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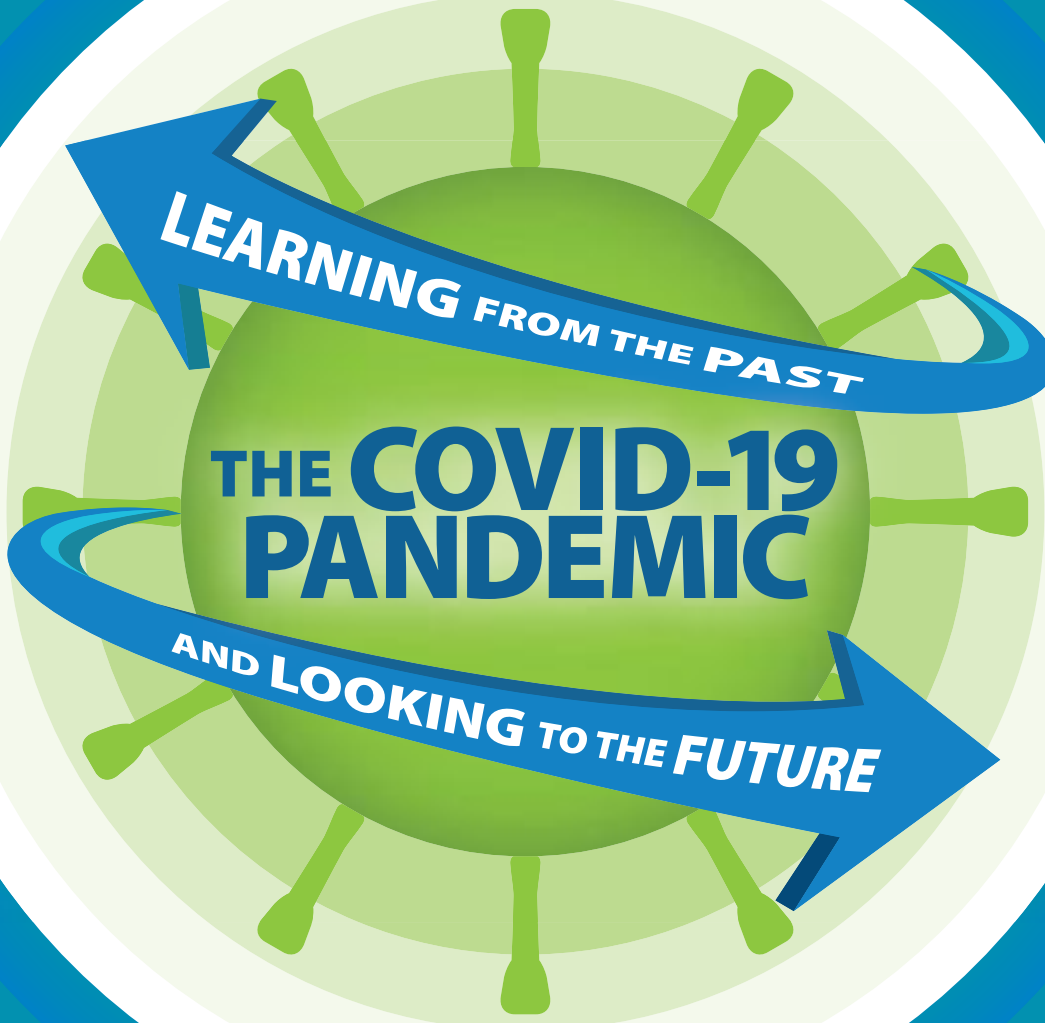

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This issue of Minnesota Medicine *introduces a new regular department, Health Equity. Health disparities are part of many articles in the magazine, but we want to particularly highlight new and ongoing efforts to provide healthcare more equitably.*

If you have suggestions, send them to lpicone@mnmed.org.

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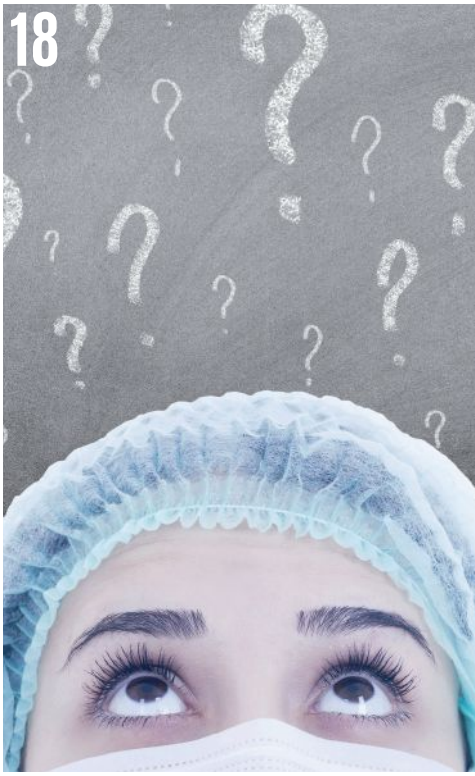
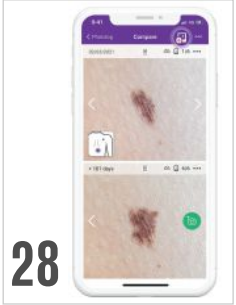
FEATURES



CORRECTION

Some information about Sharonne N. Hayes, MD, cardiologist and professor of medicine at Mayo Clinic, was incorrect in the July/August issue of *Minnesota Medicine*. She became a cardiologist in 1990 and is the former director of diversity and inclusion for Mayo. Her published comment about the pay gap between male and female physicians lacked context. The full quote is: "While we've examined gender pay equity for physicians at Mayo and, fortunately, found no compensation gaps, I know from talking to colleagues across the country that it's really erosive when you find out that someone you work next to is making $50,000 more than you do and has for the past 10 years."

DEPARTMENTS



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Chris Wenner, MD

Physicians can and should lead a movement to control firearms—and so, firearm deaths

[Firearm-induced injury] is a medical problem. Within this epidemic, our patients—our children—are dying not because of a novel virus or a mutated gene. Rather, they are dying as a result of insufficient preventive medicine.

In case you missed it:

Firearm-related injuries are now the leading cause of death for U.S. children.

According to the Centers for Disease Control and Prevention, 10,186 (10.28 per 100,000) youth in our country died in 2020 as a result of a firearm-induced injury. This is up from 7.3 per 100,000 in 2000 and it has eclipsed the prior leading cause of death for our youth: motor vehicle crashes.

This indelible societal stain, political failure, and disease unique to our country is a medical problem. Within this epidemic, our patients—our children—are dying not because of a novel virus or a mutated gene. Rather, they are dying as a result of insufficient preventive medicine.

The time is now to be medical pioneers: We need to be the collective Salk and Sabin.

Anachronistic federal filibuster laws largely block any top-down slowing of this tragedy playing out before us. Hence, the reversal of course needs to begin at the state level, which affords each one of us the opportunity to be at the vanguard of this healing movement. It also requires each one of us to act, to do our part, lest we are lumped with less favorable cohorts in the annals of medicine.

MEDPAC is working to elect state legislators interested in enacting meaningful firearm safety legislation, however, many lawmakers remain unmotivated in enacting common-sense gun laws. Our job is to educate our state representatives and senators and help them understand that they, too, have the capacity and obligation to enact change.

We need to call, email, text, and otherwise cajole our state senators and representatives (https://www.gis.lcc.mn.gov/iMaps/districts/) into recognizing the following points. These items have been vetted by the MMA and long advocated as the most effective tools to enact change. Without equivocation, our legislators need to hear:

- **Firearm-related injuries are now the leading cause of death for U.S. children.**
- Minnesota needs universal background checks on all gun sales.
- Minnesota needs "red flag" laws—allowing for temporary removal of firearms from individuals deemed to be a threat to themselves or others.
- Minnesota needs significant financial investment into public health research on firearm injury prevention.
- Minnesota needs enhanced awareness of the role of firearms in suicide.

The task at hand is challenging and, for many, daunting, but an opportunity to make a positive mark on medicine, a mark without ambiguity and aligned with the oath that we all have sworn. We must collectively work towards the day that we can reflect on our medical progress, a reversal of this horrific trend.

Firearm-related injuries are now the leading cause of death for U.S. children.

This is a preventable disease. The time to act is now. **MM**

Christopher J. Wenner, MD, is the founder of Christopher J. Wenner, MD, PA, an independent family medicine practice in Cold Spring. He is one of three medical editors for *Minnesota Medicine*.

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Cannabis use in Minnesota

Cautions and suggestions for change in cannabis statutes

BY MARIA K. POIRIER, MD

The use of cannabis for treatment of medical conditions is controversial because the demand for cannabis is outpacing evidence of efficacy. Minnesota's medical cannabis legislation was signed into law in 2014 and amended in 2021 to include smokable dried cannabis flower. Minnesota's medical cannabis program (MCP) began accruing patients in 2015. With the expansion of medical knowledge, what state legislators thought was true about medical cannabis in 2014 may not be true today.

The non-FDA-approved medical cannabis products available for purchase at Minnesota's licensed medical cannabis dispensaries are derived primarily from *Cannabis sativa* (marijuana or hemp) extracts or dried flower. These products contain variable concentrations of psychoactive THC, non-psychoactive CBD, and many other lesser known but chemically active cannabinoids. Cannabis delivery systems include vape oil, infused edibles, dried flower, topicals, and other oral products.

The newest cannabis delivery method, smokable dried flower, with THC concentrations ranging from 16% to 25%, varies in price from $35 to $70 for a 3.5-gram package and may last three days to three weeks, depending on use. According to a local medical cannabis dispensary employee, flower is popular because patients enjoy the olfactory experience of chopping and smoking the dried flower buds. Online advertising for cannabis flower, which is regulated by administrative rule making, is reminiscent of a bespoke cigar ad and is similar to recreational cannabis marketing language in states where recreational use is legal.

In 2018, the U.S. Farm Bill federally legalized cannabinoids derived from hemp, provided the delta-9 THC level was less than 0.3% of dry weight. In May, Gov. Tim Walz signed legislation that legalizes and regulates hemp-derived edible THC for adult recreational use. The edible products are limited to 5mg of any THC isomer (including delta-8, 9, or 10) in a single serving and no more than 50mg total THC per package. The Minnesota Board of Pharmacy is charged with regulating hemp-derived THC and its website answers frequently asked questions about the new law.

FDA-approved pharmaceutical cannabinoids have been available by prescription since 1985 (THC, dronabinol) and 2018 (CBD, Epidiolex). Dronabinol in the capsule form is a Schedule III drug approved for treatment of chemotherapy-induced nausea and vomiting and loss of appetite in AIDS patients. Highly purified plant-derived Epidiolex is a non-scheduled medication approved for rare forms of epilepsy.

Cannabis and chronic pain

The top two certifying medical conditions of the more than 37,000 currently active patients in Minnesota's MCP are chronic pain (62%) and intractable pain (46%). Patients suffering from chronic pain often ask whether medical cannabis will improve symptoms. Due to lack of high-quality clinical evidence and minimal efficacy, international pain experts either do not recommend medical cannabis for treatment of chronic pain or give a weak to very weak recommendation for a non-inhaled cannabis trial after failing standard evidence-based therapies.

Harm from using medical cannabis for management of chronic pain likely outweighs benefits. Australian researchers published a systematic review and meta-analysis evaluating cannabis efficacy for treatment of chronic non-cancer pain. Study findings estimated the following: If 24 patients with chronic pain are treated with medical cannabis, four will be harmed, one will benefit, and 19 will have no significant change in symptoms. The most common adverse events reported by patients receiving cannabinoids were dizziness, drowsiness, nausea, intoxication, and cognitive disturbance. While some patients using cannabis for chronic pain may report subjectively feeling better, medical cannabis taken orally for pain has not

been shown to improve functional roles at school, home, or work.

Cannabis and opioids

Given the continued elevated level of opioid overdose deaths, patients and their pain-management teams wonder if medical cannabis may have a potential opioid-sparing effect. An observational study found an association between legalizing cannabis for medical use and fewer long-term opioid prescriptions for younger adults. An Australian four-year cohort study following 1,514 patients living with chronic non-cancer pain who were prescribed opioids found no evidence that illicit cannabis use reduced opioid prescriptions or increased opioid discontinuation. While these observational studies encourage important discussions about medical cannabis for use in chronic pain, they do not answer questions regarding efficacy. The CDC warns there is no evidence that cannabis is an effective treatment for opioid use disorder and that using cannabis alone or in combination with opioids has been shown to increase risk of opioid misuse.

Cannabis Use Disorder and related problems

Using the 2012–2013 National Epidemiologic Survey on Alcohol and Related Conditions-III, researchers found that the frequency and duration of cannabis use (medical and/or recreational) are the primary risk factors for development of Cannabis Use Disorder (CUD). This condition is defined as a problematic pattern of cannabis use leading to clinically significant impairment or distress. Daily or near daily use of smokable cannabis over an extended period, independent of dose amount, leads to CUD in up to 50% of users. Quantity of cannabis consumed is a significant factor in developing cannabis-related problems, including CUD, motor vehicle collisions, psychiatric symptoms, and lower IQ and educational attainment. In this survey, any recreational cannabis use and CUD were more prevalent in respondents with pain than those without pain.

In a recent study, one in five newly certified medical cannabis card holders in Boston developed CUD within 12 weeks of entering the medical cannabis program, with no benefits found in reducing pain, anxiety, or depressive symptoms. Patients with mood symptoms were at higher risk for developing CUD. While a subset of medical cannabis users who use solely for medical indications may have a lower risk of developing CUD, most medical cannabis users also use recreationally.

The average age of Minnesota's MCP participants is 47. In a recent North American observational population study, the association between cannabis use frequency and CUD with psychosis and depression was consistent across all age groups. In a New Zealand longitudinal cohort study, middle-aged illicit multi-year cannabis users with at least weekly use showed a mean 5.5-point IQ decline compared to their childhood IQ. Cognitive deficits and smaller hippocampal volumes were found to be specific to long-term frequent cannabis use and could not be explained by persistent use of tobacco, alcohol, other substance use, or socioeconomic factors.

Patients suffering from chronic pain often ask whether medical cannabis will improve symptoms. Due to lack of high-quality clinical evidence and minimal efficacy, international pain experts either do not recommend medical cannabis for treatment of chronic pain or give a weak to very weak recommendation for a non-inhaled cannabis trial after failing standard evidence-based therapies.

Recommendations for changes in Minnesota's cannabis laws and regulations

Legislators and the public should be aware that frequent use of any THC isomer or dosage increases the risk of developing CUD and cannabis-related problems. Recreational THC opens a pipeline to the addiction-for-profit marijuana industry. Multiple cities have approved moratoriums temporarily banning the sale of hemp-derived recreational THC.

Since FDA-approved pharmaceutical cannabinoids are available by prescription, legislators should reflect on whether a compelling state interest still exists for Minnesota's medical cannabis program. The benefits of obtaining cannabinoids by prescription, rather than through the MCP or over the counter, include greater availability, potential insurance coverage, known safety and efficacy profile, and prescriber supervision of medication trials.

Pharmaceutical THC dronabinol is a generic medication. According to a Mayo Clinic Pharmacy cost estimate, the price of 30 2.5mg capsules is $175. For pharmaceutical CBD Epidiolex, a 100ml bottle costs $1,760. Prices may be substantially lower based on insurance coverage. Non-FDA-approved plant-derived CBD is available for purchase over the counter. Clinicians and patients should follow Mayo Clinic's Checklist for finding high-quality CBD, as multiple studies have demonstrated that most CBD products are mislabeled. Key components to finding high-quality products are looking for a Current Good Manufacturing Practices certification or EU equivalent, noting whether the company has an independent adverse event reporting program, labeling

indicating certified organic, and laboratory testing by batch to confirm THC <0.3%. CBD may cause liver injury, interact with other medications, and be associated with male infertility. Patients should be encouraged to discuss the risks and benefits of taking CBD or any non-FDA approved product with their healthcare provider.

While the debate over recreational THC and state-regulated medical cannabis continues at the state Capitol, I recommend the following improvements to Minnesota's MCP and the new law regulating recreational THC:

- Close the 2018 U.S. Farm Bill hemp-derived THC loophole. Repeal and amend the Minnesota statute regulating hemp with the goal to ban the manufacturing and sale of all hemp-derived THC isomers.
- Discontinue vape and smokable medical cannabis delivery systems. The only substances healthy for human inhalation are clean air and FDA-approved medication.
- Require MCP practitioners to screen patient applicants for moderate to severe depression and anxiety, psychosis, substance abuse including CUD, and pregnancy, if indicated. Require attestation to the absence of these conditions before patient certification and recertification.
- Require certified patients to attend a follow-up appointment with their healthcare practitioner three months after initiation into the MCP program to assess medical cannabis effectiveness and screen for CUD.
- Seek confirmation that cannabis is an effective treatment for a medical condition from appropriate medical organizations before the commissioner adds the condition to the qualifying condition list.
- Screen all patient participants for CUD immediately and offer treatment strategies if CUD is diagnosed. Medical cannabis program participants do not appear to have a lower risk of developing CUD as compared to recreational cannabis users.
- Annually publish adverse event data reported to cannabis manufacturers by healthcare practitioners or patients after redaction of identifying information.
- Tighten restrictions on marketing language that may be interpreted as promoting cannabis for non-medical indications and effects.

Australian researchers published a systematic review and meta-analysis evaluating cannabis efficacy for treatment of chronic non-cancer pain. Study findings estimated the following: If 24 patients with chronic pain are treated with medical cannabis, four will be harmed, one will benefit, and 19 will have no significant change in symptoms.

Reducing pain and improving function are important goals for patients. While chronic pain is the most common indication for MCP certification, international pain experts either do not recommend the use of medical cannabis for pain management or give a weak recommendation for use after standard therapies fail. Patients who experience pain relief from the MCP dispensary products may benefit from a prescription pharmaceutical cannabinoid trial under the supervision of their healthcare practitioner. More research is needed to understand the role of medical cannabis in healthcare and to find the best therapies for managing chronic and intractable pain while protecting patients and the public from harm. **MM**

Maria K. Poirier, MD, is assistant professor of Medicine, Division of General Internal Medicine, Section of Integrative Medicine and Health, Mayo Clinic.

The views expressed are the author's personal views, and do not necessarily reflect the policy or position of Mayo Clinic.

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Pickled Beets

(After Julianna Gray)

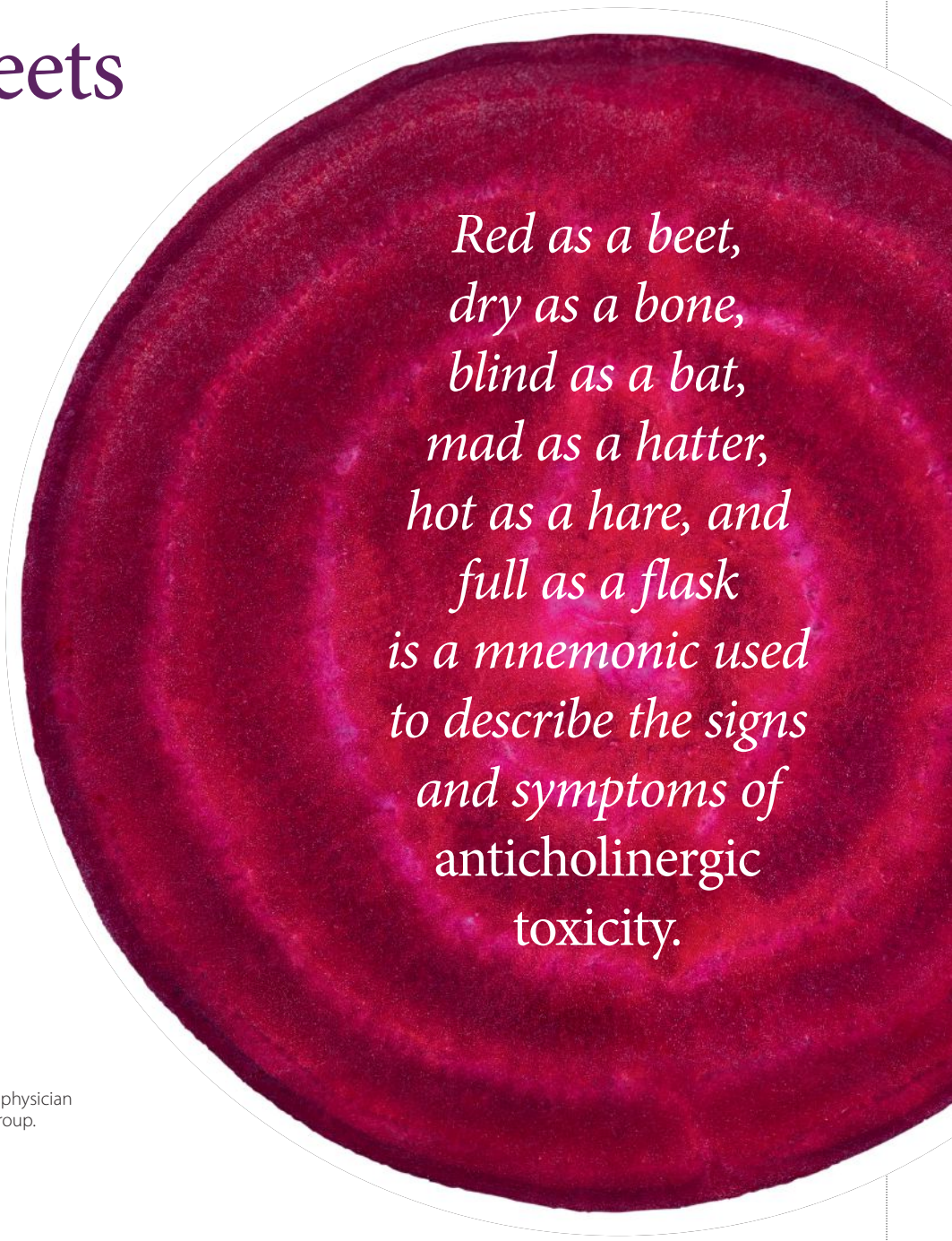
BY NANCY J. BAKER, MD

Who knew a pre-historic root
vegetable, loved or loathed
for smelling like wet dirt, was
a staple of Elizabethan tarts:
used to color lips and cheeks red
before it became fashionable
to link with delirium.

I relish pickling beets
and avoid staining my fingers
and nails with scarlet dye
by donning gloves as I cut
their stems. I wash and season
the orbs with salt and pepper,
drizzle with oil, roast until soft,
rub off their skin, slice, dice
and submerge each
in sugar and vinegar
with peppercorns.

Mercifully, it's pills
and plants, not beets,
that cause some to become
red as a beet and mad as a hatter,
not beets themselves,
that, when pickled,
almost always please.

Nancy J. Baker, MD, is a retired family medicine physician and a member of the Gang of Seven Writing Group.



Improving care for Somali patients with rheumatoid arthritis

A model for addressing healthcare inequality

BY PAVITHRA RAMAKRISHNAN, MS; MISSY FLEMING, PHD; ABDI MAHAMED, MBA; ANDREW FORSBERG, BA; AND PAUL H. WAYTZ, MD

"You can tell when there is a Somali patient in the room because you can smell their perfume outside the door."

"I didn't think she was going to take the medication because I couldn't promise her that it was going to work."

"It's not worth the expense of starting the medication because the patient won't be compliant."

These were real statements spoken to two of the authors by practicing physicians in Minneapolis who were caring for separate Somali patients. The concerns about these patients could extend to any underserved racial or ethnic group who have either found their way to this country or have otherwise been ignored or overlooked. Current experiences and thoughts underscore the need to remain mindful of omissions and offenses of the past. Efforts to erase bias and improve providers' cultural competency must be on the landscape of the present.

Implicit bias was raised as one of several barriers to the optimal evaluation and management of rheumatoid arthritis (RA) in Somali patients who were treated in a private practice setting in an earlier article we wrote, published in *Minnesota Medicine*. As part of that original evaluation from 2016, demographic data were gathered to catalog and analyze a variety of patient characteristics, as well as identify patterns of care. With the addition of 31 patients from the calendar year 2018, we are now able to reinforce and further address observations (Table 1).

Minnesota is home to the largest population of Somali people living outside of Somalia and Kenyan refugee camps. The majority of the current population, primarily living in the Twin Cities, continue to be refugees and immigrants who fled Somalia in the wake of the 1991 Civil War. However, there are now increasing numbers of second- and third-generation Somali who were born in Minnesota. Arthritis and Rheumatology Consultants is a private practice clinic in the metropolitan area, comprising 12 board-certified rheumatologists. Based on accepted rates of RA prevalence (1–1.5%), our study represents at least 10% of the estimated Somali RA population in the state.

The COVID-19 pandemic beginning in 2020 further magnified medical disparities among Black and Latino people in the United States, with increased numbers of deaths and hospitalizations compared to Caucasians. With these facts in mind, it is no wonder that Somali people—99% of whom practice Islam— of any age or with any diagnosis might have concerns about medical systems run by people who, for the most part, neither look like them nor share their beliefs. Primary care physicians, as well as those in a variety of subspecialty medical practices, provide chronic care based on training that fosters a fundamental mindset of long-term relationships and awareness of circumstances that goes well beyond the day-to-day.

Unfortunately, and for too many reasons, healthcare inequity exists. Bias of any kind may cross a line toward becoming systemic and dangerous. A logical place to start when exploring inequity in any specialty must be consideration of how a physician's thought patterns form a view of patients. If bias or barriers are part of that view, it can result in serious individual consequences.

Discussion

In spite of the introduction of remarkably safe and effective biologic medications almost 25 years ago, RA remains a serious chronic inflammatory disease that can lead to joint damage, impaired strength and mobility, and systemic morbidity. Early diagnosis and appropriate treatment optimize success, yet key to that success is patient trust and a respectful patient-physician relationship, given the long-term

nature of care. A patient's functional capacity within his or her social community, as well as that person's self-esteem, may be as important as control of inflammation.

The first generation of Somali in the United States, those who make up the majority of the group studied, are refugees who escaped war, famine, and poverty. Like similar groups who have had roots in exile, many have suffered emotional damage due to feelings of being unwanted and having been subjected to disrespect and discrimination. Migration robbed them of personal lives and stories; collective memories have been lost. A sense of self-worth, that underlying concept that anyone is just as human as anyone else, may be forgotten.

All patients in this study received standard rheumatologic medications up to the point of a surprising lack of biologic use (Table 2). Most patients did not receive nonsteroidal anti-inflammatory drugs (NSAID), likely explained by the older age of the cohort. Prednisone was used for the overwhelming majority in hopes of rapid control of inflammation. One can improbably speculate that there is something distinctive about a Somali patient with RA such that they do not progress to the point of needing biologic therapy. Longer follow-up will likely reveal evolving changes in prescribing practices or a better understanding of this current observation.

Attitudes generated by implicit bias may be as harmful as those created by explicit bias if choices are made that lead to poor or erroneous decisions. In part, these unconscious attitudes may stem from a lack of understanding of and appreciation for unfamiliar cultural beliefs and experiences. A caregiver may make omissions or form conclusions that lead to invalid or inaccurate assumptions. In the extreme, implicit bias can be a superimposed comorbidity that eventuates in substandard medical care.

Other existing attitudes and barriers can contribute to decreased credibility and result in patient distrust. Physicians who do not look like their patients may also lack a necessary appreciation of social issues, such as the physical and emotional history that brings someone to their office. We need empathy for a patient's current situation as refugees adapt to a new physical place to live, surrounded by a vastly different culture and a healthcare system unlike anything they have previously experienced.

Rheumatologists depend on personal stories—"the history"—for learning, understanding, and eventual decision-making. It is the personal storytelling of a refugee or immigrant that allows us to truly appreciate how much more there is than the length of morning stiffness or perceived presence of swelling. Similar considerations are necessary for any chronic disease and should guide how visits are conducted. We need to be attentive to the memories of displacement and not being respected, of having families separated, and of being marginalized. Being mindful of complicated background issues might well overcome certain barriers. To assume that a certain patient aspires toward the healthcare provider's lifestyle will be both unrewarding and detrimental. All patients teach us; with some, the lessons are more complicated.

Physicians must have an ongoing and heightened sense of awareness and empathy to recognize where a Somali—or any other refugee or immigrant patient—has come from and how they cope. We do not need to adjust our expectations in terms of results. It may take additional time, but by appreciating and showing understanding, long-term positive relationships can evolve. For a rheumatologist, management of RA is complicated enough; one can only imagine how it appears to someone who has been unwillingly displaced from their home and culture. For anyone involved with chronic care, it may be the physician in the relationship who most needs patience.

The statements at the beginning of this paper are startling and horrifying and often elicit the response, "I would never say that." But, if it occurred in your presence, what would you think, what would you have done, what could or should you do? If you don't want this to happen again how could you act?

Are visions of improvement in sight? Our investigation provides an opportunity to appraise a necessary racial and ethnic reckoning of inequity and disparity. These issues affect access to and delivery of care as much as any medication or procedure. In whatever way we define and evaluate positive and improved outcomes, a dynamic function exists that requires closer scrutiny within the context of an individual's social norms. Individual patient needs are vast. All physicians need to provide hope and cultivate trust, especially within a healthcare system that shortchanges the people who need it the most. We may recognize discrimination and disparity,

TABLE 1

Baseline Characteristics (n=71)

	NUMBER OF PARTICIPANTS (%)
Age at diagnosis, mean (range)	65.9 years (22-95)
Female	69 (97)
Smoking Status	
Current	0 (0)
Former	2 (3)
Never	69 (97)
Seropositive status	
Rheumatoid factor	38 (54)
Anti-CCP	16 (23)
Both	12 (17)
Elevated inflammatory markers	
Sedimentation rate	60 (85)
C-Reactive protein	64 (90)

TABLE 2

Medication use at any time (n=71)

MEDICATION	NUMBER OF PARTICIPANTS (%)
Prednisone	68 (96)
Methotrexate	56 (79)
Hydroxychloroquine	40 (56)
Sulfasalazine	25 (35)
Leflunomide	4 (6)
Biologic DMARD*	6 (8)

*Medications included 4 patients on IV Infliximab, 1 on golimumab and 1 on abatacept

but we cannot simply admire the problem from a distance.

Moving forward

Listening to stories fosters trust, respect, and reinforces a patient's self-worth.

We must consider if things will be different for younger generations of refugees and immigrants as they become more acculturated to life in the United States. Will stories be lost?

Providing a welcoming note in Somali would be an easy first step of a patient's visit.

Even the best interpreters are barriers. We can develop short educational courses for them to cover diseases and treatments.

All caregivers start in a good place; maintaining and improving those places is hard. Behavior patterns may need to change to ensure support for patients, which will eventually lead to optimal outcomes and better health.

Caregivers cannot make up for shattered lives, but we do have the opportunity to make things better through unbiased professional interactions with our patients. We need to reinforce, among many other ideas, the notion of belonging. **MM**

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Reflections while on a hospital transport cart

BY HARRISON H. FARLEY, MD, FACS

I fell one morning this past spring as I stooped to retrieve a small paper icon from the floor. My right leg simply gave way. I lost my balance and went reeling back, landing with full force on my butt and back. A bolt of pain struck me high in the posterior chest and it radiated down my right leg.

I had fallen between the bed and the wall and in one way I was fortunate, for I had escaped striking my head (so feared yet so common in aged patients in nursing care facilities, especially those on a blood thinner like me). Testing my arms and legs, I could detect no sign of a broken bone. In an active life some 20 years ago, when a fall in the woods or on a golf course had ruptured a disc, I recovered slowly by waiting it out, but I had never experienced a vertebral compression fracture before and I had just squashed T6 in addition to aggravating the old injuries at L3-L4 and L4-L5. Of course I wasn't aware of this at the moment. All I knew was that I was having a devil of a time moving. With great effort I managed to get to my knees and then up and onto the bed.

I was able to get through the day with the help of Lilydale Villa food delivery service to my apartment, a walker, and an electric scooter (all available because of their purchase for my late wife who required them after her neurological decline). My family checked in on me throughout the day but waking up the next morning, I had reached my endpoint. I called Julie, the youngest of my three nurse daughters, who was busy at work at St. John's Hospital in St. Paul; her husband,

Harrison Farley, MD, knew his fall was a bad one, but tried to tough it out. When he got to the hospital, he spent 30 hours on a cart in the ED, then a bed was found and his treatment could proceed.

Jim, helped arrange for medical transport to the hospital. Within minutes of Jim's arrival, paramedics were transferring me by ambulance to that same St. John's where Julie happened to be working in the ER.

It was early morning when I arrived at St John's. Julie was busy on her shift. In the midst of the pandemic, with COVID-19 rampant, there were no available beds in the entire hospital. Even the few beds in the ER were filled with sick patients. I was briefly checked over and, after getting basic X-rays, my cart with me on it was pushed over against the wall of the main corridor leading to and from the busy Emergency Room. Streaming by me, paramedics and firefighters pushed patients in (a few children were carried), many in pulmonary distress with O^2 running. My back and right leg hurt but the poor souls going by seemed in far worse condition than I. Thank goodness, a nurse at last stopped by.

"Are you in pain Mr. Farley?" she asked.

"Only when I try to move or cough!" I replied "but I …" and before I could finish, she moved on saying, "Your nurse will be coming."

This calmed me a bit but not for long. Nurses passed by but seemed to avoid looking at me. I was beginning to get a bit paranoid. Every so often, I would call to a passing nurse to plead my case but, truth be told, I was in no great danger and others actually were. I had no IV running, yet several hours later, I knew that I needed to empty my bladder. A nurse hearing my complaint dispatched two orderlies to help. It required two husky orderlies to get me off the cart and across the hall and into the bathroom. I asked to self-cath with a 14 French straight catheter that, thank the good Lord, was produced and I managed to catheterize myself standing at the toilet with the two orderlies steadying me. Then it was back to the cart in the hallway. My thoughts were rambling during the night. I was uncomfortable but not in great pain. If I slept at all it was for a brief moment. I was frustrated—but who was there to blame? What were my thoughts while lying there? Mostly just feeling sorry for myself! But, having lived a long life and spending many hours worrying about the outcome of a patient or patients in distress, I told myself, "This too will surely pass," and tried to sleep. Recalling a familiar Bible passage from Micah 6 helped me through that night.

When my wife Marie and I were living in New York City during my medical school days at Cornell, we lived in a tenement close to the school and hospital but we attended the Fifth Avenue Christian Church on Sundays because it had been her denomination back in our college days. At a transfer point on our journey to church each Sunday, when we came up to street level, there was a large art museum and emblazoned in the concrete facade was an often-quoted biblical passage from the Old Testament. It was a favorite of mine and that night on a cart in the hallway of St. John's ER, feeling virtually alone and in need of support, it helped soothe my jangled nerves:

"With what shall I come before the Lord,
and bow myself before God on high?

Shall I come before him with burnt offerings
with calves a year old?

Will the Lord be pleased with thousands of rams,
with ten thousand rivers of oil?

Shall I give my firstborn for my transgression
the fruit of my body for the sin of my soul?

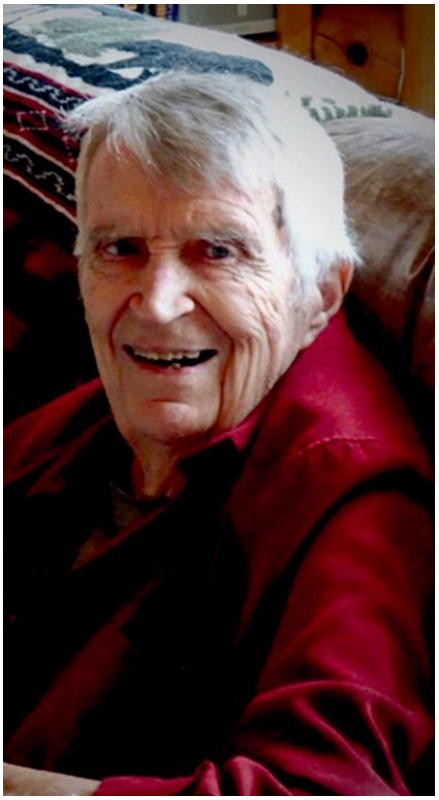
He has shown you, O man, what is good;
and what does the Lord require of you

but to do justice and love kindness,
and to walk humbly with your God?"

—Micah 6: 6-8

At last, after 30 hours on that cart in the ER, an orderly gave me the news I was waiting for: "I have good news for you Mr. Farley, we have a bed for you!"

The next three days I spent having an MRI of my spine and specialist consultations. I had a steroid injection of my lumbar spine L3-4 and L4-5 areas (the old injury site) and it seemed to help. Consensus was that surgery was not in my best interest at this time, especially at age 92.



Thanks to good medical care, follow-up therapy and supportive family, Harrison Farley was able to return to his "baseline" and celebrate his 93rd birthday at home.

I was fortunate to be able to return to my independent senior apartment at the Villas of Lilydale and I have improved back to my baseline, thanks to the good medical care at the hospital, follow-up physical therapy for the first several months, and the benefit of having outstanding supportive care from my wonderful family members. Three months after this event, I felt blessed to be able to celebrate my 93rd birthday.

My days of helping the diseased and afflicted have largely gone "by the boards," as they say, but what Micah said thousands of years ago still applies. I'll do my best to abide by his admonitions. **MM**

Harrison H. Farley MD, FACS, is a retired clinical professor of Surgery at the University of Minnesota Medical School.

WHAT'S IN A NAME?

Eponyms in medicine

BY ELISA N. HOFMEISTER; ALYSSA M. BREN; HANNAH SAALSAA; AND STEVEN D. STOVITZ, MD, MS

An eponym in medicine is the name of a disease, structure, or procedure usually derived from the name of the person who discovered it first: Alzheimer's disease, Down syndrome, Parkinson's disease, islets of Langerhans, and hundreds more.

The teaching of clinical anatomy includes an array of eponyms, yet eponym use in medical practice has been contested for more than 100 years. Those favoring eponyms argue that they are succinct descriptors for complex concepts, and that historical ties make them irreplaceable; those against contend that many eponyms are not descriptive and are superfluous.

Within medical education, and specifically within musculoskeletal (MSK) medicine, students and educators routinely debate the utility of eponyms as tools for learning. The first three authors of this study are current medical and physical therapy students trying to learn the MSK system. Like generations of students before us, we feel overwhelmed by MSK medicine, partly because of the number of eponyms taught. We decided to quantify the number of eponyms listed in common orthopedic educational textbooks and to review the rationale for and against their use in the teaching of MSK medicine, with the larger objective of asking clinical teachers to reflect upon their use throughout medical education.

We searched five major textbooks used in teaching MSK medicine. We used the index to manually search for eponyms in *Orthopedic Physical Assessment* by David J. Magee and *Orthopaedic Sports Medicine* by Delee, Drez, and Miller and electronic search functions to identify eponyms in *Essentials of Musculoskeletal Care* by Armstrong and Hubbard, *High Yield Orthopaedics* by Parvizi and Kim, and *The Sports Medicine Resource Manual* by Seidenberg and Beutler. Eponyms were recorded and collated for presentation.

Collated across the textbooks, we counted 552 eponyms. There were 420 terms that were seen in only one of the books. Of eponyms seen across multiple books, 69 appeared in two books, 38 appeared in three books, 12 appeared in four books, and 13 appeared in all five books: Lachman test, McMurray test, Jobe test, Babinski reflex, Baker cyst, Morton foot/neuroma/ test, Neer impingement, Hawkins impingement, Phalen test, Tinel test/sign, Trendelenburg sign, Salter-Harris Injury/ fracture/ classification, and Thompson test.

The question is not what is the exact number of eponyms in circulation, but rather, what is the purpose of the eponyms we have? If the eponyms are well-defined and serve as a shortened substitute for excessively long descriptions, perhaps they are useful. However, research shows that eponyms are not defined consistently. For example, a study of nearly 100 articles on shoulder and elbow injuries found that, on average, only 39% of the eponymous injury terms (range, 0% to 82%) were described similarly to the original description. The "Jones fracture" in the foot was originally defined in 1902 as being within about 3/4 inch from the base of the fifth metatarsal, but studies now use an array of definitions with variations that predict different outcomes .

In October 2016, in an article in *Evidence Based Medicine*, M.P. Somford et al surveyed 224 orthopedic surgeons regarding the correct definition of 10 eponyms. Using a multiple-choice test, only 45% of responses were correct. Among the 10 eponyms, the highest correct response rate was for Sever's disease (calcaneal apophysitis) where 75% answered correctly; the lowest correct response rate was for a Barton fracture (dorsal rim intra-articular distal radius fracture) where only 27% responded correctly. "Correct" in this context means "consistent with the original definition of the term." Definitions of many terms have migrated over time; our research showed heterogeneity in eponym interpretations, suggesting that orthopedic surgeons may be miscommunicating and misunderstanding terminology. This is not a situation where "you say tomaytoe, and I say tomahtoe"; this is a situation where we both say "tomato," but you mean "a fruit" and I mean "a vegetable."

"This is not a situation where 'you say tomaytoe, and I say tomahtoe;' this is a situation where we both say 'tomato,' but you mean 'a fruit' and I mean 'a vegetable.'"

We agree that it is important to evaluate the context of the eponym, and to evaluate when and where eponyms serve a useful purpose in medical communication. The "Lachman test" to assess the integrity of the Anterior Cruciate Ligament (ACL) of the knee, is useful because the name serves as an abbreviation for a complex maneuver. In this exam, the clinician flexes the leg at the knee and externally rotates the leg about 20 degrees. Then, the clinician pulls the tibia anteriorly while stabilizing the femur. Failure to demonstrate a solid endpoint is an indication of an ACL deficient knee. Studies have found the Lachman test to be superior to both the anterior drawer test and the pivot shift test for assessing the integrity of the ACL of the knee. The use of eponymous term, "Lachman," seems beneficial, given what

would otherwise be a lengthy description, and it takes the place of the non-eponyms "Anterior Drawer test" and "Pivot Shift Test," which are less sensitive and specific.

The concern of unnecessary eponyms may be particularly salient for MSK education, where several studies have demonstrated that students struggle. For example, K.B. Freedman and J. Bernstein found that 82% of recent medical school graduates from 37 different schools failed to demonstrate basic competency in MSK medicine ("Educational deficiencies in musculoskeletal medicine," *Journal of Bone Joint Surgery-American*, 2002). A similar assessment of students at Harvard Medical School demonstrated that, while students rated MSK medicine as "of major importance," only 26% of fourth-year medical students passed their MSK competency assessment. We think it is important that future clinicians graduate with a high degree of competency in MSK medicine.

Approximately 15-30% of primary care visits involve a musculoskeletal concern, yet fewer than 3% of medical education hours are spent teaching MSK medicine. Part of the problem with MSK education may be a lack of adequate training time and the lack of standard teaching methods; medical school surveys reveal large variation and structure in MSK curricula across schools. Medical students feel they are not learning a simple, systematic, reproducible MSK clinical exam, and poor reliability and inconsistency in definitions of concepts further impedes medical education. In a recently published viewpoint in *Anatomical Sciences Education*, June 2021, M.A. McNulty claimed that eponyms unnecessarily increase cognitive load for students learning anatomy, with little benefit, and this added burden is not justified given the pre-existing high burden of memorization for students.

Eponyms have increased in number over the last century and, unless actions are taken, counts will likely continue to increase. There have been committee-wide calls to end the use of eponyms in fields within medicine and some eponyms are beginning to fall out of favor with clinicians, committees, and even journal editors, giving some hope that the future of medicine may involve fewer eponyms. Winkelman's study suggests that about 25% of eponyms are cited infrequently and some have faded from current medical vernacular entirely.

Eponyms counted

TOTAL: **552**	
DUPLICATES **132**	UNIQUE TERMS **420**
	Magee: **197**
	DeLee: **105**
	Armstrong: **33**
	Parvizi: **55**
	Seidenberg: **30**

Eponyms counted in 5 musculoskeletal textbooks. Unique terms defined as those found in only that textbook.

The public recognition that many of our institutions have systematically favored white men serves as an additional justification to decrease the use of eponyms. Eponyms may serve as a hindrance to the goals of diversity, equity, and inclusion in medicine. McNulty et al argued for an end to the use of eponyms in anatomy education and included a section titled, "Eponyms are pale, male and stale." R. Buttner et al reviewed 432 eponyms in anatomy and found that the average date of attribution was 1847, i.e. before women were even welcome into medical schools ("De-eponymizing Anatomical Terminology," *Emergency Medicine News*, October 2020). It is thus not surprising that over 98% of the eponyms reviewed by Buttner et al were named after male physicians. Although they did not assess race and/or ethnicity of the individuals, the majority of eponyms were coined from names common in European countries. Even more worrisome to us as students are eponyms named after Nazi scientists, some of which are still used and taught today, e.g., Reiter syndrome. This eponym was listed in the MSK textbooks we use along with signs and symptoms of reactive arthritis but no bioethical context surrounding the name. One of the prominent arguments in favor of eponymous names is that they celebrate medical pioneers and ignite passion for the historical legacy medical achievement, inspiring future generations of clinicians. If this is a critical goal of eponyms, then Reiter should be purged from clinical education of reactive arthritis. Conversations become more productive if Reiter's work is discussed in conjunction with a lesson on medical ethics and the ways in which his pursuit of knowledge violated basic human rights.

With more than 500 eponyms in MSK medicine, a movement away from eponyms may serve as a small step to improve MSK education. Efforts should be made to introduce proper descriptive nomenclature based on anatomical and physiological functions. It may be easier to learn the description (anatomical or otherwise) of MSK concepts and use these lengthier but more explanatory terms rather than memorizing eponyms as substitutes for their intended objects. If learning an eponym improves student competency, then it should be emphasized. If not, then its use should be reconsidered. **MM**

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Suggestions for teaching MSK eponyms

For general education, only teach eponyms that are commonly used and that serve a purpose beyond the anatomic description.

When using eponyms in teaching, also describe the clinical maneuver or scientific description to decrease ambiguity.

When teaching an eponym, mention studies of the eponym, i.e. the validity for tests or reliability for fractures or other findings.

Minimize the use of eponyms when writing test questions, especially when this neglects the need to understand the anatomical function.

Unless there is a strong reason, please do not add new eponyms to the current list. There are enough already.

Relieving PAIN with complementary care

Integrative therapies may safely and effectively ease patients' pain

BY SUZY FRISCH

Brent Bauer, MD, hadn't planned on launching a career in complementary and integrative medicine when he completed a fellowship in advanced general internal medicine at Mayo Clinic in Rochester. But, upon joining Mayo Clinic staff in Arizona in 1992, he started encountering many patients who engaged with acupuncture, massage, mind-body therapies, and more.

Their practices sparked Bauer's interest in learning more about these modalities, especially so that he could better answer patients' questions. By the time he returned to Minnesota in 1996, Bauer had a body of knowledge through coursework and research that showed him how complementary practices help address patients' specific needs, including pain relief. He helped Mayo start its Complementary and Alternative Medicine program (as it was then known) in 2000 to offer such therapies to patients.

One initial line of research helped make the case at Mayo for robust complementary care. Two studies investigated the efficacy of massage for reducing pain and anxiety after open heart surgery, showing a statistically significant—and clinically important—improvement in both realms, says Bauer, director of the Mayo Clinic Integrative Medicine Research Program. This led Mayo to make massage therapy part of its routine care for patients after open-heart surgery. Subsequent studies made the case for providing massage to patients after breast surgery, thoracic surgery, and cardiac catheterization.

Building evidence for complementary care continues at Mayo today. Scientists and clinicians delve into research that advances the field and informs Mayo's approach to integrating varied therapies into its care model, including acupuncture, animal-assisted therapy, guided imagery, and dietary supplements and herbs, Bauer says.

These days, many Minnesota health systems provide complementary and integrative therapies to help hospitalized patients with pain and anxiety, to good effect. There also is deeper integration of complementary treatments into traditional care to help with back and neck pain, osteoarthritis, cancer care, and headache pain. "I think we have reached a point where many complementary therapies have been thoroughly investigated and found to be helpful in combination with conventional care," Bauer adds. "The best of both conventional care and evidence-based complementary therapies is increasingly being referred to as integrative medicine, and I think that nicely reflects what has occurred at Mayo over the past 25 years."

Mary Jo Kreitzer, PhD, RN, director of the Earl E. Bakken Center for Spirituality & Healing at the University of Minnesota, has witnessed this evolution firsthand. "There has been a sea change over the last five to 10 years with how we look at using non-pharmacological approaches," she says. "Part of what really opened the door for that is so much research has emerged that provides strong evidence on how complementary and integrative therapies can be effective for managing acute and chronic pain."

Kreitzer credits work like findings from the Pain Task Force of the Academic Consortium for Integrative Medicine and Health with helping change minds throughout the healthcare sector. Its analyses provided the scientific evidence that modalities like acupuncture, massage, chiropractic, and meditative movement therapy like tai chi and yoga are effective therapies for pain, including post-surgical pain, acute pain, cancer pain, and chronic pain.

> "The best of both conventional care and evidence-based complementary therapies is increasingly being referred to as integrative medicine, and I think that nicely reflects what has occurred at Mayo over the past 25 years."
>
> BRENT BAUER, MD
> INTEGRATIVE MEDICINE RESEARCH PROGRAM
> MAYO CLINIC

Michael Egan, MaOM, Dipl OM, a licensed acupuncturist and traditional East Asian medicine provider at the Allina Health Penny George Institute for Health and Healing, has seen a significant shift in the understanding of chronic pain, especially in the past five to eight years. In addition to acupuncture now being reimbursed by insurance companies more readily, "I have seen this growing acceptance of integrative medicine as a form of dealing with the monumental disease of chronic pain," he says. "We have seen an evolution in the understanding that chronic pain is not just what is going on in the tissues of the body—it is always a physical, emotional, and psychological experience."

There is a growing understanding that acupuncture releases pain-killing chemicals in the brain, like beta-endorphins and enkephalin, while triggering the central nervous system to override pain signals, Egan says. Acupuncture is one element of traditional East Asian medicine, which fosters a mind-body approach to care. Egan says there is robust evidence that mind-body practices like tai chi can be an effective treatment for chronic pain. Clinicians who help patients manage pain know that this holistic approach—addressing the mental, physical, and emotional experience of pain—is essential. Health and medical systems and payers are slowly evolving to reflect that approach.

System changes

Several important milestones sped up that process. In 2018, the Joint Commission, which accredits more than 21,000 healthcare organizations and programs in the United States, implemented new pain assessment and management standards. The commission now requires hospitals to provide nonpharmacologic pain treatment options like chiropractic care, massage therapy, and acupuncture—or to educate patients about them.

The American College of Physicians issued guidelines in 2017 that physicians should first treat acute and sub-acute low back pain lasting four to 12 weeks with non-drug therapies like heat, massage, acupuncture, chiropractic care, tai chi, and/or yoga. These options can be paired with nonsteroidal anti-inflammatory medication or muscle relaxants. For chronic low back pain, it recommends additional non-drug therapies like multidisciplinary rehabilitation, exercise, cogni-

tive behavioral therapy, electromyography biofeedback, low-level laser therapy, or mindfulness-based stress reduction.

Finding effective ways to treat pain has become an even more pressing concern as an estimated 100 million American adults—or up to 47% of the population—suffer from chronic pain, according to the Institute of Medicine. Low back and neck pain, osteoarthritis, and headache are the most common culprits.

The quest for better medications and treatments has grown in importance during the opioid epidemic, which includes 1.6 million people with opioid use disorder in the United States and 10.1 million people misusing prescription opioid medications, according to the 2019 National Survey on Drug Use and Health. From 2000 through 2019, 4,821 Minnesotans died from opioid overdoses, with that trend increasing during the COVID-19 pandemic. In 2021, 924 people in Minnesota died from opioid overdoses, a 35% increase over the 685 people who died in 2020, according to preliminary data from the Minnesota Department of Health (MDH).

Arti Prasad, MD, an internal medicine and integrative medicine physician at Hennepin Healthcare, led a mapping project that created the Non-Opioid Pain Alleviation Information Network (NO PAIN). She recently shifted from serving as chief of internal medicine at Hennepin to chief strategic development officer and she continues overseeing integrative medicine and seeing patients, primarily in integrative oncology care. Her work is varied, including providing evidence-based complementary approaches to help cancer patients with pain or side effects. She also works with people who completed cancer treatment to prevent its return with lifestyle medicine and helps them with lingering pain from conditions like chronic neuropathy.

"What inspires me every day is supporting individuals in their healthcare journey and closing the gap in their healthcare to bring healing to them and to healthcare," Prasad says. "A cure may or may not come for their condition, but if I can partake in working with them and bring healing to them and their caregivers and loved ones, then I think we are making a difference."

Prasad has rich experience in blending complementary and traditional medical care for treating pain during three decades in integrative medicine, including starting the nationally recognized preventive and integrative medicine Center for Life at the University of New Mexico. She values Hennepin's approach, which deeply incorporates integrative medicine into its clinical system. Prasad experiences it daily as physicians readily refer patients back and forth, and patients move seamlessly between appointments with oncology and integrative medicine physicians.

For example, when an oncologist's patient has questions about mind-body practices or taking herbs and supplements, that physician will refer to Prasad. She can see the patient's medical records and advise that person on complementary care. "I work with the oncologists, and we communicate back and forth," she says. "This is what I appreciate."

Similarly, at Allina Health, acupuncturist Egan says about 80% of his patients come from physician referrals. And when he sees a patient who might benefit from another provider's modalities, or if there are "red flag" symptoms, he doesn't hesitate to refer. "The beautiful thing about this integrative approach is when we realize that we all have something to offer. We all want to first do no harm, and we want to give patients relief from suffering," Egan says. "We have our different methodologies, but I think that emphasis on compassionate, whole-person, patient-centered care, while trying to treat the person's mind, body, and emotional well-being, is essential to what we do."

Pain education and research

Complementary and integrative care will continue to become more common in medicine as medical students, trainees, and current physicians learn about the possibilities and see more of the evidence.

> "We have seen an evolution in the understanding that chronic pain is not just what is going on in the tissues of the body—it is always a physical, emotional, and psychological experience."
>
> MICHAEL EGAN
> LICENSED ACUPUNCTURIST AND TRADITIONAL EAST ASIAN MEDICINE PROVIDER
> ALLINA HEALTH PENNY GEORGE INSTITUTE FOR HEALTH AND HEALING

At the University of Minnesota Medical School, students learn about integrative approaches as part of the overall curriculum, Kreitzer says. In addition, the Bakken Center offers elective integrative medicine rotations for third- and fourth-year students. Students also can enroll in roughly 70 courses at the Bakken Center, including integrative pain management and well-being and resilience for health professionals.

A key area that learning and practicing physicians should understand about pain involves how it is recognized and treated, Kreitzer says. Pain does have a gender component, with women being more likely

to feel pain and to have that pain dismissed. Pain also is often underrecognized and undertreated in people of color. It's vital to teach clinicians how to assess pain and understand that people's perceptions and experiences of pain vary widely, she adds.

"So much more has been published on pain and the importance of pain as a vital sign that needs to be managed," Kreitzer says. "I think we're doing a better job of educating clinicians on pain and hospitals are developing guidelines for looking at more comprehensive pain approaches."

The Center also has been involved with research, securing more than $20 million in federal funding for studies about complementary and integrative health for pain management and health and well-being. Brent Leininger, DC, MS, a chiropractor and assistant professor in the Integrative Health and Wellbeing Research Program, is engaged in NIH-funded research, including analyses of the effectiveness and cost-effectiveness of different complementary therapies for pain management.

In a Phase 3 clinical trial with 1,200 participants, researchers are comparing non-pharmaceutical approaches for treating acute back pain, aiming to prevent it from progressing to chronic pain. Participants either follow traditional, noninvasive medical guidelines; receive spinal manipulation therapy, a treatment commonly used by chiropractors and physical therapists; participate in supported self-management, including pain education and mind-body techniques; or utilize a combination of spinal manipulation and supported self-management, Leininger says.

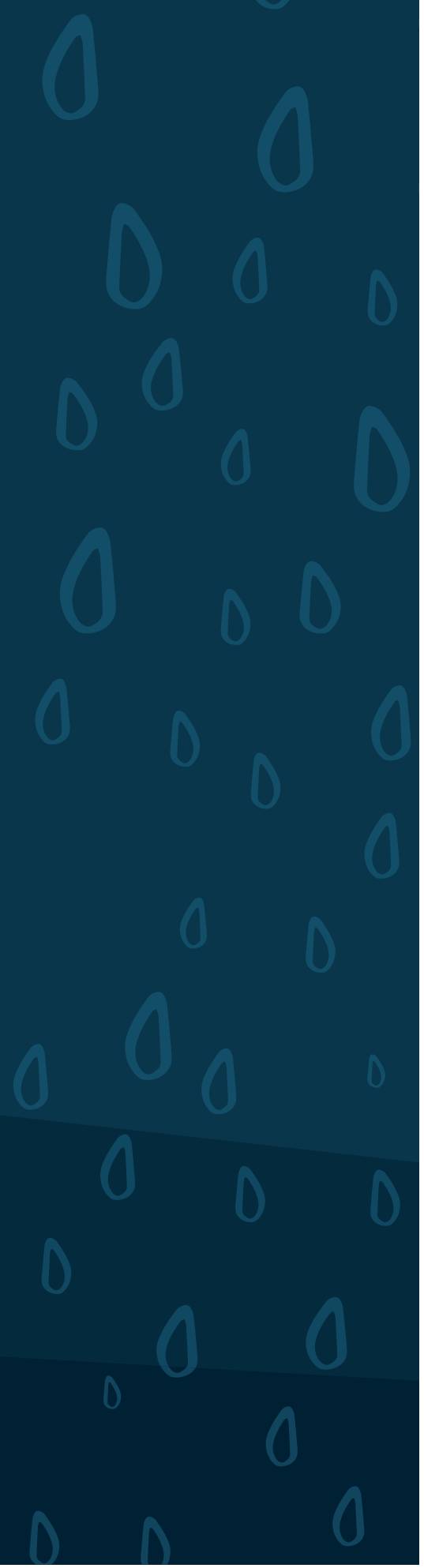
These inquiries are important because back and neck pain are pervasive in the United States. "We spend more on back and neck pain than any other condition, more than on cancer or heart disease," Leininger says. "The use of MRIs, injections, and surgery remain common and many international guidelines have called for improvements in how the conditions are managed. Complementary treatments have garnered a lot of interest, especially how they compare to standard treatments in terms of clinical outcomes, costs, and keeping people functional."

Other questions about complementary therapies include their effect on the need for narcotics. At Mayo, researchers measured opioid usage in the hospital during some of its studies, typically finding a decrease in opioid use, Bauer says. Given the Joint Commission's recommendations to rely less on narcotics for pain, modalities like acupuncture and massage have gained momentum. "Used correctly, many of these therapies can help either reduce the need for narcotics or minimize the dosage required," he says.

Favorable evidence about the effectiveness of herbal therapies and dietary supplements, animal-assisted therapy, and mind-body therapies like guided imagery and biofeedback-assisted meditation continues to guide Mayo's complementary care protocols. "I'm a firm believer in having the largest tool kit possible to help meet patients' needs," Bauer says. "Patients may choose from any of these therapies that resonate with them and that could be helpful for their pain and distress associated with the pain."

Bauer believes that medicine's approach to pain relief will continue to evolve. "It really should not matter whether acupuncture came from a different system, as long as the evidence shows it to be beneficial to patients with a specific pain condition," he says. "I think we are heading for a time in the not-too-distant future where the terminology will fade into the background. Rather than using terms like complementary or integrative, I think we will just be talking about good medicine." **MM**

Suzy Frisch is a Twin Cities freelance writer.



MINNESOTA DEPARTMENT OF HEALTH DEMONSTRATION PROJECTS

Looking for opioid-free ways to address chronic pain

BY ANDY STEINER AND SUZY FRISCH

Overuse of and addiction to opioid-based pain medication is a major problem in Minnesota and across the country. In the last few years, this issue has been on the mind of state lawmakers: In 2019, a bipartisan coalition funded several major statewide prevention programs, including a $1.25 million allocation to fund studies evaluating a range of non-narcotic pain management programs.

Suzanne Koepplinger, founder of Catalyst North Consulting, lobbied legislators to secure the grant funding as head of the Minneapolis Foundation's Catalyst Initiative. In her years working to expand integrative health and healing in Minnesota, Koepplinger has seen an evolution in views about the role of complementary care in legacy healthcare systems.

"When I started this work in 2014, I would run into pretty stiff headwinds when I talked to clinicians" about using integrative health practices to address the root causes of pain and trauma and as a way to reduce significant health disparities in Minnesota, Koepplinger says. "More and more, there is a real willingness to recognize that the medical system is not getting at disparities in any meaningful way."

One portion—$250,000—of the allocation was granted to Hennepin Healthcare to fund the development of the Non-Opioid Pain Alleviation Information Network (NO PAIN) a program that maps the location and availability of inpatient and outpatient evidence-based non-narcotic pain-management services in the state, develops a network website, and highlights

barriers to accessing non-narcotic pain management programs.

The bulk of the state funding—$1 million—was directed to five demonstration projects conducted by a range of state healthcare organizations that work directly with Minnesotans suffering from chronic pain. The five projects are testing different models that could be adopted across Minnesota to help people manage chronic pain without narcotics.

Chronic Pain Program
Nura Pain Clinic

For more than 30 years, Nura Pain Clinic (originally known as Medical Advanced Pain Specialists, or MAPS) has been a national leader in pain treatment. Two decades ago, the Twin Cities-based clinics introduced the Chronic Pain Program, an intensive month-long, in-person program that aims to help people gain control over their chronic pain.

Over the years, the Chronic Pain Program has helped many patients, but access has always been limited to those whose insurance plans cover this type of service. When the MDH funding was announced, Nura applied for a grant, with the goal of making its program available to a wider range of participants, explains Renee Shannon, a health coach and manager of Nura's chronic care programs. "Very few insurers cover the program. We were able to really open our doors to a lot more patients because of the grant."

Participating in the Chronic Pain Program requires serious commitment. For four weeks, participants meet Monday through Thursday from 9:30am to 2:45pm. The program is not focused on eliminating participants' pain or even reducing their pain drastically, Shannon explains. The goal is actually much larger: "What we want to do is help people get their lives back. We talk about coping, resilience, about managing your life, not letting the pain manage it."

Program participants hear from a range of experts and work closely with physical therapists to learn more about chronic pain and how it impacts bodily function. The information and skill-building is an essential part of the healing process.

"What people don't understand is that chronic pain is a loss of control," Shannon says. "What we want to show participants in this program is how to regain control of their lives."

This approach has seen success, Shannon says. Participants are surveyed at the end of the program, and then at three-, six- and 12-month intervals. "We do find that many are improving in their physical and psychological functioning by at least 20%," Shannon says. "In some cases they report more than that, up to 75% improvement."

While results like these are important, Shannon believes that even more important is the sense of community that the program creates for its participants. Chronic pain can be isolating. When people take part in the class, they learn they are not alone.

"Many participants report that the real magic of the program is being in a group setting with other people who have similar experiences," Shannon says. "We might have six people who come from different backgrounds but their struggle with chronic pain means that they all have something in common. They feel heard and believed and understood."

Manage My Pain With Yoga
HealthPartners Institute

When COVID hit Minnesota, all healthcare systems "needed to rapidly pivot," recalls Sara Hall, Clinical Nurse Specialist at HealthPartners Institute. "We all were thinking, 'What are we dealing with?'"

Hall, an advanced practice nurse and certified yoga instructor and fitness enthusiast, decided to take their in-person Beginning Yoga for Chronic Pain course and apply for the MDH grant to overcome barriers they identified with in-person classes.

"My COVID silver lining was that we all had enough time to put together this grant proposal for MDH and turn this program into a virtual or web-based program so it could reach more people," she says.

The bulk of [$1 million in] state funding was directed to five demonstration projects conducted by a range of state healthcare organizations that work directly with Minnesotans suffering from chronic pain.

While Manage My Pain With Yoga was popular, Hall and her colleagues wanted to reach a larger group of chronic pain suffers, including those living in isolated communities and those who cannot afford to take time off or travel for an in-person class. The COVID shift to virtual care inspired Hall to do the same with her program. The MDH grant provided the funds necessary to repackage the program and shift it online.

"The beauty of having an online program is there is no limit on who can do it," Hall says. The fact that the redesigned program is now offered free of charge is a great equalizer: "That helps advance health equity. A lot of times people don't have the money, time, or transportation to

do an in-person program." The entire program was translated into Spanish, to reach a more diverse audience.

The online version of Manage My Pain With Yoga is presented in seven modules. Each module focuses on a separate theme, like sleep or fatigue and how yoga can impact these aspects of chronic pain. "They include a brief education component, a short demonstration video, and a yoga practice with two intensities, either low-intensity or moderate-intensity poses," Hall says.

The redesigned program was launched in April 2021. Attendance is slowly picking up, and Hall and her colleagues are encouraged by the positive feedback they've received from users.

The program is designed to introduce the basics of yoga to those living with chronic pain. "Many people said that they thought yoga was inaccessible but found out it was doable with their chronic pain," Hall says. Even more important, a healthy percentage of participants say that after completing the modules, they are feeling better physically.

"About 40% of the people who went through the program reported their pain improved," Hall says. "That's pretty significant."

Living Well With Chronic Pain

Innovations for Aging's Juniper program

Nobody knows more about chronic pain than people who've experienced it. Living Well With Chronic Pain, an education and support program created by Innovations for Aging's Juniper program, takes this reality to heart.

The program's six sessions each feature a topic led by a trained lay leader, explains Sarah Blonigan, Juniper network director. "Each program has two lay leaders. It is required that at least one of the leaders has experienced chronic pain."

By design, the program focuses on the needs of participants, based on the belief that ordinary people can provide an invaluable resource to their peers. The class series focuses on different key topics, including dealing with frustration, fatigue, and isolation; appropriate exercise for maintaining and improving strength, flexibility, and endurance; appropriate use of medications; and tips for effective communication with friends, family, and medical professionals. A community health worker helps facilitate the class. People of any age can participate, although the class skews a bit older; the average age of participants is 61.

Because the program's creators have a goal of reaching as many people as possible, Blonigan explains that it is offered in several formats in various locations around the state. "The class is group-led and often offered in-person. It can also be taught online or phone-delivered." Each individual session includes eight to 16 participants and is held simultaneously at multiple locations, with two to four sessions starting each month, Blonigan says. This allows for the best options for all participants.

The fact that the program's design is flexible and can adjust to the needs of participants is key, Blonigan says. "We have some participants who say their pain is so great that they can't sit for two-and-a-half hours. I have some people who tell us they have transportation issues and can't get to the meeting site. So it's essential to be able to offer options."

In post-program surveys, Blonigan reports that 82% of participants agree to the statement that the intervention helped manage their chronic pain; 83% say that the intervention helped manage their stress and chronic fatigue; and 85% mentioned an increase in physical activity.

Growing Resilience in Chronic Pain Program

Hennepin Healthcare

Hennepin Healthcare received MDH grant funding for two initiatives. Kate Shafto, MD, an integrative medicine and internal medicine-pediatrics physician, led Hennepin's demonstration project called Growing Resilience in Chronic Pain. Using non-narcotic tools for pain management, Shafto developed a cohort model that gathered people for eight weeks of group sessions at Hennepin's Interventional Pain Clinic. Shafto and her colleagues said they found this approach to be an effective—and cost-saving—way to deliver health education

Nine cohorts engaged in a range of education and activities, including learning about the neuroscience of pain, the role of nutrition, and different therapies like chiropractic and acupuncture. They also tried mind-body techniques like guided imagery and meditation and movement practices like yoga and tai chi. In weekly surveys of participants, Shafto frequently saw people's pain levels decrease by 30% to 50%.

Shafto found that educating patients on the neuroscience of pain was key. "There is fantastic science and recent studies that show that if people understand that their pain intensity is not equal to the tissue damage or structure problems they have, their pain levels come way down," she says. In one study, "people who understand where pain is coming from and why it's happening reported less pain. We want to open their minds that there might be ways to change their pain experience, or how they interpret their pain, or what focus or energy they are giving to the pain."

With a focus on making pain management programs accessible to as many people as possible regardless of financial means, Hennepin Healthcare's demonstration project offered group medical visits to any patients experiencing chronic pain for any reason. "A group visit is a model of

healthcare that is highly underutilized in most settings," Shafto says.

This approach has gained popularity at Hennepin Healthcare over the last few years, she explains. "This program provided access to high-quality integrative pain care in an equitable way. You didn't have to pay out of pocket per class. We were able to provide people with integrative care that they were able access no matter their ability to pay."

Group participants all experience chronic pain and have been referred by their physician or another healthcare provider. Many were patients at Hennepin Healthcare's pain clinic.

Shafto says the group visits resemble classes or workshops. She opens each visit with, "an individual, brief encounter with each patient. I ask questions, like, 'How are you doing today? Anything I need to know about?'" The rest of the time, Shafto explains, is spent providing new information about pain and pain management, practicing skills, and connecting with other participants.

There is no requirement that participants stop using opioid-based pain medication to participate in the program. "The point is we're not emphasizing the use of opioids as a pain-care strategy," Shafto says. "We are emphasizing non-narcotic, self-care strategies."

Many of the group visits also emphasize patient education, including a brief introduction to pain neuroscience. "We want to help patients understand what's happening in their nervous system to create and perpetuate chronic pain," Shafto says.

"Knowledge is power," Shafto said, "but knowledge is also something that can lower levels of fear. If you understand what's happening in your body, you're not as fearful. Fear is something that intensifies chronic pain. We want to give people tools to fight fear."

Culturally-Centered Non-Narcotic Pain Management Program

Native American Community Clinic

The MDH grant allowed the Native American Community Clinic (NACC) to expand training for staff and community members on how to work with people who have trauma and stress in their lives, using traditional Native modalities, says Antony Stately, PhD, CEO of NACC.

"We also used the grant to hire Johns Hopkins Center for American Indian Health-Great Lakes Hub to help us do interviews with providers and patients about their understanding of alternative and cultural supports for people who presented with pain," Stately says. "We surveyed our provider team—by provider, we mean anyone who had a touch with the patient—to see if they were aware of resources for alternatives for managing pain and got some good information."

Traditional resources included ceremony, prayer, meditation, and plant medicine, such as teas and ointments. Alternative non-narcotic methods also included reiki and other Eastern modalities. "We found that people generally were highly accepting of the things we had created," Stately says. In fact, they expressed a desire for more options.

An unanticipated bonus of the pain-management work was seen fairly quickly, Stately says. "We found a lot of people coming back to the clinic who had not been engaged in primary care treatment for several years. They came in through the door of alternative traditional healing and culturally accepted models of care, and built really strong relationships with those providers. Several patients said something like, 'It feels like visiting grandma, we sit down and talk.' We were building a different kind of relationship with them. People were coming in that 'back door' because it felt more familiar."

One important issue going forward is whether traditional pain-management techniques can be reimbursed by insurers. Stately sees the fact that some people who had been resistant to ongoing primary care were drawn in by the idea that "the organization reflects who they are in cultural ways" is an opportunity for long-term investment.

"I've talked to a couple of insurance companies, just gauging their interest and seeing if there's a way to pilot this," he says. "We can look for people who want to do a pilot project evaluating feasibility, acceptability, and return on investment."

NACC has taken what Stately calls a more intentional approach to centering culture. "For me, what that means is that cultural healing and traditional healing methodologies are given as much importance as the Western model of healthcare," he says. "There is a way to bring those two things together under one roof.

"What does that have to do with non-narcotic pain management? We all know how we got to where we are now; the opportunity with this work is to think about what are the things that are available in our community, how can we utilize cultural healing practices to deal with physical and spiritual pain? There is the potential to heal a lot of contemporaneous pain, as well as the historical trauma."

Non-Opioid Pain Alleviation Information Network

Hennepin Healthcare

Arti Prasad, MD, an internal medicine and integrative medicine physician at Hennepin Healthcare, led the mapping project that created the Non-Opioid Pain Alleviation Information Network (NO PAIN). Along with Richard Printon, DC, medical director of the Hennepin Chiropractic Division, Prasad and team developed this resource—the first of its kind in the country.

The NO PAIN site features a map and contact information for certified or licensed providers that offer complementary therapies. The providers, in private practice and within healthcare systems or clinics, work in many fields, including acupuncture, chiropractic, mind-body practices like biofeedback and music therapy, and functional medicine. In addition, users gain access to detailed information about each modality, links to research that supports the use of the therapies, and videos that explain the practices in detail. **MM**

Andy Steiner and Suzy Frisch are Twin Cities freelance writers. Linda Picone, editor of *Minnesota Medicine*, also contributed to this article.

Digital triage tool

DERMATOLOGY APP CAN BENEFIT PATIENTS AND PHYSICIANS

BY LINDA PICONE

Margareth Pierre-Louis, MD, MBA, FAAD, had always been interested in how to best use digital health to care for patients in her dermatology practice. But it was a patient who mentioned Miiskin, a tool Pierre-Louis now uses regularly in her clinic to triage patient concerns and deliver teledermatology.

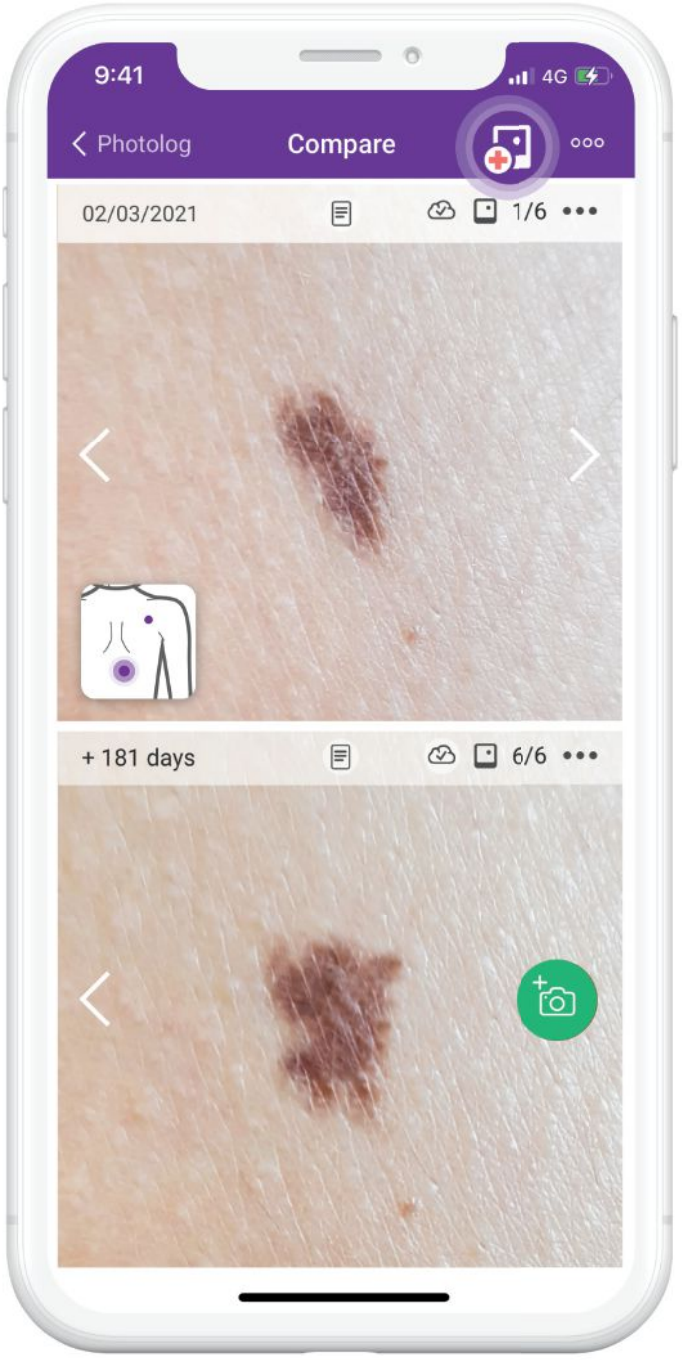
Margareth Pierre-Louis, MD, MBA, FAAD

"I was approached by a patient, who asked me to speak to a small tech company in Denmark seeking to learn more about the US digital health market," says Pierre-Louis, founder and medical director at Twin Cities Dermatology in Minneapolis. "I've always been interested in digital health tools, so I got on a Zoom call with the founder. I was impressed with the software. Then I started to use it myself in my clinic."

Pierre-Louis began using Miiskin in March 2021. "I wanted to give my patients a tool to monitor themselves and potentially offer them care through that tool," she says. "Now I use Miiskin every day to deliver care. My patients go on Miiskin to request urgent care and telehealth follow-up medication refill visits. They can also monitor and share images of their skin concerns at any time."

Miiskin guides users to take individual and full-body photographs of their skin on a secure, HIPAA-compliant platform using the latest digital technology. Once shared by the patient, images are then reviewed by the physician. "Based on their problem, I can tell them to come into the clinic, or I can treat them virtually," Pierre-Louis says. She says about 20 percent of the patients she sees through their image submissions will need to come into the clinic. "Every one out of five cases, when someone says, 'I have a worrisome mole' or 'I'm nervous about cancer,' I have a lower threshold to see them in person," she says. "If I can't tell you what the lesion is, you should come in. If I can't tell what it is via an image, I may need to biopsy it."

Performing triage digitally benefits both patients and physicians, Pierre-Louis says. "For dermatology, the average wait for an appointment is one to three months. Once patients get into the clinic, they might be there for an hour, even for a quick office visit. Miiskin helps address those issues."



Patients photograph their own skin and can track changes, then provide them to the physician through a teledermatology app.

For patients, both appointment scheduling and office wait times are greatly reduced because the physician already has insight into the problem. "Instead of waiting for a visit scheduled several months later, I already have visibility overnight into their problem, so it's just getting them in the door," Pierre-Louis says. "And then the visit goes fast because I know exactly what we're seeing."

"Having that kind of visibility, instead of just telling the patient that our next appointment is in three months, that's what's most

impactful here," she says. "I might not be able to deliver care through Miiskin, but I can triage their problem and get them into the clinic sooner and out faster. That's efficiency and better healthcare."

For physicians, using Miiskin for triage can reduce their clinic time and bring in new patients, Pierre-Louis says. "Instead of seeing 40 patients in clinic throughout the day," she says, "I may see 20 in the clinic space and 20 virtually. That's convenient for me because I can decide when I treat them. If I have patients in queue, I have flexibility in when I review those cases."

Miiskin has brought Pierre-Louis new patients. "On average, I receive five to 10 cases through Miiskin every day," she says. "I can typically turn those into visits that will be reimbursable. It's a great way to get new patients because there is no barrier to submitting their concerns if they have a smartphone. For new patients who are looking for digital care, they're going to find you because you are available on-demand."

Pierre-Louis says she has not had difficulty getting reimbursed for visits and care delivery through Miiskin. "Reimbursement is not the issue, it's understanding how to get reimbursed through appropriate coding with telehealth modifiers," she says. Most commercial insurers will reimburse telehealth encounters at a rate similar to an office visit.

Limitations

Not everything can be done through digital health. "Obviously, I can't biopsy a mole through telemedicine, and I can't give the patient complete reassurance that they don't have cancer through images," she says.

The patient may limit how well the app works. If the patient doesn't take quality images with adequate lighting or does not give enough history and sufficient images of the affected areas, it may be difficult to provide an accurate diagnosis through the images alone. "When I look at the submitted images, I know that if I have doubts about what I'm looking at, the patient needs to come in for an in-person evaluation," Pierre-Louis says.

Experience with telemedicine

Pierre-Louis has been enthusiastic about telemedicine since 2017. She launched her practice in 2018 and offered telemedicine immediately. "It's been slow, but the pandemic is driving people to seek care virtually. Telemedicine as a field has been there, but the pandemic made it an overnight necessity."

Pierre-Louis began her telehealth experience by working with Teladoc, a virtual health service. Licensed in 13 states, she has delivered care to patients virtually in those states through Teladoc for several years. While working for Teladoc, she learned about one potential challenge of telemedicine: fraud. She once received health information for a female patient with photos of a man. The telehealth account belonged to a female patient who was trying to help her uninsured boyfriend. "You have to ensure that you treat the right person for the right problem to prevent harm," she says. "There must be more scrutiny when things don't match up since you are relying on patient-submitted images to deliver care." Currently, all her telehealth care delivery is done through her own practice and Miiskin.

Subscription fee

To use Miiskin for care delivery, physicians and clinics pay a subscription fee based on the number of healthcare providers and users. This allows any established or potential patient to access Miiskin and seek dermatology care from the selected clinic for free through a clinic-provided office code. The subscription rate for Twin Cities Dermatology Center is currently $600 per month. "Miiskin is an investment that has more than paid for itself while offering my practice and patients convenience, efficiency, and growth," says Pierre-Louis. The basic app is free to everyone from Apple or Google Play for personal self-monitoring. However, a "premium" version is available to consumers for a subscription fee for advanced self-monitoring.

Currently, Pierre-Louis says, her clinic is one of two dermatology clinics in the United States using Miiskin to deliver dermatology care and for patient skin self-monitoring. Other apps available to patients for skin monitoring include UMSkinCheck, developed by the University of Michigan, and MoleMapper from the Oregon Health & Science University.

Pierre-Louis says she has been working as an unpaid advisor to Miiskin. "I've helped this company do a lot more, meaning not only do patients want to monitor their moles, I think they want better dermatology care—and they don't want to wait. And why not? Technology can make that happen." **MM**

Linda Picone is editor of *Minnesota Medicine*.

In-person conference to look at COVID-19's past and future

For the first time since 2019, the MMA Annual Conference will be back in-person.

On Friday, September 23, from 1 to 6 pm at the Union Depot in downtown St. Paul, physicians and physicians-in-training will gather for education, networking, and celebrating the practice of medicine.

This year's conference will focus on: "The COVID-19 Pandemic: Learning from the past and looking to the future."

It will begin with a general session "COVID-19 Debrief: A Public Health Perspective" from 1 to 2:15 pm, featuring Jan Malcolm, commissioner, Minnesota Department of Health, and José T. Montero, MD, MHCDS, director, Center for State, Tribal, Local, and Territorial Support at the Centers for Disease Control and Prevention (CDC).

The general session will be followed by table discussions from 2:15 to 3 pm, in which attendees will share their experiences in the pandemic with their colleagues.

The closing session, "Healing Healthcare: Adaptive Capacity for Doctors and Leaders," will take place from 3:15 to 4:30 pm with keynote speaker Glenda Eoyang, PhD, HSDP, founding executive director of the Humans Systems Dynamics Institute. Eoyang will discuss the topic of change, complexity, and uncertainty—in the context of the COVID-19 pandemic and the chaos and change it has brought to our healthcare system.

Following Eoyang's talk, there will be a panel of healthcare leaders, representing various health systems and clinics across Minnesota. The panelists will discuss:

- What was the most important lesson that emerged from the COVID-19 pandemic?
- So what has changed permanently—for the better or for the worse—as a result of the pandemic?
- Now what can we do to prepare for the next complex disruption to the systems of health and well-being in our profession and our communities?

The conference will wrap up with a reception that will introduce the MMA's new president, Will Nicholson, MD, and provide attendees an opportunity to network with peers.

For more information and to register, visit www.mnmed.org/education-and-events/Annual-Conference.

Thanks to COPIC, the premier sponsor of the 2022 Annual Conference.

News Briefs

Maternal mortality report reveals stark health disparities

In August, the Minnesota Department of Health (MDH) released its first-ever Minnesota Maternal Mortality Report, which examined maternal deaths during or within one year of pregnancy from 2017 to 2018.

While the report shows the state's overall maternal mortality rate is much lower than the national average, it also shows stark disparities in mortality—especially among Black and American Indian Minnesotans. Black Minnesotans represent 13% of the birthing population but made up 23% of pregnancy-associated deaths, and American Indian Minnesotans represent 2% of the birthing population, but 8% of pregnancy-associated deaths.

The MDH report includes data from 48 people who died during pregnancy or within one year after the end of pregnancy, from any cause, in 2017-2018. These deaths are called "pregnancy-associated deaths," even if pregnancy did not cause the death, for example, in a motor vehicle accident.

Included in pregnancy-associated deaths are those that occurred from a pregnancy complication, a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy, for example severe bleeding or high blood pressure—these are called "pregnancy-related deaths."

The report includes data reviewed by the Maternal Mortality Review Committee, a multidisciplinary committee established by Minnesota statute with diverse representation from the maternal health field, public health, and community organizations.

Gummies, chews added to state's Medical Cannabis Program

Minnesota's Medical Cannabis Program has added gummies and chews to its list of delivery methods, as of August 1.

Registered patients who are interested in these medical cannabis products can make an appointment for a consultation with a medical cannabis dispensary pharmacist to get pre-approved to buy gummies and chews.

"The state's medical cannabis program continues to respond to the needs of patients, and gummies and chews may be useful options for those who may have difficulty swallowing pills or tablets, do not want to smoke medical cannabis, or don't like the taste of other forms of medicine," said Health Commissioner Jan Malcolm.

These medical cannabis gummies and chews are separate from the recently authorized hemp-derived edible cannabinoid products regulated by the Minnesota Board of Pharmacy.

Under the guidelines of the state's Medical Cannabis Program, consultations are required when a patient changes the type of medical cannabis they receive. Both state-licensed medical cannabis manufacturers are currently scheduling consultations.

The newest options for medical cannabis patients were approved last year during the Minnesota Department of Health's annual petition and comment process to solicit public input on potential qualifying medical conditions and delivery methods for medicine for the Medical Cannabis Program.

To become a patient in the Medical Cannabis Program, a person has to be certified by a participating healthcare practitioner for at least one of 17 qualifying medical conditions.

Minnesota's Medical Cannabis Program added dried flower as an option for patients 21 and older, effective March 1, 2022.

Patient safety numbers take a dip during COVID-19 pandemic

Reportable adverse events and instances of patient harm rose in 2021 during the past year-long reporting period in Minnesota hospitals, ambulatory surgical centers, and community behavioral health hospitals, according to a new report from the Minnesota Department of Health (MDH).

Prior to 2021, the number of events had been stable, but 2021 saw an increase in events, primarily due to new challenges and increased care associated with the COVID-19 pandemic. Clinicians were forced to adapt in real time as hospitals and health systems took care of sicker, higher acuity patients with multiple health concerns. Increased patient complexity due to COVID-19 led to longer hospital stays and other complications arising from delays in seeking care.

The length of stay in intensive care units more than doubled from 2.31 days in 2017 to 5.47 days in 2021. Longer hospital stays can lead to an increase in skin breakdown (pressure ulcers) by increasing the time a patient is lying down or using a medical device. Patients with longer lengths of stay may also experience loss of strength, leading to an increased risk of falling. The report and information about individual facilities is available on the Adverse Health Events reports webpage (www.health.state.mn.us/facilities/patientsafety/adverseevents/publications/index.html).

Other pandemic-related factors included increased time for staff to put on personal protective equipment before being able to care for a patient and potentially prevent a fall, and higher caseloads.

This adverse health events report provides an analysis of the data collected from healthcare providers from October 7, 2020, to October 6, 2021. The report shows 508 adverse health events reported during this period, with 207 serious injuries and 14 deaths. Although the number of deaths remained stable, there was a significant increase in the number of events and subsequent injuries compared to 2020. The increases were in categories likely to be impacted by longer stays, namely, falls and pressure ulcers. It is important to note that many event types require a certain level of harm or injury to be reportable under the law.

In 2021, the total number of reported events increased to 508 (up from 382 in 2020). As in years past, pressure ulcers and falls were the most reported events, accounting for 217 or 60 percent of the reportable events, followed by 86 falls, 36 biological specimens, 36 retained objects, and 28 wrong site surgeries.

New "988" number launched for mental health help

Since mid-July, people facing a mental health crisis have been able to dial 988 to connect to support. The change is part of a nationwide effort to transition the National Suicide Prevention Lifeline to a phone number people can more easily remember and access in times of crisis. The shift also includes an online chat feature and new texting option.

About 988 in Minnesota

The Lifeline is a national network of more than 200 call centers. Minnesota has four Lifeline centers that connect callers to nearby or state-specific resources and services quickly and efficiently.

Minnesota calls may be routed to the Lifeline's national back-up centers when the four call centers are at capacity. The National Suicide Prevention Lifeline has several back-up centers that answer the overflow of calls from across the country. This will not change the level of service.

Interpretation services are available through calling the number. Currently, chat and text are only available in English.

The new 988 dialing code will serve as a universal entry point, so people can reach a trained crisis counselor who can help regardless of where they live. Anyone can dial or text 988 24 hours a day, seven days a week, to reach crisis support or to use an online chat feature to connect with crisis support. People can also dial 988 if they are worried about a loved one who may need crisis support.

The Lifeline 10-digit number, 1-800-273-TALK (8255), will continue to be available and will route people to the same resources. People should call 911 if they suspect drug overdose or need immediate medical help.

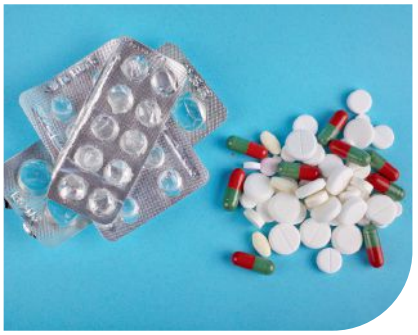
Suicide is a serious and growing public health concern across the United States and in Minnesota. The number of suicide deaths and the suicide rate in Minnesota has increased consistently for 20 years. MDH data shows:

- From 2016 through 2020, there were more than 10,000 hospital visits for self-harm injuries (i.e., suicide attempts) in Minnesota, mostly people ages 10-24, predominantly females.
- Each year, about 75-80% of suicide deaths are males.
- Each year, about 50% of suicide deaths are the result of a firearm injury. Suicide represents 70-80% of all firearm deaths.

Through 988, the Lifeline number will be easier to remember and more accessible through chat and text. This will create more ways and make it easier for the public to find support.

Record number of overdose deaths seen in Minnesota last year

Minnesota public health officials reported a record number of overdose deaths in 2021, most of which can be attributed to fentanyl, according to a new report issued in mid-July by the Minnesota Department of Health (MDH).



The 1,286 overdose deaths reported to MDH last year represented a 22% increase from the 2020 total. For the first time since 2014, there was a larger percentage increase in overdose deaths in greater Minnesota (23%) than in the seven-county metro area (20%).

Preliminary data from 2021 showed a 35% increase in the total number of overdose deaths involving opioids since 2020 (an increase from 685 deaths in 2020 to 924 deaths in 2021). Drug overdoses from non-opioids also increased from 2020 to 2021, including a 34% increase in overdose deaths involving methamphetamine (338 in 2020 to 454 in 2021) and an 81% increase in overdose deaths involving cocaine (85 in 2020 to 154 in 2021).

Many of the opioid overdose deaths involved synthetic opioids, including fentanyl. These deaths increased from 560 in 2020 to 834 in 2021. Through analysis of death certificates, MDH found that fentanyl was involved in 90% of all deaths involving opioids. Fentanyl is becoming more common in illicit drugs, even laced in other drugs like cocaine or methamphetamine.

The MMA, in partnership with the AMA and Providers Clinical Support System (PCSS), developed a physician toolkit (www.mnmed.org/MMA/media/Hidden-Documents/FINAL-DIGITAL-Minnesota-AMA-Opioid-Flyer-2022-(01C).pdf) designed to help reverse the overdose epidemic. The physician toolkit gives Minnesota physicians resources, information, and tools to help treat patients dealing with substance use and substance abuse disorders and provides opportunities to learn about better care for pain.

The full report from MDH can be accessed at: Preliminary Drug Overdose Death 2021 Report (www.health.state.mn.us/communities/opioids/documents/prelim21overdosedeath.pdf).

CMS releases proposed rule for 2023 Medicare Physician Fee Schedule

In early July, the Centers for Medicare and Medicaid Services (CMS) released a proposed rule for the 2023 Medicare Physician Fee Schedule (MPFS). The MPFS sets physician reimbursement under Medicare and serves as the basis of payment schedules used by most public and private payers.

Under the proposed rule, CMS would decrease the MPFS conversion factor (CF) by 4.5%, from $34.61 to $33.08. Most of the decrease (3 percentage points) is attributed to the expiration of temporary, COVID-19-related CF increases passed by Congress in 2021 and 2022. The rest of the decrease (1.5 percentage points) is attributed to an interplay of changes to evaluation and management (E/M) codes (as recommended by the AMA/Specialty Society RVS Update Committee) and a statutory budget neutrality requirement.

The MMA recognizes that cuts to physician reimbursement are inconsistent with inflating practice costs and commits to lobbying, alongside the AMA, for more appropriate rates. The MMA will continue to inform its members as additional analyses of this 2,000-page proposed rule are conducted and as lobbying strategies to counter its cuts are developed.

MMA, specialties oppose Supreme Court *Dobbs'* decision

In late June, the MMA joined with four other physician specialty groups to speak out against the U.S. Supreme Court's decision in *Dobbs v. Jackson Women's Health Organization*, which overturned a nearly 50-year precedent set by *Roe v. Wade* and reaffirmed by *Planned Parenthood v. Casey*.

"Abortion is a component of comprehensive medical care," the statement read. "Healthcare decisions, including whether to have an abortion, are deeply personal and should be made between a patient and their physician. The implications of this decision are profound and will include disruption and, in some states, elimination of equitable and safe access to medical care for women in the United States."

Joining the MMA on the statement were: the Minnesota Section of the American College of Obstetrics and Gynecology; Minnesota Academy of Family Physicians; Minnesota Association of African American Physicians; and the Minnesota Chapter, American College of Physicians.

Despite the Supreme Court ruling, abortion in Minnesota remains legal because of the 1995 Minnesota Supreme Court decision, *Doe v. Gomez*. It is expected, however, that patients across the Midwest will travel to Minnesota for abortions and related services. Both North Dakota and South Dakota are among 13 states with trigger laws that automatically ban abortions as a result of the overturning of *Roe v. Wade*.

Consistent with policy recently adopted and affirmed by the Board of Trustees, the MMA remains committed to ensuring access to safe, effective, and equitable healthcare, to upholding the sanctity of the patient-physician relationship, and to protecting physicians and other healthcare professionals from criminal penalties for the delivery of evidence-based healthcare services.

The day after the Dobbs' decision, Gov. Tim Walz signed an executive order protecting access to reproductive healthcare services in Minnesota. The executive order directs state agencies to pursue opportunities and coordinate among one another to further protect people or entities who are providing, assisting, seeking, or obtaining lawful reproductive healthcare services in Minnesota.

The executive order also prohibits state agencies from aiding in an investigation from other states' attempts to seek civil, criminal, or professional sanctions against anyone seeking, providing, or obtaining lawful reproductive health care services in Minnesota. Additionally, the order includes a provision preemptively declining requests to extradite individuals accused of committing acts related to an abortion.

MMA now offering private implicit bias training

The MMA is now offering private workshops for healthcare organizations to make implicit bias training available to their physicians and healthcare providers. This work is part of the MMA's initiative to advance health equity and address the health disparities that persist throughout the state.

In the 2-hour interactive workshop, participants will examine implicit bias in healthcare settings, understand how it contributes to health disparities, and learn practical strategies for mitigating the effects. 2 *AMA PRA Category 1 Credit(s)*™ are available. Both in-person and virtual options are available.

The workshop can be booked to suit an organization's schedule; participants will be limited to those within the organization. For more information and to schedule a private workshop, contact Haley Brickner, MMA health equity coordinator (hbrickner@mnmed.org).

MMA speaks out on firearm violence, again

At the beginning of June, the MMA and the Minnesota Hospital Association (MHA) released a statement calling for more firearm safety and prevention measures in the wake of the nation's mass shootings, including a shooting at a Tulsa, Oklahoma, healthcare facility that took four lives on June 1.

"The mass shootings throughout our nation in recent months due to gun violence are unfathomable," the statement read. "The hospital, health system, and physician community cannot and will not be silent as gun violence increasingly enters our places of healing, learning, and other community settings—these senseless acts of violence must be stopped. This is a public health crisis and must be addressed."

The MMA included preventing firearm death and injury as one of its top legislative priorities during the 2022 session. With a split Legislature, however, nothing moved forward at the Capitol. In recent sessions, the MMA has advocated for: 1) universal background checks on all firearm transfers and sales; 2) extreme risk protection orders ("red flag" laws) that allow family members a mechanism to temporarily remove firearms if there is a concern that an individual will harm themselves or others; 3) authorizing the use of firearm ownership data for public health research or epidemiologic investigation; and 4) raising awareness of the role that firearms play in suicides.

"Minnesota's healthcare facilities and campuses must remain places of healing—ensuring they are safe for patients, our staff and volunteers, and visitors," the MMA/MHA statement also said. "As guardians of community health, we stand ready to work with policymakers and stakeholders on solutions to prevent these tragedies now and in the future." **MM**

FROM THE CEO

MMA takes the lead with new Minnesota Physician Leadership Institute

After more than two years of planning and preparation, I'm excited to announce the launch this December of MMA's new Minnesota Physician Leadership Institute (MPLI). In partnership with faculty from the University of Minnesota Carlson School of Management, the MPLI will equip physicians with valuable skills to enhance their personal and professional growth. The program will offer world-class leadership training and practical opportunities to put those skills into action.

Following the 2017 closure of the University of St. Thomas Physician Leadership College, the MMA Board of Trustees agreed that the MMA was uniquely positioned to fill the void—but with an updated approach and model. An expert advisory committee helped define the vision for a program that could be applicable to every Minnesota physician, not just physicians interested in formal leadership or C-suite roles. The resulting program, the MPLI, is designed to reveal the innate leader within every physician. The MMA believes that better leadership skills will help physicians advocate more effectively for their patients, empower physicians to influence change within their practices and communities, and help drive improvements in health and healthcare delivery across the state. As a volunteer, member-led organization, the MMA is also interested in helping to grow, train, and recruit future MMA leaders.

The MPLI is built on a 25-physician cohort model that will bring together physicians from different geographies, specialties, and practices for both group learning and independent study. With a mix of in-person and virtual classes, the curriculum focuses on personal leadership skills—skills needed to lead others and lead change—and an introduction to leading organizations. To support continuity across each session and to facilitate practical application of skills to physicians' daily work, each course will have an active mentor in one of the two program co-chairs, Cindy Firkins Smith, MD, and Corey Martin, MD.

Through our partnership with the Carlson School of Management, the MPLI faculty bring expertise and real-world experience to their subjects. The use of case studies, simulations, and assessments will allow program enrollees to be actively engaged in each course. Key MMA events are also incorporated into the program schedule to enable enrollees to apply skills to specific MMA activities, including the annual Day at the Capitol advocacy event held during the Minnesota legislative session.

Your professional growth and success are part of the MMA's commitment to making Minnesota the healthiest state and best place to practice. I'm very proud of the MMA's investment in this new program, one that is available exclusively for MMA members. It is another example of how MMA membership delivers value.

Janet Silversmith
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VIEWPOINT

‘Do no harm’ should go both ways

PHOTO BY KATHRYN FORSS

Edwin Bogonko, MD, MBA
MMA Board Chair

As we reflect on the end of the first summer without COVID restrictions, it is my hope that we all had a chance to focus on self and family. To exhale at the tail end of one of the most challenging pandemics this generation has ever seen, one that required unprecedented sacrifice and resilience. Along the way, we were confronted with a new reality—patients demanding unconventional, non-evidence-based treatments often brought to attention in the public arena. Sometimes, these demands have turned angry and even violent.

Our jobs are, first off, to do no harm. We approach each day with this in mind. But what happens when others want to harm us? We never signed up for this, did we?

For those of us who have been practicing for many years, being harmed by patients seems like a foreign concept. Why would anyone want to hurt us when we are working to help our patient? And yet, increasingly, more and more patients and family members are doing just that. Since the onset of the COVID-19 pandemic, hospitals and clinics have seen a rise in violence toward healthcare workers.

According to statistics from the Bureau of Labor Statistics (BLS), two industries—healthcare and social services—face the highest rate of injuries on the job. These workers are five times more likely to get hurt at work than other workers. In the most extreme cases, the BLS data shows that between 2016 and 2020, an average of 44 healthcare workers were killed in the workplace each year.

We are all under stress—both those who provide the care and those who receive it. The pandemic and growing polarization of opinions are key factors, but none of this excuses lashing out or hurting others. We are not trained to deal with violent behavior but rather to treat the result of violent behavior. Now we are even confronted by legal challenges to our evidence-based edicts!

How do we reduce violent behavior in healthcare settings? One way is to restore respect, for us all to “turn down the rhetoric” and listen to each other. This would include acknowledging the reality that patients have been empowered to challenge norms, sometimes with “Dr. Google” in tow. Tactful dialogue with patients and their families will require priming and learning new strategies by all of us.

We can also work to change laws. We can be advocates. One of our own members is leading the way. “The number of assaults on frontline healthcare workers has dramatically increased throughout the pandemic, and this issue needs to be addressed with serious action,” said Minnesota Sen. Matt Klein, a Mayo Clinic physician who has pushed for legislation to protect his fellow physicians and others on the healthcare team. Unfortunately, so far, Klein has not been successful in his efforts to pass this legislation at the Capitol.

He’s not alone, though. Efforts are underway in Washington, D.C. The Safety from Violence for Healthcare Employees (SAVE) Act, introduced in the U.S. House of Representatives in June by U.S. Reps. Madeleine Dean (D-PA) and Larry Bucshon, MD, (R-IN), would protect healthcare workers against assault and intimidation, similar to federal legislation that has passed for flight crews and airport workers. The bill would also provide grants to hospitals to create programs that could reduce violence and create a safer environment in care settings.

Our jobs are, first off, to do no harm. We approach each day with this in mind. But what happens when others want to harm us?

We should be able to practice in peace without fear of reprisals from patients or their families. Take action. Reach out to your elected officials and ask them to support legislation that protects our profession. And get involved with the MMA. Together, our voices can continue to make a difference. On behalf of the MMA, I salute our community of physicians for staying true to doing the right thing. You can count on our steadfast support.

Pass/fail assessment

Student, resident, and faculty attitudes

BY JILLIAN K. WOTHE, BS, AND ARCHANA RAMASWAMY, MD, MBA

Medical education is changing rapidly, with pre-clinical grades, USMLE Step 1, and clinical clerkships transitioning to pass/fail reporting rather than numerical scores and tiered grading. Few, if any, studies have been done examining the views of those affected by these changes, such as medical students, resident physicians, and attending physicians.

Background

In recent years, medical education has shifted from tiered grading systems to pass/fail methods of assessment. Historically, students received tiered grades for preclinical coursework and clerkships, and received a three-digit score for their USMLE Step exams. The trend towards implementation of pass/fail assessment appears to have begun with preclinical course work in the early 2000s. By the 2015-2016 school year, the AAMC reported that 63% (89 out of 142) of medical schools were using pass/fail assessment for preclinical coursework. By the 2019-2020 academic year, this had increased to 82% (125 out of 153). The use of pass/fail grading in required clerkships has been less widespread among schools. In 2015-2016, only 14 of 142 (10%) medical schools used pass/fail grading for required clerkships, a number that decreased to 11 out of 153 (7%) in the 2019-2020 year. Data from the 2020–2021 year show this number more than doubled, and is now 24 out of 168 (14%). In the spring of 2020, the National Board of Medical Examiners (NBME) announced that beginning in January 2022, USMLE Step 1 would move to pass/fail reporting instead of a numerical score. While Step 1 has always been considered pass/fail for purposes of licensure, the numerical score has played an important role in residency selection since its implementation in the early 1990s.

These changes, when taken together, have fundamentally altered the medical school experience. In the case of pass/fail preclinical coursework, studies have demonstrated improved well-being, decreased stress, and increased satisfaction with the quality of education. Less research has been done on the effect of pass/fail grading during required clerkships, likely because this is far rarer. One study published in 2021 by University of California-San Francisco, which utilizes a pass/fail system for clerkships, surveyed students about their perceptions around the fairness and accuracy of clerkship grading. When compared with the previous class, which did not have pass/fail grading, the study found improved perceptions of the fairness and transparency of clerkship grading but did not show a difference in the perception of bias in clerkship assessment. Since the change to pass/fail for USMLE Step 1 has only recently occurred, existing studies have only been able to predict the potential impact.

Beyond the student experience, these changes have the potential to completely transform the residency selection process. According to a survey administered to 650 program directors by the National Resident Matching Program in 2020, USMLE Step 1 scores and grades play an important role in the application process. When asked which factors were important in selecting candidates for interview, 91% cited USMLE Step 1 score, 69% cited grades in required clerkship, 76% cited the MSPE letter that typically summarizes preclinical and clerkship grades, and 65% cited class ranking, which is determined by pre-clinical and clerkship grades.

The Association of Program Directors in Radiology expressed concern about lack of objective measures and decreased incentives for students to work hard, while program directors in surgery felt that the change would lead to increased emphasis on USMLE Step 2 CK and advocated for more measures, not fewer. No current studies report attitudes towards all of these changes in those actually directly affected-medical students, residents, and attending physicians.

University of Minnesota survey

We conducted a survey examining these attitudes as well as the effect of these changes on students' competitiveness for residency program as assessed by attending physicians involved in resident recruitment. We found higher levels of support for these changes among students and lower levels of support among resident and attending physicians. The most controversial change across all groups was pass/fail clinical clerkships; the least controversial was pass/fail preclinical grades. Students from programs with pass/fail preclinical grades were viewed as equally competitive by attending physicians involved in resident recruitment while students from programs with pass/fail clinical clerkships were viewed as less competitive. These results suggest that views about pass/fail assessment in medical school are highly varied, and depend heavily on role, specialty, and year in training.

The students in our study demonstrated a high level of support for these changes, with 91% agreeing or strongly agreeing with pass/fail preclinical coursework, 55% agreeing or strongly agreeing with pass/fail USMLE Step 1, and 56% agreeing or strongly agreeing with pass/fail clinical clerkships. The most popular reported specialty of interest was surgery (27% of

respondents) and only 13% viewed their desired specialty or program as not competitive. These findings suggest that students may feel that these changes will not affect their ability to match to their desired program, or that they feel that the benefits outweigh the potential risks.

There were lower levels of support for pass/fail USMLE Step 1 and clinical clerkships among fourth-year students. The timing of the survey likely played a role, with fourth-year students beginning residency applications at the time of the survey, while second/third years were preparing for USMLE Step 1. Fourth years likely had stress related to the uncertainties in the residency application process, leading them to disapprove of the pass/fail changes. Meanwhile, second/third years may have been stressed about USMLE Step 1 and wishing it was pass/fail. First years, being the furthest from residency applications, displayed high levels of approval for all three changes.

The most popular change among students from all years was pass/fail preclinical coursework, likely because this change has been in place for over a decade and is widespread across medical schools. Additionally, students have historically been able to demonstrate academic excellence through USMLE Step 1, making lack of grades for preclinical coursework less significant. Free-text comments among students were mostly critical. The most reported concerns related to difficulty differentiating oneself and increased pressure for research, extracurriculars, and a high USMLE Step 2 score.

While some have reported that the shift to pass/fail assessment reduces stress in students, these results indicate that it may just shift the stress to other areas. Students did report that they felt the changes would lead to less bias in assessment, improved learning, and decreased disparities in medical education. This suggests that while students are concerned about the effect of these changes on their ability to match to their program of interest, they place high importance on the potential of these changes to improve systemic bias and learning conditions.

Attending and resident physicians expressed less support for the shift to pass/fail assessment, with attendings being the most skeptical. Attending physicians from surgical specialties and emergency medicine expressed high levels of disapproval for the changes, particularly the pass/fail USLME Step 1 and clinical clerkships. Attending physicians from pediatrics, internal medicine, and OB/GYN had higher levels of support for the changes, although these dropped significantly for pass/fail clinical clerkships. This may be explained by higher reliance of surgical specialties and emergency medicine on USMLE Step 1 scores for resident selection compared to pediatrics, internal medicine, and OB/GYN. All specialties use clinical clerkship grades to evaluate residency candidates, which explains the low levels of approval across specialties.

In free-text comments, the most common concerns were difficulty stratifying students, fears that students will work less hard, and decreased objective data leading to increased reliance on subjective data. Attending physicians involved in resident recruitment felt that students from programs with pass/fail preclinical coursework would be equally competitive for their programs, likely because the use of pass/fail assessment for preclinical coursework is widespread. The same attending physicians, however, felt that students from programs with pass/fail clinical clerkships would be less competitive for their programs. These findings suggest that the concerns of attending physicians about these

FIGURE 1

Attitudes toward pass/fail assessments

Survey questions assessing attitudes about pass/fail assessment in medical school.

The final two questions were only administered to attending or resident physicians who were involved in resident recruitment.

The University of Minnesota has a pass/fail preclinical grading system rather than an A/B/C/D/F grading system. To what degree to you agree with the preclinical classes being pass/fail?

- ☐ **STRONGLY AGREE**
- ☐ **AGREE**
- ☐ **NEUTRAL**
- ☐ **DISAGREE**
- ☐ **STRONGLY DISAGREE**

Beginning in January of 2022, USMLE Step 1 will be switching to a pass/fail grading system instead of a numerical score. To what degree to you agree with Step 1 being pass/fail?

- ☐ **STRONGLY AGREE**
- ☐ **AGREE**
- ☐ **NEUTRAL**
- ☐ **DISAGREE**
- ☐ **STRONGLY DISAGREE**

Beginning in June 2021, the core 3rd year clerkships at the University of Minnesota will be graded pass/fail instead of Honors/Excellent/Pass/Fail. To what degree do you agree with clerkships being pass/fail?

- ☐ **STRONGLY AGREE**
- ☐ **AGREE**
- ☐ **NEUTRAL**
- ☐ **DISAGREE**
- ☐ **STRONGLY DISAGREE**

Will students who are from a school that utilizes pass/fail clerkships instead of honors/excellent/pass/fail be:

- ☐ **MORE COMPETITIVE FOR YOUR PROGRAM**
- ☐ **EQUALLY COMPETITIVE FOR YOUR PROGRAM**
- ☐ **LESS COMPETITIVE FOR YOUR PROGRAM**
- ☐ **I AM NOT SURE**

Will students who are from a school that utilizes pass/fail preclinical grades instead of A/B/C/D/F be:

- ☐ **MORE COMPETITIVE FOR YOUR PROGRAM**
- ☐ **EQUALLY COMPETITIVE FOR YOUR PROGRAM**
- ☐ **LESS COMPETITIVE FOR YOUR PROGRAM**
- ☐ **I AM NOT SURE**

changes are likely rooted in uncertainty about how it will affect the resident selection process. Few objective measures remain, with only some schools reporting measures like class rank.

Overall, our results indicate mixed views among medical students, resident, and attending physicians about use of pass/fail assessment in medical school. Future studies are needed to determine how these attitudes change over time.

Our study had several limitations:

- It was conducted at a single public institution and may not be generalizable to all physicians and medical students. Views about these changes may vary based on region, institutional prestige, and other factors.
- We were unable to distribute the survey to physicians from all specialties and in some specialties, responses were limited. Most significantly, we did not have any participants from family medicine.
- We had significant sampling bias, with students learning about the survey via social media, so students who were not on social media at the time of distribution may not have been included in the study. Furthermore, because we used convenience sampling, it is probable that many of those who participated had strong views on these topics.
- The timing of this survey may have affected the results. This survey was administered in May, when second/third years were taking the USMLE Step 1 exam and fourth years were preparing for residency applications. This may have led to different responses due to increased stress from these milestones. Future surveys could be distributed at institutions across the country with multiple timepoints for students. It will be interesting to examine how these attitudes evolve after the implementation of these changes.

Survey details

All students attending the University of Minnesota Medical School in May 2021 were eligible to participate. This included the first-year students, who were in their summer semester, the second/third year students who were either in USMLE Step 1 dedicated study or starting their clinical rotations, and the fourth-year students who had just finished their third year. Students from the class that had just graduated were not included in the study. In addition to the students, all faculty and residents at the University of Minnesota were eligible to participate in the survey.

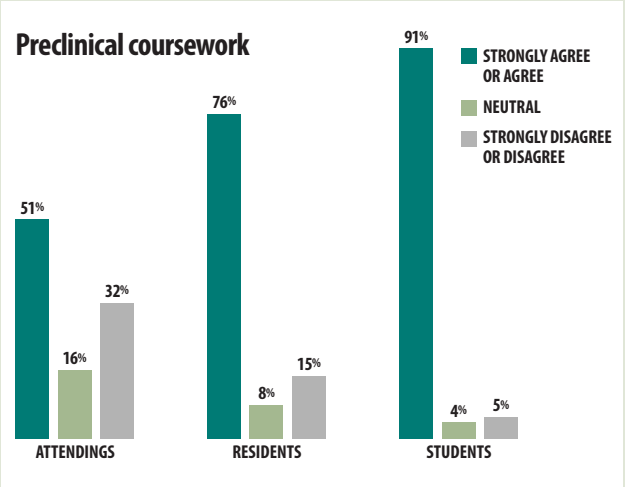
Potential survey items were reviewed with a group of medical students, residents, and faculty for content and language. The survey was piloted by several medical students, residents, and attendings to ensure the order of items was optimal and that the survey was reliable and feasible.

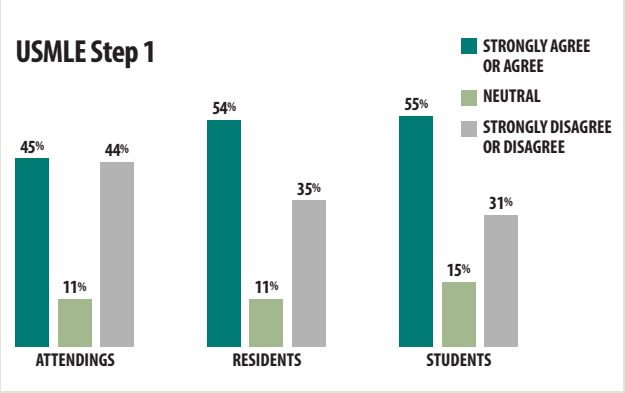
The survey was distributed to students via the respective social media pages. To reach faculty and residents, the survey was sent to department chairs for each major specialty at the university.

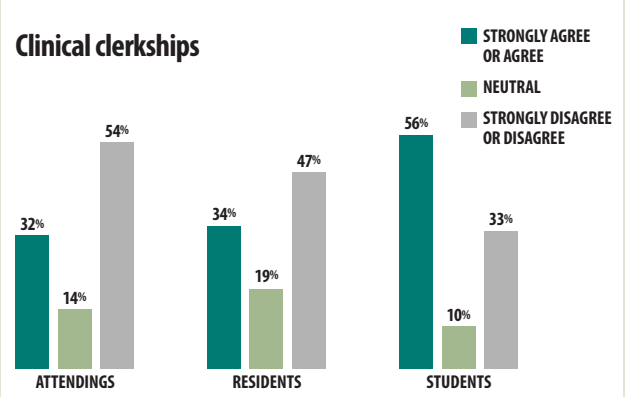
Medical students were asked about what year they were, which assessments would be pass/fail for them, their desired specialty, and their perception of the competitiveness of their desired spe-

FIGURE 2

Attitudes among attending physicians (n=201), resident physicians (n=118), and medical students (n=154) towards pass/fail assessment for (A) preclinical coursework, (B) USMLE Step 1, and (C) clinical clerkships.







cialty or program. Residents were asked their specialty, what postgraduate year they were, and whether they were involved in resident recruitment. Attendings were asked their specialty and whether they were involved in resident recruitment

Out of 473 responses, 201 (42%) were attending physicians, 118 (25%) were residents, and 154 (33%) were medical students. The specialties of the attending physicians who participated were internal medicine (25%), pediatrics (23%), surgery (16%), emergency medicine (10%), neurology (9%), obstetrics and gynecology (8%) and other (8%), which included child neurology, anesthesiology, dermatology, pathology, and psychiatry. The family medicine department declined to participate in the survey. The specialties of the resident physicians who participated were pediatrics (35%), surgery (26%), emergency medicine (10%), obstetrics and gynecology (9%), and other (12%), which included internal medicine, psychiatry, and not listed. Of the residents who participated, 30% were PGY-1, 23% were PGY-2, 28% were PGY-3, 12% were PGY-4, and 7% were PGY-5. Fifty-four percent of attendings reported being involved in resident recruitment, while 64% of residents did.

Of the medical students who participated, 25% were first year students, 40% were second/third year students, and 32% were fourth year students. The students' specialty of interest was surgery (27%), internal medicine (14%), undecided (14%), emergency medicine (11%), obstetrics and gynecology (9%), family medicine (7%) and other (18%), which included psychiatry, radiology, anesthesiology, dermatology, pediatrics, and physical medicine and rehabilitation. Only 13% of students perceived their specialty or program of interest as "not competitive."

Forty-five percent of respondents provided optional free text comments, of which 50% were attending physicians, 22% were resident physicians, and 28% were medical students. The content of these comments is summarized in Figure 2. Attending physicians had the highest proportion of critical comments at 71% while medical students had the lowest at 50%. **MM**

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The promise and pitfalls of telemedicine

Children's mental health during and beyond COVID-19

BY MARVIN SO, MD, MPH, AND CHASE HONEYCUTT, MD

The COVID-19 pandemic created significant shifts for the lives of children, families, and the healthcare providers that serve them. Emergency mandates permitted expanded use of telemedicine models to address certain medical and behavioral health conditions. Using a clinical case example, this article illustrates the many challenges that families of children with mental health needs face in receiving—and optimally benefiting from—mental health screening, assessment, treatment, and care coordination. These barriers have long been documented prior to the pandemic, but merit renewed consideration as telemedicine takes on a larger role in the healthcare system, particularly for primary care providers. Implications for patient families, providers, and healthcare systems are discussed, which could inform clinical and policy activities to achieve behavioral health equity for children.

Case presentation

Alex (name and details changed to protect patient confidentiality) is a 6-year-old Black Dominican male with diagnosed attention-deficit/hyperactivity disorder (ADHD) and fetal alcohol spectrum disorder (FASD) who was seen in the primary care office. He was accompanied by his grandfather and a Spanish-speaking medical interpreter.

Alex was born pre-term to a primigravid mother with alcohol use disorder. He was diagnosed with FASD, based on palpebral fissure length and motor, cognitive, and language development impairments. He was diagnosed with ADHD, combined type, at age 6, after two years of parental and teacher concerns about his inattentive and hyperactive behaviors. He has been on high-dose methylphenidate, which has helped with symptoms of impulsiveness and inattention. However, disruptive behavior problems persisted, even before the pandemic: his teacher reports that he cannot stay seated for longer than 10 minutes, climbs onto the furniture during class, and gets physically aggressive when he does not get his way. His grandfather described Alex as "our little hurricane" and "everywhere all the time," throwing multiple tantrums a day. Symptom severity and frequency increased while Alex was home all day during the pandemic, making it difficult for him to complete schoolwork tasks and causing significant family friction.

Previously, the patient's primary care provider recommended that Alex see a developmental-behavioral pediatrician to discuss optimal management of ADHD. When the family visited the specialist a year earlier, they found the office did not have a medical interpreter. An on-call, telephone-based interpreter service was used for the assessment, but the grandfather "[doesn't] really understand what happened at that visit." They later received a letter

with a list of therapist options, but the family lives an hour away from the nearest clinic and when they called the office, they were told the service might not be covered by Medicaid. The grandfather was also unsure why a therapist would be needed for such a young child. No other treatments have been pursued since.

Alex lives at home with his mother, his mother's boyfriend, his grandfather, an aunt, and two cousins. His mother has been sober for three years. She was recently laid-off from her job as a custodian, subjecting the family to significant financial stress. Through an individualized education plan (IEP), Alex had been working with an aide at his school to improve executive function and manage disruptive behaviors. Alex loves *Blue's Clues*, videogames, and playing soccer with his cousins.

COVID-19 and children's mental health

Alex's story reflects a robust body of children's mental health services research that preceded the COVID-19 pandemic, providing an example of the barriers that many children face in accessing needed behavioral healthcare, including: perceptions of mental health and treatment, knowledge and understanding of mental health conditions, socioeconomic circumstances, and structural-social factors. A clear thread running through his story is the delay in receiving appropriate work-up and treatment. Early identification and treatment of behavioral health conditions in childhood, including ADHD, can improve the developmental trajectory, setting the stage for long-term well-being. Unfortunately, many factors can impede the timely receipt of high-quality services, ranging from language barriers, to limited insurance coverage, to competing demands on family time and resources, to lack of provider education on evidence-based protocols. With the backdrop of the pandemic and broader declines in pediatric preventative care, children's behavioral health may be sidetracked, possibly resulting in under-utilization of services during a developmentally sensitive period.

The pandemic undeniably created significant shifts to the lives of U.S. children, including their family, peer, school, and community relationships. Children's emotional and social well-being are patterned by the presence or absence of safe, stable, and nurturing environments—for many, these contexts underwent radical changes. Disruption of peer and family relationships, increased parental workloads and economic stressors, and impaired access to school-based nutritional, educational, or behavioral supports are just a few realities families have faced. These disruptions may be exacerbating symptoms for children with existing conditions (e.g., anxiety, PTSD), as well as increasing the degree of physiologic or functional dysregulation among at-risk children that previously did not meet diagnostic criteria. Importantly, Black, Indigenous, people of color, and those in socially disadvantaged circumstances are disproportionately at risk to the pandemic's toll on mental health.

Although data continue to emerge regarding the effects of the pandemic and associated mitigation actions on children's mental health, data on rising pediatric mental health-related emergency department visits, child and parent-report of attention problems, externalizing behaviors, and anxiety symptoms associated with stay-at-home measures point to the pandemic's likely collateral consequences. Emerging data indicate that low-income households or those with children with disabilities are being disproportionately affected. Elevations in caregiver symptoms of depression and anxiety also have been documented, highlighting the complex dynamics of the public health crisis within individual family units.

Children with ADHD treated with synchronous videoconference vs. in-person psychotherapy demonstrated greater symptom improvement.

An old solution to a new problem: telebehavioral health

With the onset of physical distancing and quarantine measures, healthcare systems demonstrated a rapid uptake in the use of telemedicine, owing in part to emergency mandates that required insurance plans to cover phone- and web-based services. Provision of mental health screenings, evaluations, treatments (both pharmacologic and psychotherapy), and management services at a distance has long been discussed as a path to rectify long-standing issues of geography and workforce supply. Until now, expansion of telebehavioral health services for children has been limited to certain states and been stymied by legal and financial hurdles concerning privacy, clinical supervision and licensure, eligibility requirements, and reimbursement. The current moment offers healthcare system administrators, providers, and advocates a window to understand the opportunities—and possible downfalls—of telebehavioral health when implemented at-scale.

Research has shown that telemedicine can be as effective for many adult behavioral health conditions with respect to symptom improvement, patient satisfaction, quality of life, and treatment adherence. There may also be similar levels of treatment satisfaction and therapeutic alliance. Although evidence on managing these conditions in children is more limited, there is reason to believe similar findings would emerge. In fact, children with ADHD treated with synchronous videoconference vs. in-person psychotherapy demonstrated greater symptom improvement. Fortunately, many evidence-based programs for children's mood, substance use, and eating disorders have been developed and deemed efficacious over video format. Primary care providers can informally or formally consult with therapists, psychiatrists, and other behavioral health providers for expert guidance on pharmacotherapy and psychotherapy options, functionally serving as the hub of the patient's medical wheel. There is also burgeoning evidence that telehealth modalities can yield benefits for the patient-

provider relationship, such as improved emotional connection, reduced anxiety, and observation of the patient's home milieu.

Telemedicine has limitations, however. It may not effectively reach certain vulnerable populations with limited access to stable or reliable internet, or those in unsafe or non-private living situations. This could include children and youth who are experiencing homelessness, those subject to significant household chaos or family dysfunction, or those living in rural and remote locations. Children and youth in institutional settings, such as juvenile correctional and emergency shelter facilities, can only benefit from telemedicine if attendant organizations designate appropriate resources to enable them to participate in a confidential and meaningful manner. Decision-makers at multiple levels must recognize the possible exacerbation of existing inequalities when designing telehealth policies.

Providers must consider telecommunication infrastructure investment, training, and liability insurance when looking at telemedicine. Working with patients over video may affect clinical decision-making due to challenges in performing physical or mental status examinations or observing nonverbal cues that are particularly relevant to psychiatric care.

Guidance on patients' logistical set-up may be needed, including the field of view, speakers, and microphones of participants' technology (e.g., smartphone, tablet, computer) as well as their physical location. Depending on the concern or nature of the visit, guidance on logistics can be offered during scheduling or prior to the visit. This could include, but is not limited to, pre-completing relevant instruments (e.g., Patient Health Questionnaire), limiting distractions and competing activities, and troubleshooting tips for common videoconference issues. Privacy may be important for discussing sensitive topics such as substance use. Conversely, clinician observation of interactions between children/youth and family members may be important for informal or structured psychotherapy. Inclusion of family members for collateral information (e.g., medication side effects) can be beneficial but may be influenced by technological constraints like audio quality. Ultimately, efforts that assess providers' and patients' perceptions of and experiences with telebehavioral health will be crucial for characterizing the process of care, and informing changes for future practice.

Policies that facilitate telebehavioral health service uptake—such as expanded telehealth coverage by insurers or widespread development of broadband infrastructure—on a permanent basis, beyond the pandemic, could optimize outcomes for children with unmet needs. However, increased adoption of these models is likely not enough to overcome the many other barriers that families encounter in accessing services; multiple policy strategies are needed. For example, families that now have enhanced access to mental health care providers may not benefit if they continue to hold misperceptions about mental health treatment.

Children's mental health needs at the population level continue to outstrip the available supply of providers; even if telebehavioral health addresses concerns about provider maldistribution, the provider pool itself will need to be expanded. Without sufficient providers, long wait lists to see mental health professionals will only grow, even with telemedicine. Greater involvement of primary care practitioners in assessing and managing pediatric behavioral health concerns within collaborative care models would be important for telemedicine to generate meaningful changes moving forward.

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Case outcome

The progression of Alex's symptoms, functional impairment, and family distress suggested that methylphenidate may not be sufficiently controlling the patient's ADHD, particularly in the context of the pandemic. Increasing the dose of methylphenidate was deemed to be inappropriate, given the patient's age and risk for adverse effects. In addition, consultation of American Academy of Child and Adolescent Psychiatry guidelines on the management of ADHD in young children indicated evidence-based parent behavior therapy before to considering further pharmacologic approaches.

With the assistance of a trained Spanish-language medical interpreter using appropriate simultaneous interpretation technique, the provider explained to Alex's grandfather the benefit of therapy for children with ADHD poorly controlled on stimulant medication. A teach-back method was used to gauge the grandfather's understanding of the condition and then fill any knowledge gaps. A nurse case manager made a follow-up call to the patient's mother to ensure she understood the situation and the need for therapy, explain coverage options, and facilitate a warm hand-off to the therapist's office. The care team shared plain-language materials and videos on ADHD and FASD in Spanish and encouraged the family to connect with Alex's IEP team for guidance on contingency planning for the services he had previously received at school while in the classroom. Contact information for a legal program for low-income families was also provided.

Alex and his mother registered for videoconference-based Parent-Child Interaction Therapy (PCIT), an evidence-based program for children with ADHD. The service was covered through Minnesota's Medical Assistance program and implemented through a secure, HIPAA-compliant software. Although Alex's mother said it may be difficult to attend sessions due to her schedule, she appreciates the convenience and being able to complete sessions using her phone at home. Now that Alex's grandfather also has a better understanding of ADHD and appropriate therapies, Alex's care is more openly discussed in the home. The grandfather often reminds the mother about upcoming sessions and listens in from time-to-time, facilitating increased treatment engagement.

The primary care provider set a follow-up visit after three months to assess Alex's symptom progression, academic and social functioning, and family perceptions of PCIT services. **MM**

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Thanks to Virgie Fields, MS, for her support and feedback.

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RWANDA CAMPBELL, MD

- OB/GYN hospitalist, CentraCare Health, St. Cloud.
- MMA member since 2011.
- Grew up in Houston but has lived "around the world." Graduated from Dartmouth College, Medical school at Pritzker School of Medicine-University of Chicago, and residency in OB/GYN at the Naval Medical Center, San Diego. Served in the U.S. Navy for nine years with the rank of Lieutenant Commander. Served as OB/GYN at Naval Hospital Sigonella, Sicily, and Naval Hospital Yokosuka, Japan. Moved to Minnesota after leaving the Navy.
- Husband, Lloyd W. Campbell, Jr., and two adult sons, Lloyd W. Campbell, III, and Gent Campbell.

Became a physician because…

To empower people with the knowledge about their bodies so that we could be partners in their healthcare.

Greatest challenge facing medicine today…

Misinformation—people not believing the science.

How I keep life balanced…

Working as an OB hospitalist allows to me to work hard for 24-hour stints at a time. When I leave my shift, I leave it all at the hospital—no charts or phone calls follow me home. I am now able to focus on wellness on a daily basis.

If I weren't a physician…

Museum critic. I love to travel and visit art museums. I can easily fly into any major world city—New York City, London, Paris, or Madrid—and spend two or three days at their art museums and consider my trip "complete."

HART GARNER, MD

- Neurosurgeon, Midwest Spine & Brain Institute, Maple Grove and Edina.
- MMA member since 2005.
- Born and raised in Minneapolis. Graduated from Miami University of Ohio. Medical school, general surgery residency, and neurological surgery residency at University of Minnesota. Previously worked at Metropolitan Neurosurgery.
- Three children: daughters ages 17 and 9 and a 16-year-old son.

Became a physician because…

I enjoyed studying biology, working with people, and helping them deal with their health problems. I greatly enjoyed learning about the human body and how it works and trying to help where there are problems with the body. I had further interest in working with my hands and having immediate tangible results from what I did, which is what led me to enter the field of surgical medicine.

Greatest challenge facing medicine today…

The greatest challenge facing medicine today has to do with the financing and cost of healthcare in conjunction with the bureaucracy and paperwork required to perform medical care. I think it will be necessary over time to find better systems for healthcare delivery and management.

How I keep life balanced…

I strive to combine my work with the activities I enjoy, including traveling, sailing, music, art, and being with my children. By having these extracurricular activities, I find that I keep my overall life well-balanced and my energy level high for performing high-quality medical care and surgery.

If I weren't a physician…

I would likely be in an engineering field designing medical devices; I like thinking about this area of medicine and using my visual spatial creativity to come up with solutions to medical problems. The other field I have interest in is law, potentially being a lawyer. **MM**

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