

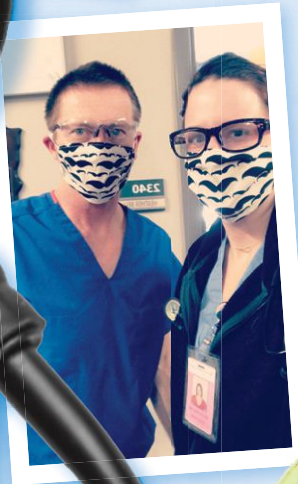
# MINNESOTA MEDICINE

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*The more things change...*

A day in the lives of five Minnesota physicians PAGE 18



**CORONAVIRUS** medicine and life PAGE 6

**TALKING ABOUT DEATH** with patients PAGE 10

**PANDEMIC** highlights weakness in health care system PAGE 16

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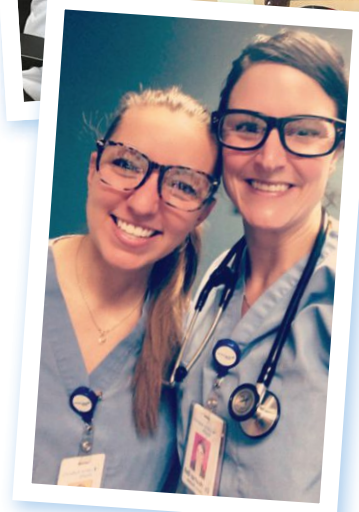
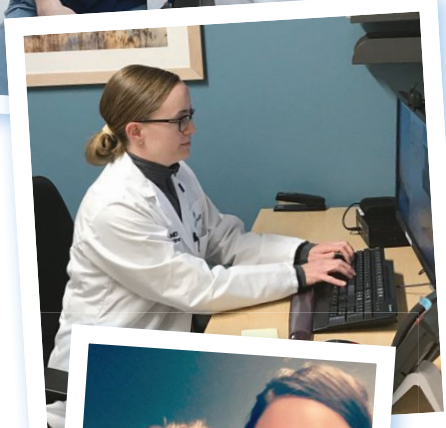


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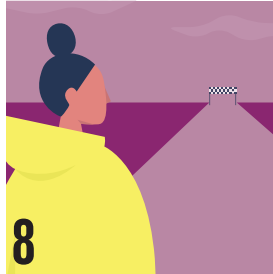
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Annual subscription: \$45 (U.S.) and \$80 (all international)

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Zeke J. McKinney, MD, MHI, MPH

Many patients are unnerved by the whole idea of going to the doctor... As we are seeing during the current COVID-19 pandemic, lack of knowledge can create anxiety.

## The importance of patient trust

**W**e physicians enter the lives of others at challenging times. That is both a privilege and responsibility. To do our best for our patients, we must earn their trust—and then use it to help them.

People come to the doctor when they are most vulnerable. I first realized this during my surgical internship at Hennepin County Medical Center. For many patients there, hospitalization was the scariest experience of their life. I remember one young man, a bouncer, who came in unconscious with a severe head injury. He woke up in his ICU hospital bed two weeks after his injury, disoriented and afraid. “What happened to me?” he asked. There he was, in a strange place, being cared for by strangers, with two weeks of his life missing.

Many patients are unnerved by the whole idea of going to the doctor. They may not understand what the physician is telling them about their disease, treatment or prognosis, and they are in an unfamiliar and often unwelcoming environment. Everything from the tedious details of registration to the grating sounds of overnight inpatient monitors can be intimidating. As we are seeing during the current COVID-19 pandemic, that lack of knowledge can create anxiety.

How can patients get through these experiences, foreign to them but so common for us? Trust. When a patient comes to you for care, they are implicitly placing an immense amount of trust in you and your expertise. It is an enormous burden to navigate the uncertainties of medicine with patients and their families, impossible to summarize the breadth and depth of years of intensive medical study and training in relatively short interactions. The weight of that task is, fortunately, counterbalanced by the successes we can have.

Sometimes, like the bouncer, patients show up without any choice; they simply have to believe that you have done or will do what is in their best interest. This young man was able to leave the hospital with his grateful family. He may not have understood what had happened to him and how he was treated, but he trusted it would turn out well—and it did.

Patients usually are willing to accept our best rationale for diagnosis and treatment because they may not know any other way to get better. This urgency—and the patient’s vulnerability and trust—drives the initial physician-patient relationship.

Later, when we get a glimpse into who patients are as individuals as we get to know them better, we can grow the relationship. We can solidify their trust in us by learning about the factors that affect both their illness and their lives beyond their medical concerns.

My current practice involves only outpatient medicine; hopefully, my patients are not as overwhelmed by the clinical experience as inpatient trauma patients. Still, I remember that my patients don’t come to clinic because they *want* to see me, but because they *need* to see me. **MM**

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



# thank you

To all the **doctors**  
*nurses ICU staffers*  
*practice managers first responders*  
*infectious disease specialists*  
**intensivists** *medical examiners*  
*geriatricians nurse practitioners*  
**respiratory technicians**  
*ambulance drivers pulmonologists*  
**epidemiologists** *social workers*  
*life sciences engineers* **microbiologists**  
*vaccine research lab technicians*  
**pharmacists** *hospital administrators*  
*public health officials* **nursing homes**  
**pathologists** *hospital housekeepers*  
*microbiology researchers*  
*PPE manufacturers* **immunologists**  
**medical research scientists** *paramedics*

**To the doctors, nurses, and other healthcare professionals battling COVID-19**—the employees of ProAssurance and our families are deeply grateful for your leadership, dedication, and sacrifices.

**To everyone else**—please stay home, wash your hands, and most importantly...

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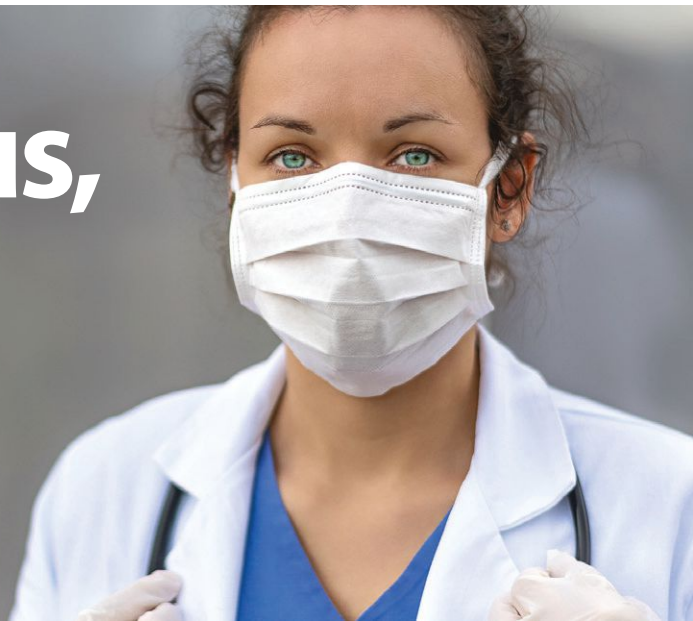
Steps from the Guthrie Theater

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# Coronavirus, medicine and life



It seemed as if everything changed virtually overnight.

Physicians—and patients—figured out telehealth (and insurers figured out how to reimburse for it). Surgeries, some on the schedule for months, were canceled. Some clinics were closed altogether. Some physicians were idled, or nearly so, others were working more than ever, in personal protective equipment, constantly worrying about whether they would become ill and/or bring illness home to their families.

And everyone engaged in health care in Minnesota is worried about how to survive financially going forward. Even if the world bounced back to what it looked like before January of this year—it cannot and will not—the economic hit of the months of social distancing will not be overcome quickly, possibly not for years.

Coronavirus and the disease it causes, COVID-19, have had an extraordinary impact on the U.S. health care system—and the lives of everyone in the country. At the time this issue of *Minnesota Medicine* went to press, Minnesota was still under Gov. Tim Walz’s “stay at home” order. By the time you receive this issue, that order may have lapsed, or been extended, or we may be beginning a staged reopening process. That kind of uncertainty is what makes the situation so hard to manage.

– Linda Picone, editor, *Minnesota Medicine*

***One physician offers this poem, which may strike a chord for many others on the front lines of Minnesota health care.***

## How can we?

*How can we avoid doing harm  
when our patients put themselves in harm’s way to see us?*

*How can we provide a safe environment  
when we must become socially not distant?*

*How do we create a normal encounter  
when our expressions are masked and our eyes guarded?*

*How does a virtual visit compare  
when we cannot auscultate, palpate, or visualize with scopes and lenses?*

*How can we reassure our patients  
when our medicine and Medicine can harm as well as heal?*

*How can we do our part  
when we need to flatten rather than steepen the curve?*

*How do we give the answers  
when the questions elude even the experts?*

*How can we do anything else?*

Justin Yamanuha, MD, is assistant professor in the Department of Ophthalmology and Visual Neurosciences, University of Minnesota.

**Send your  
thoughts  
and ideas**

In coming issues, *Minnesota Medicine* will dive deeper to explore the impact of COVID-19 on Minnesota’s physicians. We invite your anecdotes about how you have coped with dramatic change in your practice, your thoughts about what comes next for you and your patients, your “heroes” during this pandemic and your ideas about lessons learned for health care in Minnesota. Send your thoughts and ideas to Linda Picone, editor, *Minnesota Medicine*, [lpicone@mnmed.com](mailto:lpicone@mnmed.com).



# Take care of yourself

So you can  
continue  
caring for  
others

## Up to 40 percent of physicians report symptoms of burnout.

The cause of burnout is complex — structural complexities in U.S. health care, workplace demands and constraints, and personal stressors. In addition to the personal toll, burnout can also harm patient care.

The MMA advocates to make Minnesota the best place to practice medicine. And to help support the personal well-being of physicians, **the MMA has partnered with Heartwood Healing to offer physicians and trainees the Heartwood Self-Mastery Program** — evidence-based tools and strategies to prevent and manage stress and help you reconnect to your purpose.

The program, consisting of a series of short videos, downloadable audio recordings and tools, will help physicians and physicians-in-training enhance their inner strength and design a life of fulfillment. **The course includes 15.75 CME credits.**

### ABOUT HEARTWOOD HEALING

Heartwood Healing, founded by Jacquelyn Fletcher Johnson, is an education, training and coaching organization that creates ways to help businesses whose people are experiencing high levels of stress, facing burnout and compassion fatigue, or other challenges. Heartwood Healing's techniques provide people with access points to their inner core of strength and resilience so they can create sustainable health and well-being.



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*MMA members receive a 20 percent discount on the course.*

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



# Determine what matters most to you

BY COREY MARTIN, MD



Most of us have an idea in our mind when we start medical practice—or even before: We'll see and treat patients in the hospital and/or clinic, roughly 36 hours a week.

Reality turns out to be different. That 36 hours in face-to-face time with patients doesn't include the time we have to spend doing paperwork and electronic medical records. It doesn't include meetings and

case reviews. It doesn't include reading medical journals and researching solutions to our patients' medical issues online, in print or in consultation with other physicians.

We have to change that—and we have to start by changing our ideas of what it takes to be a physician vs. what it takes to be a person with needs for rest, connection, love, exercise and laughter.

I'm a family physician who chose to start practice in Buffalo because I could do the full range of family medicine, from delivering babies to taking care of children and their parents to working with older residents of the area. I threw myself into my work—and I loved my patients and caring for them.

I learned that I could burn myself out faster than anyone else. About five years into practice, I was overwhelmed, frustrated and angry. I was lucky, in a way; I had the chance to take on an administrative role at the hospital as a part-time position, director of medical affairs, while continuing to see patients a few days each week.

In my new role, I learned more about not only my own burnout, but that of my colleagues. I started doing work on how we take care of ourselves, how we support each other, how we deal with the things that get in our way—and I was in a position to help make changes.

Then, five years ago, two of my colleagues died. One, a physician who had delivered two of my children, someone I'd talked to only a couple of days before, was killed while riding his motorcycle. The other, just three months later, was a colleague who hanged himself in the hospital chapel. I remember walking into the emergency room that evening and seeing the look of devastation on everyone's faces.

What was happening here? Why were we losing our colleagues, our friends?

The next day, I was at the hospital and the medical secretary told me she was so glad to see me because when she heard that someone had taken his life in the chapel, she was afraid it was me.



That was the point of no return for me. Since then, the vast majority of my time has been spent figuring out how I maintain my well-being and my life—and helping others do the same. I still practice medicine two days a week, I still do administrative work, but mostly I work with and for physicians who struggle to reclaim the joy they thought they would have—perhaps they did once have—in medicine.

When I talk with a physician who is frustrated and burned out, I start by asking them what they want to do with their lives, what's really important to them. It's surprising how few of us have really thought about that. Maybe it's because we spend so much time nose-to-the-grindstone from college on—possibly even from high school on, focused on getting into a good medical school, then getting through that medical school, then getting into residency and through residency and then possibly a fellowship and then a clinical or research

position somewhere. We're at least in our 30s before we can even look up and think about anything other than the goal ahead of us. Even after all that, we have loans to repay and hours and hours of work to prove ourselves with more senior colleagues.

If we as health care providers can't show up with a full tank of gas, we can't take care of others. We need to ask ourselves: Are we really living the life we want to live? Are we finding joy in our practice of medicine? What do we value, what matters most in our lives?

The answers to those questions may take us on a different path—and it may not be easy, at least at first, to change directions or to reduce income or status. If family is what really matters in your life, yet your family ends up in last place on your to-do list each week, maybe it means going to part-time status or changing jobs or even location. Maybe the changes are

less dramatic, but just as significant. You carve out time every day to meditate or to swim or to have a meaningful conversation with someone you love. You ask for help—a scribe, a PA, an office assistant—to let you do more of the work that brings you joy and less that bogs you down.

In many of the organizations we work for, there are things that lead to burnout and things that should be changed. But that change takes a long time in organizations. Even if a health system decided today to change something about its expectations of physicians and began to try to make that happen, it likely would take years. I think that over time organizations will figure things out, but right now, we've got to do it for ourselves. **MM**

Corey Martin, MD, is a family physician with Stellis Health in Buffalo, MN, and founder of the Bounce Back Project™. The MMA is partnering with The Bounce Back Project for the annual Bounce Back Conference this year.

Deadline for  
submissions:

**May 31, 2020**



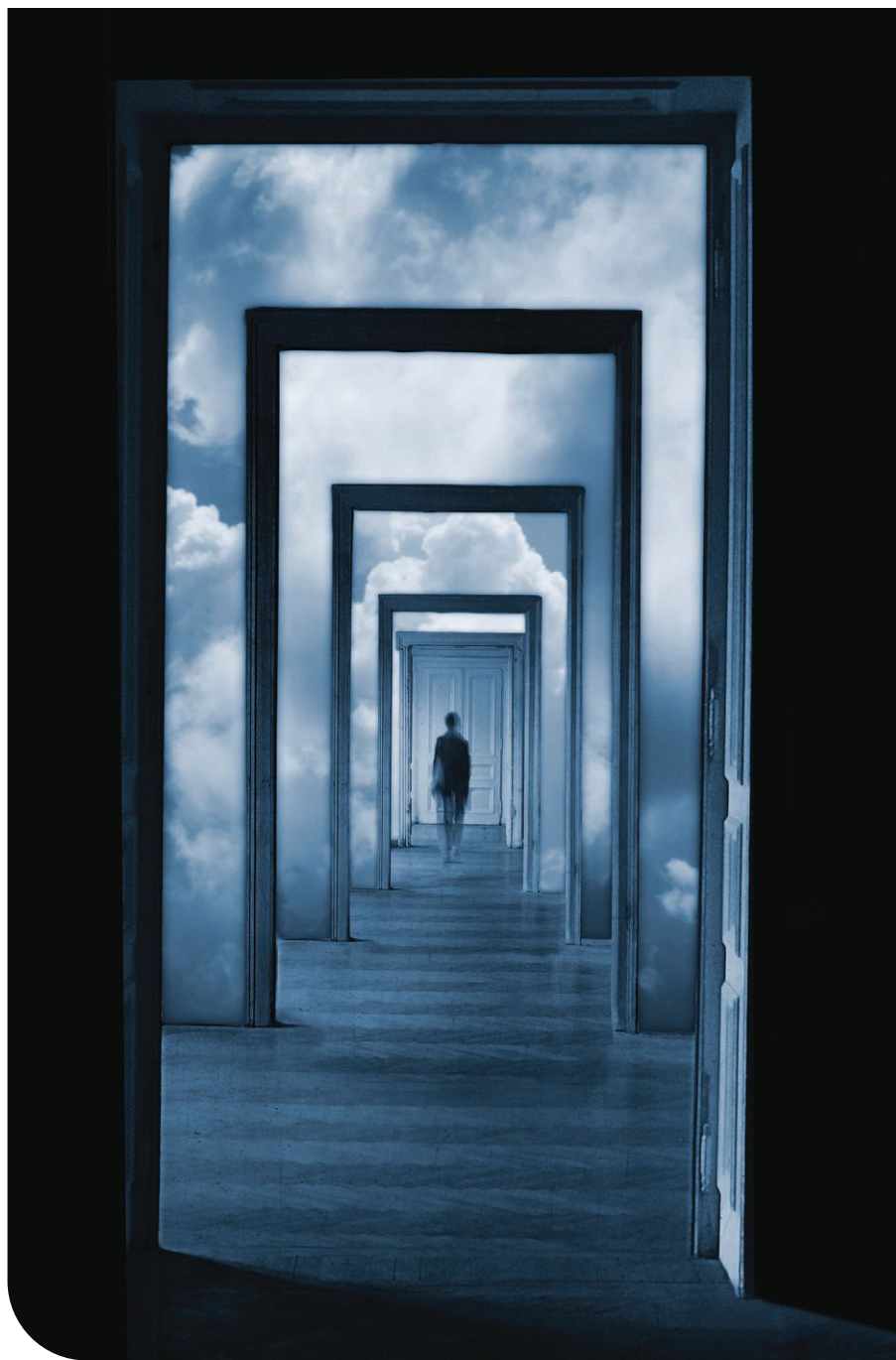
## Students, residents and fellows: Shine a spotlight on your research

COVID-19 has changed the way *Minnesota Medicine* and the MMA will display your abstracts—but not our commitment to showcasing them.

**We will publish positively reviewed submissions through at least the November/December 2020 issue. Those who are invited to present posters will have those shown virtually during the MMA Annual Conference in September.**

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# Talking with patients about serious illness and death

To do it well, physicians have to get comfortable with mortality

BY LINDA PICONE

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Physicians are trained “to do stuff, to fix things,” says BJ Miller, MD, a palliative care specialist at University of California San Francisco. “Someone comes in with a problem, we solve the problem. But death is an unfixable problem, and that flummoxes us.”

Miller, who is an expert on palliative care and end-of-life issues, was scheduled to speak at the St. Paul conference of the Minnesota Network of Hospice and Palliative Care in April. The conference was cancelled because of the coronavirus pandemic; Miller shared some of his thoughts in an interview with *Minnesota Medicine*.

Many physicians are uncomfortable with talking about death with their patients because they are not good at thinking about death, period.

“Humans are pretty uncomfortable with the subject and doctors are human,” Miller says. “We are wired as a species to run away from death; it’s just a tough subject. Wrapping our heads around nonexistence is practically impossible.”

Virtually every physician is going to see patients whose medical issues will lead to death or life-changing disabilities; few have the training or resources to have an honest and caring discussion with their patients. They may offer hope, they may focus on next steps—or they may avoid any prediction about the patient’s future.

## What can physicians do, or do better?

First, Miller says, physicians need to learn how to accept things they can’t control or change. “Learn to just not run away,” he says.

Simply being with the patient, really being there, is hugely important. Miller dislikes the phrase, “I’m so sorry, there’s nothing we can do.” “That phrase needs to be banished,” he says. “Being with someone is doing something. So, there is always something we can do. What we do is to be with people in hard, hard moments.”

There are no magic words when telling a patient bad news; you simply start by listening. “You pick up on the nuances in knowing who you are talking to—and that means listening,” Miller says. “You get a gut sense of what lands with people, and what doesn’t.”

## Grief and change in the time of coronavirus

"I feel grief in the air," says BJ Miller, MD, palliative care specialist at the University of California San Francisco, about the way COVID-19 is impacting the United States—and the world. "We are all losing stuff—our jobs our innocence, we're losing something, even if we're not sick."

One patient may say he's a fighter, he'll go through anything. Another may say he doesn't want to spend his last days suffering through painful treatment. "Figure out what's important to your patient," Miller says. "You need to listen to the goals and preference of that individual—and then you tailor the treatment to that personality, figure out what makes sense for them."

"And then be able to say things like, 'I don't think that therapy is going to help you' or 'another pathway would be to not treat it.'"

Providing what may be false hope is not simply a function of a physician's discomfort, it's often part of a collusion between the patient and the physician. "Patients sometimes don't want to hear that there aren't a lot of options," Miller says. "We all have to work on it; it's not just doctors getting better at dealing with it."

The last step in working with a patient facing a bad outcome is to understand the kinds of resources available to them. "A lot of it becomes non-medical stuff, but as a doctor, you can help the patient broker options," Miller says. "At least know how to get hold of a social worker. You don't have to know all of this stuff; it's a team effort."

Relaying bad news, sitting with the patient who is in shock or grief, being honest about options, then talking about next steps ... all of that takes time. "Everyone is so busy in these frigging 20-minute encounters," Miller says. "Most of these decisions don't need to be made today—and they can't be. You need to figure out the right time to talk about things, and the day of the bad news may not be the day to say, 'Hey, how about hospice?'" **MM**

Linda Picone is editor of *Minnesota Medicine*.

The individuals he works with are confronting their own existential crises as they get bad diagnoses; "It rocks the ground underneath them and threatens to shorten their life."

After an existential crisis, Miller says, "you tend to come back more loving, less sure of yourself, less convinced you can fix everything."

He sees the coronavirus as an existential crisis for society. "Do we apply the same things we do with an individual to our society?" he asks "Potentially, this may mean we approach our lives with a softer touch. It's too soon to say if we're going to have this massive kind of waking up, but that's what I'm keeping my eye out for."

## POLST form helps patients take control

For many patients facing long-term serious illness that may lead to their death, being able to have some control over their medical treatment helps them both better understand and accept their situation.

The Provider Orders for Life Sustaining Treatment (POLST) is a medical order that helps ensure that emergency services and other medical providers know what kinds of treatment a patient wants to receive. POLST does not replace a health care directive; it's an additional part of advance-care planning. The POLST form must be signed by a medical provider—a physician, physician assistant or advanced practice RN—to be valid. The order takes effect as soon as it is signed.

The discussion around the POLST form between medical provider, the patient and families helps clarify goals for the patient and allows families to work with the medical provider and the patient to make sure medical interventions are what the patient wants.

The Minnesota Medical Association first developed a standardized POLST form in 2010; it was adopted across Minnesota. The form was revised in 2017. The MMA offers a link to a 12-minute video, three versions of a scripted conversation between a health care professional and the patient and family, a downloadable POLST form and a complete POLST How-To Guide on the MMA website at <https://www.mnmed.org/polst>. The website has new information about how to complete the POLST during the current COVID-19 pandemic, when face-to-face meetings with families are limited.

**MINNESOTA**  
**Provider Orders for Life-Sustaining Treatment (POLST)**

Follow these orders until orders change. These medical orders are based on the patient's current medical condition and preferences. With significant change of condition new orders may need to be written. Patients should always be treated with dignity and respect.

PATIENT LAST NAME: \_\_\_\_\_ FIRST NAME: \_\_\_\_\_ MIDDLE INITIAL: \_\_\_\_\_  
 DATE OF BIRTH: (MM/DD/YYYY) \_\_\_\_\_  
 PRIMARY MEDICAL CARE PROVIDER NAME: \_\_\_\_\_ PRIMARY MEDICAL CARE PROVIDER PHONE (WITH AREA CODE): \_\_\_\_\_

**A** **CARDIOPULMONARY RESUSCITATION (CPR)** Patient has no pulse and is not breathing.  
CHECK ONE  
 **Attempt** Resuscitation / CPR (Note: selecting this requires selecting "Full Treatment" in Section B).  
 **Do Not Attempt** Resuscitation / DNR (Allow Natural Death).  
When not in cardiopulmonary arrest, follow orders in B.

**B** **MEDICAL TREATMENTS** Patient has pulse and/or is breathing.  
CHECK ONE (NOTE REQUIREMENTS)  
 **Full Treatment.** Use intubation, advanced airway interventions, and mechanical ventilation as indicated. Transfer to hospital and/or intensive care unit if indicated. All patients will receive comfort-focused treatments.  
TREATMENT PLAN: Full treatment including life support measures in the intensive care unit.  
 **Selective Treatment.** Use medical treatment, antibiotics, IV fluids and cardiac monitor as indicated. No intubation, advanced airway interventions, or mechanical ventilation. May consider less invasive airway support (e.g. CPAP, BiPAP). Transfer to hospital if indicated. Generally avoid the intensive care unit. All patients will receive comfort-focused treatments.  
TREATMENT PLAN: Provide basic medical treatments aimed at treating/relief of reversible illness.  
 **Comfort-Focused Treatment (Allow Natural Death).** Relieve pain and suffering through the use of any medication by any route, positioning, wound care and other measures. Use oxygen, suction and manual treatment of airway obstruction as needed for comfort. Patient prefers no transfer to hospital for life-sustaining treatments. Transfer if comfort needs cannot be met in current location.  
TREATMENT PLAN: Maximize comfort through symptom management.

**C** **DOCUMENTATION OF DISCUSSION**  
CHECK ALL THAT APPLY  
 Patient (Patient has capacity)  Court-Appointed Guardian  Other Surrogate  
 Parent of Minor  Health Care Agent  Health Care Directive

**SIGNATURE OF PATIENT OR SURROGATE**  
Signature acknowledges that these orders reflect the patient's treatment wishes. Absence of signature does not negate the above orders.  
 SIGNATURE (STRONGLY RECOMMENDED) \_\_\_\_\_ NAME (PRINT) \_\_\_\_\_ DATE (MM/DD/YYYY) \_\_\_\_\_  
RELATIONSHIP (IF YOU ARE THE PATIENT, WRITE "SELF") \_\_\_\_\_ PHONE (WITH AREA CODE) \_\_\_\_\_

**D** **SIGNATURE OF PHYSICIAN / APRN / PA**  
ALL ITEMS REQUIRED  
My signature below indicates to the best of my knowledge that these orders are consistent with the patient's current medical condition and preferences.  
 NAME (PRINT) \_\_\_\_\_ CREDENTIALS (MD, DO, APRN, PA) \_\_\_\_\_ PHONE (WITH AREA CODE) \_\_\_\_\_  
 SIGNATURE \_\_\_\_\_ DATE (MM/DD/YYYY) \_\_\_\_\_

**GIVE POLST FORM TO PATIENT WHENEVER TRANSFERRED OR DISCHARGED. NEVER PHOTOGRAPH OR ELECTRONICALLY SCANS OF THIS FORM AND MAIL.**  
 Minnesota Provider Orders for Life-Sustaining Treatment (POLST). [www.polstm.org](https://www.polstm.org) PAGE 1 OF 2



# White coats take over Capitol

Prior to the full-blown outbreak of the COVID-19 pandemic, more than 160 physicians and physicians-in-training gathered in St. Paul for the MMA's annual Day at the Capitol on March 4.

There, they met with legislators to discuss MMA's top legislative priorities: reducing minors' access to tobacco and e-cigarettes, preventing firearm injury and death, increasing immunization rates and reducing third-party interference in patient care.

Before meeting with legislators, attendees heard comments from Rep. Kelly Morrison, MD, an OB/GYN in Deephaven and MMA member. First elected in 2018, Morrison has been a leader on numerous health care issues, including reproductive rights, prenatal care, drug pricing and prior authorization reform. Morrison also authored the MMA's provider tax alternative in 2019.

Morrison re-emphasized the MMA's top legislative priorities in her remarks to the group, as well as the need for physicians to get involved in advocacy. "I think you all agree that it is important to have physician voices represented," she said, stressing the importance of having "science-based decisions" in policy.

Sen. Matt Klein, MD, another MMA member, stopped by the event to thank his fellow physicians for their engagement.

Following Morrison and Klein's remarks, physicians and physicians-in-training met with their individual legislators and then finished the day with a reception at the Commodore Bar & Restaurant in St. Paul.

Medical students Logan Smestad (left) and Cole Puffer prepare for a big day at the Capitol.



ALL PHOTOS EXCEPT IMAGES BY KATHRYN FORBES







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1 More than 160 physicians and physicians-in-training gathered at the Capitol on March 4 to advocate on behalf of their peers.

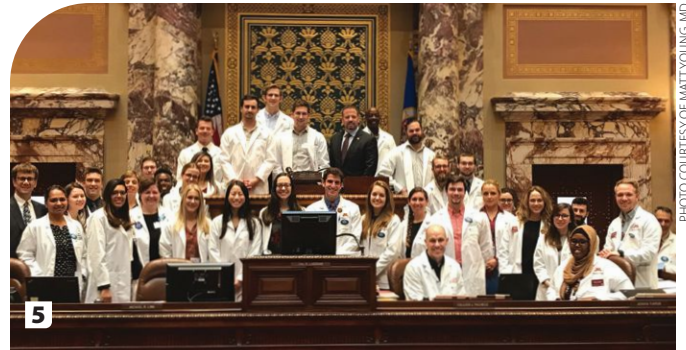
2 Fourth-year medical student Tom Schmidt introduces his child to the world of politics.

3 Rep. Kelly Morrison, MD, addresses the crowd and thanks them for their advocacy efforts.

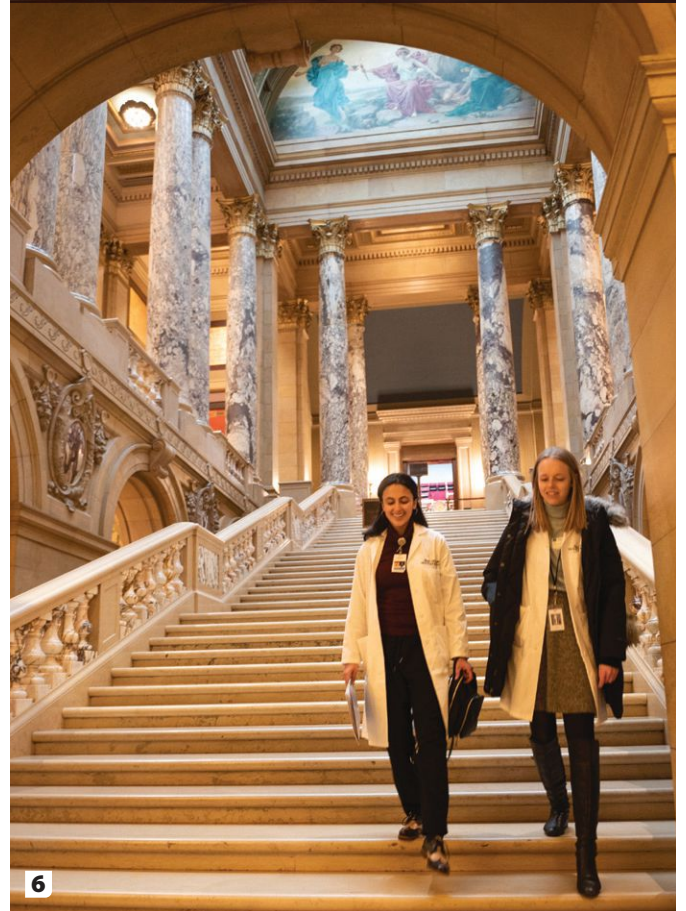
4 Rep. Rena Moran meets with her physician constituents between meetings.

5 Sen. Matt Klein, MD, (in suit) poses for a photo in Senate chambers with a group of medical students.

6 Day at the Capitol is a great opportunity for physicians and physicians-in-training to participate in government and fight for their profession.



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PHOTO COURTESY OF MATT YOUNG, MD





## News Briefs

### MMA set to launch online advocacy tool June 1

The MMA is creating an exclusive member engagement tool called

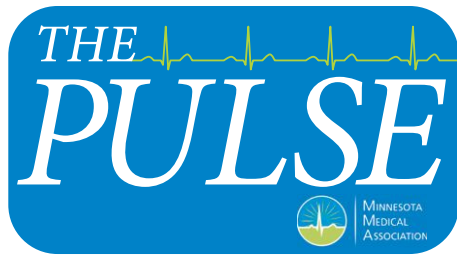
The Pulse, that will allow members to submit policy proposals, comment on proposals, indicate their support or opposition to them and provide feedback on final actions taken by the MMA Board of Trustees.

The target date for implementation is June 1.

“The Pulse will be a great tool for members to present an issue that affects our profession and patients,” says MMA President Keith Stelter, MD. “It will provide a chance for members to raise their voice and help define MMA policy. To create good policy, we need to hear from as many physicians and physicians-in-training as possible, to get all sides of an issue.”

The main goal of The Pulse is to ensure the MMA is engaging physicians across the state, regardless of specialty or practice size, in the creation and feedback of MMA policy.

The Pulse is modeled after a similar tool created by the Colorado Medical Society.



### Pandemic forces MMA to pivot on in-person events

Due to the COVID-19 pandemic, the MMA has cancelled its in-person events through at least the end of June. This includes: the Rochester Doctors’ Lounge that had been planned for late April, the May 30 volunteer gathering at Feed My Starving Children in Eagan and the June 24 Open Issues Forum.

Staff is also meeting to determine the viability of other in-person events for the second half of the year including the MMA Annual Conference, scheduled for September 25 and 26.

Stay tuned to *MMA News Now* for details about other events planned for later in the year.

### Nominations for MMA officers still open

The nominating process is still 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](mailto: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 leadership will assume their roles following the Annual Conference in September.



PHOTO BY MIKE KRIVIT

Each year, the MMA honors physicians and those who fight on their behalf to make Minnesota a better place to practice medicine.

### 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.
- **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.





# FROM THE CEO

## The world turned upside down.

These are the words allegedly sung by retreating British forces after their defeat at the Battle of Yorktown, recently popularized in the Broadway musical "Hamilton." As a big fan of Broadway musicals, I have found these words replaying in my mind over the past several weeks while our world, as we've previously known it, also feels turned upside down by the COVID-19 pandemic. Yet, amid this churn, it is humbling and inspiring to witness Minnesota physicians and other health care professionals—and countless other "essential" workers in our community—confront the crisis and its uncertainty with professionalism, kindness, collaboration and a grit honed, in part, by Minnesota winters.

**How can I help?** In the immediate wake of Gov. Tim Walz's March 13 declaration of a peacetime emergency to address

COVID-19, the first and most frequent inquiries of the MMA came from physicians asking how they could help. Amazing. Working in cooperation with the Minnesota Department of Health, the MMA immediately connected physicians, many recently retired, with Minnesota Responds, Minnesota's medical reserve corps. The MMA Foundation also activated its Physician Volunteerism Program (PVP) to help identify physicians to support needs in community clinics and among Native American tribes.

## Bringing medicine's voice forward.

Physicians are providing critical leadership in numerous ways during this crisis—in their practices, in their health systems, in research settings, in laboratories and as advisors to Gov. Walz and Health Commissioner Jan Malcolm. The MMA is also deeply involved in shaping the state response to COVID-19 and working to ensure that the needs of practicing physicians are reflected.

## Protecting and supporting physicians.

The personal and financial toll of this virus remains to be tallied, but it is certain to be profound. The MMA will continue to work aggressively to protect and support physicians as you care for critically ill patients, work to sustain your practices and strive to maintain your personal health and well-being. Please see our COVID-19 page ([www.mnmed.org/COVID19](http://www.mnmed.org/COVID19)) for resources and visit the "MMA Action" link from that page to see additional details about our work on your behalf.

**Coming soon—The Pulse.** In June, the MMA will roll out a new tool, The Pulse, to help improve policy development and add transparency to decision-making. 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. Just as you've mastered Zoom, telehealth or other virtual connection

technologies, I'm confident you will find The Pulse to be an innovative and easy way for you to shape the direction of your association.

## Membership renewal period extended to June 30!

The usual grace period for MMA membership renewals ends March 31. Given these extraordinary times, however, the MMA has extended the deadline for 2020 renewals to June 30. Your support is appreciated and is critical to making sure that the voice of physicians is heard.

**Did you know?** MMA members receive a 10 percent discount on professional liability insurance. COPIC is MMA's endorsed medical professional liability insurance carrier. COPIC is also a physician-led organization dedicated to patient safety. The MMA encourages members to contact their current MPLI agent or Jerry O'Connell, COPIC's director, Regional Development, at 844-858-1411, ext. 6182, for more information.

Because I began this column with a "Hamilton" quote, I think it seems fitting to end with one as well, one that again feels relevant to this current, historic moment, "When our children tell our story, they'll tell the story of tonight."

Thank you for your work and dedication. Stay safe and be well.

Janet Silversmith  
MMA CEO

## VIEWPOINT

## Navigating turbulent seas

*We HEAR . . . even better we LISTEN  
We SEE . . . even better we OBSERVE  
We FEEL . . . even better we RELATE  
We SMELL . . . even better we SAVOR  
We SPEAK . . . even better we ENCOURAGE  
We THINK . . . even better we BELIEVE*

I will level with you. It is difficult to know what to say in a short message. There is so much to say and a great challenge in how to say it. The poem above was written recently by a friend as he contemplated the changes before us. I think it represents a path through and forward in this time.

In a letter I sent to Minnesota physicians on March 25, I noted that we are embarking on a period of great change and upheaval. Change is constant nearly every day. Our work processes have changed dramatically and some of us are experiencing great uncertainty in our ability to keep our practices stable and continue to provide work for those who depend on us. We are also dealing with changes in our home lives as we adjust to having our children home from school. They are struggling to adjust, too. We have new concerns for our extended family wherever they may live.

During these times, it helps to review what we've done in the past to overcome these challenges. Tactics like "stay at home" and "social distancing" were employed in the 1918 flu pandemic. Several of my "more experienced" patients tell me about the changes in society and the prevalent fear in the polio years. We know from these examples that cities that adhered more strictly to these public health tactics fared better. As leaders in the community, it is our duty to continue to support these public health measures for as long as it takes. We need to vigorously support and assure the safety of those who

are involved with direct patient care, especially of COVID-19 patients.

Imagine for a minute if this pandemic would have taken place 20 to 25 years ago. We now have technologies that allow us to gather virtually to see each other and to care for our patients, and to continue our common work, which provides us a sense of purpose and action that is necessary in helping maintain our resilience.

Unfortunately, this pandemic has also pointed out (sometimes glaring) weaknesses in our overall health system, and associated supply chains. In this time, we also see how social determinants of health even further amplify health disparities. We need to be leaders in making sure these issues are addressed and fixed. That is a duty we all have. I look forward to engaging with you as we do this critical work.

We are in this for the long haul and life will not return to "normal" soon. You likely have heard how some mourn the loss of "the past," but I encourage each of you to think of ways how this can be a time of a "new and better creation." For that, we need all of you. This is our common call to action. Together, just as we have done for the last 167 years of the MMA, we will put all our effort into supporting you, amplifying your collective voice and creating something better.

I want to leave you with a link to some music that has been one of my methods of stress reduction in this time.  
<https://youtu.be/v0IIZX0pqVM>



Keith Stelter, MD  
MMA President

PHOTO BY KATHRYN FORBES

As leaders in the  
community, it is our  
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long as it takes.



MINNESOTA  
MEDICAL  
ASSOCIATION

# *Your Voice and Resource in the COVID-19 Era*

*“We have embarked on what will likely be one of most defining points of our medical careers. The weeks, and perhaps months, ahead are impossible to predict.”*

– KEITH STELTER, MD, MMA PRESIDENT

Every day, and sometimes every hour, new and sometimes conflicting information is disseminated. Physicians have been buffeted by massive changes in workflows and changes in how to care for patients, even those with relatively routine issues.

## **It's like someone turned on the firehose.**

Stay up to speed on what's happening in Minnesota's health care community, by visiting the MMA's COVID-19 resource page:

**[mnmed.org/COVID-19](https://mnmed.org/COVID-19)**

You'll see what the state's largest physician advocacy organization is doing on your behalf and find quick links to resources from the AMA, CDC, CMS and MDH.

**Stay safe, stay well.**

## **The MMA:**

- **Advancing change** through advocacy and information
- **Fostering resilience, trust and community** through physician connection, support and engagement
- **Improving physician efficacy and leadership** through education and skills building
- **Identifying and addressing emerging critical issues** as a convener and collaborator

Your membership enables the MMA to continue serving as the voice and resource for physicians from every specialty, practice type and zip code in Minnesota. Thank you!



# The more things



*The life of a physician today is filled with frustrations—and joy*

The daily lives and practices of physicians today are very different from those of a century ago—or even 20 years ago. New technology has changed how medicine is practiced, in many positive ways that carry with them new responsibilities and the need for training. Requirements of government agencies and insurance companies have changed the ways in which and how much physicians are reimbursed. The growth of large health care organizations has meant that fewer and fewer physicians work in private practices—and so have less influence on the way their practices operate day to day.

And yet, the satisfactions, the pride—even the joy—of being a physician is still the primary motivation for today's physicians. They may have more obstacles, or at least different obstacles, to doing their best, but they continue to believe that what they are doing is important—essential, even, as the current pandemic has brought painfully home.

A few months ago, *Minnesota Medicine* asked a number of doctors to keep a log of a “typical” day in their life—recognizing that even then, the mix of personal and professional activities made for few “typical” days.

Five generously agreed to keep the log and then to be interviewed about what it means to be a physician today. We take a small peek into their lives in this issue.

No five physicians can represent all of the physicians in Minnesota. There is some diversity in experience, gender, race and kind of practice among these five, but the range of all of those aspects is much greater than could be shown here.

What is striking, however, is not the differences but the similarities—particularly when it comes to what they value about their work and their lives.

To a person, they talk about how the practice of medicine is, for them, not about money or status but about caring for people, about helping people—patients and other physicians

And every one of them says that finding balance in life is important, even in the earliest days of medical education and practice. What's important to you? How do you make time for it in your life?

Their frustrations are also similar—and not surprising to anyone practicing medicine today: too little time with patients, the hours and frustration negotiating with insurers, electronic health records.

*Minnesota Medicine* also asked several physicians to write their thoughts on what it means to be a physician today. Those thoughts, showing a variety of perspectives, declare what “We are ...” as physicians.





# change...



## Active physicians

### United States

**TOTAL** 1,005,295

**PRIMARY CARE** 479,856

**SPECIALISTS** 525,439

**MALE** 644,683

**FEMALE** 359,409

### Minnesota

**TOTAL** 18,171

**PRIMARY CARE** 8,788

**SPECIALISTS** 9,383

**MALE** 11,687

**FEMALE** 6,471

Data from Kaiser Family Foundation, March 2019





## Britt Ehlert, MD

*Internist and outpatient care, Allina Health Centennial Lakes Clinic, Edina. Co-lead physician for her group.*

Graduated from the University of Chicago, medical school at Case Western Reserve University, residency in internal medicine at the University of Michigan.

Married to Mike Ehlert, MD, a urologist. They have three daughters.

### **The value of physicians is clearer in a crisis**

Being a physician is in many ways what Britt Ehlert, MD, expected when she first started. “It still involves spending time with people and listening and understanding what they’re dealing with,” she says. “It means being present with them, which in and of itself can be healing. And it’s still very intellectually interesting.”

But technology has not only changed the way medicine is practiced, she fears that it has changed the way the public views physicians. “I think people have a perception of doctors now as being disconnected. We are under enormous time and regulatory pressures, and when we type on the computer during visits, they may see us as unfeeling,” she says. “But this stereotype does not ring true for most physicians. Most of us are still driven to do this work out of a deep drive to help others.”

Coronavirus has changed some of that perception, she says. “With COVID-19, people are seeing that physicians are on the front line at the ER and the hospital, despite great personal risk. And those not in the hospital are pivoting rapidly to telehealth. If we can’t do a video visit, we can try a phone visit. Even if reimbursement is less certain for those, it is the right thing to do, to keep caring for our patients. I hope patients can tell that we are still showing up for them.”

Ehlert’s group, like many in the Twin Cities area, has quickly instituted telehealth. “We have rapidly gone from seeing our patients in-person to 99 percent of it through phone visits or video visits,” she says. “We still see patients in clinic if we absolutely need to examine them, but in order to really embrace social distancing, we’re trying to not see most of our patients in clinic.”

From a public health standpoint, that’s both important and right, she says, but she worries about what it will mean to medical practices in the future. “It’s a financial hit for any practice to do this, going from fully-booked to completely open schedules overnight due to recommendations to postpone non-emergency

visits. Trying to build back up to a solid schedule will take time, and more of it will probably involve telehealth,” she says. “That’s going to be a longer-term issue. I’m worried many physicians are going to go bankrupt, along with others in society. Although most physicians are in a privileged position to weather this storm, we clearly are not immune to pay-cuts or layoffs, and most of us carry a lot of debt from training. And if patients lose health insurance due to the economy, our clinics will be empty anyway.”

### **It takes time**

To practice the kind of medicine the way she wants to takes time, Ehlert says, which is not easy, given the way medical care is reimbursed. “I would like to have more time to spend with my patients. I would like time for medical reasoning, including taking a high-quality history, to be valued as much as testing and medicating,” she says.

Being able to spend time with patients—in office visits and over months and years—is what brings Ehlert joy. “I think seeing people, understanding what they are going through, helping them get better—as well as just building a relationship over time—is really rewarding,” she says. “Not having time to feel like I can address their concerns adequately is frustrating.”

Other barriers to doing the kind of care she wants to provide include insurance and cost; the best treatment for a patient may be something they simply can’t afford.

### **Maintaining balance**

Taking care of herself helps Ehlert avoid burnout. “It’s a battle,” she says. “I work part-time because my kids are still young, and that helps me maintain some sanity. I’m fortunate that Allina supports me in doing that. And I try to get enough sleep. I try to stay well hydrated on a daily basis—I feel really terrible if I don’t drink enough water. On a good day, I make time for exercise. If I do that multiple days in a row, I feel great.”

Ehlert says she would tell someone just starting out in medicine to identify what’s important in their life and profession. “Think about how you’re going to have balance between your work life and the things you enjoy in your free time, including your family,” she says. “How are you going to make that work? Be honest with yourself about what is important to you in the long run, whether that’s family or healing people or professional recognition.”

She doesn’t really want to do anything but be a good physician, but, she says, “I have occasional, rare moments when I might think about being an interior designer or something ... when I don’t have to think about life and death being on the line.”



## Britt Ehlert's typical day

5:45am - Woke up, had double shot of espresso, took shower, got dressed.

6:30am - Packed older 2 daughters' backpacks with their homework and snacks for the day, filled their water bottles. Woke them up, gave them breakfast. Made myself coffee for the road, rinsed a pint of berries to eat in the car. Ate 2 eggs I poached in the microwave.

7:15am - Woke up my youngest daughter, currently 17 months old, got her dressed and gave her a quick breakfast.

7:40am - Drove older 2 kids to school and then dropped off youngest daughter at daycare.

8:30am - Arrived at work, scanned my schedule and made notes on it for my clinical assistant, tackled anything urgent or quick in my EMR in-basket.

8:40am-11:30am - Saw 6 patients, including routine follow-up visits, acute visits for sore throat, abdominal pain, and cough, and physicals/Medicare wellness visits.

11:30am-noon - Met with clinic manager for weekly check-in to review any site-level issues or concerns that needed to be addressed.

12:15-1pm - Ate lunch at my desk, finished notes from the morning, completed in-basket tasks, signed home care orders.

1pm-4:30pm - Saw patients for 2 routine follow-ups, 2 acute visits, 2 physicals, a wellness visit, and a post-hospital follow-up.

4:30-5:15pm - Completed any remaining urgent in-basket tasks, clearing out results, rx requests, and patient phone calls so could start fresh the next day.

5:30-6pm - Called my husband from the car to talk about our day and review the dinner plan. Picked up kids from daycare and extended day (after school) programs.

6:15pm - Got home, unpacked car (kids/backpacks), made sure oldest daughter was starting her homework.

6:30pm - Cooked dinner.

7:15pm - Ate dinner as a family.

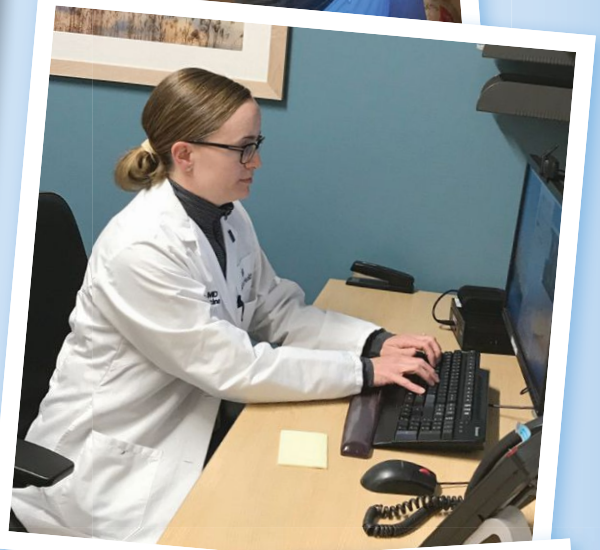
7:45pm - Gave baby a bath, read her books, put her in her crib to sleep. Kids got pj's on and picked out bedtime snacks.

8pm - Read books to my middle daughter while husband read to the eldest. Snuggled with daughter until 9pm.

9pm - Cleaned up kitchen, started dishwasher.

9:15pm - Watched TV on my laptop.

10pm - Went upstairs to get ready for bed. Turned off light at 10:30pm.





## Tom Schrup, MD, MBA

*Pediatrician at outpatient walk-in clinic, executive vice president and chief physician officer, CentraCare, St. Cloud*

Graduated from the University of Iowa, where he also went to medical school. Residency at the University of Wisconsin. Worked at the Indian Health Service in Browning, MT, and began practice in 1994 with CentraCare. He earned an MBA at the University of Colorado.

Married for 30 years with two children, ages 25 and 23.

### **A career in medicine is—and should be—about service**

Tom Schrup, MD, MBA, says he finds it sad that many physicians say they wouldn't encourage their children to go into medicine. They cite the hours, the paperwork, the long years of training, the corporatization of health care—and they don't want their children to go through those things. Although he concedes those concerns are valid, he feels the positives of the career outweigh the negative. His daughter starts medical school in the fall.

Schrup believes the basics haven't changed. "The mission part of it has not changed," he says. "I completely respect that many other physicians would understandably disagree with me, but I have always considered being a physician a vocation and not a job. For me, it's a lifestyle, it's my life's work. It's always about the human connection and being of service."

Today, Schrup spends only about 10 percent of his time in clinic seeing patients. The other 90 percent is spent in leadership; he is executive vice president and chief physician officer at CentraCare. That 10 percent helps keep him connected to the reason he became a physician in the first place. After 26 years with CentraCare, he now sees former patients coming in with their children.

The practice of medicine has changed in significant ways since Schrup graduated from medical school. "Mechanically, it has changed dramatically," he says. "When I started, there was one computer in the office. In residency, we hand-wrote histories and physicals.

"There are positives and negatives to that. We have much more access to accurate information—but there are many more non-value-added tasks added to what we do, all of the clerical-

type work that doesn't require an MD to do, but that is pushed onto doctors already full plates."

But the constant is the service to patients. "It has been about and always will be about the human relationships and trust," he says. "That's still the case, although it's more distant now because we do more things through the phone, internet and telehealth."

Schrup says the expectations of patients have changed as a result of changes in insurance coverage. "When I started, people seemed more interested in a long-term relationship with their doctor than in convenience. Although that still occurs to some extent, the emphasis now seems to be more on convenience. That's not a value judgment on my part, just my observation."

### Tom Schrup's typical day

4:00–6:00AM Early wake up and heading to Cross Fit to start out the day with a workout

6:30–7:00AM Rounding in Adult Mental Health Unit at the hospital checking in on staff and care providers

7:00–11:00AM Meetings with administrative colleagues, physician leaders, direct reports and mentees

11:00AM–12:00PM Quick lunch in office while catching up on emails

12:00–6:00PM Travel to pediatric clinic site, provide care for patients in pediatric walk in clinic, touch base with pediatric colleagues, respond to emails

6:00–9:00PM Family time



### Barriers to satisfaction—and joy

If physicians had more time with patients instead of working on the computer and wrangling with insurance companies, it would benefit everyone, Schrup says, patients and physicians alike. “It’s what most physicians went into health care for in the first place,” he says. “There’s been a sense of loss about the amount of time they get to do the things they love.”

But the joy is always there for Schrup. “To be able to pursue a career where you consistently are empowered to help people is just awe-inspiring,” he says. “It doesn’t get better than that—and that hasn’t gone away, it’s just gotten a little more distant because of the other things cluttering our days.”

Working with children is constantly revitalizing, because “it’s very clear what your mission is with them.” And also, “they’re still cute when they’re mad at you—adults, not so much.”

### Burnout

Schrup says he fortunately has never suffered symptoms of burnout. He believes a focus on service is one way to minimize burnout, but he wants to be very clear that he does not see burnout as an individual failing. “I think it’s really important to not shame physicians who experience symptoms of burnout,” he says. “We should not even use that word, because it implies a lack of resiliency—and physicians are some of the most resilient people on the planet. It’s the system we’ve ended up setting up, almost unwittingly, through legislation, oversight and insurance. People come in eager to help and then get worn down by the system. It’s an expensive, complicated system we have to work in.

“My mission as a leader is to work on that. Although there are many external forces we cannot change, I ask what in the system within Centra-Care can we change to make it easier for physicians to focus on what they love—the treatment of patients?”

### Advice

When young people talk to him about going into medicine, Schrup always asks if they are interested in serving others. “Because if that’s what you’re interested in, you’ll always be happy.”



## We are ...

### *Still able to comfort patients*

BY CHUCK MEYER, MD

**O**n July 19, 1977, I walked into a small office with four exam rooms to join a five-man group of general internists. On May 28, 2018 I walked out of the Allina Richfield clinic and into retirement. Those 41 years saw significant changes in me—more gray hair, more achy joints, more kids and grandkids—but cosmic changes in the practice of medicine.

My 1977 practice was a close, collegial group that mixed office practice with a hospital practice that was part primary care and part consulting (the name of my group was Consultants Internal Medicine until the day it closed). Sub-specialists were sparse, so general internists were called by family physicians and surgeons to handle MIs, endocrine disorders and ICU care. I used a wide swath of my medical knowledge while building relationships with patients that would last until my retirement.

Slowly, through the years, that swath narrowed. As sub-specialists proliferated, the “consultant” aspect of my practice withered. The scope of our practice narrowed as we consolidated to one office and one hospital. I saw my own patients in the exam room and in the hospital room when they faced more serious medical problems. Although their main care might be directed by sub-specialists or surgeons, I was a familiar face who provided solace and informed comfort. It was similar to an Outward Bound expedition: a shared experience that bonded doctor and patient.

With my final move to Allina in the last six years before retirement, I had to give up the hospital practice. The bond of years of doctoring still existed, but a patient’s hospital stay resulted in “Sorry you weren’t there Dr. Meyer,” rather than, “Thanks for being there.” No longer was the saga of their hospital odyssey cemented in my mind by participating in it. Instead, I had to fill in the blanks about what happened to them. I was watching it on TV rather than acting in the show.

The arc of my years in practice could seem a tragedy of less—using less of my knowledge to care for fewer of my patients’ crucial illnesses. Yet the tint of the joy of practice changed, but didn’t fade. I realized that what was most important about my daily work wasn’t performing heroic revivals or arriving at stunning Sherlockian diagnoses, but rather my presence. I wasn’t exactly a minister but I could provide a listening ear and scientifically-informed comfort so that patients would leave the office knowing they had been heard, that I had given them a small chunk of my life to try to solve their problem.

Recently I spoke with a friend about his brush with death—cardiac arrest, resuscitation, three stents, defibrillator. I listened, asked questions, answered some of his questions and reassured him that he was in good hands with the team of physicians he was seeing. It felt good.

Chuck Meyer, MD, is a retired internist and former editor of *Minnesota Medicine*. He is a member of the *Minnesota Medicine* Advisory Board.



# We are...

## *Always wondering if we've done enough*

BY YU-HUI HUANG, MD, MS

**W**e were at a restaurant celebrating Steve's belated birthday when my mind began to wander. I found myself reflecting on my ED shift the night before, when I noticed a man wandering the hall with blood dripping from his nose. I later learned that this man presented after an assault and he was my patient. I introduced myself, ready to begin my exam when the patient replied, "No English." He was Asian and had a name that was most likely Chinese, so I took a chance and asked "Ni shuo zhong wen ma?" (Do you speak Mandarin?) Pleasantly surprised and visibly relieved, he began to explain how he was choked and punched multiple times by his co-worker over an argument at work. He looked down and mumbled, "Why couldn't he have just talked it over?"

After presenting the patient to my staff physician, he asks "Is he going to press charges?" Not realizing that the answer to this question would impact how we care for our patients, I responded "I didn't think to ask." My staff explains that imaging evidence of traumatic injuries would be of value in legal proceedings, otherwise imaging may be unnecessary. As we enter the room together, he makes note of the thumb print erythema on my patient's anterior right neck and the scratches on his left neck as a result of the strangling, as well as the injuries on his deviated nose, forehead and cheek from the punches. "Thankfully no septal hematoma," stated my staff physician as he encouraged me to examine the injury for myself. I asked the patient if he would press charges. He paused and responded, "Yes." We explained how a CT would be performed and that evidence of injuries would support his legal case.

Upon the patient's return from CT, I cleaned, anesthetized and sutured the laceration above his nose. He asked me how he could press charges. This was not an answer I had in either Mandarin or English. We advised him to contact the police, since they were at the scene with a report on file. I explained to him that the CT showed nasal bone fractures, including a displaced nasal septum, and offered him a nasal fracture reduction and pain medication. He expressed desire for the reduction but refused the pain medicine as he hadn't eaten all day.

After we reduced his nasal fracture, I explained that since he had an open fracture, we were prescribing him antibiotics as well as a referral to the ENT Clinic. As I handed him a tissue box for the residual bleeding, I asked

if he has any family or friends here. He said, "No, I live alone. How would I pick up the prescription?" Since it was the end of my shift, I offered to take him to the discharge pharmacy. On our way down, another patient I saw in the ED joined us in the elevator in her wheelchair. My patient helped wheel her in and out with all of us headed to the discharge pharmacy.

For the first time, I stepped into the place where I send nearly all my patients in the ED, the discharge pharmacy, with what seemed like a bulletproof glass separating us from the pharmacist. While we waited, we chatted like ordinary people about spring rolls and noodle soups. When the pharmacist called for my patient, I jumped up to the window to help interpret as the pharmacist asked for \$51 for his prescription. My patient hesitated and looked down at his empty wallet. I felt ashamed for not having considered the prescription cost for my patient. In midst of what felt like an eternity of my patient staring down at his wallet and me beginning to wonder if I should help him pay, the pharmacist said she could send it to his insurance company for billing. Relief washed over both of us and he picked up the brown paper bag of medicine. I bid my other patient farewell as we left. Once we arrived in the lobby, my patient thanked me for the assistance tonight while holding his bag of medicine in one hand and the tissue box I had offered in the other, then he turned and walked down the desolate hallway to the exit.

As Steve and I worked our way through his birthday hot fudge sundae, I couldn't help but wonder if my patient arrived home safely and whether I've done enough to help my patients before I send them out the door.

Yu-Hui Huang, MD, is a transitional-year resident at HCMC, to be followed by radiology at the University of Minnesota Medical School.

### *The core of medical practice is the same as it ever was: care for patients*

Mohamed Yassin, MD, loves his patients—and love is not too strong a word for it. That love keeps him from becoming burned out and keeps him at what he always wanted to do: being a physician.

“I really like what I do because I really love my patients and I get to know them personally,” he says. “I try to know them well, to know what they will do with treatment.”

That connection to patients is what he says he expected when he went into medicine—something he decided to do when he was just a child. “When I was in third grade, I decided to be a physician because of the doctor who was treating me,” he says. “It’s never changed.”

But, of course, many things *have* changed since he started practice. “I didn’t expect too much paperwork, too much to do with insurances. It all takes so much time.”



## Mohamed Yassin, MD

*Allergist-immunologist, private practice in St. Cloud*

Medical school at the University of Khartoum, Sudan. Residency at Michigan State University, fellowship at the University of Cincinnati Children’s Hospital. Has worked in pediatrics, general medicine and pediatric cardiac surgery.

Divorced with three adult children: Razaan, a pediatrician; Raashid, a law student; and Amani, a psychologist.

Patients’ expectations have changed as well. “Years ago, if I told a patient that I really believed they had ABCD and we needed to start treatment, they would listen, they would follow my directions and then they would come back and say whether things were getting better or worse and we could continue from there,” Yassin says. “But now, patients are not patient enough to wait for results from treatment.”

And then there is the internet. “They come and have asked Dr. Google for a diagnosis before seeing you,” he says. “And sometimes Dr. Google is very scary—and not easy to compete with because Dr. Google uses words that are very glamorous.”

### **Joy in practice**

Yassin says he always remembers something his oldest sister told him long ago: “If you want to be a successful doctor, when you see a patient, remember that’s me or your mom or someone you love.” Today, he says, “When I walk into a room and see a patient, I do that. I don’t have a shield between me and them.

“So, I’m always coming out of that interaction and I’m very happy. I just carry that with me.”

That connection with his patients means that, for the most part, he doesn’t experience burnout. “When I close the door and sit with a patient, I don’t see anything but that patient,” he says. “When I solve something, it gives me such pleasure that I want to see the next patient.”

Because he’s been in practice for a long time—he is 67 years old—he has a number of patients he’s seen for many years. “I know them, I look forward to seeing them.”

### **Advice**

Yassin advises those who think they want to go into medicine to consider their motivation and expectations: “If you are really going to help people, to do the right thing, you will never be burned out.”



## Mohamed Yassin's typical days

Mondays, Tuesdays and Thursdays: I am in my office by or before 6:30am. I review my schedule for the day and greet my staff walking in around 6:45am. The way I designed my office, all staff has to pass by my office when entering the building. I believe the day goes much better when we positively greet each other. I start seeing patients at 7am.

For the last three years or so, my early morning patient schedule is designed to accommodate and treat school age children with food allergies who are receiving Food Oral Immunotherapy (OIT). OIT is the treatment to free kids and adults from food allergies and it requires office visits every two weeks. Last OIT patient is seen at 10am and for the remainder of the morning I see all other patients for asthma and different allergies (food, environmental, drugs, venom). Generally, I see six to eight new patients a day, 90 percent of them referred by primary care providers and other specialists, as well as 10-12 return patients.

The morning schedule is done by noon. I take a "working" or "on the desk" lunch. I usually drink my delicious homemade smoothie and answer my patients' and providers' messages and complete the medical records documentation.

1-4pm: Continuation of the late-morning patient flow. Usually between 4 and 5:30 I finish seeing patients and continue answering patients' and providers' messages.

Throughout the day, I supervise the immunotherapy suite, where patients receive allergy injections and biologics, and treat any acute allergic reactions/anaphylaxis that may occur.

Wednesdays: I do my office administration duties as well as responding to the needs of my fellow allergists all over the country as the chairman of The Practice Management of The American Academy of Allergy, Asthma, and Immunology. This latter frequently spills into most of my evenings.

Fridays: My day off, except for one Friday a month when I see patients from 8am to 2pm to accommodate patients who only can be seen on Fridays.

Overall, my best day is Monday as I am always excited to start my week again

## We are ... All 'providers' now

BY MARK EGGEN, MD

You are a provider. Undifferentiated from any other provider. Go look up Allina's Minneapolis Heart Institute and scan through the list of providers. The "MD" is there, but otherwise there's no distinction among those listed. Why, you ask? Well, depends on who you talk to, but, if you follow the \$, it usually brings the answer.

You are a mouse-clicker. Garbage in and garbage out. Your time is spent tending an endless need for more clicks. This has taken from the time once spent on "synthesis," putting together information to create "new thinking" followed by "intelligence."

The most dangerous event that has occurred in my 28 years of practice is the EHR. Great concept but frightful execution.

Finding joy practicing medicine? Spend a couple weeks providing care in a poor place. I spend a few weeks a year in Guatemala providing anesthesia care to a population where care isn't otherwise available. This involves pure care, none of the extraneous distractions so pervasive stateside.

Mark Eggen, MD, is an anesthesiologist and member of the *Minnesota Medicine* Advisory Board.



## Heather Bell, MD

Family medicine and addiction at CHI St. Gabriel's Health Family Medical Center

Graduated from Gustavus Adolphus College. Medical school at University of Minnesota Duluth Campus, rural physician program in Owatonna, last two years at University of Minnesota Twin Cities. Residency at Sioux Falls Family Medicine.

Married to Christopher Bell, MD, family medicine physician and medical director of the clinic. They have two boys, ages 10 and 8, and two girls, ages 5 and 3.

### For a younger physician, the changes in health care are just part of today's profession

Heather Bell, MD, is still a relatively new physician, and yet she's seen the practice of medicine—and her work—change considerably in seven-and-a-half years.

“When I started, we still did all the admissions and all the rounding, much like I was trained to do. I hardly do any hospital work now; I don't round on patients on a daily basis,” she says. “I did miss working in the hospital for a really long time. I do OB

and admit kids and patients with addiction, so I still get over there. I *don't* miss calling to find out if I have a patient I need to see while I'm also trying to get my kids to school and day-care.”

Bell has seen electronic medical records change from one format to another, and her clinic now is based much more on a medical home, team-based approach. “We are in a pod, we have smaller offices, our nurses are right nearby. A nurse practitioner is part of our practice.”

It's what she knows, but she says many of the physicians she works with are about a generation older and get frustrated with the way practice has changed. Although she has her frustrations as well: “When you want something, and you can't have it right now because of the levels of administration, that can be frustrating,” she says. “I don't mind the documentation; I've been using the computer my whole career. It's the insurance and prior authorization part that adds tedium.”

She enjoys the considerable flexibility her practice allows, particularly since she has gotten involved in advocacy for addiction issues—as well as working with patients who struggle with the disease of addiction. She travels more than the typical family medicine physician and speaks to both state and federal legislators. She and one of her partners more or less fell into taking care of those with addiction. “I do have a lot of addiction in my family,” she says, “but I don't think that's what drove me into it. I just saw people who needed someone to be in their corner.” Initially,

*(continued on page 30)*





## Heather Bell's typical day

3am Awakened by 10-year-old son with a fever of 102. Gave meds and tucked him back to sleep.

4am Call from OB. OB patient was 8cm, no epidural and I needed to head in. During the 3.5-mile drive to the hospital, I called Hannah Fordahl, MS3, my RPAF student whom I also mentored when she was an RMSP student in Duluth.

4:30am I stand by as Hannah delivers a healthy baby girl. I instruct her on the small repair and delivery note, then drive back home.

5am I get back home, change into running clothes and run 6 miles on my treadmill (sadly, catching up on "The Bachelor").

6am Shower, get dressed and then wake up four kids, get them dressed, check backpacks and get them breakfast in time for husband (our family medicine medical director) to get home from basketball at 7:15 to take them to daycare/school while I head in to clinic early.

7:15am Leave home, swing by coffee shop (Zoomskis in Little Falls is a must) and answer two nursing home pages, as I am now on call. Get to clinic and get the ECHO room set up for our ProjectECHO for the Augsburg PA students.

8-9am Co-facilitate with Kurt Devine, MD, the ECHO for the students; the topic is prescribing guidelines, mis-prescribing and the MN PMP.

9-11:30am See patients in clinic. Call day is urgent care day, but I still see an OB, post-partum, WCC and Suboxone patients. Lots of paperwork on call! Also, between patients, I answer many nurses' questions, social work concerns and start planning the two additional ECHOs for next week.

12:15-1:15 pm Co-facilitate our Opioid/Addiction ECHO (the 90th one!) on infectious disease complications of IV/DU. Wrap up a bit late

1:30-2:30pm Conference call with consultants for ProjectECHO and Robert Wood Johnson Foundation on how to continue to spread our programs.

2:45-4:45 pm See patients in clinic, more paperwork. I swing back to the hospital to check on OB during this time.

4:50pm Leave clinic quickly to pick daughters up from daycare by 5pm. At home I cook dinner (salmon and green beans) then clean up. Help almost 8-year-old with reading homework, then 10-year-old with writing a short story (I proofread).

I give 5-year-old and 3-year-old showers/baths. Put 3-year-old to bed; I read 2 books then deal with stalling for an hour! The 8-year-old reads to 5-year-old! Watch St. Ben's basketball game on the computer (they played my alma mater Gustavus) with my brother-in-law and husband and sons; my brother-in-law's girlfriend plays for St. Ben's.

9pm Make notes for tomorrow's meeting with Nathan Chomilo, MD, DHS medical director, answer three more pages and catch up on email. Attempt to watch a TV show but fall asleep early (luckily no more pages)!

4am Wake up, run to the hospital, round on OB/baby, run home then head to DHS after kids are all up and dressed once again!

## ON THE COVER

she was focused on opioid misuse and overuse, but now she works with all kinds of addiction.

### *Finding joy*

Two things, initially seemingly unrelated, bring the most joy in Bell's practice:

"Delivering babies—you just can't get away from that—and doing medication-assisted treatment. You really see the change in these people's lives. It's like delivering a baby because you get to see a positive result. That's what it's all about."

### *Dealing with burnout*

"I run. I run a lot," says Bell. Her best friend from college is now a dentist in Maui and convinced her to run a marathon there. "And then, of course, my kids. Just being able to do things with my kids. They are a priority."

She also finds that her time on the road working on addiction issues helps her avoid burnout. "Even though I'm working, we're giving presentations, we're meeting with legislators. I like that, it's exciting—and we have the sense that we're accomplishing something."

### *Advice to new physicians*

Bell has medical students working with her all the time, some of whom stay at her home, so she's used to giving a bit of advice about what they can expect: "It's really fun to dream about 'I'm going to be a neurosurgeon and I'm going to make a lot of money.' But at the front end, think about what you want your life to look like in 20 years. It's maintaining and planning ahead for that balance. It's a great career, but it's hard work."

### *Different paths*

Bell is busy—and happy—in her work right now. "I think I have the perfect job, to be honest—although that's not true of all of my partners; I much prefer what I do to what my husband does, for sure, even though we started at the same place." (Her husband, Christopher Bell, MD, is medical director and family physician for the CHI St. Gabriel's Health Family Medical Center.)

But if she were to do something different, or something in addition to her practice in the future, it likely would be something political—like running for office. "I really love the Washington, DC, trips, talking to politicians," she says. "But right now, I just don't have the time. In the meantime, we'll continue our teaching on addiction and move into entertainment with our addiction podcast 'The Addiction Connection,' which is starting very soon."





# We are ...

## *Helping improve quality of life*

BY AMANDA DAY, DO

What it means to be a physician leads me to what it means to be a physiatrist. “Wait, did you say psychiatrist?” is often the response I get. Another common response entails a quizzical look accompanied by, “what is that?” I get these replies from patients, friends and family—and even fellow health care providers. I’ll tell them that my specialty is Physical Medicine and Rehabilitation, or PM&R for short. The physicians that practice in this field are called physiatrists. “Oh, so you are a physical therapist?” they ask after my explanation. Sigh. “Not quite, but we work very closely as a team with our therapists to care for our shared patients.”

Since applying to this specialty and now as a PM&R resident, I have revised my elevator speech on physiatry a number of times. A physiatrist is a physician that focuses on restoring function and improving quality of life, particularly working with individuals that often have some sort of functional deficit. Impairments are often physical, but may also be mental and emotional.

It is typically helpful in my description to provide examples of the patient populations we serve in physical medicine and rehabilitation. We work with individuals after spinal cord injury, cerebrovascular accident, traumatic brain injury and amputation. Physiatrists also can specialize in pain management, sports medicine, neuromuscular disorders and pediatric rehabilitation. With the breadth of what the field encompasses, it is a bit daunting to explain.

I have learned though, that part of what it means to be a physiatrist is to educate others on what our specialty offers so that patients who may need our care can be sent our way. The improvements in function of the mind, body and spirit that I see in my patients is why I chose this field. The teamwork approach of the patients, family and friends, doctors, nursing staff, therapists, social workers, pharmacists, dieticians, psychologists, chaplains and many others is unlike any other I have witnessed. Medicine is all about teamwork, and this is exemplified even more in PM&R.

What it means to be a physiatrist is that there will be good days, bad days and some in between. It is hard to see your stroke patient discouraged because they seem to understand the conversation, but are unable to contribute due to aphasia. Taking care of a brain injury patient who cannot remember their wife or children when they come to visit can be emotionally taxing. Telling your patient with a spinal cord injury just how much function they may or may not get back can be extremely difficult. But then there are moments such as witnessing your post-CVA patient sing during music therapy after weeks of not speaking at all, or seeing a TBI patient slowly begin to remember their family, or watching an SCI patient get more functional return than you ever thought they would. Those moments are what it means for me to be a physician—specifically a physiatrist—today.

Amanda Day, DO, is a resident at the University of Minnesota Medical School and a member of the *Minnesota Medicine* Advisory Board.





## Steve Delisi, MD

*Medical director of professional education solutions division, Hazelden Betty Ford*

Trained at Loyola Stritch school of medicine in Chicago, did a three-year neuroscience research program at Hines VA and Loyola Stritch, then psychiatry residency at Rush Medical Center in Chicago. He was director of psychiatric services for Rush Behavioral Health DuPage and associate residency director of the psychiatry resident program at Rush. He worked at Gunderson Lutheran Medical Center in La Crosse, WI, then, in 2005, came to the Hazelden Betty Ford Foundation as the first full-time clinical physician there. In addition to psychiatry, he is also boarded in addiction medicine.

Married for 29 years with three sons. The oldest, 22, is involved in film production in Chicago. His 20-year-old twins are undergraduates at North Dakota State University.

### **A career that's moved from clinical care to training others**

Although much of Steve Delisi's career has been as "a very busy clinician," doing full-time clinical work, in 2012 Hazelden Betty Ford developed the Comprehensive Opioid Response for use with the 12-Steps (COR-12) program, which integrated medications into the treatment of individuals with opioid use disorder. Delisi assisted with the development of the program and then transitioned to regional medical director. For the past year, he has spent most of his time training others on this integrated care model.

"I spent a solid 15 years in direct patient care, almost 100 percent," he says. "I feel as though I made an impact and I helped people. In the past four years, I have realized that I can have an even greater impact on how health care is delivered if I

get more involved in administration, more involved in government-level policy and more involved in the training of others. The push of our team is to ensure that patients with addiction are treated with respect and can be treated in their home communities—so that if they do have to come to a center like Hazelden Betty Ford, they have a place to return home and continue their care."

In many ways, he says, being a physician today is exactly what he would have expected when he first began his training. "You are in the position of affecting someone's health and well-being at the individual, family and community level. That's why I wanted to go into medicine, and it's still true today."

But, he says, "When I first went into medicine, we had more opportunity to be in direct contact with the patients we were giving care to. Now, the time we have to spend with patients and their families is considerably shorter. More of my time is spent in documentation, in phone calls with insurance companies and in meetings."

And it's not just about less contact with patients: "When I first started, there was more opportunity to have social connections with my colleagues in the workplace. Today, it's more of an isolating experience. I think it's part of the burnout. People blame the EHRs and the pace of medicine, and certainly they play a role, but medicine was always fast-paced and busy with an overwhelming schedule. It's just that there seemed to be greater capacity to socialize and support one another in the past."





## Joy and frustration

Working with individual patients and, now, with health care systems, reminds Delisi of just why he is a physician: “When I see a system of care incorporate the integrated addiction services into their practice, when previously they would not entertain the idea of treating patients with addiction, that brings me joy,” he says.

His frustration is a big one: the health care system in the United States. “We’re an acute-care system and what is killing us is chronic disease,” he says. “We need a national system of care that puts addressing social determinants of health, trauma and

treatment of chronic disease as priorities. That’s my understanding of where we were headed with the Affordable Care Act.”

## Preventing burnout

Delisi works to stay in contact and spend time with family and friends, and he is physically active every season, from biking in the summer to snowshoeing in the winter. He says his personal discipline of spirituality and prayer is important as well, to keep him centered.

And he believes in the power of mindful meditation. Through the American Medical Association, he got a subscription to the headspace app, which offers a new guided meditation every day. That has become an important part of his daily routine.

## Find a mentor

When advising those new to medicine, Delisi says he tells them to actively seek out one—or, better, two—mentors in the field they’re going into. “That forever changed the trajectory of my career,” he says. “Some institutions do a good job of encouraging mentorship, but in general, medicine does not do a good job of bringing mentors and mentees together.”

Delisi says he encourages undergraduates who want to become physicians to take business and humanities classes, as well as the required biological science and pre-med classes. “Physicians need to understand the business of health care—and at the same time reconnect with the humanity of our profession,” he says.

Now essentially mid-career, Delisi says he has enough variety in his work that he’s simply committed to what he’s currently doing. Down the road? He doesn’t know or predict, but “with the work I do at the governmental level, I’m gaining an appreciation and interest for getting more involved with the legislature and the government.”

## Steve Delisi’s typical day

6:00am - 6:30am	Wake up, make French press coffee, and fill bird feeders
6:30am - 7:00am	Snowshoe hike through woods
7:00am - 7:30am	Drive and time in prayer on way to Hazelden Betty Ford Foundation, Center City, MN
8:00am - 8:30am	Get coffee and connect with colleagues, collect and review snail mail
8:30am - 9:00am	Respond to emails
9:00am - 10:00am	Teleconference business meeting with leadership team
10:00am - 11:00am	Read articles from literature review on Adverse Childhood Experiences, Neurobiology, Substance Use Disorders, and Co-occurring Disorders in preparation for webinar in two weeks
11:00am - 12:00pm	Clinical and Medical trainers/consultants meeting to discuss active training and consultation projects in KY, WV, MN, and NE
12:00pm - 12:30pm	Working lunch, return additional emails
12:30pm - 1:00pm	Walk on campus from office to Graduate School
1:00pm - 1:30pm	Prepare for lecture in the Graduate School, informal conversations with other faculty, students, and administration
1:45pm - 4:00pm	Biological Perspectives course lecture to students enrolled in the Hazelden Betty Ford Graduate School of Addiction Studies
4:00pm - 10:00pm	Drive to Fort Francis, ON, to provide 2-day workshop for the Rainy River First Nations
10:00pm - 12:00am	Prep and collaborate with colleague co-presenting the 2-day workshop starting the next day
12:00am - 12:15am	Headspace Meditation
12:30am	Bedtime

## We are ...

### *All souls on board*

BY STEPHANIE L. JAKIM, MD

**M**y son is a commercial airline pilot. We often talk about safety initiatives that have been inspired by the aviation industry and then adopted by and adapted to the practice of medicine. Checklists. Specific procedures. Evaluating systems or lack of systems in place. The fact that any crew member can speak up about any potential concern.

As a primary care physician and the mother of a pilot, I often muse about our roles and responsibilities as we each do our front-line jobs. He and I agree that communication is one of the most important factors.

There is an aviation term I first heard while binge-watching a show about flying in Alaska: “How many souls on board?” The dispatcher would ask this of the crew if an emergency arose. It is a nautical term borrowed from ships at sea, but one that initially I found unnerving. The terminology seems dated and melodramatic, but it means all the humans on board, whether crew or passengers or the infants without tickets who are sitting on laps.

What if I thought of our daily schedule as “How many souls on board?” It wouldn’t be just the patients scheduled but also the front-line receptionists, the lab and x-ray technicians, the nurses and the providers. I wrote the phrase on our daily chore board in the break room and asked my staff to consider its meaning. Some felt the saying acknowledged all of our team members who care for our patients. Although we place high value on good teamwork, we know it is a dynamic process that needs to occur each day.

Maybe there was a subtle shift in our care. I experienced less irritation when difficult patients were added to an already packed schedule. We were kinder to each other. All souls meant that we were all in this together. Unlike on a plane or a ship, we might not all be in crisis at the same time, but any crisis affects us all.

When you work in a small rural clinic, people often present emergently without an appointment or even calling ahead. One spring afternoon, a patient walked into the clinic after experiencing severe dyspnea and chest discomfort while trying to deliver a baby lamb. His farmhand had recommended calling 911, but he wanted to be taken to our clinic.

Our receptionist noticed his poor color as he walked into the clinic and then proceeded to lower himself to the floor of the waiting room. She called the nurses to triage and also called 911. The nurses notified me immediately and obtained vitals and history. He was bradycardic, cold and clammy as we assessed him while kneeling on the floor of our waiting room. I was reaching up to review the EKG revealing a STEMI as the ambulance crew came in the front door. The nurses administered nitroglycerin,

aspirin and oxygen as he was loaded up for air evacuation and the STEMI protocol was activated.

I assured him that I would speak to his wife and minutes later, one of the receptionists handed me a phone with her on the line. The other receptionist had gone outside to direct the ambulance and prevent other patients from entering so he could have privacy. The lab and x-ray technicians had been recording the timing of events and helped collect the information to send to the hospital.

Maybe the appropriate term that day was “all hands on deck” as we worked together. Our patient did well and returned to thank us after his stent placement. But somehow, I think adopting “How many souls on board” improved our communication and compassion. We landed our day safely.

As we start each day, we are not always sure how many souls will be on board. But remember to thank your crew; we are all in this together.

Stephanie L. Jakim, MD, is a family practice physician at Olmsted Medical Center, Preston Branch Clinic.



# We are...

## *In the service of healing*

BY GREGORY A. PLOTNIKOFF, MD, MTS, FACP

To be a physician today, like for all physicians that came before us, is to be professional in the service of healing.

What does this look like for me? As a former hospital chaplain, I am drawn to serving persons with complex, chronic and mysterious illnesses. As a med-peds physician, I am drawn to serving persons whose breadth of illness crosses multiple disciplines. For example, persons with simultaneous fatigue, pain, brain fog, insomnia, GI concerns and mood changes. I see people for whom “on average, for most people” approaches have not resulted in improved health.

In 2016, I established Minnesota Personalized Medicine, a private, independent practice. We intentionally serve those patients who, despite extensive medical evaluation, still suffer.

Our practice offers neither primary nor subspecialty care. We complement the vertical focus found in subspecialty care. We look horizontally. And we are a relief valve. We support the hard work of colleagues who are at risk of burnout.

I can offer patients time, commitment and curiosity. A typical first visit is 2.5 hours ... and has been as long as 5 hours. I gather a very in-depth history starting from *in utero*. This has turned out to be surprisingly helpful. A typical return visit is 60-90 minutes.

We practice integrative care. This means including non-pharmaceutical interventions to support optimal recovery. This can include rational use of supplements and/or specialized diets. I and my team address trauma and the spiritual concerns inherently found in chronic, disabling illness.

And we are intentionally different in our approaches. We use different language. For example, we measure vitals. We foster histories. We co-create action plans.

Incredible suffering comes through the door of our clinic. Why do I love my job? Because good things happen. And when they do, I like to celebrate. At the first visit, I point out to patients a special singing bowl in the office with a very happy tone. I note that when good things happen, we ring the bowl. This is a very powerful question: “What would it take to ring the bowl with you?”

Ringling this bowl is a deeply moving moment.

One additional ritual is essential in my professional life: Often, at the start of the clinic’s day, we gather for a

grounding meditation. If patients are present, they are invited to participate. We circle and express out loud or in our hearts our intentions for the day. Then, one person will say:

*“Today, and every day,*

*for all who are here, and for all who come here,*

*May we be filled with the light of Love,*

*May we be guided and shown the way,*

*May we be granted Strength and Wisdom,*

*and the capacity, in our every act, to foster Health and Healing in our world.”*

A special hand-made bowl with a particularly deep resonance, brought back from Japan, is rung. We stand and take in the sound. Then we do our best to make this so.

Gregory A. Plotnikoff, MD, MTS, FACP, is medical director and senior consultant, Minnesota Personalized Medicine, Minneapolis, and a member of the *Minnesota Medicine* Advisory Board.

# Transcatheter closure of patent ductus arteriosus in the premature infant: off-label use of the Medtronic Microvascular Plug™

BY GURUMURTHY HIREMATH, MD; ELISABETH HEAL, DO; AND JOHN L. BASS, MD

Most small premature infants with patent ductus arteriosus (PDA) currently undergo surgical ligation due to technical limitations of transcatheter techniques. We report our experience with successful transcatheter PDA closure using off-label use of Medtronic Microvascular Plug™ in eight premature infants (the on-label use of the microvascular plus is to occlude/decrease flow in abnormal blood vessels in the peripheral vasculature). The procedures were done in the cardiac catheterization laboratory under echocardiographic guidance using femoral venous access. Arterial access was not obtained. Median weight and gestational age at birth were 0.7 Kilograms and 25.5 weeks, respectively. Median weight and age at the time of procedure were 1.65 kilograms and 1 month, respectively. Median fluoroscopy time was 8.25 minutes, median procedural time was 51 minutes and median radiation dose (Air kerma) was 8.9 milliGray. All procedures were successful with complete occlusion and no complications.

## Introduction

Surgical closure of the patent ductus arteriosus (PDA) has been replaced by transcatheter closure as the standard of care except in the premature infant. Complications described with surgical closure include vocal cord paresis, phrenic nerve palsy, scoliosis, post ligation syndrome characterized by decreased systolic function, and inadvertent ligation of the pulmonary artery or aorta (Kumar 2017, Armstrong 2017).

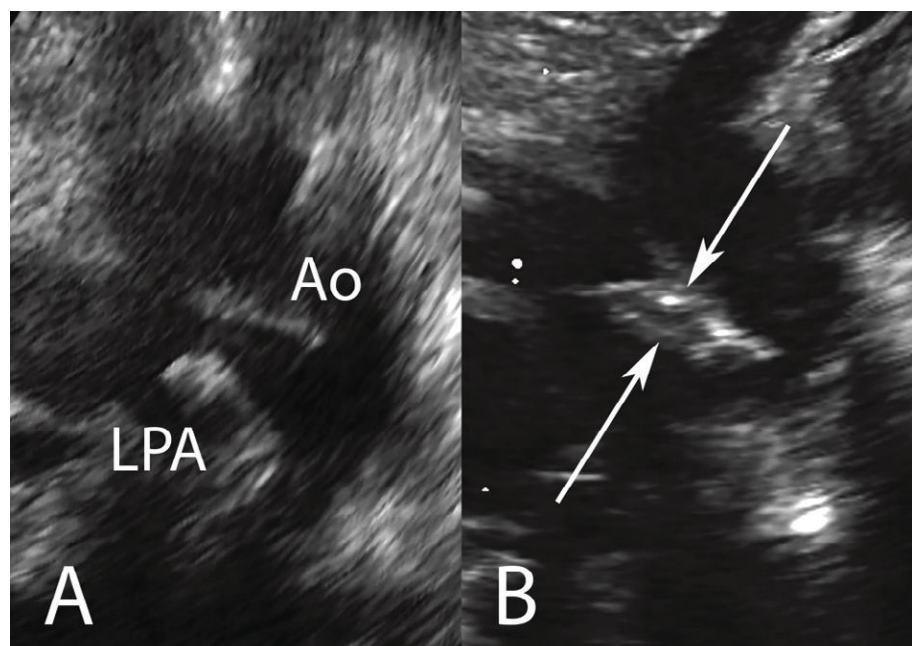
Delivery systems for standard transcatheter PDA closure devices are large for the premature infant and could cause vascular injury or hemodynamic instability. Despite these obstacles, transcatheter closure of the PDA in premature infants was reported in 2007 (Roberts and Wilson). A device that could be implanted through a 4F catheter was developed and tested in infant piglets (Bass & Wilson 2014), and its use has been reported in premature infants outside the United States (Morville 2017). However, this device is still not available for use in the US. Recently the off-label use of an endovascular occlusion device that will pass

FIGURE 1

## Echocardiographic images during transcatheter closure of PDA

A: High parasternal view of PDA, pulmonary arteries and descending thoracic aorta. The image has been rotated to match the orientation of panel B. Ao=aorta, LPA=left pulmonary artery.

B: Echocardiographic appearance of 5Q MVP device (arrows) delivered in the PDA





through a 2.7F microcatheter was reported in two series (Sathanandam 2016, Wang-Giuffre 2016). We report our experience in closing the persistently patent ductus arteriosus in 8 premature or post-premature infants using the Medtronic Micro Vascular Plug<sup>TM</sup> (MVP).

## Methods

Eight premature infants with hemodynamically significant PDAs (reversed diastolic flow in the abdominal aorta, left-sided cardiac chamber enlargement, failure to be weaned from respiratory support) were evaluated for possible transcatheter closure by echocardiography (minimum PDA diameter  $\leq 4$ mm on 2-dimensional imaging, PDA length of at least 5mm).

All cases were performed under general anesthesia with mechanical ventilation in the cardiac catheterization laboratory. Devices were selected that were at least 2mm larger than the minimum PDA diameter on 2-dimensional echocardiographic imaging. A 3.3F or 4F sheath was placed in the femoral vein using ultrasound guidance. Intravenous heparin 100U/kg was administered, along with antibiotics (Cefazolin 20mg/kg). An angled catheter was advanced to the right atrium, and a 0.014-inch guidewire (Terumo angled glide wire or High Torque Floppy guidewire) advanced through the tricuspid valve, right ventricle, pulmonary valve and PDA into the descending aorta. The guiding catheter was removed and a 2.7F microcatheter advanced over the guidewire into the descending aorta. In three cases, pre-closure aortography through the PDA was performed to better understand PDA anatomy. The guidewire was removed, and the appropriate MVP device advanced to the end of the catheter. Under ultrasound guidance, the device was withdrawn to the aortic PDA ampulla, and deployed through the PDA (Figure 1). Echocardiography confirmed absence of accelerated flow into the left pulmonary artery and descending aorta, and complete occlusion of the PDA. The device was released by unscrewing the 0.018-inch delivery cable. The catheter and sheath were removed

TABLE 1

## Patient characteristics (n=8)

Gestational age at birth (median/range)	25.5 weeks (24–35 weeks)
Age at catheterization (median/range)	1 month (1–4 months)
Birth weight (median/range)	0.73 Kgs (0.58–2.38 Kgs)
Weight at catheterization (median/range)	1.65 Kgs (1.23–3.3 Kgs)
PDA minimum diameter (median/range)	2.5 mm (1.7–3 mm)
PDA length (median/range)	7.3 mm (5.3–12.6 mm)
Procedure time (median/range)	51 minutes (30–71 minutes)
Fluoroscopy time (median/range)	8.3 minutes (6.7–24.6 minutes)
Radiation dose (Air kerma) in mGy (median/range)	8.9 mGy (2.1–29.6 mGy)

and hemostasis obtained with manual compression.

Case review was approved the University of Minnesota Institutional Review Board.

## Results

Patient demographics are summarized in Table I. Median weight and gestational age at birth were 0.73 Kilograms and 25.5 weeks, respectively. Median weight and age at the time of procedure were 1.65 kilograms and 1 month, respectively. Median fluoroscopy time was 8.3 minutes, median procedural time 51 minutes and median radiation dose (Air kerma) was 8.9 milliGray. All procedures were successful with no complications. A 5Q micro-vascular plug (MVP) was used in seven patients and a 7Q plug used in one. There was immediate occlusion of the PDA in each infant. Follow-up was limited in three infants who returned to their original institution.

## Discussion

Bedside surgical closure has remained the standard for PDA closure in premature infants who fail medical management. Because of morbidity associated with this procedure, including pneumothorax, deterioration of required ventilatory support, and infection, there has been interest and effort to develop an alternative therapy for the premature infant—transcatheter PDA closure. Coil occlusion (Roberts & Wilson 2007) and use of the Amplatzer vascular plug II (Zahn 2015) are strategies that have been employed, but share the risks

of stiff delivery systems in these small infants. The Amplatzer ADOII AS has a lower profile, and a 4F soft delivery catheter (Bass and Wilson 2014), but is not generally available for use in the United States, although a clinical trial is ongoing.

Off-label device use presents unique challenges when the targeted anatomy differs from that of the original product design. This is true for use of the MVP for PDA closure in premature infants. Each size device is relatively long compared to diameter, and length increases when constrained in the PDA. This increases the risk of device protrusion into the aorta or pulmonary artery. Fortunately, since there are no retention discs, obstruction of contiguous vascular structures is uncommon. Furthermore, the self-expanding Nitinol framework is only covered on the proximal end (pulmonary artery end in transvenous deployment), so slight protrusion into the aorta is generally not obstructive. The MVP is difficult to visualize by fluoroscopy. Precise placement requires technical expertise by an experienced operator and visualization by an experienced sonographer using 2-dimensional echocardiography. We have had good results thus far using primarily echocardiographic guidance.

By placing the MVP from the femoral vein and avoiding angiography, we eliminated the risks of arterial damage and contrast-related complications. However, the transvenous approach requires navigation through the heart. We have found that this can be done easily with a guidewire supported by a catheter that remains in the

right atrium, avoiding traversing the heart of a premature infant with a stiff catheter.

Although we have recognized and found solutions to many of the technical challenges of using the MVP to occlude PDAs in premature infants, there remain important procedural considerations. Transcatheter PDA closure requires transport of a fragile premature infant to the cardiac catheterization laboratory. We were able to do this without problems in these eight infants, but this requires intense coordination between neonatology, cardiology, and cardiac anesthesiology. No patient became hypothermic. None of these premature infants had hemodynamic deterioration with implantation. Follow-up is too short to allow conclusions regarding the effects of removing systemic arterial runoff, increased pulmonary blood flow, and improving respiratory status. Transcatheter PDA closure will be compared to bedside surgical ligation. The ability to perform the transcatheter procedure at

bedside with echocardiographic guidance may depend on arterial delivery. Newer devices that are more visible with echocardiographic imaging, have a smaller profile that does not protrude into the aorta or pulmonary artery, are deliverable through catheters less than 3F in size, and are specifically designed for PDA closure in the premature infant, are needed to achieve that goal. A new and improved piccolo device was approved by FDA in early 2019, and is now being used with premature babies at Masonic Children's Hospital, the first program in Minnesota to use it. **MM**

Gurumurthy Hiremath, MD; Elisabeth Heal, DO; and John L Bass, MD, are on the medical staff of Masonic Children's Hospital, University of Minnesota,

Child Fetal & Neonatal Ed 2007;92:F248-50.

Bass JL, Wilson N. Transcatheter occlusion of the patent ductus arteriosus in infants—experimental testing of a new Amplatzer device. *Catheter Cardiovasc Interv* 2014; 83: 250-255.

Morville P, Akhavi A. Transcatheter closure of hemodynamic significant patent ductus arteriosus in 32 premature infants by amplatzer ductal occluder additional size-AD0IIAS. *Catheter Cardiovasc Interv* 2017 Oct 1;90(4):612-617

Sathanandam S, Justino H, Waller BR 3rd, Radtke W, Qureshi AM. Initial clinical experience with the Medtronic Micro Vascular Plug™ in transcatheter occlusion of PDAs in extremely premature infants. *Catheter Cardiovasc Interv* 2017 May;89(6):1051-1058.

Wang-Giuffre EW, Breinholt JP. Novel use of the medtronic micro vascular plug for PDA closure in preterm infants. *Catheter Cardiovasc Interv* 2017 May;89(6):1059-1065.

Zahn EM, Nevin P, Simmons C, Garg R. A novel technique for transcatheter patent ductus arteriosus closure in extremely preterm infants using commercially available technology. *Catheter Cardiovasc Interv* 2015;85:240-248.

REFERENCES

Trefz M, Wilson N, Acton R, Hess DJ, Bass JL. Echocardiographic assessment of ductal anatomy in premature infants-lessons for device design. *Echocardiography*. 2010 May;27(5):575-9.

Roberts P, Adwani S, Archer N, Wilson N. Catheter closure of the arterial duct in preterm infants. *Arch Dis*

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# Characteristics of clinical extrapulmonary nontuberculous mycobacteria isolates in Minnesota, 2013–2017

BY JOANNE TAYLOR, PHD; PAULA SNIPPES VAGNONE, MT; KIRK SMITH, DVM, MS, PHD; JACY WALTERS, PHD, MPH; NANCY WENGENACK, PHD; SHARON DEML, MT; PATRICIA FERRIERI, MD; AND RUTH LYNFIELD, MD

Approximately 80 species of nontuberculous mycobacteria (NTM) that cause disease are found environmentally and in animal reservoirs. Typically, pulmonary NTM infections are sporadic; extrapulmonary NTM (ENTM) infections are commonly outbreak associated. Recent sources of ENTM outbreaks in Minnesota include contaminated heater-cooler units used during cardiac surgery and contaminated hormone injections. We examined patient demographics and characteristics of ENTM isolates characterized by four Minnesota reference laboratories during 2013–2017 to assess potential value of systematic laboratory-based ENTM surveillance in Minnesota.

Laboratories characterized 490 ENTM isolates, representing an estimated burden of 1.8/100,000 people/year in Minnesota. Thirty-one species or complexes were identified; most common were *M. avium complex* (31%), *M. chelonae* (22%), *M. fortuitum* (11%), and *M. abscessus* (4%). Most common specimen collection sites included skin and soft tissue (38%), blood (15%), neck lymph node or tissue (12%), sinus (8%), joint or bone (5%), device or implant (4%), and eye (3%). Median age of patients was 55 years (range: 2–98 years); 18% were from patients aged <18 years, 20% aged 18–44 years, 28% aged 45–64 years and 34% aged >65 years. Sex was documented for 238 (49%) patients; 127 (53%) were males. County information was available for 313 patients (64%); approximately half (49%) resided in metropolitan Minneapolis-Saint Paul.

Laboratory data can be used for ENTM surveillance in Minnesota. Implementing laboratory-based surveillance can detect ENTM cases, provide a mechanism for obtaining clinical and epidemiological information, and enable earlier identification of potential health care transmission or community clusters.

## Introduction

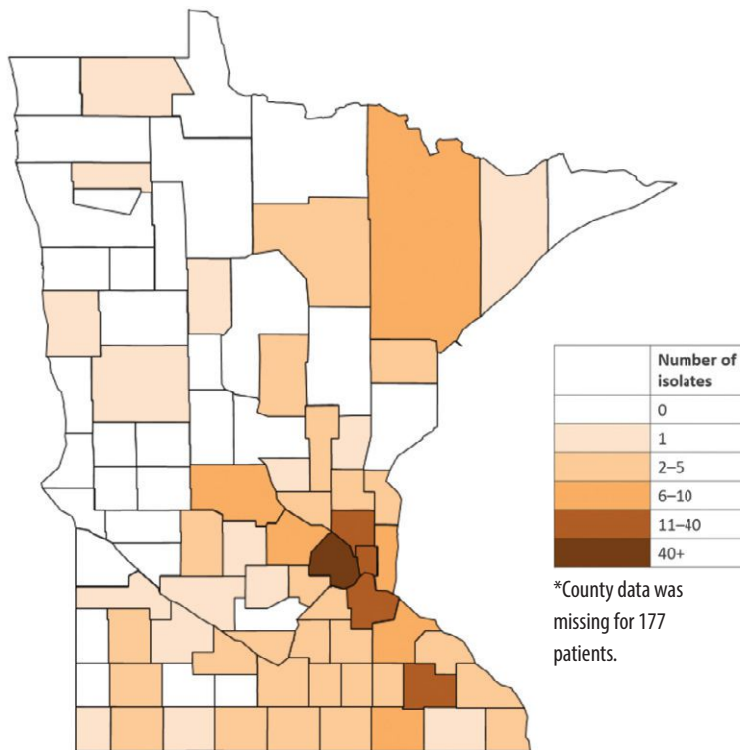
Approximately 80 species of nontuberculous mycobacteria (NTM) that cause disease are found environmentally and in animal reservoirs. Extrapulmonary nontuberculous mycobacteria (ENTM) infections are associated with high morbidity, complex treatment regimens, and potential

for community and health care-associated outbreaks. A widely publicized outbreak attributable to disseminated infections caused by *Mycobacterium chimaera* occurred worldwide during 2011–2016.<sup>1</sup> The outbreak was traced to contaminated water heater-cooler devices used during open-heart surgery. In the United States,

approximately half a million patients were exposed, with 51–80 infections known to be associated with the contaminated devices.<sup>2</sup> Other examples include 14 cases of *M. abscessus* lymphadenitis in children in Georgia as a result of contaminated dental water lines<sup>3</sup> and an outbreak of 38

FIGURE 1

**Extrapulmonary Nontuberculous Mycobacteria Infections by County — Minnesota, 2013–2017 (N = 313\*).**



*M. fortuitum* infections associated with a tattoo parlor.<sup>4</sup>

ENTM infection is reportable in seven states, including from health care providers in Oregon, Maryland, Missouri, Tennessee, and Wisconsin and from laboratories in Nebraska and Mississippi. Oregon and Nebraska have published summaries of their reported extrapulmonary cases.<sup>5,6,7,8</sup> However, information about the burden of ENTM in the United States is limited, as is information about the relative contribution of risk factors for infection such as patient characteristics, health care exposures, environmental exposures, and contribution of specific *Mycobacterium* species to disease. Similarly, given the lack of surveillance or epidemiological data, knowledge regarding potential for effective public health interventions to reduce ENTM infections or outbreaks is limited.

As of October 1, 2019, laboratories are required to report isolates of ENTM from Minnesota patients to the Minnesota De-

partment of Health (MDH). Before this reporting mandate, minimal information was available regarding ENTM disease in Minnesota. In 2016, during the global out-

break of disseminated *M. chimaera* caused by contaminated heart surgery water heater-cooler devices, three cases occurred in Minnesota.<sup>9</sup> Also in 2016, an outbreak of *M. chelonae* infections associated with human gonadotropin injections occurred at a Minnesota weight loss clinic, with six cases reported.<sup>10</sup>

We collected data on ENTM isolates identified by four reference laboratories for diagnosis of mycobacteria in Minnesota to more fully understand the types and prevalence of ENTM infections identified in Minnesota, to characterize the persons affected by ENTM infections and to help identify outbreaks.

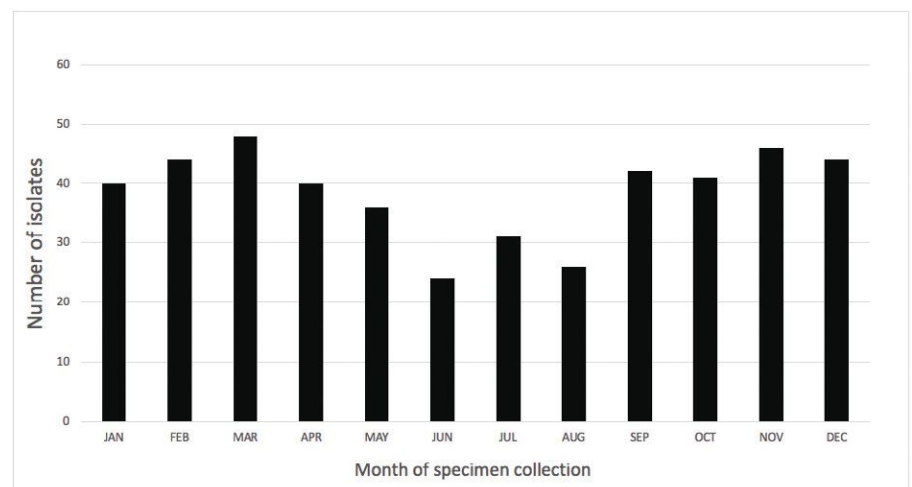
**Methods**

We collected data on ENTM isolated during 2013–2017 from the Minnesota Department of Health Public Health Laboratory (PHL), Mayo Clinic, Hennepin County Medical Center, and University of Minnesota Medical Center.

Confirmed NTM infections included any isolates of *Mycobacterium* species that were not part of the *M. tuberculosis* complex or *M. leprae*. We excluded NTM specimen sources from stool, sputum, tracheal secretions, lung, or bronchoalveolar lavage, or if the specimen source or the body site was unknown.

FIGURE 2

**Average extrapulmonary nontuberculous mycobacteria infections by month — Minnesota, 2013–2017 (N=460\*)**



\*Collection month information was missing for 30 patients



Patients were only counted once. If more than one specimen was isolated from the same site in a patient, the first isolate collected was included. If more than one species was isolated from one patient, both species were noted as a coinfection. If a patient had isolates of the same *Mycobacterium* species from more than one infection site or the sites were blood, bone marrow, peritoneal, or pericardial, the infection was considered to be disseminated. Patients with a pulmonary isolate and extrapulmonary isolate were included. Isolates associated with a medical device or implant (e.g., catheter port, injection site, or heart graft) were separately classified to determine isolates potentially associated with health care exposure.

An estimated incidence of extrapulmonary nontuberculous mycobacteria infections in Minnesota was calculated based on the average state population 2013–2017 and the associated patient demographics; *Mycobacterium* species, time of specimen collection, and sites of infection were examined.

This project was reviewed by MDH and CDC and determined to be non-research because it was public health surveillance.

**Results**

Overall, 490 Minnesotan patients had NTM isolated from an extrapulmonary site, with 101 (2013), 95 (2014), 108 (2015), 94 (2016), and 92 (2017) patients identified each year during the study period. A majority of NTM isolates were

characterized at PHL (n=256, 52.2%). Forty-three isolates did not have a known specimen source and were excluded. The number of clinical ENTM isolates identified by major reference laboratories in Minnesota was relatively stable each year 2013–2017. Confirmed cases represent approximately 98 cases annually in Minnesota, or an estimated rate of 1.8/100,000 people/year.

Patient ages were available for 457 isolates (93%); 18% were from patients aged <18 years, 20% from patients aged 18–44 years, 28% from patients aged 45–64 years, and 34% from patients aged ≥65 years. The median patient age was 55 years (Table 1). Patients aged <10 years most often had neck infections (n = 73, 64%). County information was available for 313 patients

TABLE 1

**Characteristics of Extrapulmonary Nontuberculous Isolates, by Collection Site — Minnesota, 2013–2017 (N = 490).**

SPECIMEN COLLECTION SITE	MEDIAN AGE, YRS (RANGE)	MACS NO. (%)	M. CHELONAE NO. (%)	M. FORTUITUM $\phi$ NO. (%)	M. ABSCESSUS NO. (%) $\nabla$	M. MUCOGENICUM $\diamond$ NO. (%)	OTHER# NO. (%)	TOTAL NO. (%)
Total	55 (2–98)	153	108	52	38	33	106	490
Skin or soft tissue (not neck)*	59 (5–96)	27 (17.7)	51 (47.2)	28 (53.9)	15 (39.5)	1 (3.0)	66 (62.3)	188 (38.4)
Disseminated (blood, peritoneal fluid, bone marrow, or pericardial fluid)	50 (11–88)	38 (24.8)	7 (6.5)	9 (17.3)	5 (13.2)	26 (78.8)	9 (8.5)	94 (19.2)
Blood	50 (21–88)	27 (17.7)	5 (4.6)	7 (13.5)	3 (7.9)	26 (78.8)	7 (6.6)	75 (15.3)
Multiple body sites	50 (2–70)	7 (4.6)	0	1 (1.9)	1 (2.6)	0	0	9 (1.8)
Peritoneal fluid	72 (11–75)	0	2 (1.9)	1 (1.9)	0	0	1 (0.9)	4 (0.8)
Bone marrow	42 (34–67)	4 (2.6)	0	0	0	0	0	4 (0.8)
Pericardial fluid	60 (46–75)	0	0	0	1 (2.6)	0	1 (0.9)	2 (0.4)
Lymph node	7 (3–92)	65 (42.5)	1 (0.9)	1 (1.9)	1 (2.6)	3 (9.1)	3 (2.8)	74 (15.1)
Neck specimens $\ddagger$	7 (3–92)	53 (34.6)	1 (0.9)	1 (1.9)	1 (2.6)	1 (3.0)	1 (0.9)	58 (11.8)
Nasal or sinus	63 (5–86)	1 (0.7)	26 (24.1)	3 (5.8)	3 (7.9)	0	4 (3.8)	37 (7.6)
Joint or bone	70 (10–86)	8 (5.3)	7 (6.5)	3 (5.8)	2 (5.3)	0	5 (4.7)	25 (5.1)
Medical device or implant $\ddagger$	49 (26–98)	0	2 (1.9)	2 (3.9)	6 (15.8)	2 (6.1)	6 (5.7)	18 (3.7)
Eye	66 (30–93)	0	8 (7.4)	1 (1.9)	3 (7.9)	0	1 (0.9)	13 (2.7)
Other $\Delta$	62 (2–91)	14 (9.2)	6 (5.6)	5 (9.6)	3 (7.9)	1 (3.0)	12 (11.3)	41 (8.4)

\* Includes infections in limbs (n=112, 59.6%), torso (n=23, 12.2%), face/mouth (n=12, 6.4%) and breast (n=9, 4.8%) as well as nail, axilla, ear, cervical, liver, perineal, scrotal, vaginal, skin tattoo

$\ddagger$  Includes neck mass, neck abscess or wound, cervical lymph node and parotid specimens

$\ddagger$  Includes catheter or port sites, heart graft, implant in breast, injection site, pin track, gastric tube and jejunal tube sites

$\Delta$  Other includes specimens from urine (n=9, 17.6%), aspirate/fluid unspecified, pleura, gastric fluid

$\S$  *Mycobacterium avium* complex; includes *M. avium* and *M. intracellulare* isolates.

$\phi$  Includes *Mycobacterium fortuitum* complex, *M. peregrinum* and *M. fortuitum* ssp. acetamidolyticum.

$\nabla$  Includes *M. abscessus*, *M. abscessus* ssp *abscessus*, *M. abscessus* ssp *massiliense*, and *M. abscessus* ssp *bolletii* complex.

$\diamond$  Includes *M. mucogenicum* and *M. mucogenicum/phocaicum*.

# Other includes: *M. marinum* (n=19, 17.9%), *M. chelonae/abscessus* complex (n=19, 17.9%), *M. kansasii*, *M. neoaurum*, *M. immunogenum*, *M. haemophilum*, *M. arupense*, *M. chelonae* and *M. fortuitum* complex, *M. goodii*, *M. iranicaum*, *M. obuense*, *M. smegmatis*, *M. avium* complex and *M. fortuitum* complex, *M. chlorophenicum*, *M. conceptionense/houstonense/senegalense*, *M. fredericksbergense*, *M. lentiflavum*, *M. mageritense*, *M. malmoense*, *M. mucogenicum/phocaicum*, *M. szulgai*, *M. heraklionense*, *M. wolinskyi*, *M. cosmeticum*.

(64%); most resided in the seven-county Minneapolis-Saint Paul metropolitan area (49%) or in Olmsted County (12%) (**Figure 1**). Sex of patient was available for 238 isolates (49%); 53% were from males.

The most common specimen collection sources of ENTM included skin and soft tissue (38%), and sources attributable to disseminated infections (19%), a majority of which were from blood specimens (15%) (**Table 1**). We also identified lymph node and related sources (15%) with most of these involving neck tissue, cervical lymph node, or parotid tissue (12%). Other sources included sinus (8%), joint or bone (5%), medical device or implant (4%) and eyes (3%) (**Table 1**).

*M. avium* complex, which are slowly growing mycobacteria, accounted for the greatest proportion of NTM isolates (153, 31%) and were isolated predominantly from lymph nodes and body sites indicative of disseminated disease. The rapidly growing mycobacteria (*M. chelonae*, *M. fortuitum*, *M. mucogenicum*, or *M. abscessus*) were commonly isolated from skin or soft tissue or nasal or sinus sites. Of note, these species accounted for 92% (12 of 13) eye specimens. Two thirds of the potential health care-associated infections in our data collection (classified as related to medical devices and implants) were due to *M. chelonae*, *M. mucogenicum*, *M. abscessus*, or *M. fortuitum* infection. Blood specimens accounted for 79% (26 of 33) of the rapidly growing *M. mucogenicum* isolates. *M. marinum* accounted for only 19 isolates, which were all recovered from skin and soft tissue sources, including 14 that were specified as hand or finger. Seven patients with disseminated ENTM infections also had a positive pulmonary specimen. A tattoo-associated infection with *M. neoaurum* was detected.

Collection dates were available for 460 isolates (94%). A potential seasonal trend was noted, with the least number of ENTM specimens collected during summer months (**Figure 2**).

## Discussion

Our report describes ENTM infections in Minnesota during 2013–2017, based

on *Mycobacterium* diagnostic isolation reports from four Minnesota reference laboratories and demonstrates using laboratory data for ENTM surveillance in Minnesota. While case definitions and detection methods are different between states, the estimated burden of disease and NTM species detected in Minnesota appears to be higher than other states conducting surveillance: for example the rate in Minnesota is higher than the estimated rate in Oregon (1.1 cases/100,000 people/year) captured by their active surveillance system during 2014–2016.<sup>7,8</sup>

The rapidly growing mycobacteria (*M. abscessus*, *M. chelonae*, and *M. fortuitum*) commonly isolated from skin and soft tissue are known to have caused health care-associated infections, including from cosmetic procedures,<sup>11,12</sup> dental pulpotomy,<sup>13</sup> prosthetic joints,<sup>14</sup> central venous catheters,<sup>15,16</sup> and open-heart surgery.<sup>17</sup> Twelve ocular infections were identified; ENTM keratitis commonly occurs after trauma, surgery, or as a result of contaminated contact lenses.<sup>18</sup> We did not have information to determine whether trauma, procedures, or contaminated contact lenses were involved in many these cases. In terms of community exposures, only one skin tattoo infection was specified in the data collection; however, other specimens submitted under the category “skin” or “swab” might have been related to tattoo or other cosmetic exposures.

Neck specimens, a majority of which are likely to be cervical lymphadenitis, generally occurred in young patients and involved *M. avium* complex, a common cause of NTM cervical lymphadenitis reported in children.<sup>19,20</sup>

Slowly growing mycobacteria (*M. avium* complex and *M. marinum*) have been associated with environmental exposures, such as water.<sup>21</sup> *M. marinum* in particular has been associated with exposure to aquariums, fish or shellfish, or injuries associated with saltwater and our data are consistent with this, with a majority of infections occurring in the hand in Minnesota patients.<sup>22</sup>

The trend for fewer skin or soft tissue and neck specimens to be collected

in summer is interesting and warrants further observation. One study from Australia reported that children with cervical lymphadenitis tended to present to health care during spring, although patients with skin and soft tissue infections frequently presented during summer.<sup>23</sup>

Sixteen extrapulmonary *M. gordonae* isolates were identified; this species is a known contaminant of pulmonary specimens and has not always been associated with a pathogenic contribution to disease.<sup>24</sup> However, without clinical data we do not know its role in these 16 patients with extrapulmonary sites of involvement. Sites of infection included skin or soft tissue, gastric fluid, urine, pleura, lymph node, and eye. *M. gordonae* was one of the top three species isolated from hospital water in a study of NTM environmental contamination in health care settings.<sup>25</sup>

Limitations of laboratory-based ENTM surveillance include that any patients who did not have their infection cultured would be missed. Second, the possibility exists that some health care providers sent specimens to a laboratory other than these four Minnesota reference laboratories. A majority of the ENTM specimens were from the Twin Cities or Rochester, Minnesota, where these laboratories are located. Third, some isolates without the body site of specimen collection specified might have been an ENTM infection. Finally, a substantial limitation of this description of ENTM in Minnesota is the minimal clinical information and exposure information available in laboratory reports. The requirement to make laboratory-confirmed ENTM reportable and include detailed specimen body site, clinical information, and patient interview data will improve understanding of ENTM and potentially enable recognition of common-source outbreaks. Importantly, obtaining more information pertaining to laboratory-confirmed ENTM infections in Minnesota could enable risk factor studies and suggest measures to prevent infection.

## Conclusions

Our report describes ENTM infections in Minnesota 2013–2017, based on *Mycobac-*



*terium* diagnostic isolation reports from four Minnesota reference laboratories. While the data are not directly comparable, the estimated burden of ENTM disease detected in Minnesota is higher than other states conducting surveillance. Our analysis supports using laboratory data to detect ENTM infections in Minnesota patients. Implementing laboratory-based surveillance, as has been underway since October 1, 2019, might enhance ENTM case detection, provide a mechanism for obtaining clinical and epidemiological information, and enable earlier identification of potential health care transmission or community outbreaks. **MM**

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## REFERENCES

- van Ingen J, Kohl TA, Kranzer K, et al. Global outbreak of severe *Mycobacterium chimaera* disease after cardiac surgery: a molecular epidemiological study. *The Lancet Infectious Diseases*. 2017;17(10):1033–1041.
- Sommerstein R, Hasse B, Marschall J, et al. Global Health Estimate of Invasive *Mycobacterium chimaera* Infections Associated with Heater-Cooler Devices in Cardiac Surgery. *Emerging Infectious Diseases*. 2018;24(3):576–578.
- Hatzenbuehler LA, Tobin-D'Angelo M, Drenzek C, et al. Pediatric Dental Clinic-Associated Outbreak of *Mycobacterium abscessus* Infection. *Journal of the Pediatric Infectious Diseases Society*. 2017;6(3):e116–e122.
- Griffin I, Schmitz A, Oliver C, et al. Outbreak of Tattoo-Associated Nontuberculous *Mycobacterial* Skin Infections. *Clinical Infectious Diseases*. 2019;69(6):949–955. doi: 10.1093/cid/ciy979.
- Henkle E, Hedberg K, Schafer SD, Winthrop KL. Surveillance of Extrapulmonary Nontuberculous *Mycobacteria* Infections, Oregon, USA, 2007–2012. *Emerging Infectious Diseases*. 2017;23(10):1627–1630.
- Cassidy PM, Hedberg K, Saulson A, McNelly E, Winthrop KL. Nontuberculous *mycobacterial* disease prevalence and risk factors: a changing epidemiology. *Clinical Infectious Diseases*. 2009;49(12):e124–129.
- Tierney M, Pedati C, Keyser A, Safranek T. The Epidemiology of Non-tuberculous *Mycobacteria* (NTM) from Non-pulmonary Sites over 4 Years in Nebraska. *Open Forum Infectious Diseases*. 2017;4(Suppl 1):S671–S671.
- Shih DC, Cassidy PM, Perkins KM, Crist MB, Cieslak PR, Leman RL. Extrapulmonary nontuberculous *mycobacterial* disease surveillance — Oregon, 2014–2016. *Morbidity and Mortality Weekly Report*. 2018;67(31):854.
- Tan N, Sampath R, Abu Saleh OM, et al. Disseminated *Mycobacterium chimaera* Infection After Cardiothoracic Surgery. *Open Forum Infectious Diseases*. 2016;3(3):ofw131.
- Mody R, Rainbow J, Ferguson B, et al. 1254. Outbreak of *Mycobacterium chelonae* Skin Infections Associated With Human Chorionic Gonadotropin Injections at Weight Loss Clinics. *Open Forum Infectious Diseases*. 2018;5(Suppl 1):S382–S382.
- Rodriguez JM, Xie YL, Winthrop KL, et al. *Mycobacterium chelonae* facial infections following injection of dermal filler. *Aesthetic Surgery Journal*. 2013;33(2):265–269.
- Schnabel D, Esposito DH, Gaines J, et al. Multistate US outbreak of rapidly growing *mycobacterial* infections associated with medical tourism to the Dominican Republic, 2013–2014. *Emerging Infectious Diseases*. 2016;22(8):1340.
- Peralta G. Notes from the field: *Mycobacterium abscessus* infections among patients of a pediatric dentistry practice—Georgia, 2015. *MMWR Morbidity and Mortality Weekly Report*. 2016;65.
- Jitmuang A, Yuenyongviwat V, Charoencholvanich K, Chayakulkeeree M. Rapidly growing *mycobacterial* infection: a recognized cause of early-onset prosthetic joint infection. *BMC Infectious Diseases*. 2017;17(1):802.
- Tagashira Y, Kozai Y, Yamasa H, Sakurada M, Kashiya T, Honda H. A cluster of central line-associated bloodstream infections due to rapidly growing nontuberculous *mycobacteria* in patients with hematologic disorders at a Japanese tertiary care center: an outbreak investigation and review of the literature. *Infection Control & Hospital Epidemiology*. 2015;36(1):76–80.
- Hawkins C, Qi C, Warren J, Stosor V. Catheter-related bloodstream infections caused by rapidly growing nontuberculous *mycobacteria*: a case series including rare species. *Diagnostic Microbiology and Infectious Disease*. 2008;61(2):187–191.
- Sax H, Bloemberg G, Hasse B, et al. Prolonged outbreak of *Mycobacterium chimaera* infection after open-chest heart surgery. *Clinical Infectious Diseases*. 2015;61(1):67–75.
- Huang S, Soong HK, Chang J-S, Liang Y-S. Non-tuberculous *mycobacterial* keratitis: a study of 22 cases. *British Journal of Ophthalmology*. 1996;80(11):962–968.
- Tortoli E. Epidemiology of cervico-facial pediatric lymphadenitis as a result of nontuberculous *mycobacteria*. *International Journal of Mycobacteriology*. 2012;1(4):165–169.
- Wolinsky E. *Mycobacterial* lymphadenitis in children: a prospective study of 105 nontuberculous cases with long-term follow-up. *Clinical Infectious Diseases*. 1995;20(4):954–963.
- Vaerewijck MJ, Huys G, Palomino JC, Swings J, Portaels F. *Mycobacteria* in drinking water distribution systems: ecology and significance for human health. *FEMS Microbiology Reviews*. 2005;29(5):911–934.
- Jernigan JA, Farr BM. Incubation Period and Sources of Exposure for Cutaneous *Mycobacterium marinum* Infection: Case Report and Review of the Literature. *Clinical Infectious Diseases*. 2000;31(2):439–443.
- Tebruegge M, Pantazidou A, MacGregor D, et al. Nontuberculous *mycobacterial* disease in children—epidemiology, diagnosis & management at a tertiary center. *PLoS One*. 2016;11(1):e0147513.
- Morimoto K, Kazumi Y, Shiraishi Y, et al. Clinical and microbiological features of definite *Mycobacterium gordonae* pulmonary disease: the establishment of diagnostic criteria for low-virulence *mycobacteria*. *Transactions of The Royal Society of Tropical Medicine and Hygiene*. 2015;109(9):589–593.
- Khosravi AD, Hashemi Shahraki A, Hashemzadeh M, Sheini Mehrabzadeh R, Teimoori A. Prevalence of non-tuberculous *mycobacteria* in hospital waters of major cities of Khuzestan Province, Iran. *Frontiers in Cellular and Infection Microbiology*. 2016;6:42.

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## INELL C. ROSARIO, MD

- ENT, Andros ENT & Sleep Center, Inver Grove Heights
- MMA member since 1997
- From Nassau, Bahamas. Graduated from Macalester College in Saint Paul, medical school at University of Minnesota and residency at Medical College of Wisconsin. Worked at Midwest ENT Specialists, 1997–2013.
- Married since 1988 to Luis Rosario, two children.

### Became a physician because ...

After having a younger sister die of a brain tumor and dealing with doctors who were not at all interested in explaining her condition to us, I wanted to become a physician to make sure I communicate with and engage my patients so that they understand what is going on with them and are informed participants in their care.

### Greatest challenge facing medicine today ...

The greatest challenge facing medicine today is keeping physician engagement so that we don't burn out. On so many levels, physi-

## ZACHARY SHAHEEN, MD, PHD

- Second-year pediatrics and PSTP (Physician-Scientist Training Program) resident, University of Minnesota.
- MMA member since 2018.
- Grew up in Elk River. Graduated from College of Saint Benedict/St. John's University, medical school at Medical College of Wisconsin in Milwaukee.
- Met his wife, Jessica Shaheen, MD, in Elk River. The two went to college and medical school together. Jessica Shaheen is a surgeon with Fairview Ridges surgical group. They have a 9-month-old son, Aiden, and lots of family living nearby.

### Became a physician because ...

Becoming a physician-scientist seemed to be the natural convergence point of a number of factors. I grew up in a science & music household, and I was constantly testing boundaries trying to figure out the “why” for every unanswered question. I also have always felt compelled to find a way to be an advocate for my community, for which health care and public policy have been two natural mechanisms by which I can serve. And, I have a rather aggressive competitive streak in me and the health sciences have challenged me in new and harder ways every year.



### Greatest challenge facing medicine today ...

A month ago, I would say the lack of health equity and access. Today, it is hard to consider anything beyond the imminent threat of COVID-19 but, underlying this pandemic, our fundamental problem in medicine remains one of health disparities and lack of access. Whether I am considering as a training pediatrician how to best facilitate healthy environments for a child during a wellness visit or, now, trying to find ways to promote risk mitigation in the face of COVID-19, issues

physicians are “herded,” have to ask permission for time off, told how many patients to see and how quickly to see them, what tests to order, who to refer to, etc. with loss of not only patient interaction but also personal control. It seems that the goal is to eliminate the patient-physician relationship and have shift work, replaceable physicians.

### Favorite fictional physician ...

Gregory House, MD.

### If I weren't a physician ...

If I weren't a physician I would be an orthodontist; I like seeing beautiful smiles and being able to help create them would be rewarding.



like protected parental leave, preventing food insecurity, transportation access and guaranteeing medicine and health care access all matter. We have the cumulative material and wealth in our country to provide these kinds of basic—and morally required—human necessities to every person, and we are failing to deliver on this universal promise. I am proud to work within organized medicine groups like the Minnesota Medical Association to help advocate for this future reality.

### Favorite fictional physician ...

Dr. Leonard McCoy, on the Starship Enterprise (“Star Trek”). I have an insatiable appetite for science-fiction and fantasy, and my biggest pet peeve has always been when a show or book has a single doctor or scientist character that does all of the “sciency-science” (i.e., seamlessly transitions from doing surgery, to fixing a reactor, to creating an antidote). Dr. McCoy is a thoughtful and compassionate physician who works with an incredibly effective team, because they each embrace their relative areas of expertise and recognize what they do not know (“I’m a doctor, not a physicist!”). Living in a world with so many unsolved mysteries is part of what brings me joy, and having characters so openly reflect on their ignorance is a wonderful reflection of how we should live our lives.

### If I weren't a physician ...

If I were to stop being a physician and/or scientist, I would probably fairly rapidly find myself active in a formal public policy or grassroots advocacy role. If I were to rewind time (and while I have zero regrets on my career trajectory), I would alternatively consider being a high school science teacher and assistant hockey and tennis coach on the side. All of these options fulfill my natural inclination to be an advocate and to be a teacher.



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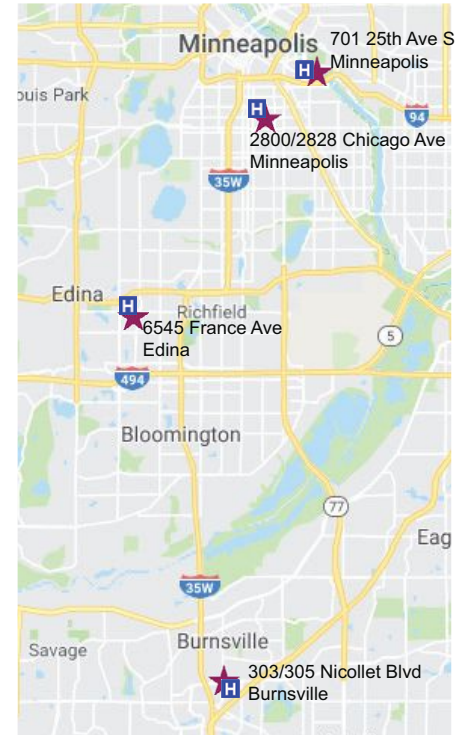
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