learned.” In the small blocks, Osler, René Laennec and Thomas Sydenham are shown; in the border, William Henry Welch and the Ether Dome of Massachusetts General Hospital in Boston are shown, commemorating the first successful use of ether anesthesia.

Panel 4 is a representation of graduate medical education, with the main theme the conferring of degrees. Small blocks represent Hotel Dieu, Paris; Berlin General Hospital; Army Medical Library, Washington DC; Tom Tower at the University of Oxford, England; and the Northrop Memorial Auditorium of the University of Minnesota. The border pictures show shields of the University of Michigan and Northwestern University (where doctors Will and Charlie Mayo obtained their medical degrees), the United States Public Health Service and the University of Minnesota. The inscription, “Take of my experience, but give me of your dreams,” is an abbreviation of the testimonial by W.J. Mayo: “Each day as I go through the hospitals surrounded by younger men, they give me of their dreams and I give them of my experience, and I get the better of the exchange.”



COLUMN 2

Medical practice

In the Middle Ages, physicians practiced medicine by following the Galenic teachings, philosophizing, speculating or performing simple procedures such as excision of polyps and small tumors. Hippocrates, his direct observations and the physical and rational explanation of disease, were forgotten.

Panel 5 represents the office of a medieval physician: a boy presents a bottle of urine to the examiner, who, it was believed, could identify the patient's disease by the urine's color, as reflected in Geoffrey Chaucer's description of the physician in *The Canterbury Tales*: "He knew the cause of everich maladye, were it of hoot, or cold or moyste, or drye." The small panels show the king curing scrofula (the king's evil), the plague doctor in costume and a scene of blood-letting, which was supposed to restore balance to the humors.

Panel 6. The renaissance in medical practice is represented by Panel 6; the main theme shows Edward Jenner performing vaccination for the prevention of smallpox. The inscription, "Why submit hypotheses, try it and know," is attributed to John Hunter and his advice to Jenner. The small panels show Ambroise Paré, Benjamin Rush and Ephraim McDowell, and the borders show medicinal plants including *Digitalis purpurea* (foxglove), ferns, poppy and, interestingly, *Cannabis sativa*. There is also a small inset of William Withering, who introduced the successful use of digitalis.

Panel 7. Surgery is complemented by the introduction of anesthesia and antisepsis to reduce pain and mortality. Joseph B. Lister is shown preparing the operating room prior to an operation, about to wash his hands in chemical solutions. Lister appreciated Louis Pasteur's important work of antisepsis to prevent infections in wounds and in the operating room. One assistant holds two bottles of chemicals and the other is spraying the operating room with carbolic acid. The quotation for this panel is attributed to Edward L. Trudeau: "To cure sometimes, to relieve often, to comfort always." The smaller panels show Samuel D. Gross, Theodor Billroth and Oliver Wendell Holmes, further emphasizing antisepsis in obstetrics and surgery.

Panel 8 represents the modern era of preventive medicine. Smaller panels show Florence Nightingale, the founder of modern nursing; the family physician, the backbone of modern medical practice; Willem Einthoven for electrocardiography; and Paul Ehrlich for chemotherapy. The overall motto is reflected in an aphorism of W.J. Mayo: "They loved the truth and sought to know it."



COLUMN 3

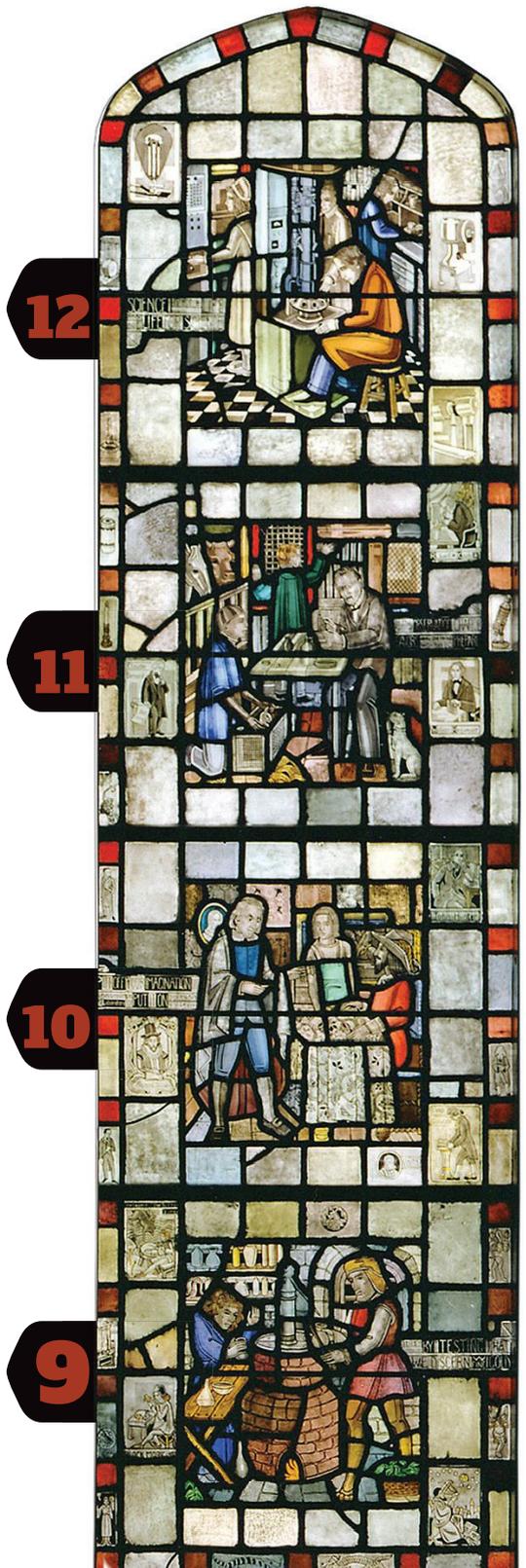
Medical research

Panel 9. A medieval alchemist is shown in his laboratory. Chemistry was originally the art of extracting medicinal juices from plants; alchemy was the preeminent chemical science of the Middle Ages, with lofty goals including the transformation of base metals into gold, discovery of the universal cure for disease and the search for a means to prolong life indefinitely. The quotation is from Leonardo da Vinci: “It is by testing that we discern fine gold.” Medieval practice includes smaller blocks showing an astrologer (prognostication), black magic and the bezoar stone believed to prevent melancholia and all kinds of poisoning.

Panel 10. Medical history of the 17th century was dominated by William Harvey, who proved the continuous circulation of the blood. This is the main subject of this panel, with Harvey demonstrating the circulatory system to King Charles I. The quotation is from the great physiologist, Claude Bernard: “Put off your imagination when you enter the laboratory, but put it on again when you leave.” The small blocks around the panel are likenesses of Francis Bacon, John Hunter, Luigi Galvani and Alessandro Volta.

Panel 11. Louis Pasteur is in his laboratory, surrounded by animals and assistants. This panel is placed at the same horizontal level as the Lister panel (Panel 7). The quotation is from Pasteur: “In the field of observation, chance favors only the mind which is prepared.” Small blocks show Claude Bernard, Robert Koch and William Beaumont.

Panel 12. The modern laboratory, with emphasis on the role of physics (including roentgen rays and electron microscopy), chemistry and related sciences in preventive medicine. Books are pictured to show the recording of prior knowledge and discoveries for use by the scientist.



Individuals featured in the panels

Hippocrates of Kos

460–370 BC

The Father of Medicine. Established medicine as distinct from other fields (e.g., philosophy), summing up medical knowledge of previous schools and the Hippocratic Oath.

Asklepios (Asclepius)

God of Medicine in ancient Greek religion and mythology. Physician-patient relationship, healing aspect of medical arts.

Hygeia

Goddess of good health and cleanliness, daughter of Asklepius.

Aulus Cornelius Celsus

~25 BC–~37 AD

Dermatovenereology.

Galen of Pergamon

129–161 AD

Influenced development of scientific disciplines in medicine, philosophy and logic.

Saints Cosmas and Damian

3rd century ~287

Two Arab physician brothers, early Christian martyrs. Compounded a paste for diverse illnesses. Regarded as patrons of physicians, surgeons and pharmacists.

Andreas Vesalius

1514–1564

*Father of Anatomy. Wrote the book *De humani corporis fabrica*.*

Paracelsus

1493–1541

Value of observation, education of the laity on etiology of disease processes and chemotherapeutics/toxicology.

Ambroise Paré

1510–1590

Battlefield surgery, reintroduction of ligature in amputation, and treatment of gunshot wounds with simple dressing instead of cauterizing with a hot iron or burning oil.

Hieronymus Fabricius

1537–1619

Father of embryology. Discovered valves in veins.

Francis Bacon

1561–1626

Credited with developing the scientific method.

William Harvey

1578–1627

Systemic circulation of blood and pumping by the heart.

Antonie van Leeuwenhoek

1632–1723

Father of histology and microbiology. Use of the microscope.

Thomas Sydenham

1624–1689

*Called the “English Hippocrates,” author of *Observationes Medicae*, standard textbook for two centuries.*

Giovanni Battista Morgagni

1682–1771

Father of modern anatomical pathology.

Luigi Galvani

1737–1798

Anatomical study of bones and inventor of bioelectricity.

Alessandro Volta

1745–1827

Inventor of the electric battery and discoverer of methane.

William Withering

1741–1799

First systematic investigator of bioactivity of digitalis.

Benjamin Rush

1746–1813

Physician, political leader, signer of U.S. Declaration of Independence; encouraged clinical research and instruction.

Edward Jenner

1749–1823

Pioneer of smallpox vaccine, the world's first vaccine.

Ephraim McDowell

1771–1830

The father of “ovariotomy” and abdominal surgery.

René Laennec

1781–1826

Invented the stethoscope.

William Beaumont

1785–1853

Father of gastric physiology and effects of stress on the gut.

Samuel D. Gross

1805–1884

Academic trauma surgeon.

Oliver Wendell Holmes

1809–1894

Realized doctors can carry puerperal fever from patient to patient, founded antiseptics in obstetrics.

Claude Bernard

1813–1878

Originator of “milieu intérieur,” the associated concept of homeostasis, role of the pancreas in digestion, the glycogenic function of the liver, the regulation of the blood supply by the vasomotor nerves and importance of control experiments.

Florence Nightingale

1820–1910

Founder of modern nursing and “the lady with the lamp.”

Louis Pasteur

1822–1895

Principles of vaccination, microbial fermentation and pasteurization.

Joseph Lister

1827–1912

Pioneer of antiseptic surgery (carbolic acid to clean surgical instruments and wounds).

Theodor Billroth

1829–1894

Father of modern abdominal surgery, including many firsts such as the successful gastrectomy of gastric cancer.

Robert Koch

1843–1910

Founder of modern bacteriology: discovery of anthrax disease cycle, bacteria causing tuberculosis and cholera.

William Osler

1849–1919

Brought medical education to the bedside and created the first residency for specialty training of physicians.

William Henry Welch

1850–1934

First Chair of Medical History at Johns Hopkins.

Willem Einthoven

1860–1927

Inventor of the first practical electrocardiogram.

Paul Ehrlich

1854–1915

Staining cells with chemical dyes to view cells under the microscope: early studies of immunology (antigen-antibodies), chemotherapy and the first cure for syphilis.

Quotes and their authors

Panel 1

“Earth, air, fire, water.” – Empedocles

CONTRIBUTIONS: Evolution, natural selection, basic elements constitute the complex world.

Panel 2

“All our knowledge originates in our sensibilities.” – Leonardo da Vinci

CONTRIBUTIONS: Mathematics, dissection.

Panel 3

“Each case has its lesson; a lesson which may be but is not always learned.”

– William Osler

CONTRIBUTIONS: Medical education at the bedside.

Panel 4

“Take of my experience but give me of your dreams.” – William J. Mayo

CONTRIBUTIONS: Group practice, with education, and research.

Panel 5

“He knew the cause of everich maladye, were it of hoot, or cold or moyste, or drye.”

– Geoffrey Chaucer

CONTRIBUTIONS: Documented medieval medical practice.

Panel 6

“Why submit hypotheses, try it and know.”

– John Hunter

CONTRIBUTIONS: Father of scientific surgery.

Panel 7

“To cure sometimes, to relieve often, to comfort always.” – Edward L. Trudeau

– Edward L. Trudeau

CONTRIBUTIONS: First U.S. laboratory for the study of tuberculosis.

Panel 8

“He loved the truth and sought to know it.”

– William J. Mayo

CONTRIBUTIONS: Integrated group practice of medicine and surgery.

Panel 9

“It is by testing that we discern fine gold.”

– Leonardo da Vinci

CONTRIBUTIONS: Mathematics, dissection.

Panel 10

“Put off your imagination when you enter the laboratory, but put it on again when you leave.” – Claude Bernard

CONTRIBUTIONS: Homeostasis, and controlled experiments.

Panel 11

“In the field of observation, chance favors only the mind which is prepared.”

– Louis Pasteur

CONTRIBUTIONS: Vaccination, fermentation, pasteurization.

Panel 12

“Science is for life not life for science.”

– J. Arthur Thomson

CONTRIBUTIONS: Defined science as the system of knowledge based on observation and experiment, and reflection on the data provided.



Expanding scope of practice for non-physician professionals

When does it cross the line?

BY SUZY FRISCH

The perennial debate over expanding the scope of practice for non-physician providers often comes down to one key question: When does it cross the line from enormously helpful to potentially unsafe?

Advanced practice providers play an important role on the health care team, working on the front lines of patient care. Physicians generally welcome their expertise and willingness to share the workload. But many believe there is a tipping point at which scope expansions go too far, especially when routine care suddenly becomes not routine at all.

The Minnesota Legislature has been considering scope expansions for optometrists in recent sessions, including this year. Mary Lawrence, MD, MPH, president of the Minnesota Academy of Ophthalmology, argues that proposed expansions like allowing optometrists to give eye injections could be dangerous. She compares the difference between being an optometrist or an ophthalmologist to private pilots versus commercial pilots. When private pilots move from flying friends and family to flying the general public, they require more significant training and a commercial pilot's license.

"If everything goes well, flying is really straightforward and the pilot doesn't need all that training. But in the situation that trouble arises, you want a pilot with a lot of training and experience to keep the plane flying safely," Lawrence says. "I think it's the same with injections into and around the eye and with ocular surgical procedures. We really want physicians who have the training, skills and experience to recognize and rectify the problem quickly."

David Thorson, MD, a family and sports medicine physician, values working closely with many kinds of providers at Entira Family Clinics on the Twin Cities' east side, including athletic trainers and nurse practitioners (NP). But he strongly believes that physicians need to lead the care team and that expansions of scope must be considered carefully.

"It comes down to not knowing what we don't know. The reality is, the more training and experience you have, the less

you don't know," Thorson says. "It's helpful to have someone there to handle potential pitfalls when others don't know."

Blurred lines

The breakdown of responsibilities in health care has been in flux for years, with debates raging in legislatures nationwide about who can provide what care. In Minnesota, rarely a year goes by that one type of provider or another doesn't seek to offer more care than their license currently allows. Recently, bills affecting certified nurse anesthetists, physician assistants (PA), paramedics and more have been proposed, debated and sometimes enacted.

In eye care, optometrists in Minnesota aim to broaden their licensure to allow administering drugs by IV or injection, including intramuscular and to the eyelid, eyeball and tissues around the eye; prescribing unlimited oral steroids, unlimited carbonic anhydrase inhibitors, and unlimited antivirals. The current time limit for optometrists to prescribe antivirals is 10 days and to prescribe carbonic anhydrase inhibitors seven days. Optometrists are currently not licensed to prescribe oral steroids.

Lawrence—who stresses that optometrists are a vital part of the eye health team—opposes these expansions because she believes they put patients at risk. "There's no such thing as minor surgery. If you're penetrating human tissue with a laser, scalpel or any instrument, including a needle, you should really take it seriously," Lawrence says. "You would want someone to know not just the technical aspects of sticking a needle into your eye, but also that the needle is put into the correct eye for the right reasons with the right diagnosis. And if you do get a complication, you want your physician to know how to recognize it early and manage it effectively."

Medicine today is increasingly team-based, with key roles being played by PAs, midwives and more. Yet many physicians argue that nothing replaces the knowledge, training and experience that they gain from their education—comprehensive expertise in multiple organ systems that is essential to providing safe and excellent care.

David Schultz, MD, an anesthesiologist and interventional pain specialist, has been advocating against proposals by certified registered nurse anesthetists (CRNA) to extend their scope of practice. They seek to move beyond providing regional anesthesia into interventional pain management, including treatments like radiofrequency ablation, epidurals of the cervical spine using fluoroscopy and implanting spinal cord stimulators.

To Schultz, founder and medical director of Nura Pain Clinics in Edina, this crosses a dangerous line by allowing nurses to practice medicine. An interventional pain specialist must do a

three-year anesthesiology residency after completing medical school, plus a one-year fellowship in pain management. Board-certified physicians have mastered pathophysiology, the skill of making differential diagnoses, and the science of chronic pain and diseases.

"From our training, we have a toolbox of things we can choose for a particular patient with a particular problem," Schultz says. "Unless we have the diagnostic ability from our medical training, we can have a toolbox, but we don't know what to do with it. A CRNA might know how to use the hammer, but they don't understand how to build the house."

Schultz says there are several CRNAs in Minnesota who already provide such services after receiving an advanced pain

management certificate from Hamline University. Anesthesiologists have been urging Hamline to end the online course, arguing that it's not appropriate for the school to train nonphysicians to practice medicine, he says.

Filling gaps

Advanced practice providers can help ensure that communities have access to health care. Jeff Scrivner, MD, a family medicine physician and chief medical officer for Scenic Rivers Health Services in Cook, appreciates the role these providers play in rural Minnesota. A Federally Qualified Health Center with two hospitals and six clinics of varying sizes, Scenic Rivers cares for about 9,500 patients in an 8,300-square-mile region in northern Minnesota. Nine physicians are joined by eight nurse practitioners and three physician assistants.

Scenic Rivers staffs its satellite clinics with experienced nurse practitioners and physician assistants to provide health care over that distance. With the difficulty of recruiting primary care physicians to rural areas, these advanced practice providers are essential to taking good care of the area's patient population, Scrivner says.

But training is key, especially early on, as is building strong, trusted relationships between all levels of providers. At Scenic Rivers, advanced practice providers don't work independently right away. It's important to have a period of training and mentorship for three to six months, Scrivner says, including monthly meetings to connect about complex cases or care concerns.

"Whether they are advanced practice nurses or PAs, they have variable skill sets and experience levels, and sometimes they don't know their limitations," Scrivner adds, noting that PAs generally come out of school with less clinical experience than nurse practitioners. "You have to be cautious about who you hire and have an effective program in place. You can't just hire someone and say, 'Here is a panel of patients. Run with it.' That's the downside." 

Medicine today is increasingly team-based, with key roles being played by PAs, midwives and more. Yet many physicians argue that nothing replaces the knowledge, training and experience that they gain from their education—comprehensive expertise in multiple organ systems that is essential to providing safe and excellent care.

Christopher Reif, MD, MPH, director of primary care at the Community University Health Care Center (CUHCC) in Minneapolis, says the Federally Qualified Health Center employs a broad swath of advanced practice providers. They work seamlessly with physicians to take care of the clinic's underserved patient population, but that doesn't happen by accident. CUHCC has long-standing structures to annually track quality outcomes and engage in case and peer review of all providers. The reviews include the types of care they have been providing, the training they have received to support that level of care and the experience they had that year with offering the care.

As a family medicine physician, Reif is sensitive to scopes of practice, noting that primary care physicians, like himself, also shouldn't provide care beyond their training. All providers must know their capabilities and limits. "If you're not using your full scope of practice and providing all of the services you can, then you're not meeting all of your patients' needs," he says. "If you try to do something beyond your scope, you're taking a chance with quality and patient outcomes."

Reif believes that CUHCC's mix of providers works because the team regularly collaborates and consults with each other, whether it's a mental health condition better suited for a psychiatric nurse practitioner or a PA needing obstetric advice. It's easy for any pro-

vider to quickly ask a colleague for a consult or a second opinion if needed. This might not work as well when an advanced practice provider doesn't have nearby colleagues, Reif says.

At CUHCC and similar clinics, advanced practice providers play a vital role. "It would be hard to staff our whole clinic with doctors," Reif says. "When you look at the vacancy rate in the Twin Cities and nationally at community clinics, there are some places with hard-to-fill positions. Having other practitioners is really helpful. We're much more able to meet all of our patients' needs and have a schedule that gets them in sooner rather than later."

Often advanced practice providers supplement the physicians' patient care with unique skills, such as a nursing background that helps NPs take especially good care of seniors, Reif says. In Thorson's case, it's athletic trainers who have specialized knowledge on strength training to prevent teen athletes' injuries.

"Medicine has become a team sport, and we all have to work together," says Thorson, whose clinic staff of 65 includes one-third advanced practice providers. "We all bring different perspectives to care delivery, and it's important to respect those perspectives. Patients come out with improved care if we all work together." MM

Suzu Frisch is a Twin Cities freelance writer.

What it takes to be a ...

Non-physician health care providers have increased—as has their scope of practice. The differences in training are significant, but the differences in what non-physicians can do is narrowing in some professions.

OB/GYN

- Medical degree.
- Four-year residency.
- Pass licensing exam.
- Pass board certification qualifying exam.
- Pass board certification certifying exam.
- Minimum 36-month fellowship for a subspecialty.
- Pass subspecialty qualifying exam.
- Pass subspecialty certifying exam.

Licensed traditional midwife (LTM) or licensed midwife (LM)

- Graduate of an approved program or evidence of three- to five-year apprenticeship through the North American Registry of Midwives (NARM).
- NARM requires at least two years of clinicals and minimum of 55 births.
- Certified for adult and infant cardiopulmonary resuscitation through the American Heart Association or the American Red Cross.

LTMS and LMs can:

- Perform initial and ongoing assessments.
- Do prenatal education and care coordination.
- Monitor vital signs and indicators of fetal development.
- Order laboratory tests.
- Attend and support the natural process of labor and birth.
- Provide postpartum care.

LTMS and LMs can't:

- Use surgical instruments during childbirth, except as necessary to sever the umbilical cord or repair a first- or second-degree perineal laceration.
- Assist birth by artificial or mechanical means.
- Remove a placenta accrete.
- Prescribe, dispense or administer most prescription drugs.
- Operate or do surgical procedures, except perineal lacerations.

Pediatrician

- Medical degree.
- Three-year residency.
- Pass licensing exam.
- Pass initial certifying exam.
- Two- to three-year fellowship for subspecialty.
- Pass subspecialty certificate exam.

Physician's assistant (PA)

- Master's degree.
- Pass certification exam by National Commission on Certified Physicians Assistants.
- Complete 100 hours of continuing medical education every two years.

PAs can:

- Take patient histories and develop medical status reports.
- Perform physical exams.
- Order diagnostic tests.
- Write prescriptions (if physician has delegated this responsibility).
- Initiate evaluation and treatment procedures in an emergency situation.

PAs can't:

- Work without physician supervision.

Scope of practice bills in Minnesota Legislature this year

Several bills have been introduced this year to expand scope of practice for different medical professionals. When Minnesota Medicine went to press, these bills were pending:

Physical therapy direct access

Current law allows a patient to go directly to a physical therapist without a physician referral for 90 days. The bill would:

- Remove the 90-day limit to allow complete direct access.
- Remove a requirement that a physical therapist must be in practice for at least one year before being allowed to treat a patient without physician referral.
- The Minnesota Orthopedic Society opposes removing the 90-day limit.

Physician Assistant

Current law requires PAs to have a supervisory agreement with a physician. The bill would:

- Remove the requirement that PAs work under a supervisory agreement with a physician.
- Allow PAs to use the title "physician associate."
- Create a broader definition of the scope of practice for PAs.
- Replace the supervisory agreement with an annual review of a PA's practice.

Pharmacy prescribing

A bill introduced by three physician-legislators would:

- Allow a pharmacist to prescribe self-administered hormonal contraceptives, tobacco and nicotine-cessation medications and opiate antagonists.
- Require additional training approved by the Board of Pharmacy.

Optometry prescribing

The Minnesota Optometric Association backs legislation to expand the authority of optometrists to prescribe and do injections. The bill would:

- Allow optometrists to use legend drugs administered intravenously, intramuscularly or by injection.
- Remove limitations on the use of oral antivirals and oral carbonic anhydrase inhibitors.
- The Minnesota Academy of Ophthalmology opposes the changes.

Family medicine physician

- Medical degree.
- Three-year residency.
- Pass licensing exam.
- Pass certification examination.
- One- to three-year fellowship for added qualifications.
- Pass certificate of added qualifications exam.

Nurse practitioner (Advanced Practice Registered Nurse)

- Two-year Master of Science in Nursing (MSN) or 4-year Doctor of Nursing Practice (DNP).
- Certification through an accepted national certifying agency.
- Complete at least 2,080 hours of practice with a physician.

Nurse practitioners can:

- Diagnose conditions and manage treatment.
- Practice independently (with an Advanced Practice Registered Nurse license).
- Write prescriptions.
- Refer to physicians.

Nurse practitioners can't:

- Perform surgery.

Physiatrist

- Medical degree.
- Four-year residency.
- Pass licensing exam.
- Pass two-part board certification exam.
- One- to two-year fellowship for a sub-specialty.
- Pass sub-specialty certification exam.

Physical Therapist (PT)

- Complete a master's or clinical doctorate in physical therapy through a licensed program.
- Pass the National Physical Therapy Exam.
- One year of practice with an established physical therapist or under a physician's orders.

PTs can:

- Provide therapy with referral or by order of a physician.
- Offer prevention, wellness, education or exercise.
- Refer patients with a medical condition beyond the athletic trainer's scope

PTs can't:

- Prescribe medications.
- Practice chiropractic medicine.
- Provide treatment for more than 90 days without an order or referral from a physician.

Ophthalmologist

- Medical degree.
- One-year of internship in general medicine.
- Three-year residency minimum.
- Pass licensing exam.
- Pass two-part certification exam.

Optometrist

- Four-year graduate school degree.
- Pass certification exams.

Optometrists can:

- Give eye exams, vision tests.
- Treat conditions like nearsightedness, farsightedness, astigmatism.
- Prescribe and fit eyeglasses and contact lenses.
- Detect eye diseases, injuries.

Optometrists can't:

- Perform surgery of eye diseases and disorders.
- Prescribe all medications. Prescribing authority is limited.

WHAT'S WRONG WITH THIS NOTICE?

Scams targeting physicians

BY ALAN LEMBITZ, MD



From illegitimate representatives who claim to be “official Medicare agents” to fake prescription discount cards, there is no shortage of scams connected to health care. In addition to going after patients and general consumers, scammers have directly targeted medical providers with various tactics.

For example, a physician received a notice in the mail from the American Board of Pulmonary Disease. The notice said that the physician had failed to register important details about his practice and also asked for payment for a certification confirmation. At right is an abbreviated version of what the physician received. Can you spot the things that would raise concern about the legitimacy of this letter?

Areas of concern

- There is no such organization as the American Board of Pulmonary Disease.
- The email address is not legitimate and there is no phone number or contact person listed.
- The terminology used is highly suspect:
 - No credible medical organization would reference “Obamacare.”
 - The phrase “hospitals presently being used” is not accurate.
 - There is no such thing as a Pulmonary Disease Certification Status Verification.
- The format of the letter is very awkward—one long paragraph and inadequate space to provide answers on the form section—and there are several typos.
- There are numerous references to sending a payment (with no option to pay by credit/debit card) and a sense of urgency to respond.

AMERICAN BOARD OF PULMONARY DISEASE
 51 N. 3rd STREET, SUITE 103
 PHILADELPHIA, PENNSYLVANIA 19106
 E-mail: certification@linuxmail.org

IMPORTANT NOTIFICATION REGARDING ALL CERTIFICATION IN PULMONARY DISEASE: COMPLETE REQUIREMENTS BY JUNE 25, 2019 IN ORDER TO PREVENT A CHANGE IN DIPLOMATE STATUS. THIS IS A MANDATORY REPORT AND A VERY IMPORTANT REQUIREMENT TO CONTINUE CERTIFICATION IN PULMONARY DISEASE AT THIS TIME. YOU ARE ON RECORD HAVING FAILED TO PREVIOUSLY REGISTER, AND MUST COMPLY.

Dear Doctor Smith,

Certification Status Verification of Diplomates requires, in order to continue having Diplomat status: for Medicare, Obamacare, the new enforcement of the U.S. Code Title 18 Section Number 1861, [42 U.S.C. 1395x] Part E, by the United States Government, enforcement has already begun closing down hospitals in the state of Idaho and requires filling out of list of hospitals presently being used, listing of states where you are licensed, statement regarding any malpractice cases recently filed against you, and certification confirmation fee payment of \$500 for Pulmonary Disease Certification Status Verification at this time. The certification confirmation registration does not constitute new Pulmonary Disease diplomate certification or recertification.

Payment with check or money order made to: American Board of Pulmonary Disease. Certification Confirmation Registration Form and Fee should be received no later than June 25. Certification Confirmation Registration fee is fully tax deductible. We request that the matter of registration be taken care of as soon as possible. There are no extenuating circumstances.

CERTIFICATION CONFIRMATION REQUIRED FORM

Preferred spelling of name and degree: _____

E-mail: _____

Office phone: _____ Cell phone: _____

Listing of states where you are licensed: _____

Listing of hospitals presently used: _____

Statement regarding any malpractice cases filed against you in past year: _____

Statement of all boards certifying you: _____

Date of last certifying or recertifying examination in any medical specialty: _____

I hereby affirm that the above statements are true to the best of my ability and i wish to continue certification in pulmonary disease.

Signed _____ Date _____

Send this form, signed and dated, and fee of \$500 made to: American Board of Pulmonary Disease

Physicians and medical practices are not immune to fraud schemes. Similar to scams that target general consumers, there are common tactics that we see used: impersonating official organizations, attempting to adopt formal terminology specific to a group of people and trying to create a sense of urgency to avoid legal/disciplinary action.

Another scam we have seen in recent years involves individuals posing as DEA officials who call or email DEA-registered practitioners and threaten legal action for supposed violations of federal drug laws or involvement in drug-trafficking activities. The “DEA officials” tell practitioners that they can pay a fine via wire transfer to avoid arrest, prosecution and imprisonment. Physicians may think they are not susceptible to these type of scams, but the level at which they are occurring indicates that criminals have had some success.

To protect yourself

- Know that organizations, such as the DEA, will never contact practitioners to demand money or any other form of payment.
- Recognize that there are numerous ways to impersonate officials. With the DEA scam, tactics included callers using fake badge numbers or names of well-known DEA senior officials as well as falsified numbers on caller ID that appear as a legitimate DEA phone number.
- Remember that certain information provided (e.g., license number, patient information, or other personal details) to make a request seem legitimate may be something that can be found via open access sources online or through social media.
- Poor grammar and/or typos are often dead giveaways in scams.
- If you are placed in a high-pressure situation, don't feel you need to respond immediately. Ask for the person's contact information so you can get back to them.

- Examine the sender's info with scrutiny: Does the email seem legitimate? Is there appropriate contact information that can be verified?
- Never provide sensitive information about yourself and/or your patients.
- Report any suspicious activity to relevant organizations (DEA, medical or specialty boards, FDA, etc.).
- Be sure to inform your staff members of potential scams, what to look for and how to handle them.

The Federal Trade Commission posts alerts and announcements on recent scams and how to recognize the warning signs. You can also sign up for email updates and browse scam information by topic (e.g., health, education, online scams, etc.). Visit www.consumer.ftc.gov/features/scam-alerts for more information. **MM**

Alan Lembitz, MD, is chief medical officer, COPIC.



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The trauma of litigation is a risk our PolicyOwners™ face every day. That's why we developed our exclusive claims predictive model. In the event you're sued, it helps us quickly determine the best possible outcome. We'll tell you your odds – and exactly how to improve them – so you can confidently choose your path forward. It's the future of healthcare liability insurance, and only MagMutual is giving it to you today.

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THE CHANGING LANDSCAPE OF TICKBORNE DISEASE IN MINNESOTA:

A spotlight on emerging diseases

BY JENNA BJORK, DVM, MPH, AND ELIZABETH SCHIFFMAN, MPH, MA

The risk for tickborne disease in Minnesota has expanded over the years, not only geographically, but also in terms of the number of infections possible. Of particular interest are some of the newer and emerging tickborne diseases like Powassan virus, *Ehrlichia muris euclairensis*, *Borrelia mayonii* and *Borrelia miyamotoi*. In addition to learning how to recognize these infections in patients, providers need to know how to test for them, offer appropriate and effective treatment and help patients reduce or prevent further exposure to ticks.

Over the last 30 years, the risk of tickborne diseases has changed. While Lyme disease is still the most common tickborne disease, both in Minnesota and nationwide, it is now just one of several diseases possible after the bite of an infected tick. The primary vector tick in Minnesota is *Ixodes scapularis*, more commonly known as the blacklegged or deer tick, and as the distribution of this tick has changed, the picture of disease has changed as well.

More than just a pest, this tick has become a significant disease threat to people living around, working in and enjoying the great outdoors while in forested areas of the state (Figure 1). In addition to spreading Lyme disease, anaplasmosis and babesiosis, this tick has been shown to be the vector of several additional diseases over the past 20 years (Figure 2). Powassan virus was reported in a Minnesota resident in 2008, and the first case of *Ehrlichia muris euclairensis* in Minnesota was reported in 2009. The index case of *Borrelia mayonii*, a new form of Lyme disease, was identified in a Minnesota child in 2013, and *Borrelia miyamotoi*, also known as hard tick relapsing fever, was first identified in Minnesota in 2016. Much less is known about these new pathogens and the illnesses they cause, but the more cases that are identified, the more a “typical” clinical course emerges.

Powassan virus

Powassan virus (POW) is a tickborne flavivirus that can cause severe disease in humans. The disease is considered rare, and although human cases have traditionally only been reported sporadically, it is becoming more common. Most cases report exposure in the northeastern United States and in the upper Midwest. POW typically presents with neurologic symptoms, most commonly encephalitis or meningitis, after an incubation period of one to four weeks. Milder, even subclinical, infections occur, although they are likely underreported. Long-term sequelae after infection occur in approximately 50 percent of cases and 10-15 percent are fatal.

From 2008 through 2018, Minnesota reported 37 cases of POW, with an average of three cases per year. Cases were 73 percent male and the median age was 60 years (range, 0–75 years). Clinically, 89 percent of cases had meningitis or encephalitis with fever, headache, confusion and weakness also commonly reported. Two of Minnesota’s cases were fatal.

Diagnostic testing for POW is not widely available, and is primarily performed at public health laboratories or the Centers for Disease Control (CDC). Serologic and molecular testing can be ordered through the Minnesota Department of Health (MDH). There is no vaccine to prevent POW and treatment is primarily supportive care.

Ehrlichia muris euclairensis

Ehrlichia muris euclairensis was first identified in 2009 by researchers at Mayo Medical Laboratories, and was initially referred to as *Ehrlichia muris*-like agent, or EML. Unlike the more well-known *Ehrlichia chaffeensis*, which is transmitted by the lone star tick, *E. muris euclairensis* is transmitted by the blacklegged tick. The index patients were from Minnesota and Wisconsin and subsequent cases have primarily occurred in the upper Midwest.

Clinically, illness caused by *E. muris euclairensis* is indistinguishable from the closely related and much more common illnesses of anaplasmosis or ehrlichiosis caused by *E. chaffeensis*. Patients com-

monly report fever, headache, malaise and myalgia, and laboratory studies often note thrombocytopenia and elevated transaminases. From 2009 through 2018, Minnesota has reported 60 cases of *E. muris eauclairensis*, 22 percent of which required hospitalization.

Laboratory diagnosis of *E. muris eauclairensis* is made by PCR and molecular methods are the only way to reliably differentiate different species. Unlike for anaplasmosis and ehrlichiosis caused by *E. chaffeensis*, there is no commercially available serologic test for this bacteria and peripheral smears are not recommended for diagnosis due to insensitivity. As with anaplasmosis and other rickettsial diseases, doxycycline is the preferred treatment for infection with *E. muris eauclairensis*.

Borrelia mayonii

Borrelia mayonii is a recently identified bacteria closely related to *Borrelia burgdorferi*. It was first identified in a Minnesota resident in 2013. Since then, a small number of cases have been found in people who have been exposed to ticks in Minnesota or Wisconsin. The illness *B. mayonii* causes is very similar to Lyme disease caused by *B. burgdorferi*, although there are some differences. For instance, nausea and vomiting are associated with *B. mayonii*, but are not commonly reported symptoms in infections with *B. burgdorferi*.

A total of 10 cases have been reported in Minnesota through 2019, with an average of one to two cases reported each year. Of the 10 cases reported, 80 percent were among males, the median patient age was 45 years (range, 6–61 years), and 90 percent had likely tick exposure in Minnesota or Wisconsin (one case unknown). All cases experienced a febrile illness, with 50 percent of illness onsets occurring in July. Four cases involved brief hospitalizations. Five patients experienced a rash, although only one patient's rash was described as erythema migrans. Other common symptoms included headache, myalgia and fatigue. All patients experienced clinical improvement after treatment with amoxicillin or doxycycline.

Currently, testing for *B. mayonii* is not widely available and is limited to molecular methods. All cases have tested positive by PCR for the disease agent. Limited information suggests that patients may develop detectable antibodies after infection with *B. mayonii*, so infections may be detected on traditional Lyme disease serology, but serologic testing cannot distinguish between *B. mayonii* and *B. burgdorferi*.

Borrelia miyamotoi

Borrelia miyamotoi is closely related to the bacteria that cause tickborne relapsing fever. It was first identified as a cause of human illness in 2011 in a patient from Russia and the first case in the United States was reported in 2013. Since 2016, 13 cases have been reported in Minnesota, with an average of three cases each year.

Of the 13 Minnesota cases, 69 percent were among males, median patient age was 57 years (range, 33–77 years) and 92 percent had likely tick exposure in Minnesota or Wisconsin (one case unknown). All patients experienced a febrile illness with 38 percent of illness onsets occurring in August. Three (23 percent) cases involved brief hospitalizations. None of those affected experienced a rash. Nationally, the most commonly reported symptoms are fever, chills and headache, as well as fatigue, myalgia and arthralgia.

Currently, both molecular and serologic testing is available for *B. miyamotoi* at commercial laboratories and CDC can assist with diagnostic testing. *B. miyamotoi* infections have been successfully treated with a two-to-four-week course of doxycycline. Amoxicillin and ceftriaxone have also been effective.

While these new diseases have emerged, the incidence of more well-known diseases, like Lyme disease, anaplasmosis and babesiosis, has also increased over the same period. It is im-

portant for providers to think broadly about tickborne diseases in patients with compatible symptoms and exposures and to consider testing with broader disease panels, rather than focusing on specific tests. The symptoms of tickborne diseases can be non-specific and co-infections may occur. Patients with outdoor occupations or recent outdoor activities, either around forested areas at home or away from home, are at particular risk. Providers should encourage prevention, like regular use of EPA-registered repellents and daily tick checks, to reduce risks.

In Minnesota, the highest risk season for tickborne diseases is from late spring into mid-summer, coinciding with peak activity of the adult and nymphal stages of the blacklegged tick. A smaller, secondary peak occurs again in the fall when adult ticks are active again. Routine surveillance of ticks in Minnesota has provided data since 2005 on six different disease agents (Figure 3). Results have shown that infec-

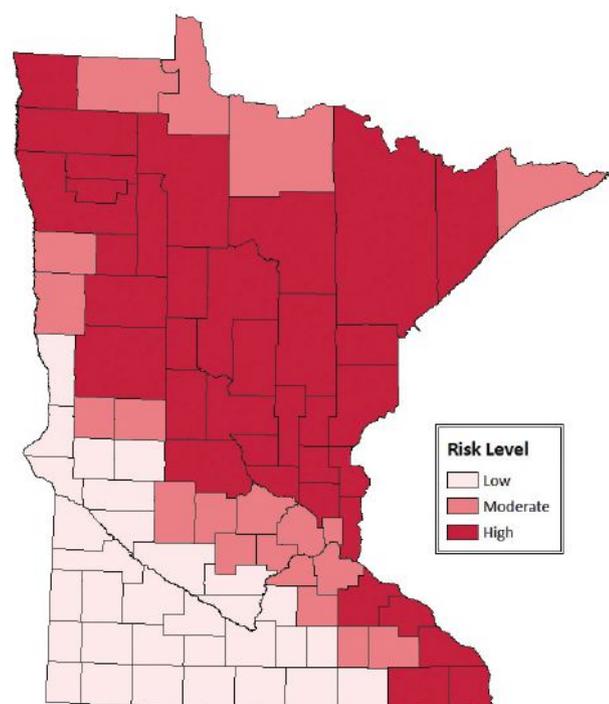


FIGURE 1

Minnesota Tickborne Disease Risk

Tickborne disease risk in Minnesota by county, based on average incidence (cases/100,000 population) of anaplasmosis, babesiosis and Lyme disease, 2007–2018 (MDH).

tion prevalence can vary from site to site and year to year but, on average, about one in three adult blacklegged ticks and one in five blacklegged tick nymphs are infected with *B. burgdorferi*. Prevalence of other pathogens is considerably lower, with about 6–8 percent of ticks infected with anaplasmosis or babesiosis and only 1–3 percent of ticks infected with *E. muris eauclairensis*, *B. miyamotoi* or *B. mayonii*. While testing of individual ticks is not generally recommended, tick data collected during field studies are useful in understanding the tickborne disease risk from a tick bite in Minnesota. Understanding when and where the risks for disease occurs can help patients avoid infection and can help providers understand the epidemiology of these important infections. **MM**

Jenna Bjork, DVM, MPH, and Elizabeth Schiffman, MPH, MA, are senior epidemiologists with Minnesota Department of Health.

FIGURE 2

Timeline of the discovery of the seven human pathogens transmitted by blacklegged ticks (Eisen and Eisen, 2018).

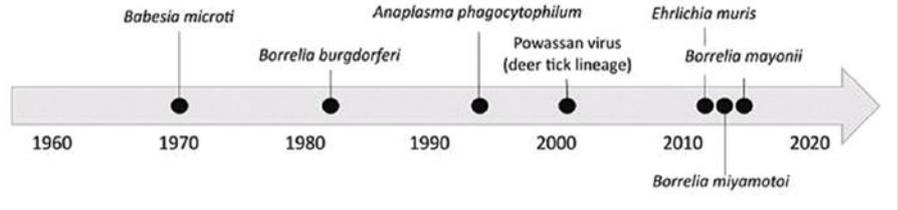
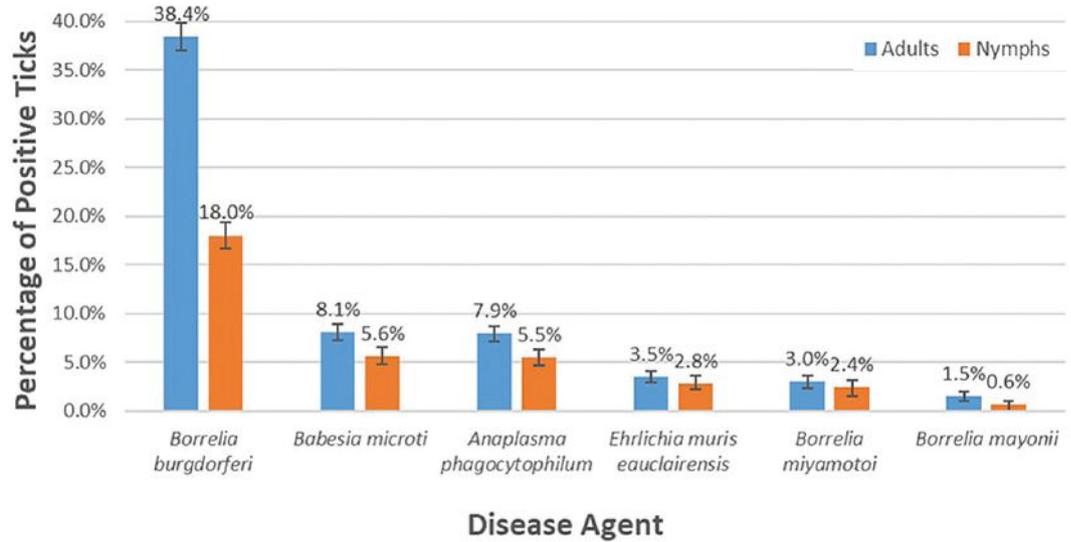


FIGURE 3

Average infection prevalence of blacklegged tick adults and nymphs for six different pathogens

Based on testing 7,634 ticks from Minnesota, 2005–2019 (MDH).



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For more information

MDH vectorborne disease epidemiologists are available for clinical consultations or facilitating testing at MDH or CDC by calling (651) 201-5414 or emailing health.bugbites@state.mn.us. MDH also offers complimentary tick-identification services using the mailing instructions listed on the online Submission Form for Tick Identification (<https://www.health.state.mn.us/diseases/tickborne/ticksform.pdf>). For further information on vectorborne diseases in Minnesota and to earn free continuing education credit, on March 17, 2020, tune into a live webinar, “Ticks, Mosquitoes, and Our Health,” designed specifically for health care providers in Minnesota. Registration and details are available on the MDH website www.health.mn.gov/ticks.



MINNESOTA
MEDICAL
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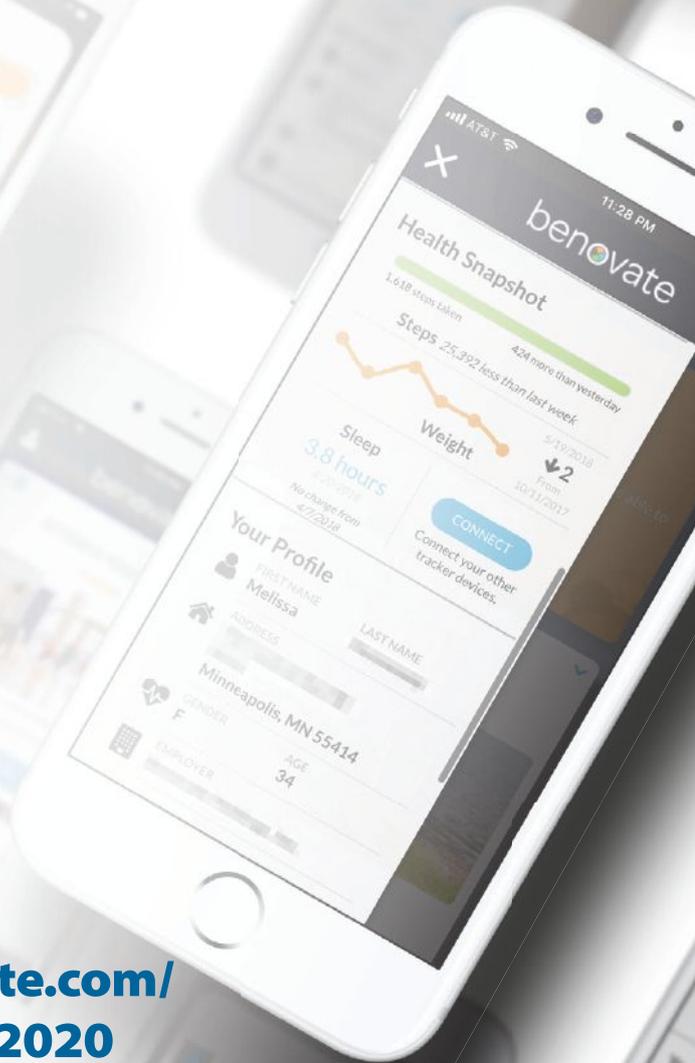
NEW Member Well- Being Benefit

MMA and Benovate have partnered for a six-month pilot, during which MMA members will receive free access to health activities and resources personalized to their needs. The app will also serve as a new way to receive MMA information and updates.



Visit

[https://portal.benovate.com/
#register/MMA/MMA2020](https://portal.benovate.com/#register/MMA/MMA2020)
to get started!



How to reduce gun violence

BY THOMAS E. KOTTKE, MD, MSPH

Early in January 2020, the *Star Tribune* ran a story that included photos of each of the 31 individuals who died by homicide in St. Paul in 2019; a gun was the weapon in 28 cases and nearly all those killed were African American men. Each one of these homicides is a tragedy for the individuals who died, their families and the entire community. But there is more to the story of gun violence. According to the latest CDC data, in 2017, 465 Minnesotans were killed with a gun: 78 were victims of homicide, 365 were deaths by suicide and 319 of those suicide victims were white males. Mass shootings are also a problem. In the final days of 2019, eight men were shot in Spring Lake Park and a 19-year-old man died.

Gun violence in Minnesota is not just a problem for African Americans, it is a problem for every Minnesotan, physicians included.

The gun violence epidemic is a public health catastrophe and physicians need to step up and speak up. We have a particularly powerful voice for at least four reasons: We are credible with the public, we know the facts, we can have first-hand experience and we are the experts in matters of health.

But we need to understand that opinion tilts one way or the other depending on the words we use. When the argument is framed as “gun control,” Americans tend to favor gun rights over gun safety. When the argument is framed as “gun safety,” Americans want action. We need to frame our argument as reducing gun violence or promoting gun safety. “Gun control” should not be in our vocabulary.

While we need to acknowledge that there is no single solution to the multifaceted gun violence problem, we do know a place to start: States that have adopted red-flag laws and laws that close the private seller background check loophole have experienced reduced rates of gun violence. There is no reason that Minnesotans shouldn't enjoy the same relief, because the majority of Minnesotans support these two approaches to gun safety.

Here's what you can do to further gun safety:

- **Be able to give some facts.** A good place for you to start is the article by the UC Davis Health group of Garen Wintermute, MD, MPH, in the June 4, 2019 issue of the *Annals of Internal Medicine*. One fact: compared to other developed countries, the United States has far and away the highest fatality rates from gun violence.
- **Claim our lane.** Talk about gun violence as the public health issue that it is. Remind people of what David Satcher, MD, PhD, said about gun violence when he assumed the directorship of the CDC: “If it's not a health problem, then why are all those people dying from it?”
- **Watch your language.** A reminder: Use “gun violence” or “gun safety,” not “gun control.”
- **Talk to your patients.** Wintermute suggests we ask our patients three critical questions:
 - “Are there any firearms in or around your home?”
 - “Who has access to them?”
 - “Are your guns and ammunition locked and stored separately?”
- **Ask your public officials to support gun safety laws.** The aphorism, “all politics is local,” is absolutely true when it comes to addressing gun violence. Ask your mayor, city councilors, state representatives and your state senator to support red-flag laws and universal background checks because these laws save lives. Have an elevator speech in your pocket that 1) relates a personal experience that makes you care, 2) uses feeling words like “dismayed” or “distressed” about gun violence and 3) promotes an action that you want taken. In Minnesota, for example, the action might be the Senate majority leader holding votes on the lifesaving bills that have passed the House.
- **Don't advocate an all-at-once solution to the gun violence problem.** Yes, it is true that military-style assault weapons are the guns most frequently used in



the mass shootings in schools and other public venues, but recent experience tells us that advocating for prohibiting the sale of these weapons will only derail progress toward firearm safety legislation. There is nothing wrong with planning to come back for more while working for what is currently possible.

- **Support an advocacy group.** The majority of Minnesotans want something done to increase gun safety in their communities; groups like Protect Minnesota and Moms Demand Action have been effective in promoting the legislative agenda for gun safety. Support them and speak for them when asked—your support is important.
- **Make it personal.** Personal stories make the statistics salient. For example, when my daughter was in grade school, a classmate died when a toddler found a gun in a sofa and pulled the trigger. The event was repeated a few years ago next door to my clinic in Minneapolis. Nearly every week a toddler age 3 or younger shoots themselves or someone else with a gun they've found. This is personal for me because these kids needn't be dead. So, step up and lean in. Your voice is important, and your voice is effective. With the voices of Minnesota physicians, we can achieve gun safety and lift the pall of gun violence that is blanketing every Minnesota community. **MM**

Thomas Kottke, MD, MSPH a cardiologist and epidemiologist, is medical director for well-being at HealthPartners and professor in the Department of Medicine, University of Minnesota. He is a member of the Protect Minnesota Board of Directors.



Best Practices for Prescribing Opioids

AND OTHER CONTROLLED SUBSTANCES

You need to earn 2 CME credits to fulfill the legislative mandate. Where better to turn than the Minnesota Medical Association, the state's largest physician advocacy organization?

During the 2019 session, the Minnesota Legislature passed a law that requires individuals with licenses with the authority to prescribe controlled substances to obtain CME on best practices in prescribing opioids and controlled substances.

To help physicians comply with this mandate, the MMA has developed an online, self-assessment activity that includes content on best practices in prescribing opioids as well as non-pharmacological and implantable device alternatives for treatment of pain and ongoing pain management.

This activity has been approved for AMA PRA Category 1 Credit™

Cost

MMA members are free, others pay \$60.

Questions on the activity?

Email the MMA
(cme@mnmed.org)

Questions about the mandate and how to provide documentation of course completion?

Email the Minnesota Board of Medical Practice
(Medical.Board@state.mn.us)

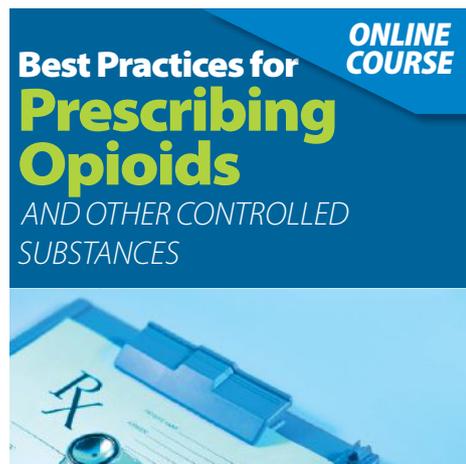
**For more information, visit
[www.mnmed.org/
opioidmandate](http://www.mnmed.org/opioidmandate)**



News Briefs

Required opioids prescribing course now available online; free to MMA members

The MMA is offering an online, self-paced activity for Minnesota prescribers of opioids and other controlled substances to help physicians comply with a new mandate from the Minnesota



Legislature. This course is free for MMA members.

The self-assessment activity can be taken whenever it's convenient and offers instant feedback, including the answer, commentary and references for each item. To

learn more about the course available for CME credits, visit www.mnmed.org/opioidmandate.

During the 2019 session, the Minnesota Legislature passed a law that requires licensees with the authority to prescribe controlled substances to obtain at least two hours of CME. The CME must include content on:

- Best practices in prescribing opioids.
- Non-pharmacological and implantable device alternatives for treatment of pain and ongoing pain management.

Licensees are required to report completion of these 2 CME credits between January 1, 2020 and December 31, 2022.

MMA launches new physician wellness app

MMA members now have access to a new physician wellness app through a partnership with Benovate, a Minnesota-based software development company.

Through the personalized app, participants will have free access to tools, information and incentives to help make simple



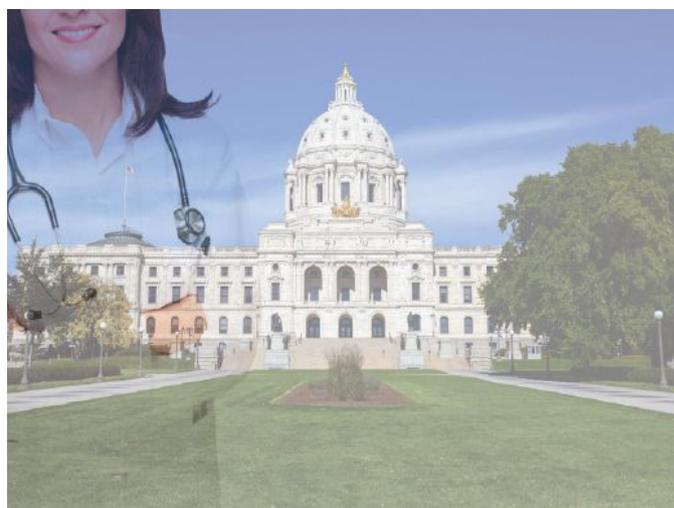
lifestyle changes to maintain or improve health and increase well-being. The program is completely confidential, non-identifying and HIPPA-compliant.

As part of the agreement between the MMA and Benovate, MMA will have access to aggregate information about factors contributing to the stress of physicians and

physicians-in-training, which will be used to inform future MMA work and priorities.

Benovate has been a well-being platform-delivery company since 2011. The platform combines unifying health data, incentives, benefits and activities in a single place, to empower and engage members to improve their total well-being. Benovate creates a dynamic assessment relevant to each individual member, based on their preferences and health risks. The platform focuses on members' total well-being, including nutrition, physical activities, relationships, personal growth and financial health.

Members can utilize the program on any web-enabled device to access health plan resources; they are rewarded for partaking in a variety of activities, courses and local events.



MMA members discuss the public health insurance option in Minnesota

A group of dedicated physician and physician-in-training advocates gathered both in-person and online on a frigid morning in mid-February to discuss the impact on patients and physicians of a public health insurance option.

Kathleen Call, PhD, a professor with the Division of Health Policy and Management and SHADAC at the University of Minnesota School of Public Health, provided the group with an overview of various state-level public option proposals, shared the experience of two states that have passed public options and painted a picture of Minnesota's current health insurance landscape.

Call noted that, in assessing reform, those in the health care industry need to take a step back and think about: 1) What do we

On the calendar

Event	Date	Location
MMA Day at the Capitol	March 4	St. Paul
2020 MMA Annual Conference	September 25 and 26	St. Louis Park

want health reform to accomplish? 2) What kind of society do we want? and 3) What values should health care reform be built upon, embody and achieve?

Attendees discussed the impact a public option would have on physicians and their patients in Minnesota and helped shape MMA policy. The MMA will use the feedback gathered at the forum to weigh options on future policy positions.

With the MMA, the event was sponsored by the Minnesota Academy of Family Physicians, the Minnesota Academy of Ophthalmology, the Minnesota Chapter of the American College of Physicians, the Minnesota Section of the American College of Obstetricians & Gynecologists and the Twin Cities Medical Society.

Nominations for MMA officers now open

The nominating process is open for MMA president-elect, trustees and AMA delegate/alternate delegates; nominations will close in June. A copy of the job descriptions and preferred skills/attributes

can be found at: <https://www.mnmed.org/MMA/media/Hidden-Documents/MMA-Leadership-Job-Descriptions-2019.pdf>.

Please send any nominations you have for president-elect, trustee or AMA delegate/alternate delegate to Shari Nelson (snelson@mnmed.org) by June 5.

The nominating committee will meet later in June to recommend a slate of candidates for each position. The member-wide election will begin in August and close 30 days later. Election results will be announced as soon as possible. New leaders will assume their roles following the Annual Conference in September.

Nominate a peer for one of MMA's awards

Members are encouraged to nominate their peers, medical students and advocacy champions for one of MMA's four annual awards. Visit the MMA website (<https://www.mnmed.org/Forms/MMA-Award-Nomination-Form>) to make a nomination by June 26.

Award categories include:

- **Distinguished Service Award.** Given to a physician who has made outstanding contributions in service to the MMA and on behalf of medicine and the physicians of Minnesota during his or her career.
- **President's Award.** Designated for individuals who have made outstanding contributions in service to the goals of the MMA.
- **Medical Student Leadership Award.** Presented to a member of the MMA Medical Student Section who demonstrates outstanding commitment to the medical profession.



PHOTO BY MIKE KRIVIT

Board Chair Randy Rice, MD, (left) presents Donald Jacobs, MD, with the Distinguished Service Award at the 2019 Annual Conference.



- **James H. Sova Memorial Award for Advocacy.** Given to a person who has made a significant contribution to the advancement of public policy, medical sciences, medical education, medical care or the socio-economics of medical practice. Sova was the chief lobbyist for the MMA from 1968 until the time of his death at the AMA meeting in December 1981.

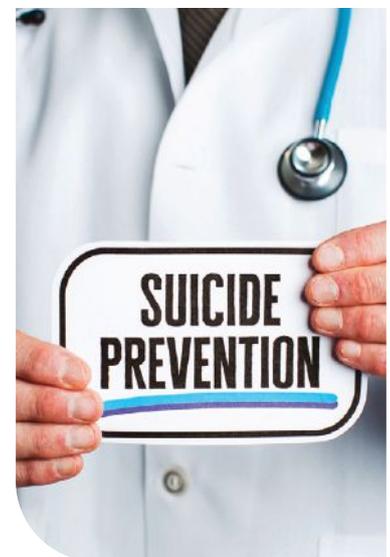
Awards will be bestowed at this year's Annual Conference, September 25–26 in St. Louis Park.

MMA and its Foundation address suicide prevention

The MMA and MMA Foundation (MMAF) are offering free “Question, Persuade, Refer” (QPR) suicide prevention workshops to clinics in Minnesota. QPR is a 1.5-hour presentation that teaches best practices in suicide prevention and three steps to help prevent suicide. QPR is an evidence-based intervention, and attendees can earn CME credit.

Workshops are facilitated by trained MMA members. The MMAF is able to offer QPR workshops free of charge on a first-come, first-served basis through this June.

MMA members Joshua Stein, MD, and Alexandria Kristensen Cabrera have facilitated QPR workshops for students at the University of Minnesota-Twin Cities and in Rochester at the Mayo Clinic. Stein will facilitate a workshop for Entira Family Clinics this summer.





FROM THE CEO

With the state legislative session underway, don't underestimate the impact that you can have when you raise your voice. The MMA's Day at the Capitol, March 4, is our largest and most visible way of helping physicians speak up on the issues affecting the health of Minnesotans and the practice of medicine. We are also creating additional ways that you can make a difference, including the launch of our new Advocacy Action Teams. Focused initially on two of MMA's key legislative priorities, firearm injury/death prevention and immunizations, the Advocacy Action Teams are designed to help you impact specific issues of interest to you in a virtual, self-directed manner. There are no capacity/size limits, no travel involved, no meeting attendance requirements; rather, action teams allow you to learn, inform, guide, support and take action in ways that work for you. Please consider joining an action team today

([www.mnmed.org/advocacy/MMA-Advocacy-Toolkit-\(1\)/Advocacy-Action-Teams](http://www.mnmed.org/advocacy/MMA-Advocacy-Toolkit-(1)/Advocacy-Action-Teams)).

MMA leadership brings advocacy to Washington, DC. I joined MMA President-Elect Marilyn Peitso, MD; Board Chair Randy Rice, MD; and Secretary-Treasurer Edwin Bogonko, MD, in mid-February at the AMA National Advocacy Conference in Washington, DC. During our trip, we had the opportunity to meet with six members and/or staff of our congressional delegation, including Reps. Tom Emmer, Angie Craig, Pete Stauber and Betty McCollum, as well as Sens. Amy Klobuchar and Tina Smith. It was a good week to be on the Hill as two different bills to address surprise medical bills were being debated in the House. We urged members of the Minnesota delegation to support bills to fix surprise billing that protect patients, use an independent arbitration process and do not include a benchmark payment amount, which unfairly benefits insurance companies.

Accelerate your well-being with new, six-month free app. Through a partnership with Benovate, the MMA is thrilled to offer members free access to health activities and resources personalized to fit everyone's needs. Through the app, you'll also receive MMA-specific news and information, and those with the highest engagement scores have the chance to win prizes. Improve your health and be assured that all information provided is confidential. Take care of yourself and urge your colleagues to do the same. Contact the MMA (mma@mnmed.org) for more details.

New tool will allow MMA to capture The Pulse of its members. Later this year, the MMA will roll out a new tool called The Pulse to help improve its policy development. The Pulse will allow members to submit policy issues for consideration, vote on proposed policies, offer comments and feedback and review decisions made by the MMA Board of Trustees. As a membership organization,

the MMA is working hard to create new and improved avenues for you to shape the direction of your association. Look for more details in the coming months.

Earn your state-mandated opioid education credits for free. In 2019, the Legislature enacted a requirement that all physicians and other prescribers obtain two hours of continuing education on best practices in opioid and controlled substance prescribing. This new requirement applies to all license renewals between January 2020 and December 2022. Based on input and guidance from an expert advisory committee, the MMA has created an online, self-paced educational activity that is available free of charge to MMA members—another example of the value of your MMA membership. Visit mnmed.org for details.

Renew Your Membership by March 31. If you haven't renewed your membership yet, it's not too late. The 2020 membership grace period ends March 31. Your support is critical to make sure the voice of physicians is heard.

Did You Know? The MMA Medical Student Section is an active, vital part of the MMA. All Minnesota medical students—whether in Duluth, Rochester or the Twin Cities—receive complimentary membership in the MMA. But they give back far more than they receive. Students lead their own activities, participate in MMA committees and the Policy Council, serve on the MMA board and influence national policy at the AMA. Students also develop and run an annual advocacy campaign that complements current MMA advocacy priorities (the 2020 campaign is focused on access to mental health care). Most importantly, they provide the MMA with new ideas and energy.

Thanks for your continued support and think spring!

VIEWPOINT

The Climate Change Emergency

As you receive this issue, the MMA will be busy advocating for its legislative agenda at the State Capitol. While those are all critically important issues, one issue has been on my mind a great deal since attending the AMA Interim Meeting in November. While there, I attended a session on climate change that was sobering, to say the least. Since then, I have studied this issue more diligently than I have in the past. Many things that I had not previously considered were brought to light. My personal motivation to try to make a change that will reverse the effects of climate change was greatly enhanced.

I had never before thought about how health care itself contributes directly to climate change; I thought it was a forgone conclusion that we in health care really had no significant impact on it. However, data from a 2019 “Green Paper” by Josh Karliner and Scott Slotterback, “Health Care Without Harm,” notes the following:

- The health care industry is responsible for 4.5 percent of global net emissions. This is equivalent to more than 500 coal-fired power plants.
- If health care were a country, it would be the fifth largest emitter of greenhouse gases on the planet. Fossil fuel consumption makes up 50 percent of that.
- In the United States, the health care industry creates 12 percent of the impact of climate change.

Climate change now is a not just an “issue,” it is an emergency—and we need to treat it that way. The window of opportunity is rapidly closing; it’s much like the “golden hour” in trauma care, when action needs to be taken in order to prevent further irreversible deterioration in the patient.

Climate change is also a considerable and powerful health equity issue that we need to acknowledge and address. Changes in climate disproportionately

harm the most vulnerable in our midst. Children and older adults, people with low income and those with disabilities and chronic illnesses are most affected by heat and drastic weather events, due to mobility issues and lack of secure and solid housing.

What can we do to address this issue? As scientists and educators, we need to be leaders in helping to solve this public health crisis. We need to talk to our state and federal legislators and convince them to act and implement policies that address the climate emergency.

We need to advocate for policies that reduce our consumption of fossil fuels and electricity. How many computers in our offices do we run 24 hours a day when we are only there half that time? We need to emphasize active transportation initiatives and promote healthy farms and diets that are more plant based. We also can advocate for health care delivery models that utilize telemedicine and mobile technologies that reduce the transportation requirements our patients face. We need to urge our health professional schools to develop curricula on climate change so the workforce is prepared to make ongoing changes that reduce our impact on the climate.

The bad news, as I heard at the AMA meeting, is that this is a deadly serious issue and we need to make changes now to address the emergency. The good news is that the AMA already strongly supports climate actions and what we do now can make a difference. The AMA is among 100 other health organizations that signed the Medical Society Consortium Climate and Health’s “Climate, Health and Equity: A Policy Action Agenda” (climatehealthaction.org). I strongly recommend that you review this document to learn more and find out what we can all collectively do together to mitigate further climate change.

Please join me in this effort.



Keith Stelter, MD
MMA President

PHOTO BY KATHRYN FORSS

As scientists and educators, we need to be leaders in helping to solve this public health crisis.



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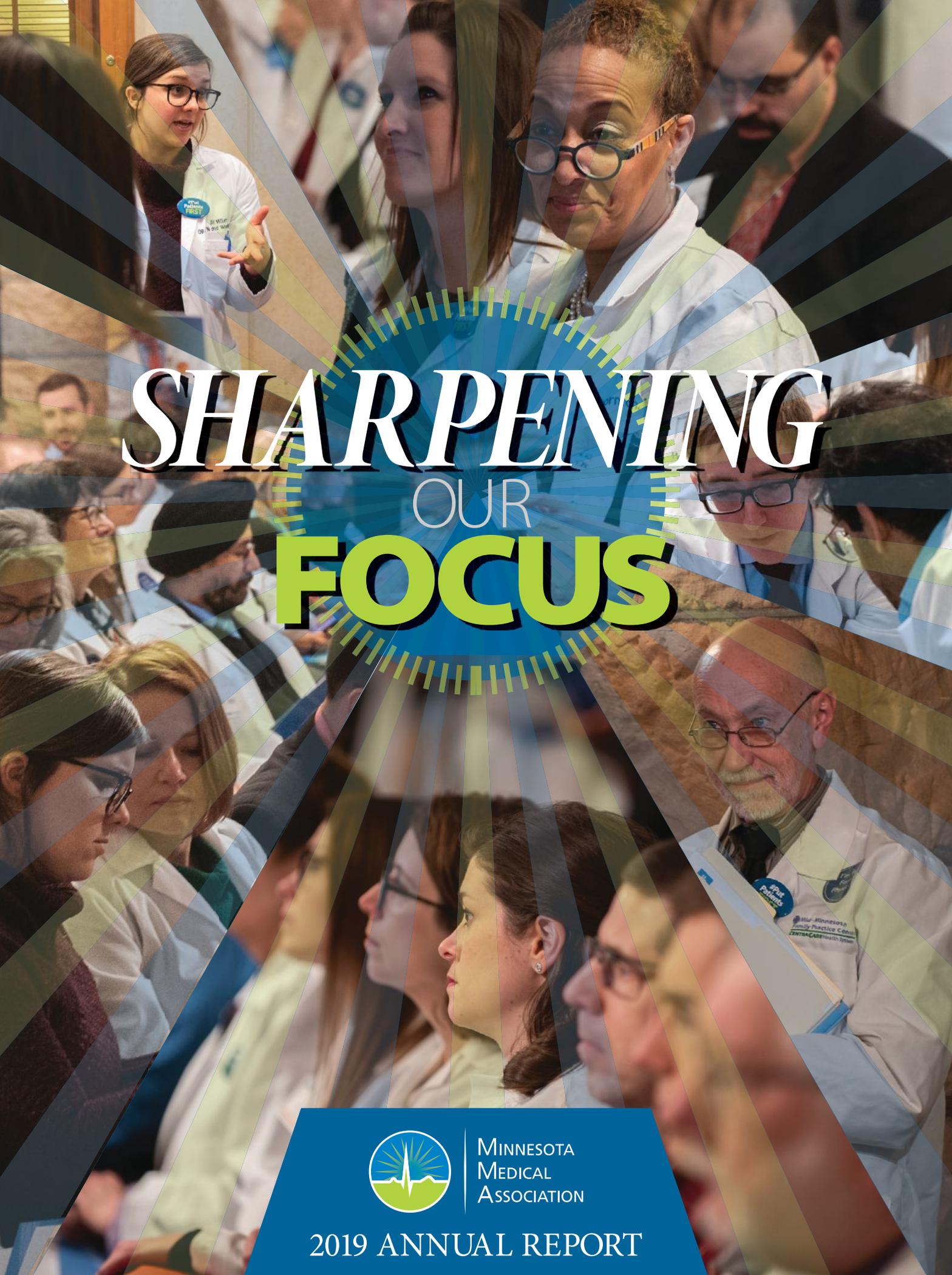
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MINNESOTA
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2019 ANNUAL REPORT



FEBRUARY 2020

2019: *It's a wrap*

It is my privilege to once again share the MMA Annual Report with you. We have changed the release date of the report so that we can report on a full calendar year's worth of activity—and what a busy and productive year 2019 was!

We spent much of 2019 implementing the organization's strategic plan, which was revised by the MMA Board of Trustees in 2018. The strategic plan defines four key outcomes to advance MMA's mission and vision to be the leading voice of medicine, and to make Minnesota the healthiest state and the best place to practice: 1) advance the Triple Aim (improve patient experience, improve population health, reduce cost of care); 2) achieve health equity; 3) empower physicians to lead health and delivery system change; and, 4) promote professional satisfaction and well-being. In the following pages you'll see some of the ways we worked to advance those goals over the past year. You will also meet some inspiring MMA physicians—those who raise their voice to improve medicine and the health of Minnesotans.

There is, of course, much more work to do and we are excited to continue our progress in 2020. We have a variety of exciting, new initiatives planned—initiatives that will continue to advance our goals, increase the value of your membership, and leverage technology to better capture your opinions and ideas. You won't want to miss it!

Our success, of course, depends on you—MMA members. Without your generous support of time, energy, expertise and payment of dues, the voice of medicine would be severely muted. The MMA is unique: it is where Minnesota physicians—regardless of specialty, geography, practice type or political orientation—have collectively made a difference in the past, and where physicians can continue to make a difference in the future. Thank you.

Here's to continued progress in 2020.

A handwritten signature in black ink that reads "Janet A. Selinowski". The signature is written in a cursive, flowing style.

MMA CEO

MMA Leadership

(JANUARY THROUGH SEPTEMBER 2019)

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Within a comprehensive strategic plan, MMA leadership has identified four key priorities:

Advancement of the Triple Aim, health equity, physician leadership in health and delivery system change, and professional satisfaction and well-being.

In 2019, the MMA advanced these priorities through engagement, education and advocacy.

Priority No. 1

Advancement of the Triple Aim

The MMA is working to improve the health of our communities, the affordability of care and the quality and experience of care for all Minnesotans—the Triple Aim of health care.

Reduce the harm from tobacco/e-cigarettes

Tobacco use is an obvious target for improving community health—according to the Minnesota Department of Health, tobacco use kills more than 6,300 Minnesotans each year and costs Minnesota \$3.2 billion annually in medical costs. Raising the age to purchase tobacco products to 21 is expected to reduce smoking initiation by 25 percent among 15-to-17-year-olds and to prevent more than 3,300 young Minnesotans from starting to smoke. Cities and counties across Minnesota have voted to raise the age to purchase tobacco products to 21 years. By the third quarter of 2019, nearly three dozen municipalities and counties had done so. The Physician Advocacy Network (a project of the Twin Cities Medical Society) played a significant role in amplifying the voices of physicians before city councils and county boards. The MMA echoed that work in letters sent to mayors, city council members and county board officials. To capitalize on the local momentum, the MMA remained a strong champion of state legislation that would raise the age to 21 across the state. That legislation passed the House during the 2019 legislative session, but stalled in the Senate.

The MMA also advocated at the Capitol to further restrict e-cigarettes. With our partners in the tobacco and nicotine control community, we were able to help pass a law that includes e-cigarettes in the smoking definition in the Minnesota Clean Air Indoor Act. We also helped pass legislation that extends funding for tobacco and nicotine-cessation services.

Firearm injuries and deaths

Nearly 100 physicians and physicians-in-training gathered in St. Paul in January to discuss how physicians might better address the public health crisis associated with firearm injuries and deaths.

Panelists, including a University of Minnesota professor and epidemiologist, an emergency department physician and a physician member of the Minnesota Senate, discussed the lack of research, how technology could make firearm ownership much safer and the stigma around mental health, among other topics.

Attendees at the workshop also participated in table discussions on a variety of topics such as: how to discuss firearm violence prevention with patients; how to talk to legislators about firearm violence prevention; physicians' role in preventing firearm violence; and debunking myths about firearm violence and mental health.

Legislative efforts on firearm safety did not fare well. The MMA advocated for laws to extend criminal background checks to private sales of firearms, as well as for a "red flag" law that would allow law enforcement to temporarily remove firearms from individuals who are deemed to be a serious threat to others or themselves. These bills cleared the House but were not voted on in the Senate.

Opioids

New funding to address the opioid crisis, including funding for new addiction treatment, prevention and education for both prescribers and patients, passed the Legislature by wide margins after contentious debate in 2019. The new law requires individuals with licenses with the authority to prescribe controlled substances to obtain at least two hours of CME on best practices in prescribing opioids and controlled substances, as well as non-pharmacological and implantable device alternatives for treatment of pain and ongoing pain management. The CME requirement must be fulfilled by the end of 2022. The new law also creates an opioid epidemic response account that will be funded with \$20 million per year through a combination of sharply increased registration fees paid by drug manufacturers and wholesalers and any settlement money received by the state in lawsuits against opioid manufacturers. Revenues will be used to expand treatment services; fund education for consumers and prescribers regarding opioid abuse, addiction and overdose; and help offset the escalating cost of opioid abuse absorbed by county and tribal child protective services. The bill also creates a new 19-member Opioid Epidemic Response Advisory Council (with an MMA appointee) that will guide the state's efforts to promote treatment, prevention and education.

Improving mental health

In 2019, the MMA and its Foundation partnered with the National Alliance on Mental Illness (NAMI) Minnesota and the Minnesota Department of Health (MDH) to offer train-the-trainer sessions for members who have an interest in leading suicide-prevention workshops for their colleagues.

Using the evidence-based Question-Persuade-Refer (QPR) Suicide Prevention Gatekeeper Training program, the hour-long workshops train colleagues to recognize the warning signs of a suicide crisis and to question, persuade and refer someone for help. The certification training is available free for MMA members.

QPR training was conducted at the MMA Annual Conference in Duluth in September and will be available to members in 2020.

In 2019 the MMA also partnered with the Minnesota Chapter of the American College of Emergency Physicians to examine the factors associated with the boarding of mental health patients in emergency rooms. Proposed policy solutions are expected in 2020.



Priority No. 2

Improved health equity

Despite Minnesota's placement at or near the top of most measures of overall population health, Minnesota has among the largest health disparities in the nation for people of color. The MMA is dedicated to shining a light on this issue and closing the gap.

Health equity awareness

The MMA continues to raise awareness of the health disparities faced by Minnesota's minority communities. Efforts include finding ways that the medical community can come together to achieve health equity in Minnesota.

In partnership with the Minnesota Chapter of the American Academy of Pediatrics (MNAAP) and the Minnesota Academy of Family Physicians (MAFP), the MMA hosted events in January (health disparities within the Native American community) and February (structural racism) via Facebook Live. In July, the MMA examined housing insecurity and health equity with partners MNAAP, MAFP, Minnesota Doctors for Health Equity and Simpson Housing.

Diversifying the physician workforce

In 2019, the MMA began efforts to explore what is needed to increase the number of black men in medicine. The number of black men applying and matriculating to medical school has declined to very low levels, an alarming 40-year trend. The MMA work will continue to explore ways that we can raise awareness of this issue in 2020.

United States of Care

In 2019, the MMA, along with other health care stakeholders and leaders, partnered with the United States of Care to support development of a feasibility study to assess local opportunities to reduce health disparities. United States of Care was launched by Andy Slavitt, former acting administrator of the Centers for Medicare and Medicaid Services during the Obama Administration, and is dedicated to ensuring that every American has access to quality, affordable health care regardless of health status, social need or income. Based on the feasibility study results, plans for collective action on some targeted initiatives are in development.



Priority No. 3

PHYSICIAN LEADERSHIP IN Health and delivery system change

The MMA brings ideas and solutions on behalf of medicine to the critical debates occurring in the state, whether at the Capitol, with state agencies, with health plans or among community partners.

Preserving funding for safety net programs

With the December 31, 2019 provider tax repeal deadline looming, the MMA's leadership worried that if it occurred as planned without replacement funding, critical programs funded by the tax, such as MinnesotaCare and Medical Assistance, would be threatened.

The MMA worked with the State Health Access Data Assistance Center (SHADAC), a health policy research center affiliated with the University of Minnesota School of Public Health, and Harbage Consulting, a national health policy consulting firm with expertise in federal health care financing, to conduct analyses and model potential alternative revenue sources. After examining more than a dozen different options, the team landed on a claims expenditure assessment (CEA).

This CEA would have been assessed on all claims paid by non-federal payers for services provided to Minnesota residents. Unlike the provider tax, it would not have applied to patient out-of-pocket spending, including co-pays and deductibles, or non-covered services. This feature made the CEA a less regressive financing mechanism than the provider tax.

The MMA's CEA legislation was introduced in both bodies and generated significant member and public interest, but it was not given a hearing. With concerns, most unfounded, that the CEA was new, might attract lawsuits and could jeopardize federal matching funds, legislators focused simply on whether to keep or kill the provider tax. During final budget negotiations, the governor and House and Senate leadership agreed to maintain the provider tax, but reduced it from 2 percent to 1.8 percent. Although a modest reduction, the change makes it more difficult for legislators to use provider tax revenues for non-health care-related purposes.

Warren v. Dinter

In a decision that caused shockwaves throughout the medical and legal communities, the Minnesota Supreme Court issued a ruling in April in the case of *Warren v. Dinter*, holding that the existence of a physician-patient relationship is not a prerequisite for a medical malpractice action. The court held that a person may sue a physician for malpractice—even if that person was not a patient of the physician—if the harm suffered by the person was a “reasonably foreseeable consequence” of the physician's actions.

The MMA partnered with the AMA and the Minnesota Hospital Association to participate in the case as *amici curiae*, forcefully arguing that expanding physician liability outside of the physician-patient relationship would damage physician collaboration and informal consultation and ultimately harm patients. Despite this counsel, the Supreme Court issued a ruling that may hinder a physician's ability to collaborate with care partners.

The MMA and COPIC, MMA's endorsed professional liability carrier, released a fact sheet for Minnesota physicians to keep them up-to-date on the issue so they can worry less about their malpractice risk and more about the health and safety of their patients. The fact sheet is available at www.mnmed.org/WarrenDinter.

Priority No. 4

Professional satisfaction

The MMA is working to ease the administrative burdens and inefficiencies that are the most common drivers of physician burnout and professional dissatisfaction. The MMA champions the medical profession and celebrates the joy, art and humanity of caring for patients.

Reducing administrative burdens

For the past several years the MMA has brought much-needed attention to the various layers in the complex pharmaceutical supply chain. Among the key players in this process—about which there is little information, transparency or oversight—are pharmacy benefit managers (PBMs). Most physicians who work to navigate pharmaceutical prior authorization rules or to understand formulary changes interface with PBMs, which contract with insurers and employers to administer pharmacy claims and negotiate pricing and rebates with pharmaceutical manufacturers. This past legislative session, the MMA was successful in passing a bill that licenses and regulates pharmacy benefit managers operating in Minnesota and shines some much-needed light on this industry.

The new law requires annual reporting on the aggregate cost spent on wholesale drugs by PBMs, the aggregate amount of rebates received from drug manufacturers, whether a PBM has any exclusive contracts with manufacturers and any difference between the amount charged to insurers and the amount paid to pharmacies. It also outlaws the use of “gag clauses” on pharmacists, a practice in which PBMs prohibit pharmacists from telling patients that there may be cheaper alternatives available than those on the PBM’s formulary.

The MMA also worked to ensure continuation of drug therapy for patients with chronic medication needs by limiting the ability of health plans or pharmacy benefit managers to restrict access to drugs once a patient begins a therapy. However, an MMA-supported bill that would have prohibited health plans from forcing patients to change drugs once they have started on a therapy that is working until the end of the health plan contract year did not become law. The use of formularies and preferred drug lists are tools that may help reduce drug costs, but changes to drug therapies based solely on cost can harm patient care while increasing administrative burdens on physicians and clinic staff.

Supporting and expanding physician volunteerism

Over the past year, the MMA Foundation expanded its flagship Physician Volunteerism Program (PVP), a project founded to support physicians’ work to advance health equity and optimal health for all Minnesotans. Today, the MMA Foundation’s PVP is active in 32 clinic locations across Minnesota. In addition, the PVP is now a resource available to veterans who attend community-based Stand Down events that are organized to take care of veterans’ basic needs. In 2019, volunteer physicians provided approximately 5,000 additional patient visits in medically underserved communities through this program.

Ethics

In 2019, *Minnesota Medicine*, the journal of the MMA, added a new, regular column that deals with various ethical dilemmas physicians face. The first dealt with “firing” patients who refuse to vaccinate their children. The journal published opposing responses from practicing physicians—one who argued that “firing” a patient was ethically permissible, and another who argued against “firing” a patient, instead continuing to educate on the importance of vaccines. *Minnesota Medicine* will continue to publish ethical debates to engage members and keep ethics at the forefront.

Engagement events

The MMA held two types of engagement events for current and future members in 2019.

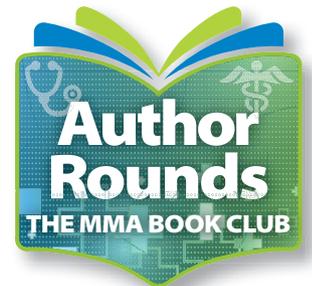
To celebrate the art of medicine, and in recognition of research that has found that reading for pleasure reduces physician burnout by improving empathy and combating depersonalization, the MMA launched a book club. At our first event in downtown Minneapolis, attendees discussed a novel written by a former emergency department physician. Board member and current emergency department physician, Carolyn McClain, MD, led the audience in a robust Q&A session with the author, Tom Combs, MD.

Since 2015, the MMA has hosted free Doctors’ Lounge social events that provide food, beverages and networking opportunities. These gatherings are a great opportunity for physicians, residents, medical students and their families to get together for casual conversation and interaction. The events celebrate medicine, serve as a thank-you to members and a welcome to new and prospective members.

The MMA hosted events in April (St. Cloud), May (Rochester and Minneapolis), September (Duluth) and October (Mankato and Edina).

Battling Burnout: Resilience Conference

The MMA was honored to partner with the Bounce Back Project for its annual Healthcare Provider Resilience Conference (pictured below) in December. The conference, which is dedicated to improving physician and other health professional well-being and resiliency, is a collaboration of physicians, nurses and hospital leaders from multiple health systems. With more than 200 attendees, the event focused on the consequences of burnout, strategies for managing stress and personal health challenges and best practices in building individual and organizational resilience.



Members making a difference

Medicine is not a 9-to-5 endeavor. Often, it's more of a round-the-clock commitment. For these physicians and a medical student, it's go-go-go all day, every day. These people go above and beyond the call of duty regularly and are truly making a difference in people's lives; we are proud to call them MMA members.



Elisabeth Bilden, MD

Sometimes you find causes. Other times, they find you. Bilden, an emergency medicine physician/toxicologist in northern Minnesota, has become a champion of telehealth because access is important to her patients. Bilden served on the MMA's telehealth task force that examined a range of topics, including how current models and practices work, exploring how different physician specialties can use telehealth services, reimbursement issues, licensure and regulatory oversight of telehealth and the quality of care standards and practices. Bilden also served as a member of the MMA Public Health Committee, as well as on Phase I and Phase II of MMA's Prescription Opioid Management Advisory Task Force, another issue that has greatly affected rural parts of the state.



Carolyn McClain, MD

On a frigid night in January 2019, McClain was fired up as she led a panel discussion on gun violence at an MMA forum. An emergency department physician, she's seen the devastating toll of firearms up close. She's also become an advocate for mental health, helping lead a push to address the use of emergency departments to board patients suffering a mental health crisis. McClain serves on the MMA Board of Trustees; is a member of the MMA's Finance & Audit Committee; has volunteered for the MMA's new mentorship program, which kicked off in 2019; became a passionate advocate on surprise billing legislation; and was named an MMA Advocacy Champion in November 2019.



Robert Moravec, MD

Moravec is a true champion of medical education. For years, he has served as the driving force behind the MMA's continuing medical education efforts. He serves as chair of the MMA's Committee on Accreditation and Continuing Medical Education, conducts accreditation surveys, champions quality improvement and mentors new committee members. In addition to his medical education work, Moravec has been active in MMA governance, having served as a former Speaker of the now-sunset House of Delegates and on the Twin Cities Medical Society's board.



Rep. Kelly Morrison, MD

Morrison, an OB/GYN, is a member of the growing (currently at four members) Physician Caucus at the State Capitol. She went against the grain and carried the MMA's provider tax alternative bill this past legislative session, despite DFL leadership's desire to maintain the existing provider tax. She also fought the good fight on prenatal exposure to drugs and mandated reporters, protected the physician-patient relationship in her efforts on reproductive rights and worked to address disparities in access to prenatal care.



Ashok Patel, MD

Greeting everyone with a smile, Patel, a pulmonologist, is always willing to volunteer, whether it's improving how medicine is practiced in the state or helping students learn the craft of medicine. He is the kind of person who makes those around him better. Patel is a current co-president for the Zumbro Valley Medical Society and has been a member of the MMA Policy Council since 2018. Following his recent election, Patel will begin service as a member of Minnesota's delegation to the AMA in 2020.



Abby Solom

Solom, a fourth-year medical student at the University of Minnesota and student trustee on the MMA board, is going places. In the fall of 2018, at the MMA Annual Conference, she received the MMA's Student Leadership Award, which recognizes medical students who demonstrate exemplary leadership in service to fellow medical students, the profession of medicine and the broader community. She has previously served on the MMA's Medical Student Section executive committee as the AMA delegate for the University, and she currently serves in a national capacity as a regional AMA Delegate from the Midwest medical schools. If medical school wasn't enough to keep Abby busy, she is now also pursuing her MBA as a dual MD/MBA candidate.



Maria Veronica Svetaz, MD, MPH

A key priority for the MMA is improving health equity because the state has some of the largest health disparities between whites and people of color. The MMA is dedicated to shining a light on this issue and closing that gap. Svetaz is helping do just that. The board-certified family medicine and adolescent health physician has been a driving force for health equity as a member of the MMA Health Disparities Work Group and the MMA Health Equity Advisory Group. In February, she served as a panelist for the "Structural racism and other barriers to health equity" webinar on Facebook Live. The discussion focused on structural racism, historical trauma and other barriers that stand between minority communities and their ability to achieve equitable health.



Kim Tjaden, MD, MPH

Tjaden, a family medicine physician, is always willing and eager to go the extra mile for the MMA. She has served on the MMA's public health committee for six years, including two as chair. She's been a member of the MMA Policy Council since 2014, addressing issues that affect how medicine is practiced in Minnesota. Tjaden has been involved in planning annual conferences and helping with policy meetings, including serving as a table facilitator during a meeting on recreational cannabis. In August 2019, Tjaden was elected as a board member for the MMA Board of Trustees.



Brian Whited, MD

For seven years, Whited served as the MMA's appointed representative to the MN Community Measurement Board of Directors. A family physician with Mayo Clinic Health System, Whited brought the voice and perspective of physicians to measurement debates and was dedicated to measurement that drives improvements in care for patients. In 2019, the MMA withdrew as a dues-paying member of MN Community Measurement, ceasing its role on the board. The work and efforts of MN Community Measurement over the past seven years were better because of Whited's involvement. The MMA sincerely thanks him for his many years of service and dedication.



Tyler Winkelman, MD

Winkelman is part of a new program in Hennepin County to help people in jail who struggle with addiction. When they are incarcerated, they are screened for opioid use disorder. The board-certified internist and pediatrician served on the MMA Quality Measurement Work Group, is a board member for the Twin Cities Medical Society and serves on the PAN (Physician Advocacy Network). Winkelman recently helped to co-found the Hennepin Healthcare Transition Clinic, which is designed to keep individuals engaged in care after release from jail.

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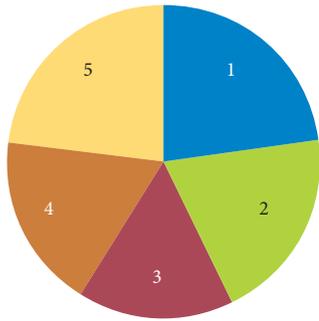
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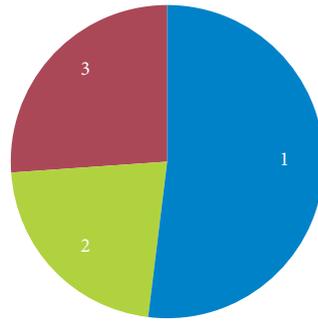
Executive Director Beth Kangas

2019 financial highlights



How your dues are used: Expenditures

- 1 **MEMBER ENGAGEMENT** 23%
Membership engagement, Annual Conference, Day at the Capitol, other events, committees and work groups, student & resident sections, component society services
- 2 **ADVOCACY** 20%
Legislative and regulatory lobbying, policy development
- 3 **COMMUNICATIONS AND EDUCATION** 16%
Minnesota Medicine, MMA News Now, website, special reports, CME (accreditation and joint providership), other education
- 4 **GOVERNANCE** 18%
MMA Board, AMA delegation
- 5 **INFRASTRUCTURE AND OVERHEAD** 23%
Office rent, IT, equipment, finance and human resources, professional development, MMA partnerships and sponsorships



MMA Operating Revenue: \$3.25M

- 1 **DUES** 52%
Dues payments from members
- 2 **NON-DUES REVENUE** 22%
Includes revenue from advertising, sponsorships, events, CME programming, specialty society lobbying, grants
- 3 **SPENDING POLICY** 26%
Investment income used for operations

Membership overview

Year	Total Members
2000	9,089
2001	9,162
2002	9,109
2003	9,116
2004	9,297
2005	10,858
2006	10,835
2007	10,909
2008	10,969
2009	11,330

Year	Total Members
2010	11,250
2011	10,106
2012	10,347
2013	9,998
2014	10,309
2015	10,257
2016	10,171
2017	10,260
2018	10,637
2019	11,011

Membership types

Member Type	2019 Count
Regular	4,399
Resident/Fellow	3,628
Retired	1,427
Student	1,557

2019 membership information

NORTH CENTRAL TRUSTEE DISTRICT	488
At-large	112
South Park Region	44
Stearns Benton	242
Upper Mississippi	60
West Central	18
Wright	12

NORTHWEST TRUSTEE DISTRICT	69
At-large	7
Headwaters	18
Heart of the Lakes Region	16
Red River Valley	28

NORTHEAST TRUSTEE DISTRICT	459
At-large	459

SOUTHEAST TRUSTEE DISTRICT	4,539
At-large	77
Freeborn	47
Goodhue	76
Rice	34
Steele	64
Wabasha	11
Winona	15
Zumbro Valley	4,215

SOUTHWEST TRUSTEE DISTRICT	548
McLeod-Sibley	19
Nicollet-LeSueur	27
Prairie	497
Waseca	5

TWIN CITIES TRUSTEE DISTRICT	4,908
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TOTAL **11,011**

Counts include: regular/active, retired, students, residents/fellows; resident and student counts may fluctuate throughout the year. At-large members are those who work or live in areas without a component medical society.



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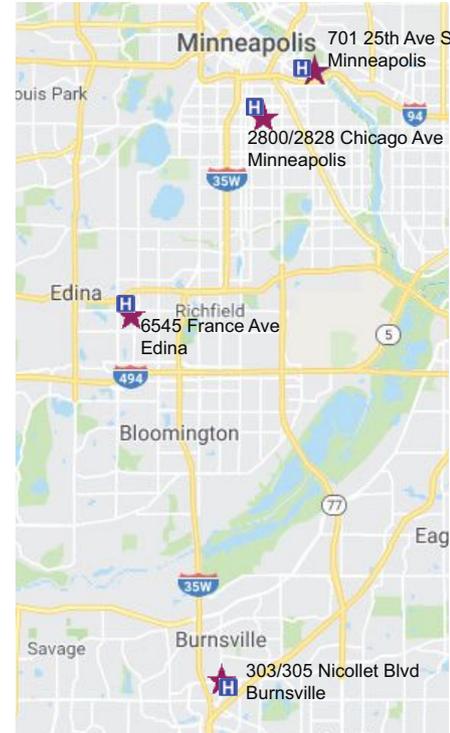
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Chiari network: suboptimal imaging leading to diagnostic uncertainty and an adverse outcome

BY DANIEL ROZENBAUM, MD; VLAD C. VASILE, MD, PHD; AND ANDRÉ C. LAPEYRE, III, MD

Advances in cardiac diagnostic imaging have allowed an increased detection of both clinically relevant and incidental findings. Incidental findings may require individualized decisions which carry associated risks. We present a case in which an echocardiographic finding in an immunosuppressed patient changed the management and led to an adverse event.

A 48-year-old female with Crohn's disease, on chronic adalimumab therapy, presented with a three-month history of generalized weakness, unintentional weight loss, night sweats, fevers, and chills. There was no history of recent central lines or intravenous drug use. She was admitted to the hospital with worsening hypoxemia and tachycardia. Chest computed tomography imaging and a transthoracic echocardiogram (TTE) were performed. The former revealed a miliary pulmonary infiltrate, and the latter identified a mobile, serpiginous, 2.5 cm mass in the right atrium, possibly attached to the Eustachian valve (Figure 1). The initial impression was that the echocardiographic mass could represent a thrombus, vegetation, or a Chiari network. Chiari network was thought to be unlikely due to the

unusual thickness of the mass, as well as the clinical context of infection in an immunocompromised host. A transesophageal echocardiogram (TEE) was deferred given the patient's worsening respiratory status. Due to concerns for a right atrium thrombus, IV heparin was initiated. Subsequently, the patient developed a massive retroperitoneal bleed. After stabilization, a TEE was performed as her respiratory status had significantly improved. The TEE elucidated a prominent, long mobile mass arising from the Eustachian valve (Figure 2). After further characterization of the mass, it became clear that it was a Chiari network with unusually increased dimensions. Eventually, the patient was diagnosed with disseminated tuberculosis and showed satisfactory response to antimicrobial therapy.

and left venous valves. The right valve extends from the orifices of the inferior vena cava (IVC) to the superior vena cava and coronary sinus, and it directs oxygenated blood from the IVC to the left heart via the foramen ovale. Chiari's network likely originates from failure of complete resorption of this valve.²⁻⁴

This embryonic remnant is found in 1.5–2% of patients.^{5,6} Echocardiographically, it typically appears as a thin, thread-like, very mobile echogenic mass usually attached on one end to the Eustachian or to the Thebesian valves, with the other end variably found in different right atrial positions.^{2,5-7}

A Chiari network can be confounded with other right atrium masses.^{2,6,8-11} When atypical in appearance or when found in complex cases, differentiating a Chiari network from right atrial thrombus, vegetation, or ruptured tricuspid chordae tendineae can be challenging.^{6,9-12} Moreover, distinction between different causes can be influenced by the use of TTE versus TEE. In a study using both methods, only 28% of the TEE-identified Chiari networks were detected during TTE.⁵

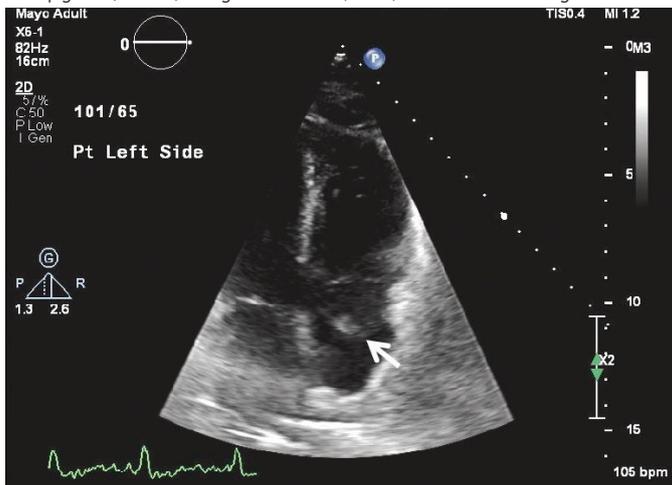
Conclusion

In a patient with a complex clinical scenario, the choice of imaging modality may be limited by the patient's medical conditions. This can lead to inadvertent clinical decisions based on available but incomplete imaging information. Our case illustrates one potential pitfall that can occur after using a suboptimal imaging modality for a right atrial mass.

FIGURE 1

Apical four-chamber TTE view

A serpiginous, mobile, echogenic structure (arrow) is visualized in the right atrium.



Discussion

Chiari's network is an embryological remnant from the right sinus venosus valve named after Hans Chiari, who described the presence of meshwork-like tissue in the right atrium of cadavers in 1897.¹ During the early embryonic period, systemic venous return converges to the sinus venosus. This cavity is connected to the right atrium (RA) by the sinoatrial orifice, which is surrounded by right

Daniel Rozenbaum is an internal medicine resident, Cleveland Clinic. When this article was submitted, he was a fourth-year medical student at Universidade Federal do Rio de Janeiro Medical School, Rio de Janeiro, Brazil. Vlad C. Vasile, MD, PhD, has a joint appointment in the Department of Cardiovascular Diseases and the Department of Laboratory Medicine and Pathology, Mayo Clinic. André C. Lapeyre, III, MD, is retired, formerly a cardiologist with the Department of Cardiovascular Diseases, Mayo Clinic.

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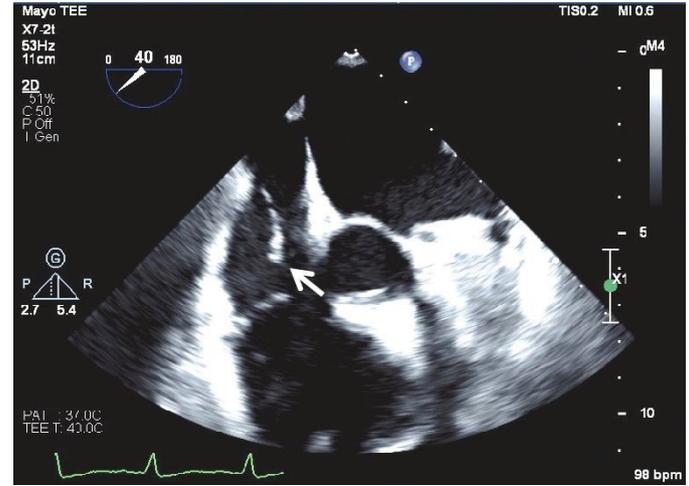
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Chiari Network—Only an Embryonic Remnant or a Confusing Finding? *World J Pediatr Congenit Hear Surg.* 2017;1-3. doi:10.1177/2150135117704658.

FIGURE 2

Mid-esophageal right ventricle inflow-outflow view

The same mobile structure (arrow) is seen in the right atrium with one end attached to the Eustachian valve.



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Vestibular schwannoma: a review of contemporary diagnosis and management strategies

BY LESLIE A. NUSSBAUM, MD, PHD; CHRISTOPHER HILTON, MD; REBECCA WALTON, BS; AND ERIC S. NUSSBAUM, MD

Vestibular schwannomas are uncommon, benign intracranial tumors that present a management challenge based on their intimate association with the brainstem and the cranial nerves affecting hearing and facial nerve function. Modern strategies for managing vestibular schwannomas have been characterized by improved diagnostic accuracy and reduced morbidity and mortality rates. Observation with serial imaging, open microsurgical tumor resection, stereotactic radiosurgery, or a combination of both modalities represent viable management options. Treatment should be individualized based on the unique characteristics and expectations of each patient.

Vestibular schwannomas are associated with hearing and balance deficits due to compression of the brainstem and vestibulocochlear nerve. Magnetic resonance imaging is used for definitive diagnosis, and computed tomography as well as audiometry are generally used as part of patient evaluation. Open microsurgery, which was previously regarded as the mainstay of therapy, is associated with relatively high rates of hearing loss, facial nerve injury, cerebrospinal fluid leakage, and damage to neural structures when compared to stereotactic radiosurgery. As a result, stereotactic radiosurgery has become a critical treatment option for older patients, for those with medical co-morbidities, and for younger patients with good preoperative hearing function. Younger patients with very large tumors resulting in significant brainstem compression still generally require open surgery to decompress the brainstem. In our experience, many such patients will benefit from a combined approach including debulking of the tumor to decompress the brainstem followed by radiosurgery to treat residual tumor adherent to critical structures.

As surgical approaches for vestibular schwannoma have improved, most patients undergoing treatment can expect reasonable preservation rates of both hearing and facial nerve function. Optimal care should be determined on an individualized, case-by-case basis, may involve a combined surgical/radiosurgical approach, and should ideally be delivered in high volume, multi-disciplinary centers.

Introduction

Vestibular Schwannomas (VS) are rare, generally benign tumors with an annual incidence of 1 in 100,000; a total of 2,000 to 3,000 new cases are identified in the United States each year, comprising 6-7% of intracranial tumors.^{1,2} The detection of VS has improved in recent years, likely as a consequence of increased access to and use of magnetic resonance (MR) imaging.³

The last century has seen a dramatic shift in the treatment of VS. Due to historically poor surgical outcomes, with mortality rates exceeding 50% until the mid-1900s, a “wait and see” approach was often taken. Subsequent advances in neurosurgical techniques reduced surgical mortality rates to 20%,⁴ and microsurgi-

cal excision became more commonplace. Current surgical methods offer mortality rates of 0-1%,⁵ yet the development and advancement of stereotactic radiosurgery has reduced the need for open microsurgical excision.⁶ As a result, patients affected by VS today can generally be managed successfully and typically have an excellent prognosis.

Clinical presentation

VS are slow-growing, benign tumors, and therefore symptoms are generally slow in onset.²¹ The most common symptoms in VS patients include unilateral, progressive sensorineural hearing loss, tinnitus (ears “ringing”), and balance disturbance.^{1,22,23} In one study, the mean length of time from

onset of signs or symptoms to diagnosis was 31.6 +/- 50.96 months, with a median of 12 months.²⁴

Patients may occasionally present with more acute symptoms such as sudden sensorineural hearing loss.²² Less common symptoms include headache, feelings of head fullness, and facial numbness, weakness, or pain.^{22,25} Due to the wide range of symptoms, VSs are often mistaken for Meniere’s disease,^{2,21} migraine,²¹ or other conditions.⁴ The use of MR imaging (**Figure 1**) and an array of diagnostic testing, including auditory brain stem response (ABR) and audiometry (**Figure 2**), have greatly increased the sensitivity and specificity of VS diagnosis.^{1,2}

Assessment and diagnosis

When hearing symptoms persist, patients are usually referred to an otolaryngologist, and audiometry is performed revealing unilateral high-frequency sensorineural hearing loss. While it is common to develop a high-frequency sensorineural hearing loss with advancing age, typical aging does not lead to asymmetries in hearing, and unilateral hearing loss will typically prompt MR imaging to rule out a VS.

Radiologic imaging is typically undertaken using T1-MR, T2-MR, and 3D FLAIR imaging with administration of gadolinium as a contrast agent offering a diagnostic accuracy of 96% sensitivity and 88.2% specificity.^{1,2,4,5,26,27} MR images can help determine the exact location of the lesion and whether it is compressing other brain structures, such as the brainstem.¹ Computed tomography (CT) imaging is often used as a part of the pre-surgical work up as well.^{4,28}

Pathogenesis

VS are benign neoplasms of the nerve sheath surrounding the eighth cranial nerve (CN VIII or the vestibulocochlear nerve).² Most VS occur in sporadic fashion without associated genetic abnormalities. VS may be associated with neurofibromatosis type 1 (NF1)—this subtype is also considered a sporadic VS—or with neurofibromatosis type 2 (NF2) which is typically associated with bilateral VS.^{1,4,7,25-7}

Neurofibromatosis 1

NF1 has been shown to be associated with the development of nerve sheath tumors, including VS⁸⁻¹⁰ based on mutations of a Ras GTPase gene on the long arm of chromosome 17 that regulates cell proliferation.¹⁰⁻¹³ Sporadic VS have demonstrated a connection with deregulation of p53 in several studies, but further research is needed to determine the range of pathogenesis of sporadic VS.^{7,14,15} NF1-related and sporadic VS are rarely bilateral, differentiating them from NF2-associated VS.⁹

Neurofibromatosis 2

For VS associated with NF2, the strongest genetic marker is a loss-of-function mutation in the tumor suppressor gene NF-2 on chromosome 22.^{9,16,17} Tumor development, proliferation, and survival have been associated with multiple intracellular signaling molecules, including MAP kinase, AKT, p21-activated kinase, and others. However, there has been no conclusive evidence for the causative role of these pathways in the development of VS.¹⁸ Furthermore, genetic alterations are insufficient to describe or predict tumor growth or clinical manifestations in these patients.^{16,19}

Therapeutic strategies

Treatment options for VS include a “wait-and-see” approach, microsurgical tumor removal, stereotactic radiosurgery (SRS), and combined microsurgery-SRS.

The “wait-and-see” approach, which consists of serial MR imaging typically performed on an annual basis to monitor tumor growth, was initially proposed as a method for addressing the historically high morbidity and mortality rates associated with surgical removal of these tumors. In one study of 123 patients managed conservatively, 28% were ultimately operated on due to tumor growth, 6% received SRS and/or shunt insertion, and 6% died of tumor compression.²⁹ Therefore, the risks of this approach primarily relate to the delayed consequences of tumor growth causing functional deficits and potentially increasing the risks of treatment once the tumor has reached a larger size. This approach makes sense in older patients with smaller tumors that may never reach a size of consequence to the patient. Generally, a course of watchful waiting is recommended for a significant percentage of newly diagnosed patients, since many VS are now being diagnosed in older patients or while their size is quite small due to the increasing utilization of MR imaging.

Open microsurgery

When treatment is recommended, microsurgery has been shown to both control



FIGURE 1

Coronal posts-contrast T2-weighted MRI showing a typical vestibular schwannoma.

The lesion is homogeneously enhancing and extends from the left cerebellopontine angle into the internal auditory canal.

tumor growth and potentially preserve hearing, depending on the approach used.^{26,30} Microsurgical resection is often recommended in younger patients, in patients with substantial dizziness that may not respond well to SRS, and in those with larger tumors causing symptoms due to mass effect on the brainstem (see **Figure 3**).⁴ However, resection carries the risk of permanent facial nerve palsy, hearing loss, CSF leak, meningitis, and headache.^{4,31} Over the past 50 years, the goal of treatment for VS first shifted from preservation of life to preservation of facial nerve function with improving surgical techniques. More recently, the goal has become preservation of hearing, an option that would not have been considered feasible in the past but has become a real possibility with further refinements in surgery and with the advancement of SRS options.

Surgery may be carried out through translabyrinthine, retrosigmoid, or middle fossa approaches.^{1,4} The translabyrinthine approach is generally used to treat tumors of the internal auditory canal (IAC) or cerebellopontine angle (CPA) in patients who have already lost their hearing ability as the approach itself results in complete hearing loss due to removal of the inner ear structures.^{1,4} The greatest advantages of this approach include the need for only minimal brain retraction and the ability to visualize tumors that extend all the way to

the lateral-most aspect of the internal auditory canal.^{4,5} The retrosigmoid approach is used to resect VS primarily involving the CPA and is often preferred for larger lesions with significant brainstem compression.^{1,4,32} Hearing preservation is possible with this approach. The middle fossa approach is used to resect small tumors within the IAC when hearing is excellent.^{1,4,32,33} This approach allows for the possibility of hearing preservation but carries an elevated risk of facial nerve injury.^{4,33}

The major disadvantages of open surgery include the relatively high rates of hearing loss, the potential for injury to the facial nerve causing temporary or permanent facial weakness, and the risk of CSF leak postoperatively. In our practice, surgery is performed by a team that includes a skull base neurosurgeon and a neurotologist. The specific approach is tailored to meet the needs of each individual case. Over time, we have gained a better sense of which tumors can be completely resected without subjecting the patient to significant facial nerve palsy. In those patients with tumors particularly adherent to the facial nerve, we will often perform a subtotal resection, removing most of the tumor and decompressing the brainstem. This can be followed by SRS to treat any residual tumor while minimizing risk to the facial nerve.

Stereotactic radiosurgery

Stereotactic radiosurgery (SRS) has become an increasingly important alternative to open microsurgery over the past two decades.^{1,4,34,35} SRS is most often used to treat smaller tumors that demonstrate interval enlargement on serial imaging and is an excellent option for patients with good hearing. SRS has been shown to control tumor growth with higher rates of hearing preservation and decreased risk for facial nerve palsy compared to open microsurgery (see **Figure 4**).^{1,4,24} Two popular forms of SRS are Cyberknife (CKRS) and Gamma Knife (GKRS). While both methods apply beams of radiation to lesions; their main difference is in the procedure itself.³⁶ Since GKRS requires the mounting of a head frame with screws

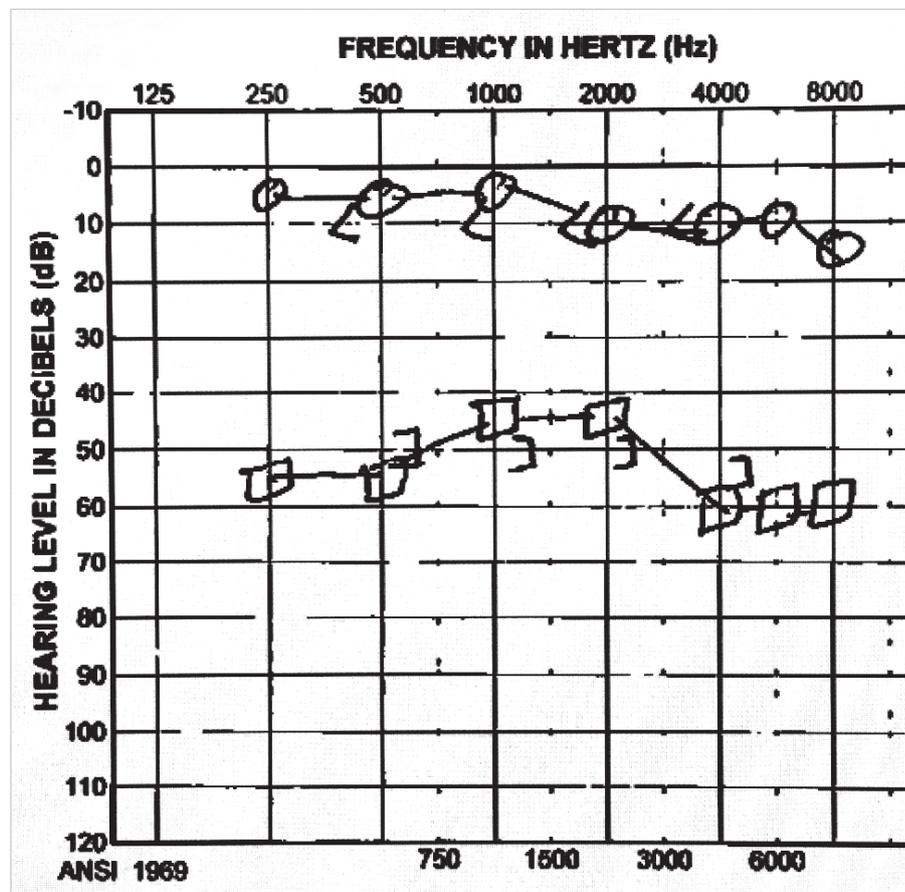


FIGURE 2

Conventional audiogram showing asymmetrical sensorineural hearing loss.

In this example, hearing level in the right ear is within the normal range (O, 0-20 dB range), with moderate hearing loss in the left ear (X, 40-70 dB range).

inserted into the skull before and during treatment, we have utilized CKRS for the past 15 years. CKRS is frameless and therefore painless, often allowing patients to return to work the day of treatment. The lack of a frame allows for CKRS to be fractionated, which may improve tumor control rates while minimizing the potential for injury to neighboring critical structures.³⁷

Both options provide excellent tumor control rates with hearing preservation rates exceeding those offered by open surgery in those patients who have good hearing before treatment. One study found that GKRS was able to control tumor growth in 97.1% of the patients and 82.7% showed decreased tumor volume at follow-up.²⁴ CKRS has shown excellent tumor control rates, as high as 99.1%.³⁸ Hearing preservation rates in GKRS reportedly range from 55% to 79%,³⁸ while studies evaluat-

ing hearing preservation for CKRS have shown that approximately 80% of patients have improved or unchanged hearing post-operatively.^{38,39}

Potential complications reported following GKRS have included cerebral edema, headache, nausea, and facial numbness or weakness.^{40,41} Also, similar to other forms of standard radiotherapy, there are risks of bleeding and microvascular dysfunction due to endothelial cell damage.^{36,42} Other potential complications include facial nerve impairment, vertigo, and imbalance, however, these findings are rare, ranging from 0 to 3%.²⁴

Some surgeons have argued against SRS for VS, based on the potential risk of late malignant transformation.⁴³⁻⁴⁶ In fact, the statistical evidence suggests that malignant transformation likely only occurs in the setting of NF-2, can occur in NF-2 tumors even without irradiation, and is so uncom-

mon that the risk of death from surgery far exceeds that of malignant transformation.^{44,47} Based on these factors, we do not believe that the hypothetical risk of malignant transformation should play a significant role in the decision-making process regarding the use of SRS, although it is appropriate for patients to be informed about this issue.

With the advancement of SRS techniques, we have come to regard SRS as the treatment of choice for older patients, individuals with multiple medical comorbidities who have enlarging tumors, and in patients with excellent hearing status. Although some hearing can be preserved with open microsurgery in roughly three-quarters of patients with good preoperative hearing, fewer than half will retain good hearing.³³ In addition, it is not uncommon for hearing deterioration to occur several years following surgery.⁴

Options in the setting of NF-2

NF-2 patients are unique in their propensity to develop bilateral VS, often presenting at a young age, and potentially resulting in eventual deafness. In these patients, unique strategies have been developed to maintain hearing function, including the possible use of chemotherapeutic agents to slow tumor growth in an attempt to preserve hearing as long as possible.^{1,48,49}

In patients who suffer bilateral hearing loss, auditory brainstem implantation may allow for some preservation or restoration of hearing.^{50,51} These are best managed in centers that care for a high volume of VS patients to optimize their outcomes. Genetic counseling and patient support groups may also be important, particularly for NF-2 patients, who often struggle with life-long issues from their disease.

Conclusions

As microsurgical techniques have improved over time, many VS patients can undergo treatment with the realistic expectation of preservation of hearing and facial nerve function. The increasing use of SRS has revolutionized the management of VS and allowed for a combined approach with microsurgery

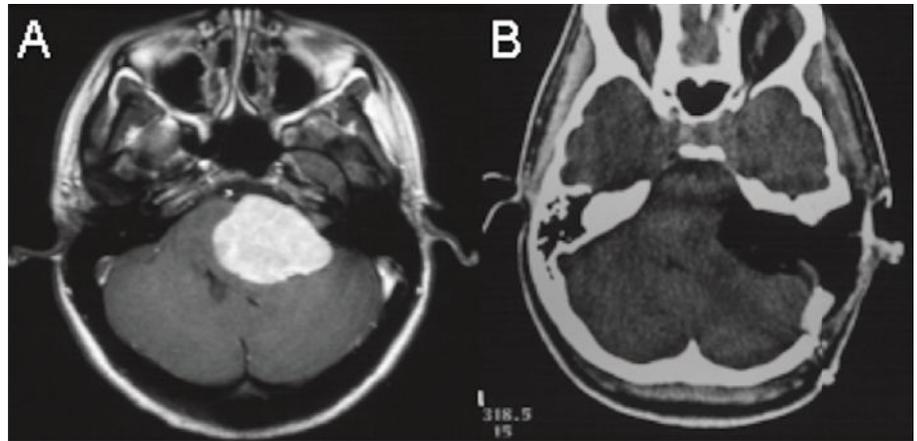


FIGURE 3

Large vestibular schwannoma before and after open microsurgery.

A) Pre-operative axial T1-weighted MRI showing large enhancing vestibular schwannoma filling the cerebellopontine angle with marked displacement of the brainstem and fourth ventricle to the right. B) CT after removal of a large acoustic neuroma, showing fat graft following resection and improvement in brainstem position.

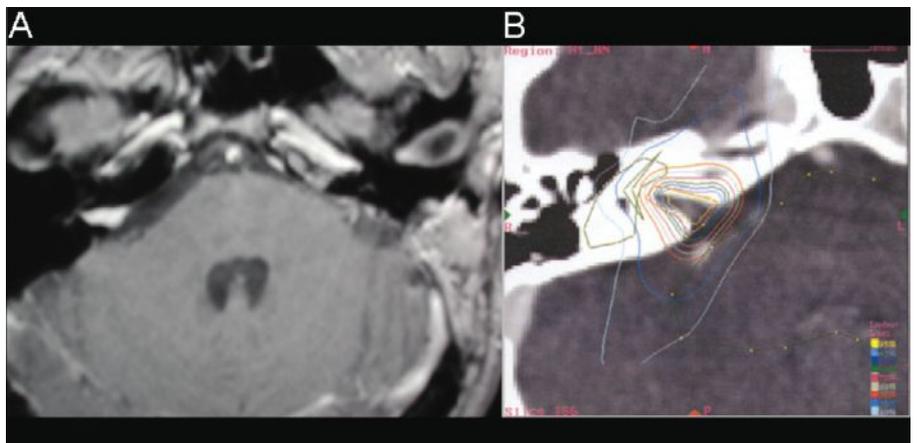


FIGURE 4

Planning stereotactic radiosurgery of a vestibular schwannoma.

A) Axial T1-weighted post contrast MRI showing a homogeneously enhancing intracanalicular vestibular schwannoma, prior to stereotactic radiosurgery. B) Treatment plan showing precise targeting of fractionated radiation on axial contrast CT.

to debulk the tumor and decompress the brainstem followed by the use of SRS to treat residual tumor adherent to critical structures. Optimal management for VS patients generally occurs in high volume, multidisciplinary centers that include skull base neurosurgery, neuro-otology, and dedicated SRS to offer patients the full spectrum of options and to optimize outcomes. MM

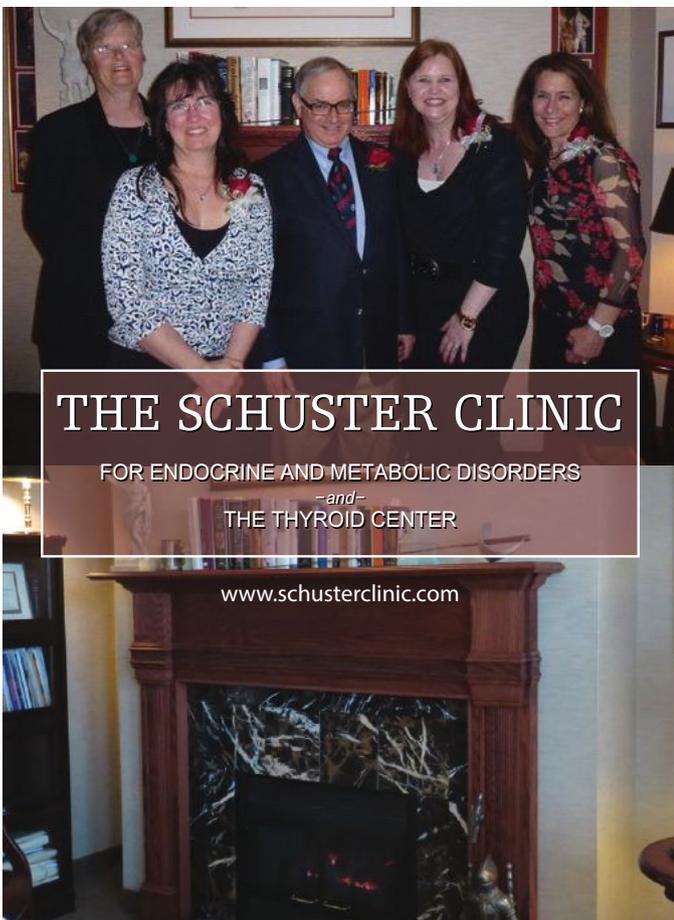
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VERNA THORNTON, MD

- OB/GYN, Community Memorial Hospital, Cloquet, and consulting gynecologist, Mercy Hospital, Moose Lake
- MMA member since 2018.
- Grew up in Birmingham, Alabama. Graduated from Fisk University, Nashville. Medical school at Morehouse School of Medicine, Atlanta. Residency at Emory University and Affiliated Hospitals. Since finishing residency, has worked in private group practices in suburban Atlanta, including Peachtree City, where she was the proprietor and solo practitioner of Genesys Gyn, Inc. Began working in Cloquet in 2018.
- Married, with adult twin daughters. Enjoys gardening, travel, interior design and public speaking.

Became a physician because ...

I always wanted to become a physician; I have no other memory of desiring to train

for any other profession. As a child, I was always interested in the scientific and medical television shows such as “Quincy,” and “Marcus Welby, M.D.” I also had the privilege of growing up and interacting with many physicians in my community and was fascinated by the relationships these real-life physicians and fictional characters had with their patients and their communities. However, the main reason that I chose to become a physician is due to my early realization of the health care disparities that existed in our nation. I grew up in segregated Birmingham, Alabama. Though privileged, I was constantly reminded of the maltreatment that my people encountered—even in health care. I was



made aware at a young age that most black women were relegated to labor and deliver their newborns in the undignified hallways of the basement of the public hospital. While I realize that times have changed, disaffected people of color, poverty and lesser education still suffer from the effects of policies that disen-

franchise them from achieving parity in quality health care. I sought to become and still dream of being a physician who is trusted by all patients, regardless of “race, creed or color.”

Greatest challenge facing medicine today ...

The greatest challenge facing medicine today is the unfortunate disconnection many patients feel in their relationships with their physicians. Corporate medical policies, emphasis on technology, insurance reimbursement and interference by “Big Pharma” have certainly created obstacles to forming meaningful interactions in the patient-physician relationship.

Favorite fictional physician ...

I prefer to answer with my favorite non-fictional physician: Rebecca Lee Crumpler, MD, the first African American woman to become a physician in the United States. A graduate of the New England Female Medical College in 1864, she first practiced in Boston, primarily caring for poor women and children. After the Civil War ended, she worked for the Freedman’s Bureau to provide medical care to freed slaves. She encountered racism and sexism while practicing medicine. Unfortunately, many minority and female physicians are still battling these same issues in 2020.

If I weren’t a physician ...

I would be an event planner; I absolutely love to entertain. I relished giving my twin daughters, now 28 years old, wonderful birthday and graduation parties when they were young. I enjoy looking at the happiness of those hosting a well-planned event, as well as the enjoyment of the invited guests. I am presently planning a wedding for one of my daughters, who will also graduate from medical school in May.

PAUL KIETZMANN, MD

- Physician champion, Controlled Substance Care Team, Alexandria Clinic, a service of Alomere Health, Alexandria.
- MMA member since 2008.
- Grew up in Watertown, SD. Graduated from the University of Minnesota, medical school at University of Minnesota (first two years at University of Minnesota Duluth). Family practice residency at Sioux Falls Family Practice. Became a family practice physician at Alexandria Clinic in August 2008.
- Married with five children—two boys and three girls.
- Enjoys the outdoors all year round, including waterskiing, wakesurfing, fishing, running, hiking, cross-country skiing and snowboarding.



Greatest challenge facing medicine today ...

Health insurance and lack of price transparency in health care cost. I feel like we are well-trained and fully capable to help patients find out what’s wrong with them and come up with a plan for how to fix it. Seeing patients struggle with the cost of medical care and trying, along with their physician, to navigate insurance and cost is a major roadblock.

Favorite fictional physician ...

Dr. John “J.D.” Dorian from “Scrubs.” Watching “Scrubs” with my wife while in residency

is a great memory of mine—and Dr. Dorian created a lot of laughs.

If I weren’t a physician ...

High school biology teacher—for the same reasons I wanted to be a physician: an interest in biology, a desire to serve others and make an impact on their lives and a daily challenge.

Became a physician because ...

Being a physician was only a loose idea until my freshman year of college. My interest in human biology, a desire to serve others and the daily challenge of a career in medicine pushed me to go to medical school

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