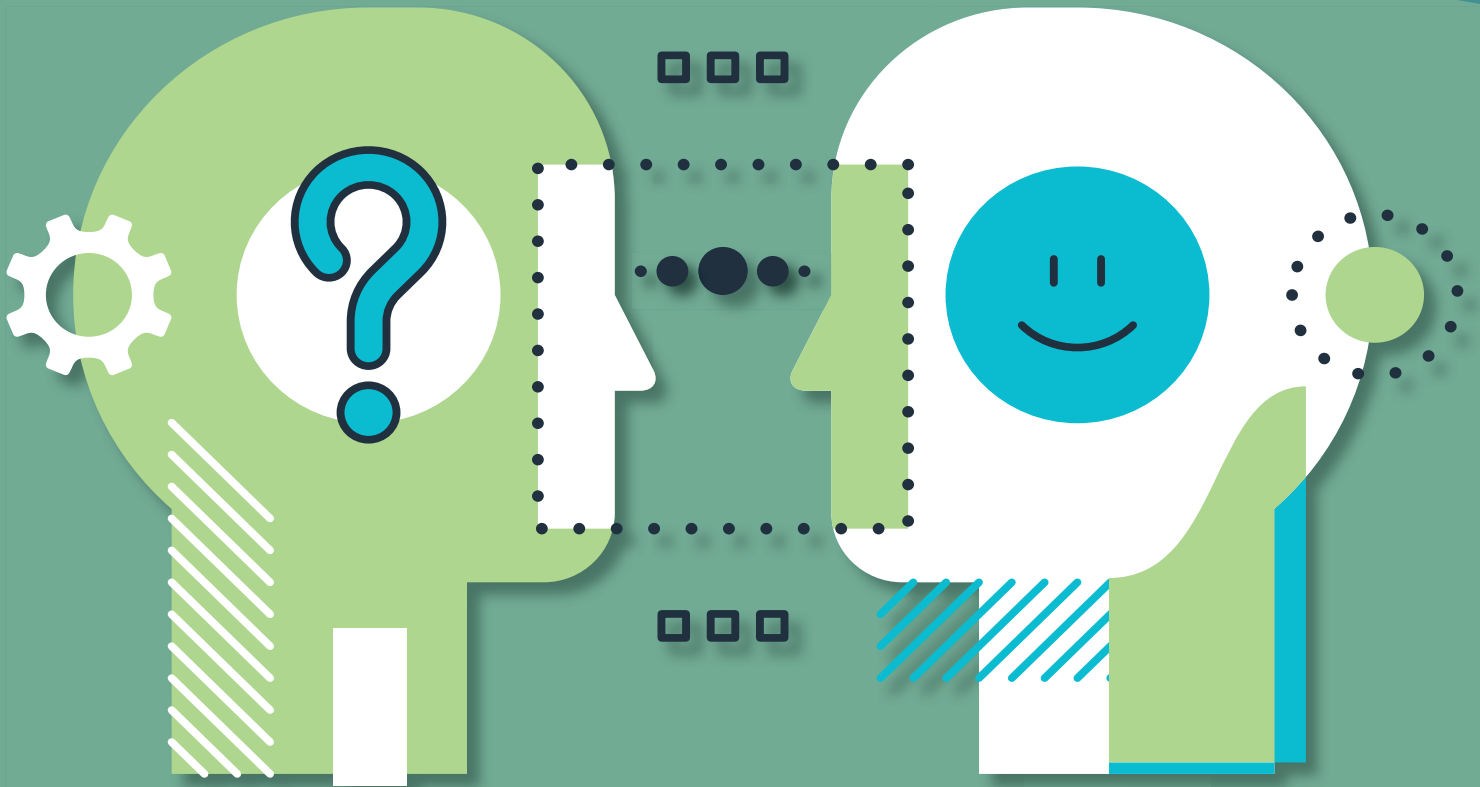


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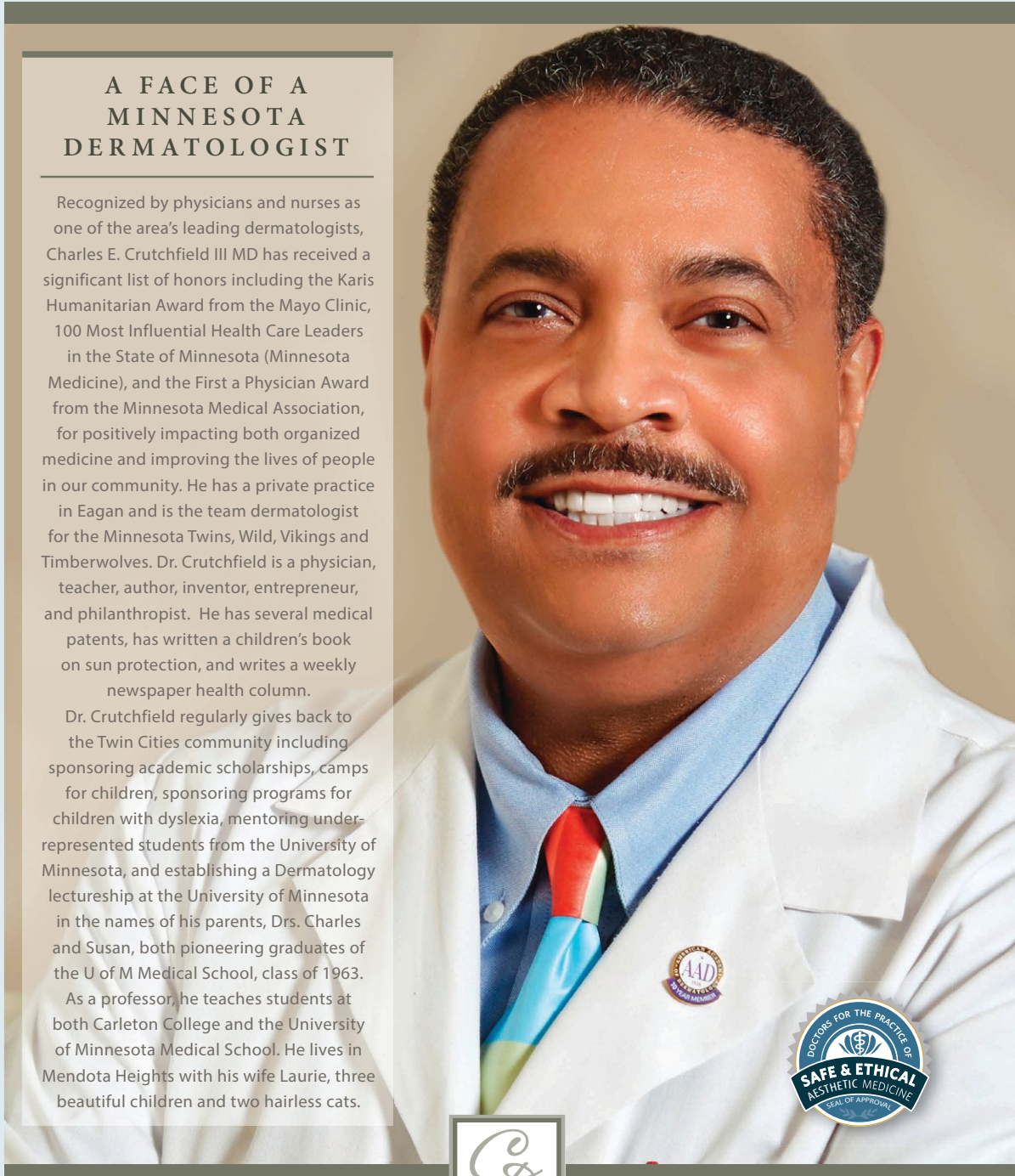
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Dr. Crutchfield regularly gives back to the Twin Cities community including sponsoring academic scholarships, camps for children, sponsoring programs for children with dyslexia, mentoring under-represented students from the University of Minnesota,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

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



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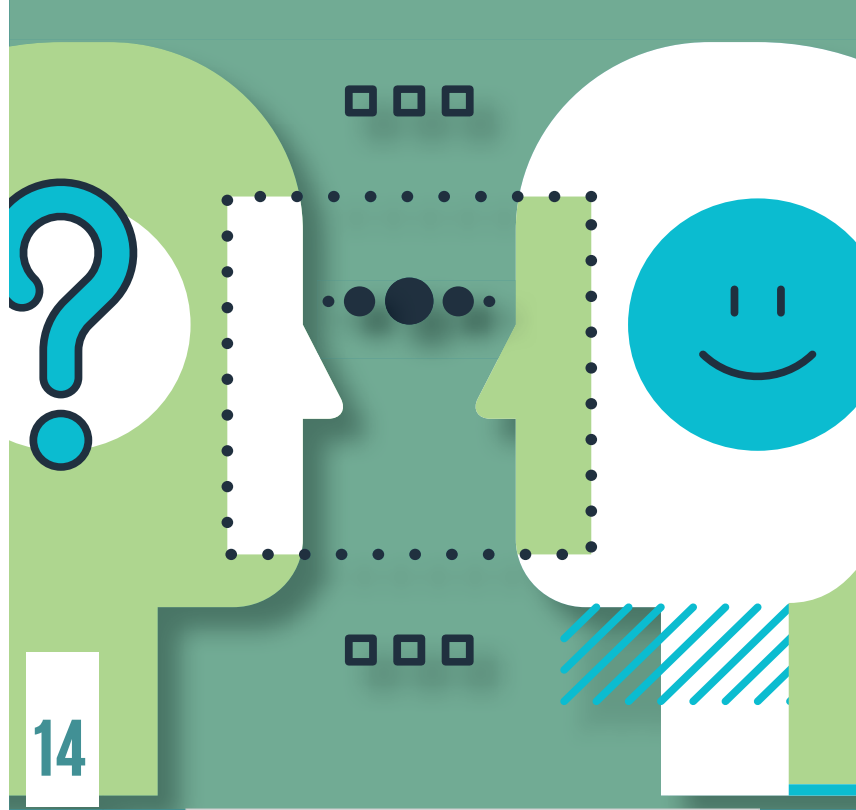
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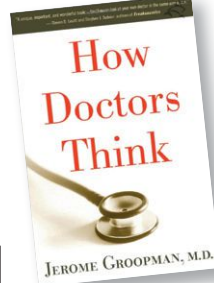
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We don't always
need to find a
solution; we just
need to hear the
problem.

Patients simply want to be heard

Like most physicians, I want to resolve my patients' clinical concerns. But this intent is often challenged when I'm seeing patients who have long-standing workers' compensation claims. These often are patients who, after prolonged and complicated treatment with multiple clinicians, still have difficulty returning to their normal activities at work and at home. How can I presume to reach a perfect solution in such complex cases?

In medical school, we were taught to be sympathetic listeners because (except in life-threatening situations when quick action is required) people want to be heard—sometimes more than they want to have their problems solved. This listening may well be the heart of the art of medicine.

In medicine, we apply the scientific principles of the human body to the complex social system that is human life. In that way, medicine is different than other hard sciences. We are not mechanics adjusting the nuts and bolts of a machine, but people caring for other people. The direct application of medical science is colored through the lens of human communication.

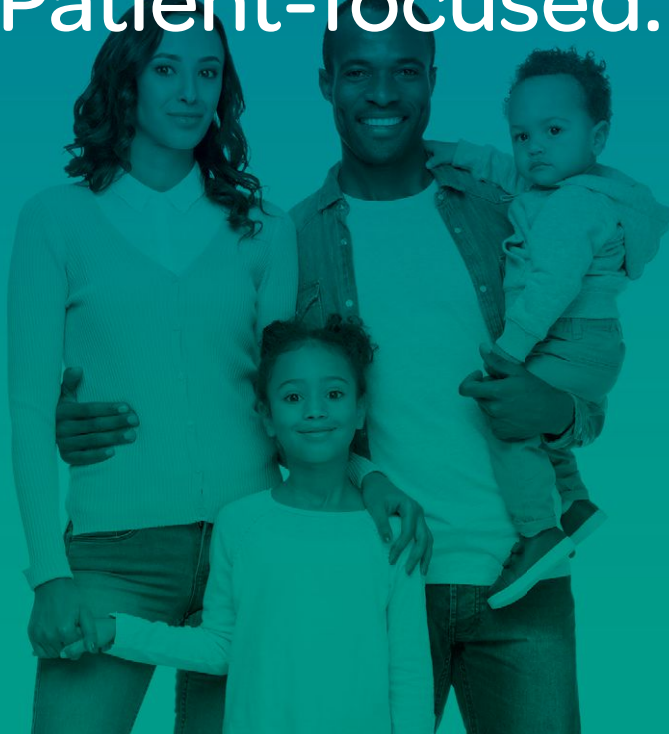
Patients sometimes complain that physicians are not listening to them; research has shown that physicians don't usually listen very long to patients before interrupting them during a clinic visit; some earlier studies found that time to be about 20 seconds or less—a 2019 study showed only 11 seconds of listening. That's disturbing—but most likely we are simply following our compulsion to “do something.” It's also an unfortunate unintended consequence of fee-for-service models of clinical medicine, with physicians compelled to do more in less time, to meet documentation requirements of billing and coding and to maximize specialty expertise. Having a

conversation may not seem to be the best use of time—ours or the patient's.

One way to address this might be to schedule more time for a patient who needs more space to communicate effectively. While it can be frustrating to sacrifice “doing something” immediately, determining which patients need time for listening and then scheduling it can advance the physician-patient relationship. In the cases where this makes sense, we can support listening by billing cases with time-based coding, rather than meeting clinically irrelevant documentation requirements. A 2016 JAMA Internal Medicine viewpoint described the success of time-based billing in primary care practice in Switzerland (Selby, 2016). Adapting that to the U.S. medical system might be challenging, but ultimately worthwhile.

I have had success with patients who have chronic work-related conditions by scheduling longer appointment times and acknowledging—to the patient and to myself—that treatment with me may not be any more successful than their prior evaluations. But I assure patients I will listen to their story, understand their goals and consider what has not worked for them in the past as we look to future options. Surprisingly, patients are satisfied, even when they do not reach their optimal outcome, in knowing they were heard and understood. **MM**

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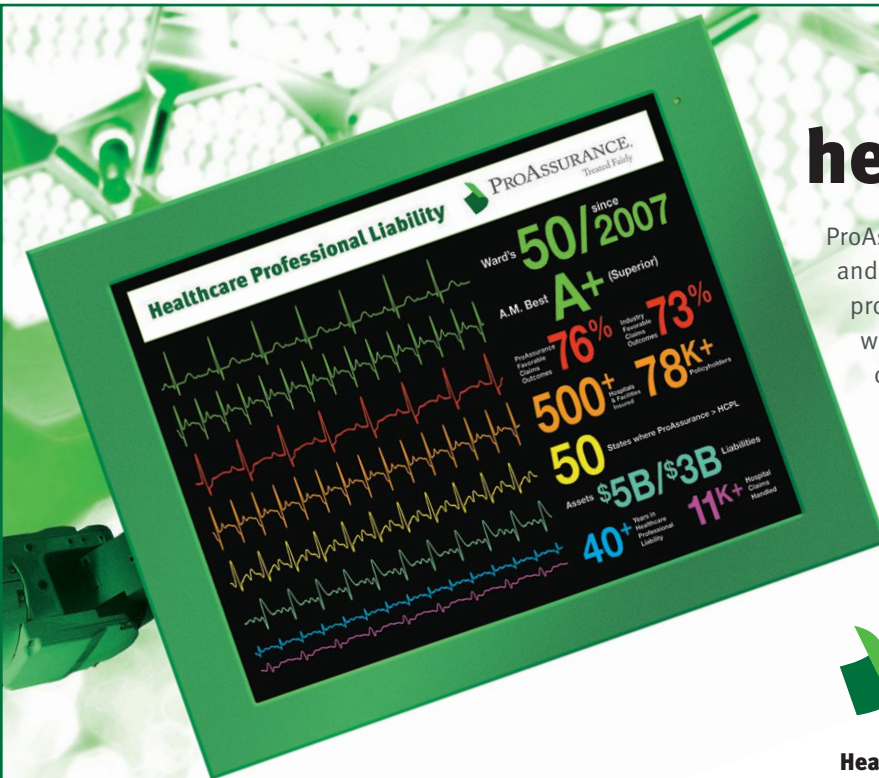
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Not willing to be a spectator

BY LINDA PICONE

Badrinath (Badri) Konety, MD, FACS, MBA, brings not only experience and expertise to his new role as CEO of University of Minnesota Physicians (UMP), he brings a passion for identifying and changing health care disparities.

Konety may not have been born to be the head of University of Minnesota Physicians, but he has definitely done what he needed to be prepared for the role—including earning an MBA at the same time he was doing a fellowship in urologic oncology at Memorial Sloan-Kettering Cancer Center in New York.

“I got my MBA just after I finished my residency, but the motivation was different at that time,” he says. “I knew I wanted to be a department chair someday and thought that of all I’d learned, the only thing I had no knowledge of was finances and the business aspects of medicine.”

Konety practiced medicine in a university setting at the University of Iowa and the University of California-San Francisco, before coming to the University of Minnesota. He took on a number of administrative roles as well, including vice chair of the Department of Urology at UCSF. At University of Minnesota, he has been chair of the Department of Urology, director of the Institute for Prostate and Urologic Cancers and associate director for clinical affairs of the Masonic Cancer Center. He became CEO of UMP on December 1, 2018.

Why does someone who values the practice of medicine—he will continue to be in clinic for 20 percent of his time—and academic research want to be an administrator, an often seemingly thankless job?

“You can either be a spectator, or you can be part of the solution,” he says. “I view being an administrator, if you do it well, as being part of the solution. I’m a surgeon and most surgeons have this idea—whether it’s based on ego or a high level of self-confidence—that you want to fix it. It’s hard for us to watch issues and not jump in and take action.

“So becoming an administrator is, to some degree, a natural extension of that sort of thinking. It allows you to get in and see if you can help more directly.”

University of Minnesota Physicians was created in 1997 as the consolidation of 18 separate practice groups of physicians into one clinical entity. That was the year when Fairview Health System and the University of Minnesota merged the operations of what had been the University Hospital and the Minnesota Children’s Hospital. Today, UMP is an independent nonprofit organization with more than 50 specialty clinics and five family medicine clinics. UMP contributes a part of its operating revenue to support medical research and education at the University of Minnesota.

In short, it was a complicated relationship at the beginning and, with a new partnership of Fairview and the University, the relationship continues to be complicated.

And UMP is part of a health care landscape that is itself both complicated and unpredictable. The challenges ahead for UMP and Konety are significant.



The biggest issue, Konety says: to be able to improve efficiency, to maintain and improve clinical care quality and to continue to burnish the organization’s reputation.

“We’ve always had a great academic reputation,” he says. “I think that to continue to maintain it and elevate it while you offer more services and expand your ability to offer more services and see more patients, is harder.”

He compares it to a simple manufacturing challenge: “If you’re only making three nice bags, that’s easy, but if you’re mass producing bags and you want to maintain the same quality, that gets harder.”

Also, he says, the challenge is even greater because, in the partnership with Fairview, UMP is responsible for the quality of care delivered through all service lines, throughout the system.

Particular concerns include:

- Maintaining high-quality faculty and staff—and paying them well, “in this era when reimbursement is declining.”
- Maintaining the spirits of faculty. “Our biggest issue now is burnout at the resident and trainee level, at the physician level, at the nurse level,” Konety says. “Electronic medical records is one of the biggest sources of stress.”
- Keeping everyone energized about the academic components of the UMP mis-

sion. “Everybody is focused on providing excellent and efficient and rapid clinical care, but we can’t forget the importance of the other component,” Konety says. “That’s what we’re all about as a medical school.”

In the long term, the organization and resources for health care in the United States are, if not a mystery, at least a puzzle. Where does the puzzle piece that is UMP fit? “What is our place in this cosmos?” Konety asks. “Where are physician

groups going? The optimal place for them needs to be defined.”

Although he doesn’t know the answer to those questions, or at least not yet, he has a strong opinion about who should lead the process: “I’m convinced that the best systems have significant physician leadership—Cleveland Clinic, Mayo ... Many of the top health systems are led by physicians.” But, he says, most physicians are not trained to be administrative lead-

(continued on page 8)

CHAAMPS

Disparities in health care has been an interest of Badri Konety for more than 20 years, starting when he was a resident at the University of Pittsburgh and looked at prostate cancer rates in Tobago and the United States.

He and Selwyn Vickers, MD, former chair of the Department of Surgery at the University of Minnesota, developed a project to make a positive difference in the health of African American men. A five-year grant from the National Institute on Minority Health and Health Disparities has just been extended for an additional year.

The Center for Healthy African American Men through Partnerships (CHAAMPS) is a collaborative center through the University of Minnesota Medical School and the University of Alabama-Birmingham (UAB) Medical School to do research, outreach and training; Vickers is now at UAB, hence the collaboration between researchers in very different parts of the country.

CHAAMPS, working with community partners, has set up centers on African American men’s health, focusing particularly on cancer, heart disease and violence prevention, “because these are the three main issues that we felt affected African American men disproportionately.”

The centers use a community participatory research model, Konety says, which is crucial to being able to not only do research but to involve men whose health may be improved. “If you don’t have community partners, it’s difficult to reach out.” Community partners identify the themes for research and help facilitate the execution of any projects.

Churches have been sites for recruiting participants. One investigator ran a project using Fitbits to educate men who had

been recruited through their church how to monitor their exercise and blood pressure and be careful about their eating habits.

There is a project looking at the attitudes of African American men towards genetic analysis of prostate cancer. “There’s a lot of good data suggesting that knowing your genetic makeup is going to help you better understand the disease and better tailor

treatments,” Konety

says. “But African American men are very suspicious, given history, of subjecting themselves to genetic testing—even when it was testing of specimens, not individuals.”

One of CHAAMPS’ main projects explores violence prevention for children in school. Sonya Brady, PhD, an associate professor in the University of Minnesota School of Public Health, is developing a model in Northeast Minneapolis with interventions,

coaching for parents, coaching for teachers and a supportive community network. A matching project is going on in Alabama, which will look at similarities and contrasts. In middle school, Konety says, children—in particular, African American boys—may be labeled as troublemakers and taken out of mainstream classes. “A kid who is not African American, they say, ‘Oh, he’s just being a boy’ for similar behavior,” Konety says. “But frankly, there’s just blatant disparity in the way these kids are treated, and that perpetuates the bad behavior. Breaking the cycle early is very important.”

CHAAMPS also has done “some beautiful pure science,” Konety says, including trying to identify markers for prostate cancer that only predict aggressive disease in African American men and a similar research project on pancreatic cancer.

For more information about CHAAMPS and its projects, go to <https://chaamps.com>.



Badri Konety, MD, FACS, MBA, (second from right) hosted an annual meeting for CHAAMPS researchers at the University of Minnesota in March.

ers; building that capacity for the future is yet another challenge.

“One thing I am pretty convinced of,” he says. “As we aggregate and get bigger as groups of physicians, I think we are in the best position to solve our problems. It’s always better for physicians to get together with each other and figure out how we can address our issues, monitor and police our quality internally and continue to push to make things better for our patients.”

Getting together is a bit of a stretch for many physicians. “Physicians are inherently very autonomous,” Konety says. “You are taught to be a single player; it’s not a team sport—although we are all parts of teams. Look at how medical education happens: you have to be a really committed student in high school, you have go through college and get great grades—it’s all on you. You are by yourself when seeing the patient, and you are ultimately responsible for their care. And then, when you come out on the other end, you have to work as part of a well-integrated team.”

In his first months as CEO, he has found an energy and enthusiasm from physicians and other staff at UMP that he didn’t quite expect—but definitely appreciates. “Everybody realizes that change is needed and change is coming; somebody has already switched the tiller. So everybody wants to control the direction in some way.

“Physicians come up to me all the time and say, ‘How can I be part of this?’ They want to be on the team, they want to be on committees. Suddenly there’s a lot of interest and I think that’s tremendous. It shows engagement.” MM

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Emergency Physicians Professional Association

BY LINDA PICONE

After 50 years of providing services to hospitals and patients, EPPA is still growing.

In 1969, emergency medicine was not a recognized specialty; emergency departments might be staffed by whatever physicians were available at that moment, whether their training was in dermatology or orthopedic surgery or pediatrics. As emergency department visits increased, so did the pressure to better deliver patient care in the unique setting and, often, time constraints of the hospital emergency room.

In March of that year, four Twin Cities physicians—Jim Anderson, Reuben David, Charles Kelly and Solomon Zak—created an independent medical group to provide trained emergency physicians to hospitals across the Metro area. Today, Emergency Physicians Professional Association (EPPA) is not only still a leader in emergency medicine, it is increasing its scope of services.

“The early development of the specialty of emergency medicine took vision, and a passion for creating better medical outcomes for patients suffering an emergency,” says Rob Thomas, MD, president and CEO of EPPA. “The founders of our group had that vision and passion to create something better. Those attributes remain at the core of our group.”

Emergency medicine is a specialty today, with appropriate training—and EPPA was part of the lobbying efforts to make that so. Within two years of the founding of EPPA, Hennepin County Medical Center started a residency program focused on emergency medicine, only the second in the country at the time. EPPA hired graduates as soon as they finished their training.

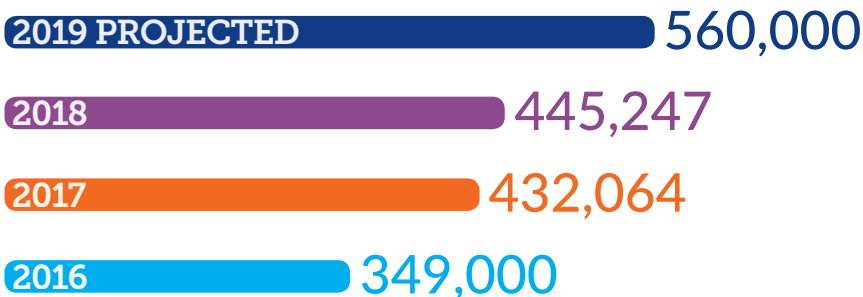
EPPA is the largest independent, physician-led group to provide emergency room services in Minnesota; several smaller independent groups provide similar services. Some hospitals choose to contract with national companies—or to employ their own emergency medicine physicians.

The first hospital to contract with EPPA for emergency department services was Methodist Hospital in St. Louis Park. EPPA now delivers emergency services in 11 locations, from some of the largest hospitals in the Metro area and central Minnesota, such as Fairview Southdale Hospital, CentraCare Health St. Cloud Hospital and HealthPartners Park Nicollet Methodist Hospital to two regional hospitals, Allina Health Buffalo Hospital and Allina Health Cambridge Medical Center. EPPA also operates three Urgency Rooms, freestanding emergency facilities, in Vadnais Heights, Egan and Woodbury.

In 2018, EPPA clinicians were involved in approximately 450,000 patients. In 2019, the organization anticipates that number to grow to 560,000.

The first Urgency Room was built in 2010. As the number of visits to emer-

EPPA TOTAL PATIENT VOLUMES



gency departments kept growing, EPPA leaders considered that only 70 percent of patients who visit an emergency department need to be admitted to the hospital and decided to develop an alternative. “The idea was originally met with skepticism because no one had ever done anything like it before in the United States,” says Thomas.

In 2008, EPPA began a remote scribe program that provides scribe support to both EPPA and non-EPPA hospitals and clinics. Today, there are more than 300 scribes in the program handling more than 40,000 patient charts each month.

Minnesota Medicine asked Thomas to reflect on the organization’s history and future.

What is unique about an emergency room physician?

An emergency physician’s training shapes their approach to health care. We necessarily are programmed to rapidly risk-stratify our patients based on signs and symptoms that could be life-, limb- or organ-threatening. We must excel at diagnostics, resuscitation and communication with diverse care teams and patients. We enjoy being the health care safety net for our communities. We will see any patient that presents to our emergency departments, no questions asked. For many people, we are their only medical resource.

How do the EPPA staff at a particular location connect with the other physicians at that location?

Even though EPPA is an independent contractor with a hospital, we are an integral part of the hospital’s medical staff. We are also integral members of hospital care and quality committees, and have had multiple EPPA physicians serve as hospital chief of staff. Our medical directors, in conjunction with hospital-employed leadership, lead the care that is provided in each hospital’s emergency departments. While we are working within the hospital, EPPA physicians are vital members of the hospital’s team. Since the hospital and EPPA

have the same goal of providing the best care for our shared patients, we don’t feel that we are on separate teams.

Is the Urgency Room a model for health care as we move forward, comparable to free-standing surgery centers, etc?

We believe there is significant future potential for the Urgency Rooms. Care at the URs for intermediate- and high-acuity patients meets the triple aim of lower cost, highest quality and excellent patient experience. When you consider that the EPPA and UR clinicians also enjoy their professional work environment, you have a recipe for future success.

How is EPPA positioned to face potential changes in health care? Does it offer efficiencies—the kind that are increasingly important to insurers and the government—that can be replicated in other ways?

We are highly engaged clinicians who are used to a steady dose of change. As a result, we are well positioned to adapt to health care changes. We believe that we must better understand our clinical and operational data in order to thrive in the future. Fortunately, we have a great team of clinicians and non-clinicians who are ready to learn from our data and develop health care innovations that will improve the value we deliver to patients, payers and health systems.

How easy or difficult is it to recruit physicians for EPPA? What qualities are you looking for?

EPPA has a reputation of providing incredible support for our physicians and advanced practice clinicians. We believe that the challenging field of emergency medicine requires that clinicians are well cared for. Because of this reputation, we often have more applications for positions than we have available.

The key attributes of an EPPA clinician are: excellent emergency clinician, fantastic clinical team leader, healthy bal-

ance between professional and personal responsibilities and achievements, excellent communicator and strong citizen of EPPA, hospital medical staff and health care community.

How long, on average, does a physician work for EPPA? What are the main reasons they choose to work for EPPA—and to stay? What are the typical reasons they would move on?

An average physician career with EPPA is over 20 years. We have had multiple physicians retire after over 30 years. The longevity of an EPPA physician is fundamentally due to the support and flexibility they receive as a member of our group. If a physician leaves EPPA, it is generally to move closer to family in another state. They may have come to Minnesota for medical school or residency from another state. Once they begin to start a family of their own, they often will move back to where they grew up. This also works to our advantage. Physicians who left Minnesota for their medical degree or emergency medicine training may return to be closer to their roots in Minnesota.

Fifty years is a long time, obviously, but what does the next, say, 10 years look like?

The health care landscape is shifting, and the challenges to an independent physician group are rife. However, we believe that by focusing on caring for the clinician, caring for the community and striving for clinical excellence, EPPA will remain a strong, innovative and impactful group of ambitious independent clinicians. ■■■

– Linda Picone, editor of *Minnesota Medicine*

WHAT PHYSICIANS SHOULD READ

A canon shot from an addicted reader

BY CHARLES R. MEYER, MD

In a seldom-used room in my childhood home was a shelf full of black, dusty, hardbound books entitled *The Harvard Classics*, which were used even less than the room in which they resided. Occasionally in one of my fits of wanting to fill the holes in my education, I would attempt to crack one of the tomes, only to sheepishly place it back in its lonely resting place after a meager attempt.

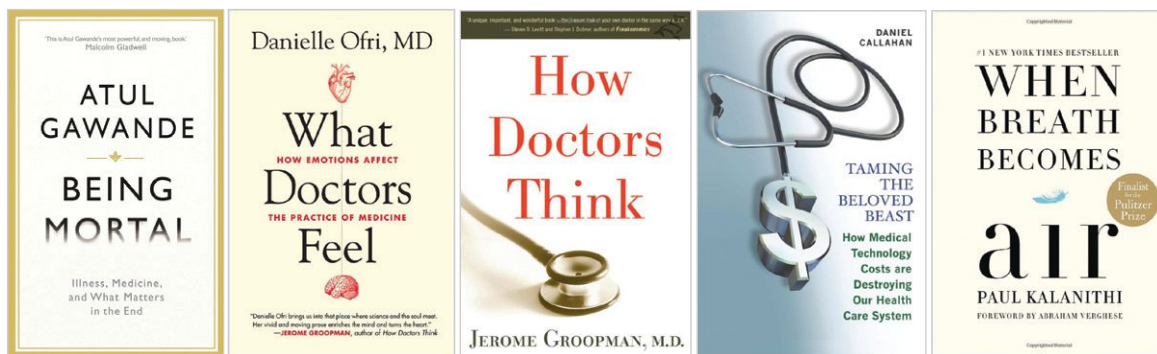
The brainchild of Harvard president Charles Eliot and first published in 1909, the *Classics* were intended to supply a “liberal education” in one shelf. Like Mortimer Adler’s and Charles Hutchins’ *Great Books* series, it was one of many attempts to define a canon of books that the elite educated class would have mastered en route to desirable, but vaguely envisioned, goals of erudition and perhaps being a “better person.”

Similar attempts have been made for physicians. Most of these compilations have shunned “classic” medical texts like Gray’s *Anatomy* or *Harrison’s Principles of Internal Medicine*, assuming that all physicians would have tackled their scientific canon in medical school and residency. Instead they have focused on works that speak to the human condition as a physician presumably will encounter it in their professional life.

A recent collection of essays edited by Michael Lacombe, MD, *Osler’s Bedside Library: Great Writers Who Inspired a Great Physician*, explored Sir William Osler’s choices of necessary reading for physicians. Sir William’s imposing lineup included Plutarch, Shakespeare, Sir Thomas

Browne, Montaigne, Marcus Aurelius, Epictetus, Don Quixote, Emerson, Oliver Wendell Holmes and the Old and New Testaments with which he hoped practi-

cians: “Being mortal is about the struggle to cope with the constraints of our biology, with the limits set by genes and cells and flesh and bone. Medical science has



ing physicians would pursue a serious dalliance intended to nurture a complete person who also happens to be a physician.

My approach to a canon for physicians is a bit more pragmatic. I looked for books that address issues common to every doctor’s journey—dealing with end of life, conquering the art of communication and listening, wrestling with insecurity, understanding the limits of medicine and experiencing what it’s like being a patient. This list might not be everybody’s top five and certainly the list could be longer but I think it touches on the essence of what it means to be a practicing physician.

In his 2014 book *Being Mortal: Medicine and What Matters in Life*, surgeon and *New Yorker* writer Atul Gawande, MD, MPH, analyzes modern medicine’s grappling with mortality in a society that increasingly expects fixes for all ailments. Confronted with a burgeoning population of nonagenarians and centenarians, 21st-century doctors flail against the dire threat for physicians, patients whose aging bodies present problems doctors cannot solve.

Dramatizing his points with his father’s and grandfather’s end-of-life stories, Gawande pens a sage conclusion for physi-

given us remarkable power to push against these limits, and the potential value of this power was a central reason I became a doctor. But again and again, I have seen the damage we in medicine do when we fail to acknowledge that such power is finite and always will be.”

My search for a single volume that focused on the art of communication in the practice of medicine came up dry. Instead I found selected short pieces or parts of books that addressed different aspects of the doctor-patient interaction. In *On Being a Doctor 3*, a collection of perspectives edited by Michael Lacombe, MD, various selections spotlight the chemistry that is the doctor-patient relationship.

Yet nowhere did I find a concise tutorial of what is a healthy interaction between physician and patient. If left to me, my lesson would emphasize paying attention to jargon usage and eye contact, becoming an actor who is attentive to word choice and facial expression because what is heard is more than words; understanding that a 15-minute conversation may be the most important event in a patient’s week; and, in the spirit of good acting and good medi-

cine, analyzing each day to see if you can improve how you relate to patients.

Perhaps the ideal tutorial has yet to be written and it will be tough to teach that most difficult lesson—attitude, the open mind and unbiased judgment that are crucial for perceptive doctors. If the patient is a “crock until proven otherwise,” the physician won’t recognize significant chest pain. If doctors think they know the diagnosis from the patient’s first sentence, they’ll miss half the history and physical. If MDs let their personal dislike or disapproval of patients color their interactions, communications will be distorted in both directions. And the key lesson is listening.

Many of the stories in collections like Lacombe’s and *What Doctors Feel: How Emotions Affect the Practice of Medicine* by internist Danielle Ofri, MD, PhD, feature the uncertainty and insecurity that walks with any physician during their career.

What to do about that insecurity is part of the message in the 2007 book by Harvard oncologist Jerome Groopman, MD, *How Doctors Think*. Deluged with symptoms, signs and historical information, all laden with uncertainty, doctors resort to shortcuts to pare away the irrelevant and the unhelpful to reach firmer footing. Although shortcuts help deal with the vagaries of clinical practice, they can be fraught with errors.

Groopman identifies errors endemic in physician thinking and opines that recognizing those errors is half the secret to avoiding them. The doctor-thinking promoted by Groopman is really physician confidence-promoting, self-questioning—a look inward, a constant vigilance about where your mind is taking you and repeatedly asking whether it’s leading you astray.

Whether confronting mortality or just ordering an MRI, physicians must realize that their medical science has, or should have, limits. Hastings Center bioethicist Daniel Callahan, PhD, has been one of the boldest proponents of what medicine should and should not do. His 2009 book *Taming the Beloved Beast: How Medical Costs are Destroying our Health Care System* advocates that we move from the

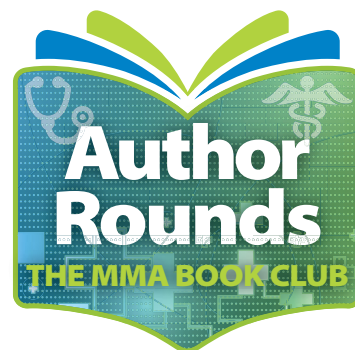
present infinity model of “unlimited medical progress and technological innovation” to what he calls a “finite model” of health care “that understands the necessity to shape health care goals that are affordable, accessible and sustainable.” It should be required reading for any physician that signs an order.

And any physician who treats a patient and will one day be a patient themselves should read the wrenching memoir *When Breath Becomes Air* by Paul Kalanithi, MD, published in 2016. In a lyrical meditation on life and death, Kalanithi describes his journey from discovering he had metastatic lung cancer at the end of his neurosurgery residency to literally taking his last breath. During that journey he moved from the analytic physician trying to manage his own illness and control his fate to an accepting father who pens a moving letter to his 8-month-old infant on his death bed.

My canon has omitted the literary stars in Osler’s list, which certainly would

round out even the most deficient liberal education. In your spare time, for sure pick up Plutarch—but not until you’ve sampled these authors who speak directly to what it means to be a physician. MM

Charles R. Meyer, MD, is the former executive editor of *Minnesota Medicine*.



Charles R. Meyer, MD, will host the first MMA Book Club on June 18, 7–8:30pm at the Edina Barnes & Noble. Barron H. Lerner, MD, will talk about his book, *The Good Doctor: A Father, a Son and the Evolution of Medical Ethics*. Future Book Club events will be held in July and October.

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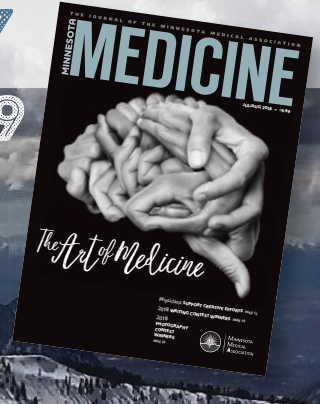


WEBSITE

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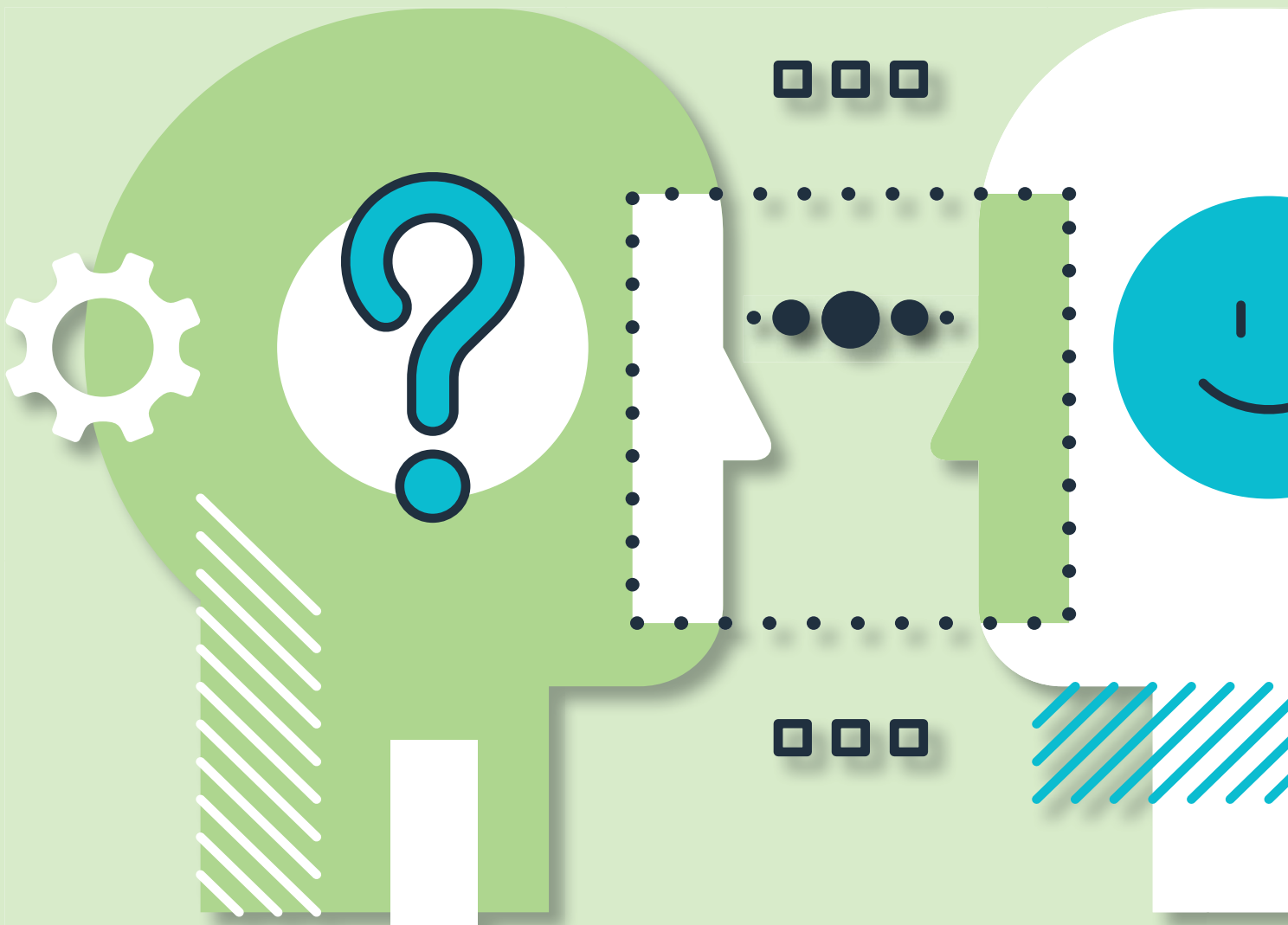
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Start by avoiding assumptions

BY SUZY FRISCH

The secret to successfully opening doors of communication with patients can be boiled down to one piece of advice: *Don't assume.* Humans are complex creatures, and they aren't always what they seem.

When a man wears a wedding ring, it doesn't mean that he is married to a woman. Don't presume that a woman in her 80s wouldn't be struggling with addiction. And don't take for granted that patients from other countries share your beliefs about health and medical care.

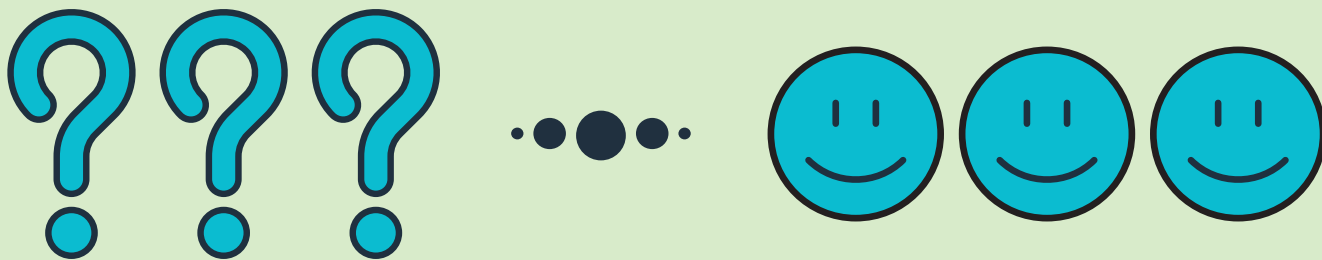
"People don't necessarily fall into the generalizations that you formed in your mind," says Russ Turner, director of the Training Institute at People Incorporated, a St. Paul nonprofit that provides continuing education for health professionals. "I encourage people to treat everyone as cross-cultural. People have a lot of layers. The skillful thing to do is to allow people to reveal the layers they want to."

Another communications complication emerges when you are quite different from your patients: A Latina physician treating a Somali man, or a cisgender male doctor taking care of a transgender man. When you must ask probing questions to discover what's going on with someone, build

trust by getting to know them as a person first, advises Mary Fredrickson, MD, an internal medicine hospitalist at Regions Hospital in St. Paul.

"Don't walk in with an agenda. What you're concerned about might not be what the patient is concerned about, especially with people who are from a different walk of life than you," says Fredrickson, who trains other doctors in communication skills. "When I first meet someone, I take all the time necessary to understand who they really are. Then, when we have that rapport, we can make decisions together."

Katie Spencer, PhD, a licensed psychologist and assistant professor in the Program in Human Sexuality at the University of Minnesota, says it can be key for physicians to call attention to differences when needed, instead of avoiding the elephant in the room. She points to research that shows that acknowledging differences improves rapport between physician and patient, which leads to better outcomes.



“If the provider is from a different racial or ethnic background than their patient, it can be helpful to the relationship to inquire about how it might feel to be working with someone from a different background,” Spencer says. “Since providers steer the conversation in a patient visit, asking the question provides an opening for the patient to address any feelings they may have. It’s helpful because it validates people’s experience.”

Consider this advice to effectively communicate with people who are different from you in a variety of possible ways:

Gender and sexual orientation

For many LGBTQ people, visiting the doctor may include medical care with a side of micro-aggression, deliberate or, more often, simply the result of a lack of thought in the rush of a clinic visit or emergency hospital visit. It can occur in many situations, such as a lesbian being advised to use birth control or a provider insisting on regular HIV tests for men in long-term, monogamous relationships.

Dos and don'ts

- **Ask, “What would you like me to call you?” or “How can I respectfully address you?”** If someone is gender fluid, transitioning or transgender, this can help put them at ease, says Megan Mueller, MPH, community education supervisor for JustUs Health, a health advocacy and training organization in St. Paul.
- **Use gender-neutral phrasing** like, “Who are the important people in your life?” or “Do you have a partner?” instead of “boyfriend” or “wife,” Mueller says. “What do your partners look like?”

helps people talk about having multiple or same-sex partners.

- **A patient’s medical records don’t always reflect the whole person.** A transgender man might still need a pap smear and breast exam. Ask transgender patients how they refer to their body parts to avoid triggering trauma if they don’t feel at home in their bodies, Mueller says.
- **Wear visual cues or display them in the office demonstrating that you and your staff are allies.** For example, health brochures with photos of a gay couple or a pronoun button on your lanyard. It will let people know that they are in a safe space.
- **When a topic feels awkward to you, remember that “nobody ever died of awkward,” Spencer says.** Develop language you’re comfortable with using and practice it so that you can ask probing questions without embarrassment. Being as matter-of-fact as possible—and having an excellent poker face—will help people be comfortable sharing intimate details.

Age

When physicians are much younger than their patients, they often get comments about seeming too young to be a doctor. The age gap can make it hard to pave the way for open communication about sensitive issues. On the other end of the spectrum, getting teens talking can be challenging for physicians of any age. But there are tricks and tips for getting wary teens and sensitive seniors to open up.

Dos and don'ts

- **Start conversations on the right foot by asking patients how they want to be addressed,** says Onelis Quirindongo-Cedeno, MD, an internal medicine physician at Mayo Clinic and an assistant professor in its medical school, where she teaches communications to other medical providers and students. Some older patients prefer to be called by their first names, while others feel most comfortable with Mr. or Mrs. Smith. “That greeting is so important because it is their first impression of you,” Quirindongo-Cedeno says. “Sometimes if we call them by their first name, that is not respectful.”
- **When age comes up with an older patient, don’t get defensive,** Spencer says. It’s not personal. Instead, acknowledge and validate how the person is feeling about the age difference, if necessary, even suggesting a referral to someone with whom they might feel more comfortable.
- **With teens, remember that it takes a lot of courage for them to share what is bothering them.** Ask open questions and give them time to explain how they feel. Don’t be quick to dismiss their own take on their health, suggests Elizabeth Reeve, MD, an adult, child and adolescent psychiatrist at the HealthPartners Riverside Clinic in Minneapolis. “If you’re too quick to disagree with them, that will shut them down,” says Reeve, using an example of a teen seeking anxiety medication. After talking with the patient, she might conclude that medication is not appropriate. “Tip-toe around it more slowly and normalize things for them. Say, I’ve seen other

teens who had these difficulties, and we started with therapy rather than medication. Medication might be useful down the road,” she says. “Give them a range of options and let them draw a conclusion themselves.”

- **Don't try to act younger or cooler than you are.** Teenagers will see right through that and think you aren't genuinely caring, Spencer says. At the same time, don't be pedantic or arrogant. That rubs adolescents the wrong way. By being transparent and authentic, you can build more honest relationships with teens.

Race and ethnicity

Differences abound in how people from various races and cultures approach medicine, including views of how disease works in their body. Approaching people with curiosity and not judgment is the Golden Rule Quirindongo-Cedeno uses with patients and when teaching communication.

Say a patient has experienced female circumcision. “If you say, ‘Oh, that’s too bad. I’m so sorry that happened to you,’ you’re bringing biases that will destroy that relationship. What I say is, ‘Tell me about it. What does it mean to you?’” she says.

Acknowledge your own biases and leave them outside the exam room. Then listen and be respectful, curious and open-minded. You might be surprised what patients tell you when they don't feel judged, even when questions are highly personal, Quirindongo-Cedeno says.

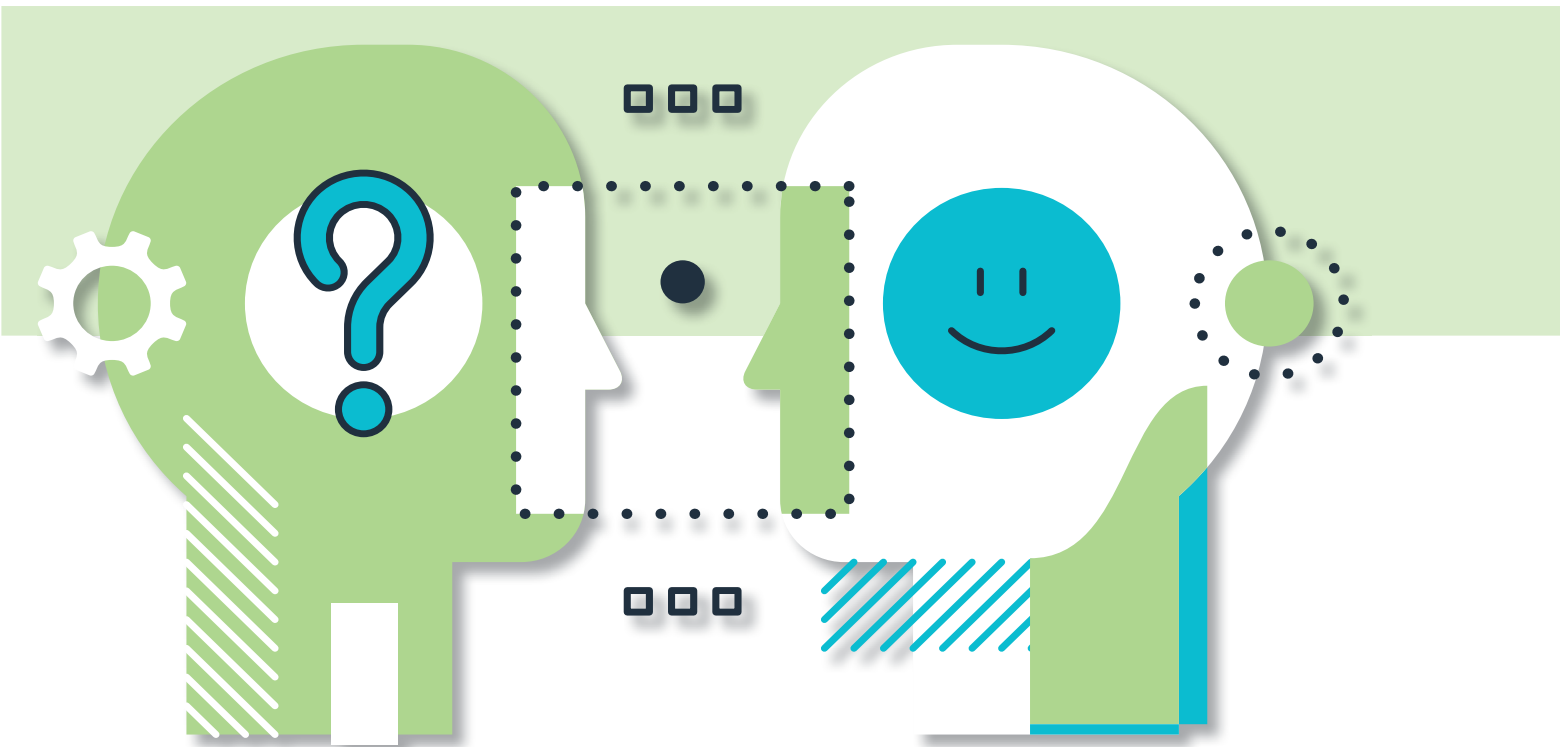
Dos and don'ts

- **In some cultures, it's taboo to reveal your struggles to a stranger.** That's something you do with a spiritual leader, elder or shaman. Instead of direct questions, come at the conversation differently, suggests Turner. Ask, “How do the people close to you view the problem?” Then the person might respond, “My sister is worried about me because ...”
- **Be cognizant of wariness surrounding shaking hands or other touching, especially in mixed gender situations,** says Quirindongo-Cedeno. Begin a successful appointment by watching for cues, such as people standing up with their hands on their chests when you walk in.
- **Ask about a patient's comfort level with discussing sensitive topics when an interpreter is present.** The interpreter might be a relative or fellow com-

munity member, making the patient reluctant to open up about drug use or domestic violence. Mayo Clinic has a phone bank of anonymous interpreters, helping people share personal details.

- **Don't judge if a patient wants to try natural remedies or spiritual healing practices** in concert with or instead of your medical recommendations. Negotiate a plan for that path and then stress that you will continue to help the person regardless, Quirindongo-Cedeno says. “Acknowledge differences, recommend treatments, and negotiate. If I don't put importance on their perspective, there is no trust and no respect,” she adds. “And then maybe next time they won't open up.”
- **In general, Turner advises physicians to be conversational instead of transactional** in their patient interactions, asking open-ended questions to open doors. “If someone looks uncomfortable, they probably are,” he says. “Ask about it and say, ‘I noticed that you're looking a bit uncomfortable. Is there anything I can do to help?’” he says. “Give people an invitation to speak.” MM

Suzu Frisch is a Twin Cities freelance writer.



Everyone *has a*

According to an often-cited article from the *Journal of General Internal Medicine*, on average, physicians give patients only 11 seconds to talk about their reasons for a clinic visit before interrupting.

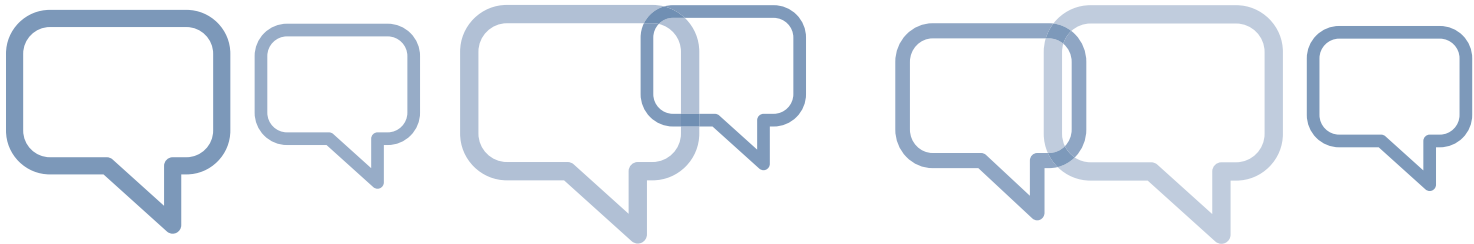
Packed clinic schedules, limited time for each patient, electronic medical records to fill out ... who has time for conversation?

Annie Brewster, MD, chose to pursue medicine because she wanted to know and connect deeply with her patients, as most physicians do. She chose primary care, driven by the “idealized notion” that she would know the stories of her patients’ lives.

moving fast, trying to stay on schedule, and patients just want time to be seen and heard.”

Then Brewster became a patient herself with a chronic illness. “Suddenly I was on the other side and I experienced what it was like to have a doctor who wasn’t fully present and wasn’t taking into account who I was as a human being.”

Those two things coming together—her disillusionment at what medical practice had turned out to be for her and her experience being a patient—led her to start thinking about how to make the health care system better for both patients and physicians.



“This turned out not to be true,” she says. “I had way too many patients and not enough time to know them well.

“What made me the saddest was that the system turns what is supposed to be a therapeutic alliance into an antagonistic one, because we have competing demands placed on us. Doctors are

What helped her was talking and listening to other people, telling them her story—and not just the story of her illness, which was only part of her life—and listening to theirs. She decided to collect stories to share. “I was thinking I would build a library of stories for other people,” she says. “And yes, the library was useful for others to listen to, but the process I was going through of talking to people really was kind of therapeutic. I was telling my story more and that was really helping me.”

She decided there should be more time and space in medicine for listening and telling stories. That prompted the idea for the Health Story Collaborative.

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The patient’s perspective

Michael Bischoff of south Minneapolis has been through a lot of medical treatment since he was diagnosed with glioblastoma in 2015. After his first surgery, a group of his friends had a gathering to support him. “Their listening to me, their loving listening, made me recognize what was most important,” he says. “I felt like they pulled me into my belly.” While he was undergoing chemotherapy, an aunt sent him stories about people in his family who had experienced various difficulties.

Those stories, and the process of listening and telling stories, not only helped—and continue to help—Bischoff, they led him to a new focus. Before his illness, Bischoff was a facilitator and consultant to nonprofit organizations. Today, he is a key part of the Health Story Collaborative, the nonprofit founded by Brewster

story

Sharing them can help both patients and physicians

BY LINDA PICONE

that helps physicians and patients learn how to tell their stories and listen to the stories of others.

Health Story Collaborative

Brewster came across the work of psychologist Jonathan Adler, PhD, in 2012. His research has been on how stories and storytelling connect with health.

Today, Brewster and Adler lead the Health Story Collaborative, Brewster as executive director and Adler as chief academic officer. Bischoff is “healing story principal.” Health Story Collaborative is

“It’s just a matter of staying present, of not trying to have that agenda in our head of what we think we need to get done in that appointment, but rather to shift and give power back to the patient sitting there, to really listen,” she says. “To say less and observe and be present more.” Even in a short clinic appointment, physicians can:

- Be more present.
- Bring in less ego.
- Try to be more interested.

Bischoff says, physicians can—and, with him, occasionally do—share brief stories of their own experiences and thoughts.



a 501c3 organization, supported mostly by individual donations and a few grants. “We’re pretty grassroots,” says Brewster. Although the organization is in Massachusetts, its work is national.

Health Story Collaborative hosts live healing story sessions—Bischoff has organized a number in the Twin Cities—in which both a physician and a patient tell their stories—often stories neither has heard from the other before. The website (www.healthstorycollaborative.org) also is home to stories and storytellers, from audio stories to written interviews with caregivers and individuals who are facing health issues to a Healing Art Archive of visual art. The collaborative also has an audio listening kiosk, SharingClinic, at Massachusetts General Hospital.

Storytelling in the clinic

Brewster says she’s not sure that there will ever be enough time in the typical clinic visit for patients and physicians to engage in true story sharing as she envisions it, unless the structure of health care radically changes. “It’s challenging to give the time and the space to let someone go where they want to go and let the story come out at its own pace,” she says. “I feel like that is not really possible in the short time of an appointment; we have to create space outside of the office for this to happen.”

Still, within that 15- or 20-minute appointment, Brewster says a physician can make patients feel that they are more tuned in to them.

At the right time, with the right story, this can help the patient develop trust in the physician. (He warns, however, to keep the focus on the story of the patient; “If you’re telling stories to make yourself look good, it doesn’t work.”) One thing the physician can do is to simply ask a patient, “What’s a story that matters to you?”

Many physicians are concerned with keeping professional boundaries, Bischoff says. “I tell my oncologist that his job is to build tall professional boundaries—and my job is to jump over them and into his heart.”

Physician burnout is not just a fad topic; it’s real, as any physician or physician-in-training can attest. “Part of that is that the meaning gets stripped out of our work because it can feel like a business rather than an art form,” Brewster says. “Finding a way to connect more meaningfully with our patients can help with that.”

Her practice has changed, she says. “It’s been a shift of realizing that the patient really has the answer; my job is to be more of a guide and to provide the patient with my knowledge and my opinions, but to give them room to decide whatever they are going to do without attachment to my ego, my idea of what is ‘right.’”

Bischoff says that one physician he has worked with on storytelling said that 90 percent of what her patients come to her with are “soul problems” but “she said she always responds with a technical solution. She found that our process of setting up time outside of the clinic for patients and providers to tell stories together helps bridge that gap.” MM

Linda Picone is editor of *Minnesota Medicine*.

Enhancing *the*

Mayo conversation aids help patients and clinicians sort through choices ... together

BY LINDA PICONE

Some look like the kind of flash cards a parent or teacher might use to help children learn basic grade school academics. Others look like simple brochures. Still others are visually inviting websites.

What these roughly 15 conversation tools from the Mayo Clinic's Knowledge, Evaluation and Research Unit (KER) have in common, however, is that they were designed to help clinicians and patients talk through decisions about medical treatment together.

"A particular feature of our work is that we design our tools to be used during the interaction of patient and clinician," says Ian Hargraves, PhD, principal health services analyst with KER. "They're not just for the clinician; they're not just for the patient. They work with them together, which is somewhat unusual."

KER—initially the Knowledge and Encounter Research Unit—was started about 15 years ago by Victor Montori, MD, an endocrinologist and professor of medicine at Mayo Clinic. He began working with a designer, Maggie Breslin, to develop tools and test them. (Breslin is today co-director of The Patient Revolution, an initiative to support patients and communities "as advocates for careful and kind health care" and she continues to work with KER.)

Decisions about diabetes medication

One of the early conversation aids developed by the unit was designed to help with choices of diabetes medication. It's a set of seven cards, each with information on

seven different medications for controlling diabetes. Each card addresses a different aspect of treatment and side effects: monitoring (daily sugar testing), weight change, blood sugar (A1c reduction), low blood sugar (hypoglycemia), daily routine, cost and "considerations," which covers a variety of side effects. These are all highly practical issues that bear on how a patient will live with diabetes treatment and how these medications will affect a person's life.

In conversation, these cards support thinking, talking and feeling through the issues that are most relevant or concerning to the patient, says Hargraves. Typically, considering two or three issues is sufficient to come to a decision, although occasionally all issues cards are reviewed.

So, for example, if the patient is concerned about how often they would have to test blood sugar, they might look at that card first. They would see that insulin and Lirglutide/Exenatide may require twice-daily testing, while some other medications require no monitoring or occasional monitoring. The patient may also be concerned about weight change. That card shows what kind of weight change may occur with each of the medications, from a 3- to 6-pound loss to a gain of more than 6 pounds.

Although cost is something clinicians don't always address—either because they are not sure what the cost of a medication might be or simply because it's uncomfortable—it is a major concern for some patients. The cards help put the issue of cost on the table in a non-threatening way

and allow for tailoring decisions to the practicality of buying a drug. For example, a patient may be willing to put up with a fussier daily routine and some side effects for a less expensive treatment. The cost of the medications to control diabetes may range from \$3 per month to \$370 per month.

Mayo is not unique in developing tools to help clinicians and patients make decisions, but what may set it apart, Hargraves says, is that its tools are developed in the real clinical setting where patients and clinicians are making real decisions. "A lot of these tools are developed in the conference room, so there's a lot of speculation about what people need to know to make good decisions—a lot of which is incorrect," he says.

With the first conversation aid prototypes, for example, each card was for a specific medication, with a list of its various aspects and side effects. It seemed logical. "But then the designers discovered they couldn't be used to make decisions," Hargraves says. "They made a turn from the technicalities of a medication to the reality of a patient's life."

Today's shared tools include those for making choices about anti-coagulants, statins, dealing with a thyroid biopsy that shows there may be cancer, depression medications and even a small, four-page brochure to help a patient and clinician begin a discussion of the patient's life and health care concerns.

Measuring efficacy

"We're a research unit, so all of our tools are part of research," Hargraves says. Although the field is still "wrestling" with what constitutes meaningful measures of efficacy, the three standard measures are increased knowledge, decreased decisional

discussion

Low Blood Sugar (Hypoglycemia)		Blood Sugar (A1c Reduction)	Cost
Metformin 		Metformin 1 – 2%	These figures are estimates and are for comparative reference only. Actual out-of-pocket costs vary over time, by pharmacy, insurance plan coverage, preparation and dosage. Under some plans name
Daily Routine	Daily Sugar Testing (Monitoring)	Weight Change	
Metformin 	Metformin S M T W T F S No monitoring necessary.	Metformin None	by dose) its: \$26 its: \$26 its: \$2.50 its: \$28 its: \$25 its: \$30
Insulin 	Insulin S M T W T F S Monitor once or twice daily, less often once stable.	Insulin 4 to 6 lb. gain	
Pioglitazone 	Pioglitazone S M T W T F S No monitoring necessary.	Pioglitazone More than 2 to 6 lb. gain	/ 3 months
Liraglutide / Exenatide 	Liraglutide/Exenatide S M T W T F S Monitor twice daily after meals when used with Sulfonylureas. Otherwise not needed.	Liraglutide/Exenatide 3 to 6 lb. loss	/ 3 months
Sulfonylureas Glipizide, Glimepiride, Glyburide 	Sulfonylureas Glipizide, Glimepiride, Glyburide S M T W T F S Monitor 2 - 5 times weekly, less often once stable.	Sulfonylureas Glipizide, Glimepiride, Glyburide 2 to 3 lb. gain	/ 3 months
Gliptins 	Gliptins S M T W T F S No monitoring necessary.	Gliptins None	/ 3 months
SGLT2 Inhibitors 	SGLT2 Inhibitors S M T W T F S No monitoring necessary.	SGLT2 Inhibitors 3 to 4 lb. loss	/ 3 months

These cards were among the first discussion aids developed by KER at Mayo Clinic. A clinician and patient use the cards together to determine what diabetes medication might be best, based on the patient's goals and concerns.

conflict and behavioral measures during the interaction.

Research involves rating videos made of interactions between patients and clinicians with and without the use of the tools. Neutral observers, who have not been involved in the development of the tools, view the videos and score interactions.

So far, Hargraves says, the tools have been shown to be effective at improving conversations and shared decision-making. Currently, Mayo is testing its tool for choosing anti-coagulant medications with 1,000 patients in five health systems: Park Nicollet, Hennepin Healthcare and Mayo in Minnesota and two sites in Alabama and Mississippi.

Funding

The tools developed by KER are financed largely by internal Mayo Clinic funding, augmented by NIH and other funds. No funding is taken from pharmaceutical companies.

And all of the tools are freely available to clinicians who want to use them. Currently, Hargraves says, the tool on choosing statins, and what kind of statins, is being used by about 120,000 people each year across the globe.

Clinician-patient interaction

The conversation tools are “relatively content-light” says Hargraves—and that’s intentional. “We want them to enhance the conversation, not replace it,” he says.

“There are experts in the room—the clinicians.”

The reaction of clinicians has been mostly positive, Hargraves says, especially that of primary care clinicians who are working with a variety of patients with different diagnoses and medications. While it might seem at first that working with the conversation aids with a patient could take more time in a packed clinic schedule, Hargraves says it can reduce the time, simply because the aids provide a structure and resources that are useful in everyday clinic conversations. There is no effort to replace conversation between clinician and patient with a tool—the opposite is true. “The key thing about our tools is that we see shared decision-making as something that routinely happens in the course of providing

care; it’s not an add on, it’s the day-to-day work of talking together with patients to figure out what to do,” Hargraves says. “We often say that at the end of the day, we want to help arrive at a decision that makes sense intellectually, practically and emotionally for each person and their situation.” MM

Linda Picone is editor of *Minnesota Medicine*

All of the aids developed by Mayo to support shared decision-making are available—at no cost—to any clinician or other health care provider who wants to use them. The tools are online at <https://shareddecisions.mayoclinic.org>. Some printed versions are also available if requested at kerunit@mayo.edu.

CANDOR

An open approach to improving patient safety

BY ALAN LEMBITZ, MD

In general terms, “candor” can be defined as “the quality of being open and honest in expression.” Within health care, this definition carries over when referencing CANDOR, the acronym for Communication and Optimal Resolution. CANDOR is a patient-centered process that supports early disclosure of adverse outcomes along with proactive steps to facilitate an amicable and fair resolution for the patients and providers involved.

The focus on CANDOR is due in part to efforts by the Agency for Healthcare Research and Quality (AHRQ). AHRQ launched a \$23-million grant initiative in 2009 that used a CANDOR toolkit in 14 hospitals across three U.S. health systems. The toolkit promoted a shift from a “deny and defend” mentality to an environment that encourages open, honest conversations with patients after adverse outcomes occur. The process also is designed to investigate and learn from what happened, to address the providers’ needs alongside patients’ needs and to disseminate any lessons learned in order to improve future outcomes.

In the wake of the AHRQ initiative, an enhanced CANDOR toolkit was developed, with training modules to help implement this approach in other health care settings. The toolkit is available at [https://](https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/candor/introduction.html)

www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/candor/introduction.html.

Key elements of CANDOR

The underlying components of CANDOR are based on the insight derived from the AHRQ initiative, coupled with expert evaluation on results that have demonstrated a positive impact. They include:

- **Reinforce early reporting and identification of events that CANDOR can address.** Perhaps the most underestimated element in terms of importance is the value of early identification of an adverse medical outcome. Creating an effective reporting culture around this requires a shift from blaming the individual physician to focusing on identifying system processes and related factors that may have contributed to the

adverse outcome. Supporting a system that encourages rapid response also allows those involved to gather valuable information while the incident is fresh in everyone’s minds.

- **Assess and improve communication skills.** Breakdowns in the communication process, whether with patients/family or other members of the medical team, are often at the root of medical liability claims. Communication is not an equally shared skill; there are good communicators and there are good systems to enhance the coaching of communication. CANDOR seeks to develop the skills required in these situations, including empathy, sincerity, active listening, patience, tact and emotional intelligence. Finally, the initial communication should not be delayed, but be appropriate to what is reasonably certain to have occurred when it is known. Full disclosure is a process that continues as more information becomes available from an investigation into the adverse outcome.
 - **Embrace efforts to care for the caregiver.** Harm to patients arising from medical care has a direct effect on the caregivers as well as the patients. Feelings ranging from blame and shame to worry about one’s effectiveness and an overwhelming sense of guilt can all become evident following harm to a patient in which professional acts, omissions
- (continued on page 24)*

CANDOR=

Communication and Optimal Resolution

The CANDOR process is designed to help health care organizations and practitioners respond to unexpected patient harm events in a timely, thorough and just manner.

The CANDOR process helps hospitals improve their immediate response to harm and realize short- and long-term improvements in the monitoring and reporting of events by promoting candid, empathic communication and timely resolution for patients, caregivers and the organization.

A CANDOR event is an event that involves unexpected patient harm. The unexpected harm can be physical, emotional or financial.

—from the CANDOR Toolkit of the Agency for Healthcare Research and Quality

CentraCare is first Minnesota organization to adopt CANDOR process

Chelsie Bakken, RN, MBA, patient safety manager at CentraCare Health in St. Cloud, is a key player in introducing the CANDOR process to her organization—and she's definitely a cheerleader for it.

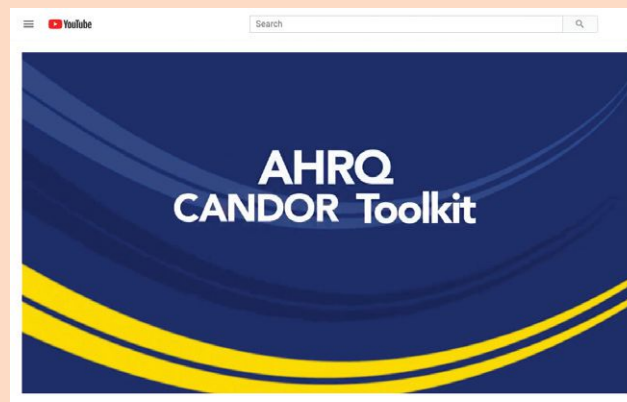
"The moment I understood what it was all about, I couldn't think of any better process we could put in place to make us the safest organization and also achieve our mission and vision," she says. "It's been an absolutely wonderful journey. Honestly, from a patient safety perspective, it's an ideal model."

CentraCare began looking at programs to improve safety and communication about 18 months ago, Bakken says. Several CentraCare executives had learned about the CANDOR process at conferences and it seemed to provide what CentraCare would want. "When we looked into CANDOR, we saw it as a full safety program," says Bakken. "It has a component for discovery and learning around events, support for caregivers and a patient and family component with disclosure and resolution."

It wasn't as if CentraCare was starting from scratch; "We have a strong process here," Bakken says. "CANDOR gives us an opportunity to strengthen connections among teams and with patients and their families. Not improve, but strengthen."

Although the CANDOR process became state law in Iowa in 2015 as medical liability reform, CentraCare is the first Minnesota health care entity to adopt the process, Bakken says. CentraCare will implement CANDOR in July, a little over one year after it first began analysis and training.

In May 2018, the MedStar Institute for Quality & Safety (MIQS), began the first step of CANDOR, which included an information session for CentraCare leaders, information gathering and then interviews with board members, leaders, frontline staff and



For an introduction to CANDOR by its creator, Tim McDonald, MD, JD, go to <https://www.youtube.com/watch?v=5j3SAS1Pcho>

others. The information and interviews were used to develop a "gap analysis" to identify where more effort might be needed to introduce and implement CANDOR.

"After the gap analysis, you outline your plan, look at policies, procedures and processes and what you might need to change," Bakken says. The implementation leaders then began to promote CANDOR, getting staff involved and engaged.

MedStar has helped lead formal training in a multi-step process as outlined by the CANDOR Toolkit. At the end of June, the consultants will work with CentraCare implementation leaders to share what has developed during the training sessions.

Overwhelmingly, Bakken says, staff who have participated in training sessions so far "have expressed gratitude and excitement." The training has included everyone from nutrition services staff to physicians. "It's a very all-inclusive approach."

CentraCare has taken each of the components of CANDOR and assigned measures of success, so that after implementation the organization can look at whether and how the process has made a difference in everything from claims and settlements ("not historically a big risk for our organization," Bakken says) to patient experience.

CANDOR includes a "care for the caregiver" program—this is what drew CentraCare to the program initially. Tim McDonald, MD, JD, the director of the Center for Open and Honest Communication at the MIQS and the creator of CANDOR, says, "By caring for our caregivers, we also prevent future harm to our patients."

Bakken's enthusiasm about CANDOR comes from what she believes will be a safer—and more supportive—environment for both patients and caregivers. "Patients in organizations that have CANDOR in place say it is healing for both staff and patients," she says.

—Linda Picone, editor of Minnesota Medicine

sions or misjudgment played a role. The CANDOR toolkit has resources from established programs to help clinicians and the members of health care systems get back as close as possible (or in some cases, better than before, having grown from the process) to the effective, caring state that they had prior to the adverse outcome.

- **Conduct investigations from a systems analysis approach.** The reason for using a systems approach is that managing individual performance alone doesn't ensure that an adverse event won't happen again with a different provider. To strengthen system accountability, we need to learn what happened, why it happened, what normally happens and what applicable procedure(s) are required. Only then can we learn why errors were made and how we can implement policy, process and improvement mechanisms to prevent the same errors from happening again.

- **Support education based on learning.** All too often, we only learn about preventable causes of medical harm after the harm has occurred. Building a robust education platform based on analysis of adverse events will protect the next patient from harm. The education should be case-based and interactive and involve all members of the health care team. Debriefing following near-misses is an example of case-based education that protects the next patient and improves outcomes.
- **Focus on meeting the patient's needs and expectations during the resolution process.** Trust forms the basis of the clinician-patient relationship. After an adverse outcome, it is essential to maintaining trust that there is an explanation of what occurred and what actions are being taken to prevent this in the future as well as an apology when appropriate. Although financial compensation is not applicable in all situ-

ations, CANDOR does encourage fair compensation to individuals harmed in the process of receiving medical care when it is a result of clinician or systems error.

While CANDOR was designed as a framework for hospitals, the principles it is built upon can be applied to other medical settings. The CANDOR toolkit training modules can be adapted and customized to meet the needs of different organizations. It is not a one-size-fits-all panacea for medical harm and the stress that follows for patients, families, clinicians and systems, but it can be an effective tool if used correctly by a team that understands it. Ultimately, the goals of this process are to maintain the clinician-patient relationship, increase patient satisfaction, improve patient safety outcomes and have fewer medical liability claims. **MM**

Alan Lembitz, MD, is the chief medical officer of COPIC, which provides medical liability and malpractice insurance.



MINNESOTA
MEDICAL
ASSOCIATION

MMA FORUM

A Physician's Take on Recreational Marijuana

Thursday, June 6

5 - 8pm

317 on Rice Park

St. Paul

For more information or to register:

<https://www.mnmed.org/recmarijuana>



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News Briefs



Sign up now for recreational marijuana forum on June 6

Registration is now open for the MMA’s policy forum on recreational marijuana, taking place June 6, 5–8pm at 317 on Rice Park, 317 Washington St. in downtown St. Paul. Visit www.mnmed.org/recmarijuana for more information.

The forum, “A Physician’s Take on Recreational Marijuana,” will provide an opportunity to learn more about the health effects of marijuana and what legalizing recreational marijuana could mean for Minnesota.

It will include a 45-minute panel discussion, followed by table discussions in which attendees will have the opportunity to dive deeper into the issue. Speakers include Darin J. Erickson, PhD, associate professor, Division of Epidemiology and Community Health, University of Minnesota; former MMA President David Thorson, MD, Entira Family Clinics; and Sheila Specker, MD, associate professor, Department of Psychiatry and director of Addiction Medicine Fellowship, University of Minnesota.

Following the panel, attendees will split into group discussions on the following topics:

- Youth Access to Marijuana: How does marijuana affect youth health?
- Marijuana and Pregnancy: What are the potential health effects of using marijuana during pregnancy?

On the calendar

Event	Date	Location
Doctors’ Lounge	May 9	Rochester
Doctors’ Lounge	May 21	Twin Cities
MMA Forum: A Physician’s Take on Recreational Marijuana	June 6	St. Paul
Housing Insecurity and Health Equity	July 24	Facebook Live
Doctors’ Lounge	September 18	Duluth
Hippocrates Café	September 19	Duluth
2019 Annual Conference	September 20-21	Duluth
Doctors’ Lounge	October 1	Mankato
Doctors’ Lounge	October 24	Edina

- Race and Marijuana: How does the criminalization of marijuana use disproportionately harm (health and social effects) people of color?
- Marijuana and Mental Health: What are the effects of marijuana use on mental health?
- The Legalization Debate: What is the role of medicine and science in this debate?

Nominations still open for MMA awards

MMA members are encouraged to nominate their fellow physicians, medical trainees or advocacy champions for one of MMA’s four annual awards by June 28.

Award categories include:

- *Distinguished Service Award.* 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.* Individuals who have made outstanding contributions in service to the goals of the MMA.
- *Medical Student Leadership Award.* A member of the MMA Medical Student Section who demonstrates outstanding commitment to the medical profession.
- *James H. Sova Memorial Award for Advocacy.* Someone 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.

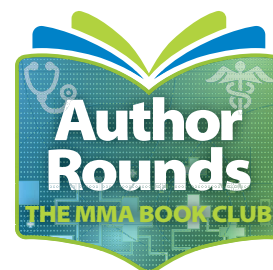
Awards will be given out at this year’s Annual Conference, September 20–21 in Duluth. Visit www.mnmed.org/awards to make your nomination.

Dates set for MMA’s book club

Planning continues on the MMA’s newest way to engage with members: Author Rounds: the MMA’s Book Club. Each event will include time to network, an introduction to the author and their book and questions and answers from the attendees. Former *Minnesota Medicine* editor Charles R. Meyer, MD, will serve as host.

This year’s book clubs include:

- June 18 | *The Good Doctor: A Father, a Son and the Evolution of Medical Ethics* by Barron H. Lerner, MD, at the Edina Barnes & Noble, 7–8:30pm. The book is a compelling story of one family’s engagement with medicine over the last half century.
- July 23 | *Nerve Damage* by Tom Combs, MD, at Open Book, Minneapolis, 7–8:30pm. This novel features fictional ER physician and medical researcher Drake Cody as he tracks down a depraved killer.
- October 11 | The third event will be a virtual event that will take place from 7–8:30pm. Details with the author were being finalized as we went to press. Stay tuned to future issues for details.



Registration open for 2019 Doctors' Lounges

Registration is now open for all of the 2019 Doctors' Lounges taking place in Rochester, Minneapolis, Duluth, Mankato and Edina.

Since 2015, the MMA has hosted these free events, which feature food and beverages. It's a great opportunity for physicians, residents and medical students to get together casually and network. Significant others and children are welcome, too. It's a celebration of medicine, a thank-you to members and a welcome to new and prospective members.

- May 9: Rochester, 5–7pm at Bitter and Pour, 183rd St. SW, Lower Level
- May 21: Minneapolis, 5–7pm at the Aster Cafe, 125 SE Main Street
- September 18: Duluth, 5–7pm at Vikre Distillery, 525 Lake Avenue South, Ste. 102
- October 1: Mankato, 5–7pm at Number 4, 124 East Walnut Street
- October 24: Edina, 5–7pm at Wooden Hill Brewery, 7421 Bush Lake Road

For more information, visit www.mnmed.org/socials.

MMA teams up with COPIC as liability insurance provider

The MMA has partnered with Colorado-based COPIC (www.callcopic.com) as the association's endorsed medical professional liability insurance (MPLI) provider for its members.

COPIC provides medical liability insurance that goes beyond basic coverage to offer educational resources, expert guidance and proven programs designed to address health care risks and improve outcomes. COPIC is the preferred MPLI provider in Colorado, Iowa, Nebraska, Utah and North and South Dakota. COPIC's network of insured entities includes more than 8,000 physicians and more than 160 hospitals and health care facilities.

"COPIC stands apart from other carriers in its commitment to improving health care and providing support to help ensure the best in patient care," says MMA Board of Trustees Chair Randy Rice, MD. "One of our primary goals is to make Minnesota the best state to practice medicine, and we believe our partnership with COPIC will help us achieve this while also offering our members a better option for medical liability insurance."

"COPIC is honored to have been chosen as an MMA partner and we look forward to demonstrating our commitment to health care in Minnesota," says Gerald Zarlengo, MD, CEO of COPIC. "We focus on collaborating with state medical societies and their members, and when we work together, we can generate new and impactful ways to support improvements in patient safety and risk management."

The MMA encourages members to contact their current MPLI agent or Jerry O'Connell (joconnell@copic.com), COPIC's director, Regional Development, at 844-858-1411, ext. 6182, to learn more about what COPIC offers and to receive a premium indication, which includes a 5 percent discount for MMA members.

State distributes opioid reports to Minnesota prescribers

Minnesota physicians who treat Minnesota Health Care Program (MHCP) members and prescribe opioids for pain management will receive individualized Opioid Prescribing Reports this spring from the Department of Human Services (DHS) as required by law.

DHS will send the first reports this spring to MN-ITS mailboxes. The reports compare each prescriber's prescribing data to their peers in their specialty. To access a report, a prescriber must register for a MN-ITS account, which is a free, web-based HIPAA-compliant system for electronic billing and communication with providers.

DHS sent out customized MN-ITS registration letters to all opioid-prescribing providers who do not currently have a MN-ITS account, via U.S. Postal Service, in late March. Prescribers who are managed care only will not receive MN-ITS registration letters. Their reports will be sent via the U.S. Postal Service for the first year.

Training on how to access your report in the MN-ITS mailbox will become available before the release of the reports. DHS will provide a link to the training on the Opioid Prescribing Improvement Program website and the Provider news and updates webpage.

The Opioid Prescribing Reports will support the DHS Opioid Prescribing Quality Improvement Program. See the Opioid Prescribing Improvement Program website for more information, including the "Flip the Script" resources on talking with patients about pain management and opioid use.

For more information, contact the MHCP Provider Call Center at 651-431-2700 or 800-366-5411. Direct questions about the Opioid Prescribing Reports to dhs.opioid@state.mn.us.

Judge rules against United Behavioral Health

In March, a federal judge ruled that United Behavioral Health, UnitedHealth Group's behavioral health insurer, breached its duty to patients and made arbitrary and capricious coverage denials by using restrictive coverage determination policies that deviated from clinical guidelines.

The ruling stems from a class action lawsuit brought on behalf of approximately 50,000 patients who were denied coverage for residential mental health and substance use disorder treatment. Under federal law, self-insured health plans are obligated to administer health plan benefits "solely in the interest of the participants and beneficiaries ... [and with] care, skill, prudence, and diligence."

The court found that determining coverage using criteria that deviated from established standards of care violated the fiduciary duty that was owed to patients.

At issue in the recently decided case, *Wit v. United Behavioral Health*, were internal United Behavioral Health coverage determination policies that were significantly more restrictive than the standard of care. These guidelines, according to plaintiffs, focused on acute symptoms rather than chronic conditions, inappropriately limiting coverage to treatment that would alleviate

symptoms instead of treatment that would address an individual's underlying condition.

This "overemphasis on acuity," the court ruled, resulted in inappropriate denials of coverage for patients and violated federal law. Although federal and state law generally require health plans to provide mental health and substance use disorder benefits at levels equal to other medical or surgical benefits, patients continue to struggle to obtain coverage for treatment of mental health and substance use disorders. This decision, if upheld on appeal, could provide a legal avenue for patients to ensure that they receive adequate coverage for treatment of mental health and substance use disorders.

MMA staff to meet with physicians across the state

MMA staff will tour the state this summer to meet with physicians, and to listen to what's important to them, their clinics and their patients. Here's the schedule:

- Northwest Trustee District: June 10–12
- North Central Trustee District: June 17–19
- Southwest Trustee District: July 15–17
- Northeast Trustee District: July 29–31
- Southeast Trustee District: August 5–7
- Twin Cities Trustee District: Contact staff for availability

If the dates that staff will be in your Trustee District don't work, please let us know and we'll find an alternative time. If you are interested in scheduling a meeting or presentation, please contact Elizabeth Anderson (eanderson@mnmed.org). MM



*Congratulations to
George Lohmer
for his 40 years of service to the
Minnesota Medical Association*

**Best wishes
in your
retirement**



MINNESOTA
MEDICAL
ASSOCIATION



Janet Silversmith



Dave Renner



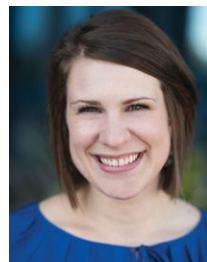
Eric Dick



Andrea Stoesz



Juliana Milhofer



Elizabeth Anderson

MMA in Action

MMA CEO **Janet Silversmith**; **Dave Renner**, MMA director of advocacy; and **Eric Dick**, manager of state legislative affairs, met in early April with Cassandra Moore, policy advisor to Gov. Tim Walz, to discuss MMA's provider tax alternative proposal.

Silversmith, Renner, Dick and **Andrea Stoesz**, health policy analyst, met with Department of Human Services Commissioner Tony Lourey and State Medicaid Director Marie Zimmerman in late March to discuss the governor's ONECare proposal.

Silversmith, Renner, Dick and **Juliana Milhofer**, policy analyst, joined several physicians in early March to meet with Sen. Melissa Franzen to discuss her recreational marijuana proposal.

In early March, Silversmith met with new University of Minnesota Physicians CEO Badrinath Konety, MD, and, along with **Scott Wilson**, membership outreach manager, met with David Herman, MD, Essentia Health CEO.

Silversmith and **Elizabeth Anderson**, membership director, met with representatives of Sanford Health in late April.

MMA members Kim Tjaden, MD, and Marilyn Peitso, MD, and Anderson met with Tom Schrup, MD, at CentraCare in mid-March.

In late March, Renner presented legislative issues to the Minnesota Academy of Family Physicians' House of Delegates. In late April, he also presented to the Mankato Clinic Board of Directors.

Anderson and Wilson attended the MAFP Spring Refresher in late March as well as the MMGMA Winter Conference in early March.

VIEWPOINT

It's time to take T21 statewide

Like so many dominoes, cities and counties across Minnesota are enacting ordinances that raise the age to purchase tobacco and nicotine products from 18 to 21.

By the time of this writing, 26 cities and five counties had passed Tobacco 21 laws. Metro cities. Rural cities. Counties in the north. Counties in the south. One after another.

The MMA has been a strong supporter of T21 efforts, at both the state and local level. Physicians have played a key role in supporting local initiatives and their great work has set the table for the Legislature to pass a statewide policy.

A T21 bill (SF 463/HF 331) has been introduced this session, and it's been very well received, at least in the House of Representatives. The bills, carried by Sen. Carla Nelson (R-Rochester) and Rep. Laurie Halvorson (DFL-Eagan), have strong bipartisan co-authors, and the hearings on the bills have been very positive. The House has included the T21 provisions in its HHS finance proposal, so the bill remains alive. We hope that the Senate will act to support this important proposal. The resistance in the upper body is a reminder that tobacco companies, as well as the retailers who sell these products, continue to have significant influence at the Capitol.

In early April, governors in Illinois and Washington signed T21 legislation. As we went to press, nine states plus the District of Columbia had passed T21 legislation with more on the horizon. Minnesota has long been a leader on tobacco issues, but we now appear to be falling behind.

Raising the age to purchase tobacco, e-cigarettes and other products containing nicotine makes perfect sense. It will reduce

use among young adults and, perhaps even more markedly, adolescents. For many 14- and 15-year-olds, tobacco products are readily available thanks to older students in high schools.

Tobacco use remains Minnesota's leading cause of preventable death and disease. It costs an estimated \$7 billion annually and takes the lives of more than 6,300 Minnesotans every year.

Smoking rates in Minnesota had been declining for decades, but the adult cigarette smoking rate has stalled at 14 percent and, for the first time in a generation, youth tobacco use has increased.

While there are many strategies already in place to reduce the use of tobacco, more must be done to ensure that adolescents and young adults do not start to smoke or use e-cigarettes.

Raising the minimum legal sale age for tobacco products would delay initiation rates of tobacco use by adolescents and lower prevalence in the overall population. More than 95 percent of smokers begin by the time they reach 18 years of age. Restricting the sale of these dangerous products to those over the age of 21 will dramatically reduce the availability of nicotine to younger people, as far fewer 14- and 15-year-olds have ready access to adults over the age of 21.

In our efforts to help make Minnesotans the healthiest in the nation, preventing death and disease caused by tobacco and nicotine—and preserving clean indoor air—has long been an MMA goal. The MMA strongly supports prohibiting the sale of tobacco products and e-cigarettes to individuals under the age of 21. It's time for the Legislature to pass T21 into law to safeguard the health of all Minnesotans.



Randy Rice, MD
MMA Board Chair

Tobacco 21 legislation will reduce use among young adults and, perhaps even more markedly, adolescents.

What physicians can do about climate change

It's already making our patients sick

BY VISHNU LAALITHA SURAPANENI, MD, MPH, AND NYASHA SPEARS, MD

Climate change is the greatest health threat of the 21st century. Surveys consistently show that more physicians than the general public agree with the scientific consensus on anthropogenic climate change. For physicians, the question isn't whether climate change is occurring, but "How do I address this complex topic in an already short patient visit?"

Even as we struggle to answer that question, we are beginning to see and treat the health impacts of climate change. Whether it's an elderly woman on diuretics with heart failure who comes

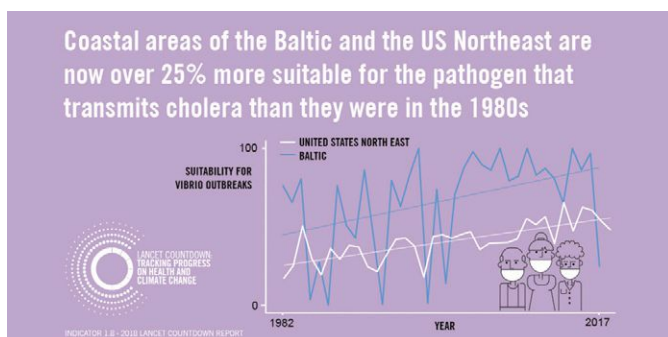
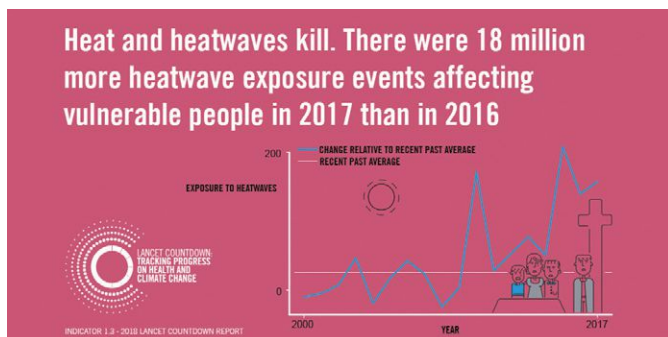
in with syncope and acute kidney injury while gardening on an unusually warm day in June, or an asthmatic child with a severe exacerbation after playing in his schoolyard next to a highway, we are seeing a rise in diseases directly attributed to climate change. Physicians all over America encounter families under stress due to displacement by floods, fire and famine. The physical and mental health implications of a warming planet are being felt in every corner of the earth, including Minnesota.

The Lancet Countdown, a global monitoring system dedicated to tracking the health impacts of climate change, reported in 2018 that 24 million more Americans were exposed to extreme heat in 2011 and 12.3 million more in 2016 when compared to the 1986–2005 baseline. Climate-sensitive vector-borne illnesses transmitted by mosquitoes, ticks and fleas, including Lyme disease and West Nile virus, tripled between 2004 and 2016. The U.S. Northeast has had a 27 percent increase from the 1980s to the 2010s in the area of coastline that's suitable for the pathogenic waterborne *Vibrio* bacteria. According to the Fourth National Climate Assessment, extreme heat and wildfire smoke, augmented by climate change, are projected to worsen air quality, even as more than 100 million Americans live in communities where air pollution already exceeds air quality standards. More people are likely to be impacted by climate change—and health care infrastructure itself is directly at risk during extreme weather events, as we've seen during hurricanes Katrina and Maria.

Climate change is an existential crisis; thinking of the magnitude of the action we need to take can be paralyzing. This is precisely why physicians can and should take the lead in addressing it. As health care professionals, we routinely work to help patients tackle enormous challenges by encouraging action in small steps.

Individuals Changing behavior

To limit global temperature rise to no more than 2 degrees Centigrade above pre-industrial levels, as outlined in the Paris Agreement, individuals must collectively make lifestyle modifications to promptly reduce carbon emissions. Three of the top four most high-impact actions to reduce individuals' greenhouse gas emissions have clear links to improved health outcomes and so fall under the purview of physician recommendations. In short, these behaviors have climate and health co-benefits.



Graphic used with permission of Lancet Countdown www.lancetcountdown.org.

Nutrition. One of the most rapid and effective ways for an individual to reduce his or her carbon footprint is to eat less meat. A 2015 study by Hudenus demonstrated we can't stay below the 2-degree Centigrade limit expressed in the Paris Agreement without a significant change in diet: eating less meat and generally shifting away from reliance on animal sources of protein.

According to the United States Department of Agriculture (USDA), Americans consume the equivalent of 223 pounds of meat per person each year. Compared to the average American diet, vegetarian and vegan diets reduce foodborne greenhouse gas emissions by 32 percent and 67 percent respectively, reduce water use by 70–75 percent and land occupation by 70–79 percent. According to the Centers for Disease Control (CDC), only one in 10 American adults gets enough fruit and vegetables. By helping patients eat less meat and more vegetables, we can simultaneously change the rising trajectory for chronic diseases such as vascular disease, obesity and many cancers; reduce health care costs; and reduce greenhouse gas emissions. This is a win-win-win.

There are several realistic strategies to move patients toward more plant sources and fewer animal sources of protein. Incremental changes such as Meatless Mondays, avoiding meat on weeknights or weekends and even eating generally lower on the food chain are good first steps. One excellent resource for patients is the Meatless Monday Campaign (<http://www.meatlessmonday.com>), which has recipes for patients and institutions and practical suggestions to move people toward a more climate-friendly diet. In our practices, we have found that meat-eating patients find this resource informative and non-judgmental.

Exercise. The transportation sector now contributes up to a third of greenhouse gas emissions, according the U.S. Environmental Protection Agency. Recommendations to use public transport and purchase an electric car don't generally fall within the purview of clinical practice, but increasing physical activity is a lifestyle modification we can recommend in many clinically relevant scenarios. Most Americans do not get the requisite physical activity recommended by current guidelines. Exercise provides mental and physical health benefits. Physical activity is vital for healthy aging, prevention and control of chronic diseases and preventing premature death.

Car-free living is one of the top four most effective ways to reduce an individual carbon footprint while reducing obesity, hyperglycemia and airborne pollutants. In addition to mitigating the impacts of climate change, walking or biking as a mode of active transportation coincides perfectly with the exercise needed to help our patients live longer, healthier lives. Forty percent of all car trips in America are less than 2 miles. Physicians can advise patients to begin choosing active transportation for any trip that's less than 2 miles. Those in rural areas may reduce car mileage by walking the last part of a trip or seeking ways to ride-share.

Reproductive choices. When women are given the ability to avoid unplanned pregnancies, their health benefits. Having fewer

What's good for health is good for the planet too.

+ active transportation
(walking, biking)

exercise benefits and reduced emissions

+ plant-based diet

nutritional benefits and reduced emissions

+ using renewable energy

cleaner air and water and reduced emissions

+ energy efficiency

improved air quality and reduced emissions

+ green spaces

psychological, civic and health benefits and trapped emissions

children is also the largest impact one can make on an individual level in cutting emissions. According to one research paper, a family choosing to have one less child provides the same level of emission reduction as 684 teenagers who adopt comprehensive recycling habits for the rest of their lives. Physicians should routinely provide a full range of reproductive health counseling and services to both male and female patients.

Adapting to a changed environment

In addition to encouraging behavior changes that help mitigate the damage to our climate, physicians need to counsel patients on how they can protect themselves from climate change that is already impacting health.

Extreme heat. Minnesota is one of the fastest warming states in America. Unfortunately, Minnesotans tend to underestimate their susceptibility to extreme heat, putting themselves at a higher risk for heat-related illnesses. We need to identify and educate vulnerable groups such as the elderly, outdoor workers, the homeless and athletes—those more likely to suffer heat-related illness. This includes education on tracking extreme-heat alerts and recognizing the signs of heat illness. Physicians can help develop extreme-heat plans to check on elderly people living alone and identify access to air-conditioning or community cooling centers. Documenting heat as a risk factor for hospitalization when appropriate will also help accurately track the burden of heat illness.

Air quality, allergies and asthma. Patients with heart and lung disease are particularly vulnerable when air quality worsens. Warmer temperatures worsen air quality, and studies show increased ER visits with asthma on hot days. Our allergy season in Minnesota has increased by 18-21 days, which compounds the

problem of allergic asthma attacks. Physicians should counsel patients to check air quality before outside activities and help them prepare asthma contingency plans for hot and poor air quality days.

Mental health. Extreme weather events, including extreme heat, have been linked to increased rates of suicide. People impacted by extreme weather events, such as flooding or tornadoes or extended frigid temperatures, may face the loss of their homes, jobs and communities. Health care professionals can help patients prepare a mental health plan and assist with the burden of displacement, whether temporary or permanent.

Realistically, patients will rarely bring up climate change in a time-limited office visit. They do, however talk about their concerns regarding obesity, mental health, cancer risk, diabetes, heart disease and stroke risks. Physicians are in a unique and powerful position to help patients make lifestyle changes to improve their own health outcomes, keep our climate cooler and manage the negative impacts of a warming planet.

Health care institutions Changing behavior

In the United States, health care institutions contribute 10 percent of greenhouse gas emissions. As a profession that practices “First, do no harm,” we have a moral obligation to reduce our contribu-

tion to climate damage that adversely impacts the health of our most vulnerable patients.

The health care system can become more environmentally sustainable in many areas, including energy use and efficiency; managing food, water and transportation needs of patients and staff; and the unique challenges of the use and disposal of chemicals and waste. Many resources now exist to help guide hospitals and offices through this transition including Practice Greenhealth, Healthcare Without Harm and My Green Doctor. Hospitals all over the country are already making major changes to deliver health care sustainably.

For example, Gundersen Health System (Wisconsin, Minnesota, Iowa) was the first U.S. health system to target (2008) and reach energy independence (2014), saving millions of dollars a year. Minnesota hospitals have made sustainability leadership a priority and rank in the top 25 hospitals nationwide (Practice Greenhealth 2018 Environmental Excellence Awards). HCMC’s Whittier Clinic received a LEED Silver Certification for sustainable building, Stillwater’s Lakeview Hospital energy usage was 57 percent carbon-free in 2017 and Mayo Clinic retrofitted its parking ramps with LED lights and is saving \$300,000 dollars annually as a result.

In 2017, the St. Cloud VA hospital reduced its water use by 30 percent, Park Nicollet Hospital in St. Louis Park decreased its food waste by 40 percent and the Minneapolis VA reduced its meat consumption by 33 percent. Regions Hospital in St. Paul achieved a 20 percent reduction in its paper usage in 2017, compared to the 2014 baseline, and is planning on adding electric vehicles to its fleet.

According to Practice Green Health, the operating room produces 20–30 percent of hospital waste, is the largest consumer of hospital supplies and uses anesthetic gases, like halogenated ethers, that are powerful greenhouses gases. Interdisciplinary “greening” of operating room teams including surgeons, nurses and anesthesiologists, are diverting waste from landfills, reducing emissions and saving hospitals tens of thousands of dollars, adding to the triple bottom-line of “people, profits and planet.” Fairview was the first health system locally to recycle blue wrap from the surgical ORs, and received a Greening the Operating Room Recognition Award in 2018. As a first step, physicians can create or join a green team in their hospitals.

Organizations can amplify individual employee behaviors by implementing systems that make planet-friendly behaviors easier. For example, hospital cafeterias can endorse Meatless Mondays. Hospitals can provide bike racks and showers for employees who choose active transport (walking, running or biking) to work.

Adapting to a changed environment

Health care systems also need to develop resiliency in their infrastructure and staff operations as part of climate adaptation. This is evident when we recall extreme weather events like hur-

Resources for health care professionals

+ American College of Physicians Climate Change Toolkit

<https://www.acponline.org/advocacy/advocacy-in-action/climate-change-toolkit>

+ Practice Greenhealth. Greening the OR Toolkit

<https://practicegreenhealth.org/initiatives/greening-operating-room>

+ U.S. Climate Resilience Toolkit

<https://toolkit.climate.gov/topics/human-health/building-climate-resilience-health-sector>

+ Medical Society Consortium

<https://medsocietiesforclimatehealth.org/take-action/>

+ Health Professionals for a Healthy Climate, including a Minnesota-specific Action Toolkit

<https://www.hpforhc.org/>

+ Climate and Health Resources for Patients

<http://climatehealthconnect.org/resources/posters/>

ricanes Katrina and Maria, which disrupted delivery of health care services. In response, based on specific regional threats, hospitals across the country have built first-floor elevations above predicted flood levels, created underground hospital floors where tornado risk is high and installed air scrubbers to protect air quality during wildfires.

Hospitals need to develop emergency plans for an influx of patients who will present in large numbers during critical weather events, including heat waves, or disasters.

Hospitals need health care and ancillary staff in order to function effectively. During superstorm Sandy, disruptions to care resulted in staff not able to reach the hospital. Increases in precipitation and tornadoes are predicted for Minnesota, meaning road closures and electricity outages that can disrupt delivery of care. Health care professionals need to be involved in developing an extreme weather event emergency response plan specific to their institutional needs and the populations they serve.

Communities

It is our ethical duty as physicians to help prevent what we cannot treat. From the days of John Snow, who discovered that a cholera outbreak was caused by an infected water pump, to the recent efforts of Mona Hanna-Attisha, MD, who exposed the Flint water crisis in Michigan, physicians have been advocating for patients outside of their clinics and hospital rooms. Today, our role as physicians is expanding, with some advocating for policies around affordable health care, gun violence, drug use, smoking and more. Some are even running for public office themselves. More medical schools and residencies are including advocacy tracks.

Health care professionals are in the frontlines, caring for victims of extreme weather events, treating children with asthma readmissions from air pollution and serving immigrant populations displaced by climate change. We need tell our patients' stories and advocate for environmental policies that protect human health. In the Climate Change Toolkit, the American College of Physicians outlines steps we can all take.

Physicians can write letters to the editor in local newspapers, author opinion editorials, use social media and meet with legislators to report our observations from caring for patients in a warming climate. Expert testimonies by physicians to city, county and state legislators help communicate the impacts of pollution and climate change on patient health.

For collective action to be effective, joining a group that is already working on climate issues is a good place to start. In Minnesota, Health Professionals for a Healthy Climate is a multi-disciplinary group of health professionals, including doctors, nurses and public health professionals who work on advocacy issues at institutional and policy levels.

To tackle an issue as complex and multi-faceted as climate change, we need to break down our traditional practice silos and work in an inter-professional team-based manner. At the Uni-

versity of Minnesota Academic Health Center, we are tackling climate change in a team that spans medicine, nursing, dentistry, physical therapy, pharmacy and veterinary medicine.

Climate action is primary prevention. Physicians are well suited to act on climate. We are agents of change; this is what we do. As trusted voices, we can lead individuals and communities by using evidence-based data to foster behavior changes and public policy changes that will positively affect human health and the health of the planet. **MM**

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REFERENCES

- Reidmiller DR, Avery CW. Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief. Washington, DC: U.S. Global Change Research Program. 2018.
- Watts N, Berry H, et al. The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come. 2018;(392);2479-2514.
- Willett W, Rockström J. Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet*. 2019;(393).
- Wynes S, Nicholas K. The climate mitigation gap: education and government recommendations miss the most effective individual actions. *Environmental Research Letters*. 2017(12)



Outdoor air quality and health

Physicians can help protect and treat patients by understanding the connection

BY KRISTEN KELLOCK, PHD; EMILY ONELLO, MD; AND KRISTIN RAAB, MLA, MPH

PATIENT SCENARIO 1: *A Minnesota family physician notices a sudden increase in walk-in visits for asthma exacerbations. Could distant wildfires in the western United States be playing a role in this uptick of asthma activity?*

PATIENT SCENARIO 2: *A 56-year-old male patient returns to his primary care physician to discuss*

recent unexpected findings on his coronary angiogram. Atherosclerotic narrowing was noted and several stents were placed. The patient is puzzled because he lacks any of the classic risk factors for coronary artery disease. His physician wonders if past exposure to diesel exhaust and other air pollutants could have contributed to the patient's disease.

Understanding Minnesota's air quality

Following the inception of the Clean Air Act in 1970 and amendments in 1977 and 1990, air quality has dramatically improved in the United States. The term “air quality” broadly describes either indoor or outdoor air in relation to potential adverse human health effects, visibility, odors or possible deterioration of man-made or natural structures from air exposure. Physicians are likely familiar with the acute health effects of impaired outdoor air quality but may not fully appreciate the more insidious chronic health impacts of outdoor air pollution. Understanding the adverse health effects of both acute and chronic exposure to air pollution helps physicians diagnosis and treat their patients.

The American Lung Association scores Minnesota's outdoor air quality good with respect to high ozone days and particle pollution, as well as in comparison to other states. For example, Minnesota counties (where monitoring data existed) scored As and Bs for high ozone days, which equates to 0–0.9 high ozone days from 2014 to 2016, while data for numerous California counties scored Ds and Fs for the same period.

FIGURE 1

Minnesota annual count of days in each Air Quality Index (AQI) category for ozone and fine particle matter 2.5 microns. Source: Minnesota Pollution Control Agency.

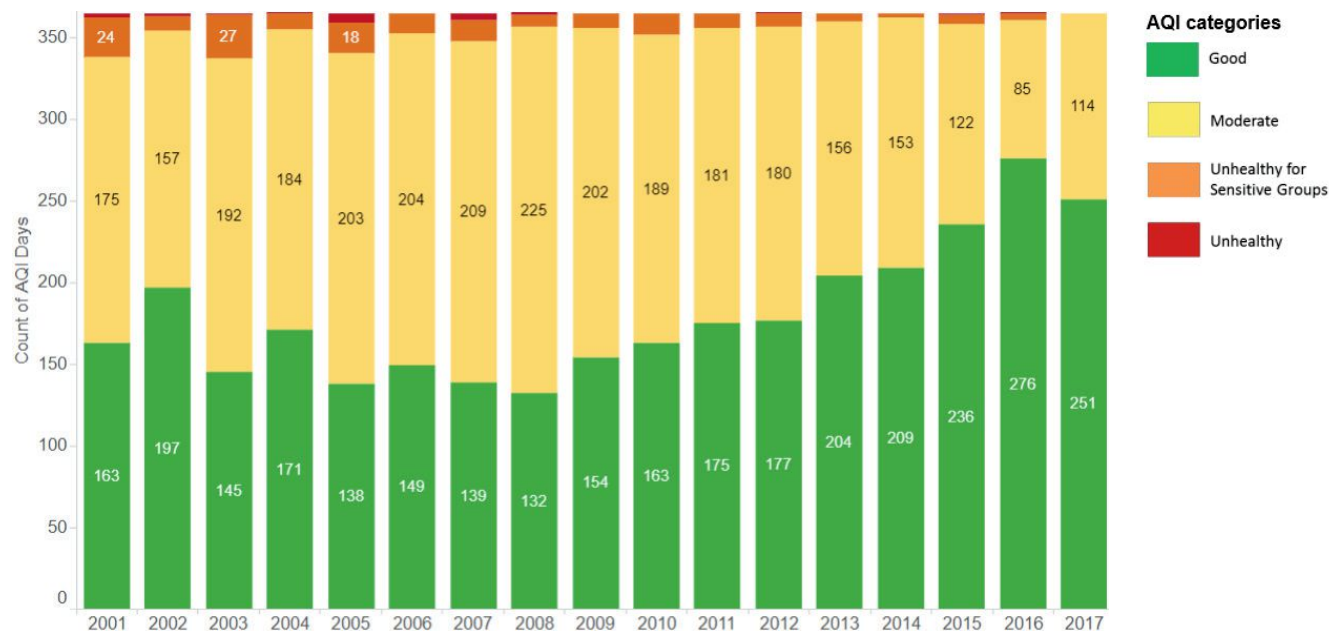
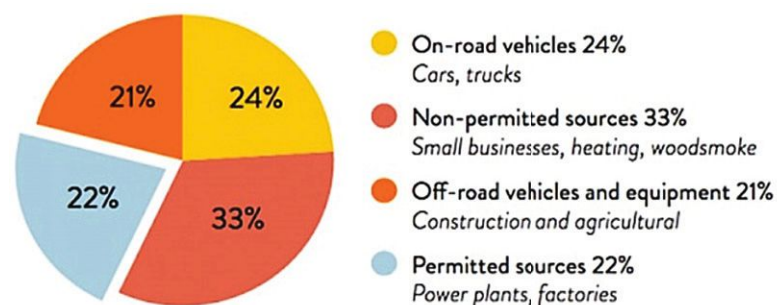


FIGURE 2

Air pollution emission sources in Minnesota from 2017.

Source: Minnesota Pollution Control Agency.



Even though Minnesota has overall better air quality than many states, areas of Minnesota still experience unhealthy air quality days throughout a year that can adversely affect human health (Figure 1). Medical professionals can help protect their patients and communities by understanding the drivers of air pollution, the potential acute and chronic health effects of poor air quality, the populations that are most sensitive to air pollution and the tools that can help prevent negative health impacts.

Air quality influences

Air pollutants are emitted from a wide range of sources. The pollution emissions in Minnesota generally come from what are known as permitted and non-permitted sources and on- and off-road vehicles, as defined by the Minnesota Pollution Control Agency (MPCA) (Figure 2). Permitted sources typically are large industrial facilities like power plants, factories and refineries. Non-permitted sources are generally smaller stationary sources of emissions that do not require an MPCA permit to emit. Gas stations, dry cleaners, residential wood combustion, prescribed burning and intentional or inadvertent agricultural burning are all examples of non-permitted sources. Mobile sources encompass vehicles, off-road and construction-related equipment powered by internal combustion engines, landscaping equipment, aircraft and trains. Local jurisdictions can require permits for MPCA's non-permitted sources, such as a city requiring a permit for backyard burning.

In addition to permitted and non-permitted pollution sources, other environmental factors can contribute substantially to air quality. Weather conditions, such as wind speed and direction, temperature, humidity and sunlight and presence of impediments (i.e., buildings, landscape topography) can influence air quality. For example, strong winds can carry pollutants long distances or disperse a pollutant, lowering concentrations near a source, but stagnant air and tall buildings can essentially trap pollutants, resulting in more unhealthy air quality days. In August 2018, wildfire smoke traveled from western Canada, prompting MPCA to issue an air quality alert for the entire state of Minnesota.

Air Quality Standards

The Clean Air Act requires the United States Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for pollutants considered adverse to the public and environmental health. The NAAQS apply to six principal pollutants: particulate matter 2.5–10 microns in diameter, ozone (O₃), carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂) and lead. The NAAQS include primary and secondary standards. Primary standards provide health protection to populations that are particularly sensitive to air pollution. Secondary standards provide general public protection and consider factors such as compromised visibility and damage to animals, crops and buildings.

Of special interest for human health is particulate matter less than 2.5 microns in diameter (PM_{2.5}). These particulates can be emitted directly from a source (i.e., wildfires or backyard burning) or can occur as the result of chemical reactions with sulfur dioxide and nitrogen dioxide, which are emitted from various industrial sources and automobiles. These smaller particles remain suspended in air longer than larger particles, thus lengthening the potential human exposure time. PM_{2.5} materials rival small bacteria in size, and are easily inhaled deep into human lungs. Scientific inquiry continues into the potential harms of PM_{2.5}. A recent study suggested that the EPA's current standards for acceptable levels of exposure to PM_{2.5} (35 micrograms (μg)/cubic meter (m³) per 24-hour averaging time or 12 μg/m³ annual mean averaged over three years) could be more stringent to better protect public health. The study asserted that both acute and chronic health effects of PM_{2.5} exposure could be reduced by improving air quality even lower than the current U.S. EPA standards.

Acute health effects and vulnerable populations

During a poor air quality event, people with existing respiratory conditions or those who are otherwise healthy may experience symptoms like difficulty breathing deeply, shortness of breath, throat soreness, wheezing, coughing or unusual fatigue (see Figure 3 for more detail). In **Patient Scenario 1**, a physician observes an increase in acute patient visits for asthma symptomatology during the community's exposure to air pollution from a wildfire. Acute adverse health events associated with air pollution are well documented and include a wide range of disorders, including cardiovascular events (angina, myocardial infarction, heart failure, abnormal heart rhythms), cerebrovascular events (strokes), asthma and COPD exacerbations.

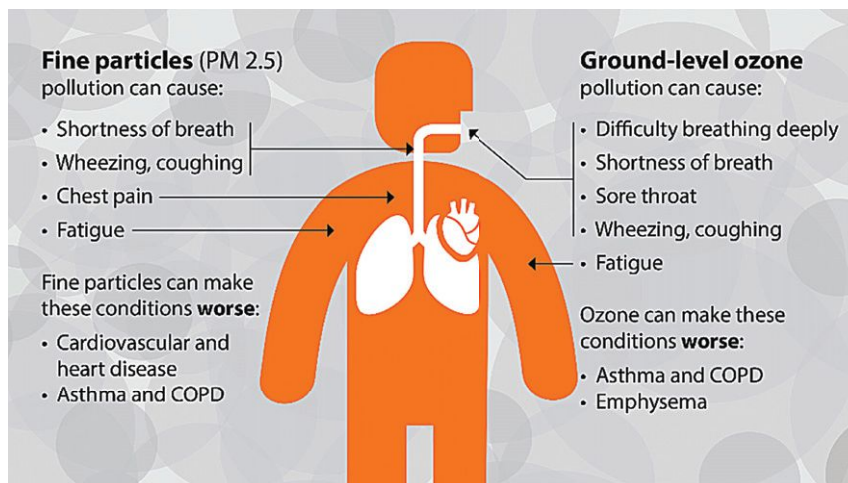
The MPCA and the Minnesota Department of Health's (MDH) joint 2015 *Life and Breath Report* estimated that each year PM_{2.5} causes more than 2,100 deaths, more than 200 respiratory hospitalizations, 91 cardiovascular hospitalizations and about 400

emergency department (ED) visits for asthma in the Twin Cities. A 10 percent reduction in PM_{2.5} concentrations from 2008 baseline levels could prevent more than 200 deaths, more than 30 hospital admissions and more than 40 ED visits every year. Baseline ground-level ozone pollution is estimated to cause about 20 deaths, 47 hospitalizations for asthma and 185 ED visits for asthma. Ozone pollution causes an estimated 5 percent of all asthma hospitalizations and 3 percent of all asthma ED visits. A 10 percent reduction in ozone concentrations could prevent an

FIGURE 3

Health effects associated with fine particle pollution and ozone.

Source: Minnesota Pollution Control Air Quality and Health.



estimated seven deaths, 14 hospital admissions and 57 ED visits in the Twin Cities. The MPCA and MDH are currently updating the *Life and Breath Report* to better understand and describe hospitalizations and ED visits attributable to air pollution in greater Minnesota.

People with preexisting respiratory ailments, like asthma, chronic obstructive pulmonary disease (COPD), cardiovascular disease or other related conditions, are more likely to be affected when ozone and/or particulate matter reach unhealthy levels. Young children, the elderly and people of all ages who are active outside are also at risk during poor air quality days. In 2016, MDH reported that the asthma hospitalization rate for children living in the Twin Cities-metro area was 67 percent higher than for children living in Greater Minnesota. Patient education on air pollution and health, especially among urban and sensitive populations, may help to minimize emergency medical care.

Chronic Health Effects

Air pollution can also cause chronic health effects through similar pathophysiologic mechanisms as tobacco smoke. Physicians easily conceptualize the deleterious health effects of tobacco smoking. Cigarette smoke passes through the lining of the respiratory tree, the lung alveoli, the vascular interface and spreads systemically

as toxins are absorbed into general circulation. Yet during patient care encounters, physicians may not routinely consider the harms of air pollution. The 56-year-old patient in **Patient Scenario 2** has developed atherosclerotic coronary artery disease in the absence of recognized risk factors, but he had experienced chronic exposure to ambient levels of outdoor air pollutants, which may have played a role in disease development.

Mechanistically, air pollution's combustion-driven nanoparticles are inhaled and result in pulmonary inflammation and subsequent translocation from the lung into the systemic circulation with subsequent direct cardiovascular effects. Pro-inflammatory pathways are activated and tissues experience cellular oxidative stress. Particulate matter augments the development and progression of atherosclerosis via detrimental effects on platelets, vascular tissue and the myocardium. Current modeling extends the pathologic impact of particulate matter inhalation to include amplified systemic inflammatory and oxidative stress responses, induced autonomic nervous system imbalances and increased thrombosis risk.

Atherosclerosis, coronary and cerebrovascular concerns

Given that air pollution and tobacco smoke are similar in pathophysiologic mechanisms, it is not a surprise that exposure to air pollution has

been associated with an increase in stroke and heart attack, as well as other cardiovascular events, such as abnormal cardiac rhythms and congestive heart failure. Studies have shown that PM_{2.5} exposure can result in vasoconstriction and impaired endothelial function. A 2015 publication from the Multi-Ethnic Study of Atherosclerosis (MESA) and Air Pollution revealed that both short- and long-term exposure to ambient PM_{2.5} levels were independently related to reductions in retinal arteriole diameter. In a subsequent 2016 report, the MESA Air study revealed that long-term exposure to PM_{2.5} at ambient urban levels of six metropolitan areas in the United States showed a significant increase in coronary artery calcification. Compounding the effects, epidemiologic studies provide some evidence that PM_{2.5} air pollution may contribute to the development of cardio-metabolic conditions. There is good evidence that exposure to outdoor air pollution should be included among the important modifiable risk factors for cardiovascular disease (smoking, diabetes, high cholesterol, hypertension, sedentary lifestyle).

Pulmonary and other effects

Chronic exposure to air pollutants has been shown to increase risk of lung cancer and can make asthma worse. Air pollution has also been linked to a variety of other conditions, including preg-

Useful links for further information

- + **Air Now Guide to Air Quality and Your Health.** www.airnow.gov/index.cfm?action=aqi_brochure.index
- + **EPA air quality research areas.** www.epa.gov/air-research

EPA Air Quality and Climate Change research

- + **EPA’s History of the Clean Air Act.** www.epa.gov/clean-air-act-overview
- + **MDH Asthma Program.** www.health.state.mn.us/diseases/asthma/about/whoweare.html
- + **MDH Cardiovascular Health Unit.** <https://www.health.state.mn.us/diseases/cardiovascular/cvhunit/>
- + **MDH Minnesota Public Health Data Access Portal.** <https://data.web.health.state.mn.us/web/mndata>
- + **MPCA emissions source categories.** www.pca.state.mn.us/air/sources-air-pollution
- + **MPCA reports on NAAQS.** www.pca.state.mn.us/air/current-condition-details

nancy-related disorders, neurological disorders, rheumatologic and mental health conditions. The systemic inflammatory events that occur in response to air pollution exposure affect diverse organs, suggesting that exposure to air pollution should be considered when reviewing a patient’s medical history.

Health protection tool

The EPA developed the Air Quality Index (AQI) to provide a homogenous way to report on daily air quality conditions incorporating the NAAQS pollutants previously mentioned. The MPCA created a Minnesota-specific AQI tool to report on air quality, based on hourly measurements from approximately 30 individual monitoring sites throughout the state. Through the use of monitor data, artificial intelligence, automated weather predictions and in-house meteorological expertise, MPCA now forecasts air quality conditions for 18 locations across the state and releases customized AQI Alerts for anywhere in Minnesota.

The categories of air quality (Figure 4) are easy to understand and are accompanied with a corresponding color to denote the level of potential health impact. Green indicates clean air that is safe for everyone, and progressively warmer colors indicate higher levels of pollution and levels of health concern, as seen in Figure 4. Patients can track the daily AQI on MPCA’s website (www.pca.state.mn.us/air/current-air-quality) or by downloading the MN Air Mobile App through

Android, Apple or Windows app stores. Providing patients information on how to track and interpret the MPCA’s AQI could help them better prepare for poor air quality days and implement strategies to protect their health.

While some individuals may be affected by air pollution more than others, everyone should take precautions when the air quality is unhealthy. On air quality alert days, it is advised that people avoid strenuous outdoor activity and stay away from local sources of air pollution, like busy roads and wood fires. People with breathing problems should also have their relief/rescue inhaler with them.

Patients may have questions about the value of commercially available, sometimes costly, indoor air filters or personal/wearable air purifiers. A recent study of senior citizens in Detroit demonstrated significant reduction in PM2.5 exposure using commercially available portable air filters, but the long-term health benefits of such devices have not been adequately studied. In some

FIGURE 4
Minnesota Pollution Control Agency’s Air Quality Index (AQI) categories. Each color represents an AQI range and corresponding level of human health concern.

Air Quality Index (AQI) Values	Levels of Health Concern	Colors
<i>When the AQI is in this range:</i>	<i>..air quality conditions are:</i>	<i>...as symbolized by this color:</i>
0 to 50	Good	Green
51 to 100	Moderate	Yellow
101 to 150	Unhealthy for Sensitive Groups	Orange
151 to 200	Unhealthy	Red
201 to 300	Very Unhealthy	Purple
301 to 500	Hazardous	Maroon

Outdoor air quality and health

(continued from page 37)

circumstances, N95 (filters at least 95 percent of airborne particles) and N99 (filters at least 99 percent of airborne particles) National Institute for Occupational Safety and Health-approved particulate-filtering face-piece respirators can filter out PM pollution of 0.1–0.3 μm and larger (but are not effective against ozone and other gases such as SO₂). These devices may be options for vulnerable patients during known exposures, such as smoke from wildfires, but need to be fitted correctly to be health-protective. Discussing these strategies can help patients find ways to stay healthy on poor air quality days.

Summary

Physicians and state agencies can work together to improve Minnesota’s air quality and protect the health of Minnesota’s citizens. While air quality throughout Minnesota generally meets EPA’s NAAQS and there are fewer unhealthy air days compared to other states, those who are sensitive to air pollution know it only takes one day with unhealthy air to feel an impact. Air pollution is associated with acute as well as chronic health effects, including stroke, heart attack, other cardiovascular events and cardio-metabolic conditions and cancer. The new MPCA AQI forecasting program puts Minnesota ahead of the curve by providing easy to understand air quality and health information at our fingertips. Patients and their physicians can use this program to educate themselves and their communities to reduce exposure to unhealthy air and protect their health. Exposure to outdoor air pollution is a modifiable risk factor for cardiovascular and other diseases. **MM**

Kristen Kellock, PhD, is a research scientist in the Environmental Impacts Analysis Unit of the Minnesota Department of Health. Emily Onello, MD, is assistant professor in the Department of Family Medicine and Biobehavioral Health at the University of Minnesota Medical School-

Extreme heat

Who’s at highest risk?

This project is a collaboration of the Minnesota Department of Health and Wisconsin Department of Health Services. Lead investigators were Tess Konen, MPH, Minnesota Department of Health, and Paul D. Cresswell, PhD, Wisconsin Department of Health Services.

Extreme heat events in Minnesota and Wisconsin are already occurring and are expected to become more common, more severe, and longer lasting as our climate changes. Extreme heat causes entirely preventable illness and death.

For years, staff in the Minnesota and Wisconsin Environmental Public Health Tracking programs used similar messaging about how older adults, infants and people with chronic health conditions—particularly in urban areas—were more likely to suffer from heat-related illness. Anecdotally, our programs started noticing more cases of heat-related illness outside of these populations.

Our states teamed up to build a more robust dataset to better understand who is most impacted by extreme heat. Because Minnesota and Wisconsin have similar climates, populations and patterns of heat-related illness, we decided to combine our data and work together to assess current trends and patterns.

What we did

In 2017, our state Environmental Public Health Tracking programs began discussing heat-related illness and how to frame an analysis. We decided to base the analysis on the following data:

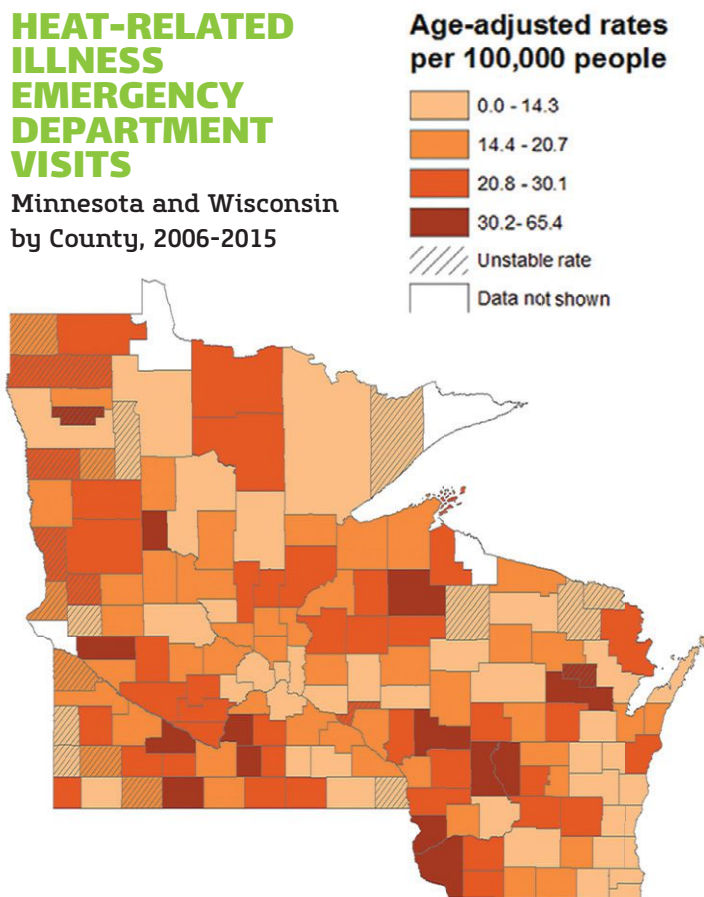
Emergency department data. Any Minnesota or Wisconsin resident who went to the emergency department for heat-related illness during warm weather months (May–September) 2006–

2015 was included in the analysis. Veteran’s Administration and Indian Health Services hospitals were not included in the analysis.

Risk factor data. Staff pulled data on known risk factors for heat-related illness, such as being an older adult or living in poverty. In total, we assessed 17 county-level variables linked to heat-related illness.

HEAT-RELATED ILLNESS EMERGENCY DEPARTMENT VISITS

Minnesota and Wisconsin by County, 2006–2015



Duluth. Kristin Raad, MLA, MPH, is Minnesota Climate and Health Program director for the Minnesota Department of Health.

REFERENCES

Ailshire JA, Crimmins EM. Fine particulate matter air pollution and cognitive function among older U.S. adults. *Amer Jour of Epidemiology*. 2014; 180(4); 359-366. <https://doi.org/10.1038/s41370-018-0085-2>

<https://www.epa.gov/criteria-air-pollutants/naaqs-table>

Franklin B et al. Air pollution and cardiovascular disease. *Current Prob Cardio*. 2015; 40(May);217-238.

<http://www.lung.org/our-initiatives/healthy-air/sota/city-rankings/states/minnesota/>

Kaufman J. et al. Association between air pollution and coronary artery calcification within six metropolitan areas in the USA (the Multi-Ethnic Study of Atherosclerosis and Air Pollution): a longitudinal cohort study. *Lancet*. 2016; (388);696-704.

Lee SL et al. Association between air pollution and asthma admission among children in Hong Kong. 2006 *Clinical & Experimental Allergy*. 2006; 36(9); 1138-1146.

Maestas M. et al. Reduction of personal PM2.5 exposure via indoor air filtrations

systems in Detroit: an intervention study. *Journ Exposure Sci & Environmental Epidem*. 2018;Nov.

Mills N. et al. Adverse cardiovascular effects of air pollution. *Nature Clin Prac Cardio Med*. 2009; 6(1);36-44.

https://apps.health.state.mn.us/mndata/asthma_hosp

MPCA, MDH. Life and breath report: how air pollution affects public health in the Twin Cities. 2015; July.

<https://www.pca.state.mn.us/air/current-condition-details>

Raaschou-Nielsen O et al. Air pollution and lung cancer incidence in 17 European cohorts: prospective analyses from the European Study of Cohorts for Air Pollution Effects (ESCAPE). *Lancet Oncol*. 2013; 14(9);813-822.

Rajagopalan S, Brook RD. Air pollution and type 2 diabetes: mechanistic insights. *Diabetes*. 2012; 61;3037-45.

Shi L et al. Low-concentration PM2.5 and mortality: estimating acute and chronic effects in a population-based study. *Environmental Health Perspectives*. 2016; 124(1): 46-52. DOI: 10.1289/ehp.1409111. Epub 2015 Jun 3.

<http://www.startribune.com/wildfire-smoke-prompts-air-quality-alert-across-minnesota/490594781/>

Wellbery C, Sarfaty M. The health hazards of air pollution—implications for your patients. *Amer Fam Phys*. 2007; 95(3);146-8

With the emergency department data, we ran several statistical tests to measure differences among age, sex, insurance status, county and month and year of admission. We assessed patterns of correlation to see which risk factors were associated with heat-related illnesses.

These county-level risk factors included urban and rural designations, climate regions, percent of elderly population living alone, people below the 185-percent poverty threshold, percent of population with limited English proficiency and occupation.

What we learned

People ages 15–34 are most likely to visit the emergency department for heat-related illness. While messaging often focuses on the very young and the very old, in our states, a younger age group was more likely to report to the emergency department for being sick from the heat.

Men are more likely to visit the emergency department for heat-related illness than women. Men were about twice as likely as women to report to the emergency department with heat-related illness. We don't know precisely why this is, but it could be related to specific occupations. In Wisconsin, heat illness was related to workers' compensation payments, but this wasn't true for Minnesota. This is likely related to differences in reporting by health care providers in each state, but more research is needed.

For more information

- + **Extreme heat toolkit** <https://www.health.state.mn.us/communities/environment/climate/docs/mnextremeheattoolkit.pdf>
- + **Heat-related illness data** <https://data.web.health.state.mn.us/heat>
- + **Health and Climate Change training module series** <https://www.youtube.com/watch?v=I3LmhJdF2cM&feature=youtu.be&list=PLnv1INVKmxxmvgeSWcbXwlWJarnAqx5GAw>
- + **Extreme heat tips** https://www.health.state.mn.us/communities/environment/climate/docs/heattips_eng.pdf

Counties with a higher heat index generally had more cases of heat-related illness. When we looked at the average maximum heat index in a county, we found more cases of heat-related illness. It makes sense that the hotter it is, the more people get sick from the heat.

For counties as a whole, heat-related illness rates are significantly higher in rural areas than in metropolitan areas.

In the past, we have specifically mentioned urban areas as areas at increased risk due in part to the urban heat island effect, when concrete and asphalt in cities absorb and hold heat and can increase temperatures. While age-adjusted rates were lower for urban counties in both states, sub-county data (e.g., zip code data) were not included in our analysis; pockets within a county could have more cases of heat-related illness.

What's next?

Together, the Minnesota and Wisconsin Tracking programs will work with our

Climate and Health Programs to build on our understanding of extreme heat. We will use these findings to tailor messages for specific audiences on websites, in videos, at festivals and in print materials. We still have to be concerned about the elderly and the very young during intense periods of heat, but our data show that there are other populations that may need to be informed of their risk. Our programs will continue to find new ways to proactively protect the health of these at-risk groups. **MM**



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Impact of patients' primary language on stage of cancer at diagnosis

BY MARIYA E. SKUBE, MD, MPH; BRUCE H. ALEXANDER, PHD; GREG J. BEILMAN, MD; AND TODD M. TUTTLE, MD, MS

Non-English language (NEL) patients have been identified to have worse health outcomes and care utilization patterns compared to English-speaking patients. The objective of this study was to investigate if a patient's primary language impacts the stage of cancer at the time of diagnosis. A retrospective review of the Minnesota Cancer Surveillance System's database was conducted with incorporation of language data from an integrated health system's data repository. Adult patients with cancer of the breast, colon and rectum, female genital system, male genital system, or respiratory system were included, and cancer stage at diagnosis was grouped as early (stages 0-2) or advanced (stages 3-4). Statistical analysis involved two-sided chi square tests of independence and multiple logistic regression modeling. From a cohort of 13,245 cancer patients spanning the years 1991-2017, 311 (2.3%) were NEL. Thirty-six percent of NEL individuals were diagnosed at an advanced stage compared to 25.8% of English speakers ($P < 0.001$; OR 1.62 [95% CI 1.27-2.04]). Analysis by site of cancer revealed that NEL patients with a male genital system cancer were 2.58 times more likely to be diagnosed at an advanced stage (95% CI 1.03-5.60; $P = 0.022$). NEL, male gender, and more recent year of diagnosis were significant predictors of advanced stage diagnosis in the logistic regression model. NEL patients are at risk of being diagnosed with cancer at a more advanced stage compared to English speakers. The NEL population warrants unique attention when it comes to cancer detection initiatives, and further study is warranted to delineate associated factors.

Introduction

In the United States, approximately 8.5% of the population or 25 million individuals have limited English proficiency.¹ This population faces unique challenges in many aspects of daily life, and successfully interfacing with the American health care system can be a particular struggle. This reality demands that the health care community seek to better understand how health equity is affected by language preference.

Patients with a non-English language (NEL) preference have been identified to fall behind their English-speaking counterparts in a number of measures of health, including asthma control, diabetes care, and hypertension management.²⁻⁵ NEL preference has been implicated in con-

cerning health utilization patterns such as higher risk of readmission to the hospital and early emergency department return visits.⁶⁻⁸

Cancer care is not immune to the effect of language preference on the provision and use of key services. NEL patients have been found to have decreased rates of cancer screening compared to English-speaking patients.^{2,9,10} The diagnosis of cancer at later stages generally portends a worse prognosis, so these findings may have troubling repercussions on cancer mortality for NEL individuals in the United States.

Previous studies have demonstrated that demographic characteristics such as race and socioeconomic characteristics can lead to delayed cancer diagnosis, but the impact

of language preference has not been well studied.¹¹⁻¹³ The objective of this study was to investigate the impact of a patient's primary spoken language on the stage of cancer at the time of initial diagnosis. We hypothesized that the cancer stage would be more advanced in patients with an NEL preference.

Methods

After approval by the University of Minnesota's Institutional Review Board, a retrospective observational study was performed involving secondary analysis of existing data. Data were obtained from the Minnesota Cancer Surveillance System (MCSS). The State of Minnesota has mandated the reporting of new cancer diagnoses to the MCSS since 1988, in accordance

TABLE 1

Characteristics of all patients including non-English and English subgroups

	Total (n=13,245)	Non-English (n=311)	English (n=12,934)
Age at diagnosis	61.5 ± 12.9	58.4 ± 14.4	61.6 ± 12.9
Young adult (18-24 years)	42 (0.3)	3 (1.0)	39 (0.3)
Adult (25-64 years)	7492 (56.6)	192 (61.7)	7300 (55.1)
Mature adult (>65 years)	5711 (43.1)	116 (37.3)	5595 (42.2)
Cancer site			
Breast	3974 (30.0)	79 (25.4)	3895 (30.1)
Colon and rectum	1280 (9.7)	41 (13.2)	1239 (9.6)
Female genital system	2193 (16.6)	87 (28.0)	2106 (16.3)
Male genital system	3391 (25.6)	39 (12.5)	3352 (25.9)
Respiratory system	2407 (18.2)	65 (20.9)	2342 (18.1)
Gender			
Female	7974 (60.2)	205 (65.9)	7769 (60.1)
Male	5271 (39.8)	106 (34.1)	5165 (39.9)
Year of diagnosis			
1990s	824 (6.2)	3 (1.0)	821 (6.3)
2000s	3465 (25.8)	60 (19.3)	3405 (26.3)
2010s	8956 (67.6)	248 (79.7)	8708 (67.3)

Data presented as mean ± standard deviation or n (%).

with standards set forth by the North American Association of Central Cancer Registries. Variables acquired from the MCSS included 1) age at diagnosis, 2) gender, 3) year of diagnosis, 4) site of cancer, and 5) clinical stage at diagnosis. As MCSS does not include a patient language variable, language data were acquired by interfacing the MCSS patients with the Clinical Data Repository (CDR) of an integrated health care system (Fairview Health Services), which includes both community and academic institutions. The patients' self-reported primary languages were abstracted from the CDR.

The study's primary outcome, or dependent variable, was the stage of cancer at the time of diagnosis. Stage of cancer was grouped into "early" (stages 0 through 2) and "advanced" (stages 3 and 4) based on clinical staging. Adult patients (over 17 years old) with one of the following

sites of cancer were included: breast, colon and rectum, female genital system, male genital system, and respiratory system. These five sites were selected because they represent the most common cancers in the United States and because most have established screening recommendations in place. Patients were excluded if data were incomplete (i.e. no language data available, inadequate staging entries) and if the primary language was not a spoken language (i.e. American Sign Language). If the patient had multiple entries in the MCSS for more than one cancer diagnosis, data only from the first cancer diagnosis were utilized.

Statistical analysis

For descriptive statistics, normally distributed data were summarized using mean and standard deviation (SD). Two-sided chi square test of independence was applied to compare characteristics of NEL and English language patients as well as stage of cancer (early versus advanced) based on language preference, and odds ratios (OR) with 95% confidence intervals

(CI) were calculated. Multiple logistic regression was employed to assess the impact of other demographic and situational variables—namely age, gender, and year of diagnosis—in addition to language on the stage of cancer at the time of diagnosis. Statistical significance was considered with an alpha level less than 0.05. Data analysis was conducted using SPSS Statistics 23 (IBM, Inc., Somers, NY) and the R statistical software package (R Foundation for Statistical Computing, Vienna, Austria).

Results

Demographics

A total of 13,245 individuals met the inclusion criteria: 7,924 women (60.2%) and 5,271 men (39.8%) with a mean age of 61.5 years ± 12.9 (Figure 1, Table 1). Years of diagnosis ranged from 1991 to 2017 with the greatest representation in the studied cohort being diagnosed in the current decade. Of the five included cancer sites, breast (n=3,974; 30.0%) and male genital system (n=3391; 25.6%) were the most common in the total cohort. For all five cancers, 72.9% (n=9,790) had an early stage diagnosis while 26.1% (n=3455) were diagnosed at an advanced stage.

Language and cancer stage

Three hundred and eleven patients (2.3%) had a non-English primary language compared to 12,934 (97.7%) with English as the primary language (Table 1). Women represented a greater proportion of the NEL population (n=205; 65.9%) compared to English-speaking patients (n=7769; 60.0%), and NEL patients were slightly younger on average (58.4 years ± 14.4) than English language patients (61.6 years ± 12.9). Thirty-one unique non-English languages were represented (Table 2) with the most common non-English languages being Spanish (n=60), Russian (n=44), and Vietnamese (n=37).

Thirty-six percent of NEL individuals were diagnosed at an advanced stage compared to 25.8% of English speakers (Table

3). This result was statistically significant ($P < 0.0001$) with NEL patients being 1.62 times more likely than English-speaking patients to be diagnosed at an advanced stage (95% CI 1.27-2.04). Examining the specific cancer sites included in this study, NEL patients with a male genital system cancer were 2.58 times more likely to be diagnosed at an advanced stage ($P = 0.02231$; 95% CI 1.03-5.60) (Figure 2). NEL patients with cancers of the breast, female genital system, and respiratory system were also more likely to be diagnosed at an advanced stage compared to their English language counterparts; however, the differences did not reach statistical significance. The only cancer site that showed increased odds—albeit not statistically significant—of advanced stage diagnosis in the English-speaking group compared to the NEL population was colon and rectal cancer.

Multiple logistic regression

The logistic regression model—with stage at diagnosis as the binary dependent variable (early versus advanced) and age, gender, language, and year of diagnosis as the independent variables—was statistically significant ($\chi^2(6) = 400.35$, $P < 0.001$). The regression analysis revealed that in addition to language, patient gender and year of diagnosis (categorized by decade) contributed significantly to the model in predicting advanced stage at diagnosis (Table 4). NEL patients were more likely ($P = 0.002$; OR 1.47 [1.16-1.86]) to be diagnosed at an advanced stage. Furthermore, men were more likely than women to be diagnosed at an advanced stage ($P = 0.024$; OR 1.10 [1.01-1.19]), and more recent year of diagnosis was associated with an increased likelihood of advanced stage diagnosis. Patients diagnosed in the 2000s ($P < 0.001$; OR 1.86 [1.46-2.38]) and 2010s ($P = 0.001$; OR 3.98 [3.16-5.01]) were more likely to be diagnosed at an advanced stage than patients diagnosed in the 1990s.

The overall age variable (categorized as young adult [18-24 years], adult [25-64 years], and mature adult [>65 years]) did not contribute significantly to the regres-

sion model ($P = 0.063$) however there was a significant intra-category comparison. Adults ($P = 0.05$; OR 0.53 [0.28-1.0]) and mature adults ($P = 0.074$; OR 0.56 [0.29-1.06]) were less likely than young adults to be diagnosed with cancer at an advanced stage.

TABLE 2

Specific primary languages

	N	%
English	12934	97.7%
Non-English	311	2.3%
Amharic	6	1.9%
Arabic*	16	5.1%
Bengali	1	0.3%
Bosnian	1	0.3%
Bulgarian	1	0.3%
Central Khmer	13	4.2%
Chinese*	26	8.4%
Gujarati	3	1.0%
Hmong*	16	5.1%
Indonesian	1	0.3%
Italian	1	0.3%
Japanese	3	1.0%
Javanese	1	0.3%
Karen languages	1	0.3%
Korean	8	2.6%
Lao	10	3.2%
Lithuanian	1	0.3%
Nepali	2	0.6%
Oromo	5	1.6%
Other	14	4.5%
Panjabi; Punjabi	1	0.3%
Persian	3	1.0%
Polish	1	0.3%
Portuguese	1	0.3%
Romanian	1	0.3%
Russian*	44	14.1%
Somali*	30	9.6%
Spanish; Castilian*	60	19.3%
Tagalog	1	0.3%
Tigrinya	1	0.3%
Turkish	1	0.3%
Vietnamese*	37	11.9%

*Languages spoken by at least 5% of the non-English language population.

Discussion

This retrospective analysis of the diagnosis of cancer in Minnesota yielded a few key findings. Overall, for the five examined cancers, NEL patients were diagnosed at an advanced stage more frequently than English language patients. Language remained a significant factor in regression analysis as well. This finding adds to the growing body of literature highlighting the importance of a patient's preferred language on health outcomes. In regard to cancer diagnosis, the association of advanced stage diagnosis with worse prognosis is particularly disconcerting in light of our study's main finding. Both patient care and public health initiatives must incorporate strategies to address the disparities present secondary to the socioeconomic determinants of healthcare, including a patient's language. A recent publication by Genoff et al. (2016) reviewed studies involving interventions related to cancer screening for NEL patients based on the "patient navigator" model and found that targeted interventions were able to increase screening rates in this patient population. Such models should be considered when planning and providing care for NEL patients. It must be acknowledged that the health outcomes of the various language groups (i.e. Spanish versus Somali) are impacted to varying degrees. For example, Minnesota's annual Health Equity of Care Report reveals that patients with a NEL preference frequently fall behind on various measures of adequate healthcare, such as optimal diabetes care and colorectal cancer screening.² The trends, however, vary by preferred language. Although our study is not powered to analyze each language independently, it will be important

TABLE 3

Comparison of early and advanced cancer diagnosis by primary language category

	EARLY STAGE (N=9790)	ADVANCED STAGE (N=3455)	P	OR	95% CI
All cancers			<0.001	1.62	1.27-2.04
Non-English (n=311)	199 (64.0)	112 (36.0)			
English (n=12934)	9591 (74.2)	3343 (25.8)			
Cancer site					
Breast (n=3974)	3537 (89.0)	437 (11.0)	0.117	1.63	0.85-2.88
Non-English	66 (83.5)	13 (16.5)			
English	3471 (89.1)	424 (10.9)			
Colon and rectum (n=1280)	600 (46.9)	680 (53.1)	0.376	0.76	0.40-1.42
Non-English	22 (53.7)	19 (46.3)			
English	578 (46.7)	661 (53.3)			
Female genital system (n=2193)	1579 (72.0)	614 (28.0)	0.519	1.17	0.72-1.84
Non-English	60 (69.0)	27 (31.0)			
English	1519 (72.1)	587 (27.9)			
Male genital system (n=3391)	3118 (91.9)	273 (8.1)	0.022	2.58	1.03-5.60
Non-English	32 (82.1)	7 (17.9)			
English	3086 (92.1)	266 (7.9)			
Respiratory system (n=2407)	956 (39.7)	1451 (60.3)	0.080	1.61	0.95-2.83
Non-English	19 (29.2)	46 (70.8)			
English	937 (40.0)	1405 (60.0)			

Data presented as n (%). OR, odds ratio. CI, confidence interval.

for future work to appreciate and to investigate differences among the various non-English languages.

Secondly, our data show that stage at diagnosis stratified by language preference varies based on the site of cancer. For example, we found that 18% of NEL patients diagnosed with a male genital system cancer had an advanced stage at diagnosis compared to 8% of English speakers. This is a particularly interesting finding in light of the significance of gender in the regression model with male patients having an increased likelihood of advanced diagnosis. NEL male patients may be especially at-risk of a late cancer diagnosis.

A surprising finding in our study was that cancer was more likely to be diagnosed at an advanced stage in more recent years. Advanced stage diagnoses increased from 10% of the cohort in the 1990s to 18% in the 2000s to 31% in the 2010s. A closer examination of our patient cohort reveals that English language patients followed a nearly identical trajectory (10% to 17% to 31%) while NEL patients displayed greater variation (33% to 27% to 38%) with each subsequent decade. A potential contributor to this finding is that clinical staging in more recent years may actually be better able to identify regionalized and metastatic disease compared to earlier decades due to improved diagnostic tools such as positron emission tomography and computed tomography. The full ex-

planation for this finding of increasing advanced stage diagnoses warrants further investigation.

Finally, our regression analysis found that other factors contribute to disparities in cancer diagnosis, namely gender and year of diagnosis. Factors not included in our analysis have been also implicated, including race, socioeconomic status, and insurance status.¹¹⁻¹⁶ Determining the most crucial factors remains challenging, however are a variety of patient characteristics play key roles. Addressing language inequity is a reasonable approach as there are a number of interventions that can potentially modify patient and clinician behavior (i.e. ensuring adequate interpreter services, providing NEL patients with patient navigators, marketing screening campaigns to NEL populations).

This study is subject to a number of limitations. Although reporting of new cancer diagnosis to the MCCS is mandatory, some new cancer diagnoses will inevitably be missed. Also, as MCCS does not include a primary language variable, patient language had to be acquired from a secondary source (Fairview Health Services CDR). This limits the patient cohort to those with contact with this health system; the entire Minnesota population is not represented. Fairview Health Services serves a wide variety of patients including rural and urban populations across the state in both community-based and academic-affiliated centers, providing a reasonable cross-section of the population at large. The Minnesota experience may not be reflective of national trends; similar studies should be carried out at the national level. Additionally, defining a patient's language preference can be elusive. The variable within the CDR is based on patient self-reporting, but comprehension of English even with a self-reported preferred NEL population is wide-ranging.

Language preference or reported primary language is not necessarily equivalent to facility with English. Given that just over 2% of our patient cohort was categorized as NEL, some of the subgroup analyses have low sample sizes and so may be underpowered to detect true differences. There also are patient characteristics not able to be assessed in the current study that also play a role in health-seeking behaviors and may contribute to advanced stage diagnosis, such as income and insurance status.

Conclusions

NEL patients are at risk of being diagnosed with cancer at a more advanced stage than are English speakers, which can impact ultimate disease prognosis. The NEL population warrants unique attention when it comes to cancer detection initiatives. A number of overlapping patient characteristics also may influence advanced stage diagnosis, so further study is warranted to delineate associated and contributing factors. Health disparities secondary to language preference must be accounted for while planning and implementing the care of patients. **MM**

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TABLE 4

Multiple logistic regression model

	EARLY STAGE (N=9790)	ADVANCED STAGE (N=3455)	P	OR	95% CI
Age at diagnosis					
Young adult (18-24 years)	26 (61.9)	16 (38.1)	0.063	Reference	--
Adult (25-64 years)	5592 (74.6)	1900 (25.4)	0.050	0.53	0.28-1.00
Mature adult (>65 years)	4172 (73.1)	1539 (26.9)	0.074	0.56	0.29-1.06
Gender					
Female	5886 (73.8)	2088 (26.2)	--	Reference	--
Male	3904 (74.1)	1367 (25.9)	0.024	1.10	1.01-1.19
Language					
English	9591 (74.2)	3343 (25.8)	--	Reference	--
Non-English	199 (64.0)	112 (36.0)	0.002	1.47	1.16-1.86
Year of diagnosis					
1990s	740 (89.8)	84 (10.2)	<0.001	Reference	--
2000s	2860 (82.5)	605 (17.5)	<0.001	1.86	1.46-2.38
2010s	6190 (69.1)	2766 (30.9)	<0.001	3.98	3.16-5.01

Data presented as n (%). OR, odds ratio. CI, confidence interval.

REFERENCES

- United States Census Bureau. Language Spoken at Home. 2016; <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>. Accessed January 18, 2018.
- Minnesota Community Measurement. Health Equity of Care Report. 2017. <http://mncm.org/health-equity-of-care-report/>. Accessed January 19, 2018.
- Jang Y, Yoon H, Park NS, Chiriboga DA. Health Vulnerability of Immigrants with Limited English Proficiency: A Study of Older Korean Americans. *J Am Geriatr Soc*. 2016;64(7):1498-1502.
- Kim EJ, Kim T, Paasche-Orlow MK, Rose AJ, Hanchate AD. Disparities in Hypertension Associated with Limited English Proficiency. *J Gen Intern Med*. 2017;32(6):632-639.
- Njeru JW, Boehm DH, Jacobson DJ, et al. Diabetes Outcome and Process Measures Among Patients Who Require Language Interpreter Services in Minnesota Primary Care Practices. *J Community Health*. 2017;42(4):819-825.
- Karliner LS, Kim SE, Meltzer DO, Auerbach AD. Influence of language barriers on outcomes of hospital care for general medicine inpatients. *J Hosp Med*. 2010;5(5):276-282.
- Ngai KM, Grudzen CR, Lee R, Tong VY, Richardson LD, Fernandez A. The Association Between Limited English Proficiency and Unplanned Emergency Department Revisit Within 72 Hours. *Ann Emerg Med*. 2016;68(2):213-221.
- Njeru JW, St Sauver JL, Jacobson DJ, et al. Emergency department and inpatient health care utilization among patients who require interpreter services. *BMC Health Serv Res*. 2015;15:214.
- Jacobs EA, Karavolos K, Rathouz PJ, Ferris TG, Powell LH. Limited English proficiency and breast and cervical cancer screening in a multiethnic population. *Am J Public Health*. 2005;95(8):1410-1416.
- Brenner AT, Ko LK, Janz N, Gupta S, Inadomi J. Race/Ethnicity and Primary Language: Health Beliefs about Colorectal Cancer Screening in a Diverse, Low-Income Population. *J Health Care Poor Underserved*. 2015;26(3):824-838.
- Zhan FB, Lin Y. Racial/Ethnic, socioeconomic, and geographic disparities of cervical cancer advanced-stage diagnosis in Texas. *Womens Health Issues*. 2014;24(5):519-527.
- Risser DR, Miller EA. Cancer in relation to socioeconomic status: stage at diagnosis in Texas, 2004-2008. *South Med J*. 2012;105(10):508-512.
- Weiner AB, Keeter MK, Manjunath A, Meeks JJ. Discrepancies in staging, treatment, and delays to treatment may explain disparities in bladder cancer outcomes: An update from the National Cancer Data Base (2004-2013). *Urol Oncol*. 2018.
- Lukavsky R, Sariego J. Insurance status effects on stage of diagnosis and surgical options used in the treatment of breast cancer. *South Med J*. 2015;108(5):258-261.
- Walker GV, Grant SR, Guadagnolo BA, et al. Disparities in stage at diagnosis, treatment, and survival in nonelderly adult patients with cancer according to insurance status. *J Clin Oncol*. 2014;32(28):3118-3125.
- Robbins AS, Lerro CC, Barr RD. Insurance status and distant-stage disease at diagnosis among adolescent and young adult patients with cancer aged 15 to 39 years: National Cancer Data Base, 2004 through 2010. *Cancer*. 2014;120(8):1212-1219.

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ROBERT SLOAN, MD

- Veterans traumatic brain injury evaluator.
- LHI, Eagan.
- Assistant professor of Medicine at the University of Minnesota and the University of Hawaii.
- World Championship Ringside Physician, physician for the U.S. Olympic Training Center and for the Winter Olympics and Paralympics.
- MMA member since 2016.
- Hometown is Honolulu. Studied nutrition at the University of Hawaii, biology and religious studies at the University of California and physiology at San Jose State University in California. Graduated from University of California-Davis Medical School. Interned in surgery at Santa Barbara Cottage Hospital. Residency at University of California-Davis. Has worked at Kaiser Hospital in Sacramento, Calif., every hospital on every island in Hawaii, Palm Springs Desert Regional Hospital, Hennepin County Medical Center and LHI.
- Wife Misako, three daughters, four sons, three grandchildren and Milo the dog.
- Member of the Waikiki Acrobatic Troupe for 40 years, where he also enjoyed tandem surfing—"and I still miss it."

Became a physician because ...

After studies in nutrition and physiology, I knew that I needed more tools to help people with their health needs. Medicine was the next logical step.

Greatest challenge facing medicine today ...

The cost of medical care.

Favorite fictional physician ...

Marcus Welby, MD, a caring, competent, experienced general practitioner who provided whole patient care.



If I weren't a physician ...

I'd be a wilderness tour guide and interpreter because I love nature.

LAURA RATHE, MD

- Internal medicine and certified diabetes educator.
- Central Lakes Physicians, Crosby.
- MMA member since 2012.
- Grew up in Waverly, Iowa, where her father and grandfather practiced medicine and her brother and sister practice today. Her mother was Waverly's first female mayor. Graduated from Wartburg College, graduate studies in biochemistry at the University of Minnesota, then University of Minnesota Medical School. Residency in internal medicine at Emanuel Hospital in Portland, Ore. Had a solo practice in Craig, Colo. for 11 years, then worked at the Billings Clinic in Billings, Mont. Moved to Minnesota in 2012.
- Daughter is a paralegal and an artist. Son died in 2018 of a drug overdose, leaving two sons (one shown biking with Rathe).



Became a physician because ...

I grew up in the clinic of my father and grandfather (founded by the physician that was my grandfather's childhood mentor and eventually partner—for a great read, see his autobiography gmd.rathe.org), going on house calls and nursing home visits and watching my father interact with people on the street on a daily basis. I initially did not want to practice medicine but loved science and interacting with people so after a while it seemed the obvious thing to do. Some of my most satisfying moments in practice have been doing things that I recall watching my father do: removing a fish hook with needle-nosed pliers on a neighbor's front steps, drilling a friend's subungual hematoma at my

kitchen table with a candle and a paper clip, writing notes back and forth with a deaf young man.

Greatest challenge facing medicine today ...

We have stopped focusing on things that make people's lives and health better (food, safety, education, a living wage, social services); much of what we do is focused on money and billing. The majority of a primary care physician's day feels like it is spent clicking boxes and filling out paper work in an attempt to get things paid for for people and trying to figure out why they are not. It seems we do very little of what we wanted and were trained to do.

Favorite fictional physician ...

Dr. Leonard H. McCoy, right?

If I weren't a physician ...

I might be a physical, occupational or speech therapist. They do things every day that improve people's lives in very concrete ways.

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