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Scholar in chief

Can **Brooks Jackson** help the University of Minnesota Medical School become one of the nation's top institutions? A look at the dean's progress so far.

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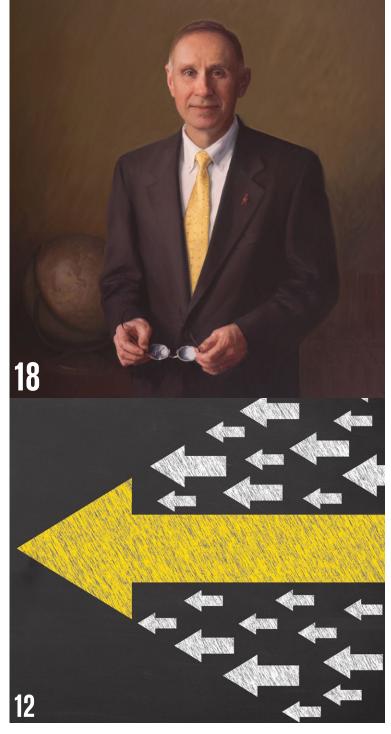
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EDITOR'S NOTE



Charles R. Meyer, MD, Editor in Chief

Tomorrow's doctors need to leave their competitive, A-centric striving at their medical school graduation and embrace the cooperative nature of medical practice today.

From student to physician

don't think I could get into medical school today. Looking at the qualifications of the entering classes of Minnesota's medical schools and comparing them to my college record makes me think that I would have had to seek other gainful employment if the competition that exists today existed in 1970. I suppose I could sport my old-guy curmudgeon hat and say that a 1970 A was a "real" A. But I fear grade inflation, real or imagined, isn't the whole explanation.

Despite the impressive backgrounds of today's incoming medical students, the question of whether medical schools are choosing students with the right quiver of skills to become the kind of doctor we all want to go to still remains. No doubt they are smart and can navigate the avalanche of facts and concepts that will be dumped on them during medical school and postgraduate training. Clearly, they possess stamina, having weathered organic chemistry, biology and physics in college, and having run the gauntlet of the medical school application process, sometimes two or three times. This should prepare them for the long hours of residency and medical practice. And they are children of the digital age, growing up when computers were as much a part of life as toothbrushes. So they should be ready for today's technology-heavy medicine. Yet these characteristics don't guarantee burn-out-free survival in medicine.

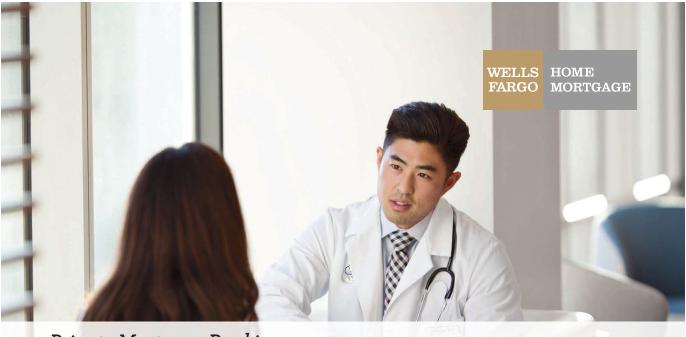
Tomorrow's doctors need to leave their competitive, A-centric striving at their medical school graduation and embrace the cooperative nature of medical practice today. After the luster of grades fades, the care of patients must offer its own reward,

one in which getting an A is harder to define. Few are the doctors who strike out to form their own practice. Most physicians today are not "in charge" and must rely on a team to help them get the job done. In most practices, the thrill of seeing unusual cases will happen less frequently than during training, and more of a physician's time will get eaten up by fulfilling quality standards. In the future, doctors will need to resist the sucking emotional vortex that the Scylla and Charybdis of endless computer clicks and questionnaire completion can exert and have the maturity and insight to see the broader picture of what they do for patients.

Medical schools are taking more mature students than in the past, and the student who stays on the academic track from college to medical school to residency is becoming the exception. By gaining life experiences before going to medical school, students hopefully will keep their focus on the big picture. And that means that long after you have forgotten your GPA and MCAT scores, your main duty is to listen to your patients, know your patients, and care for and about your patients.

So I don't know whether I could get into medical school today, but I do know that I would join the 52,000 students who tried. I would survive organic chemistry, the MCAT, the application process and residency call just so I could have the privilege of shutting the exam room door, sitting down and saying, "So what's going on with you today?"

Charles Meyer can be reached at charles.073@gmail.com.



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Going to the mat

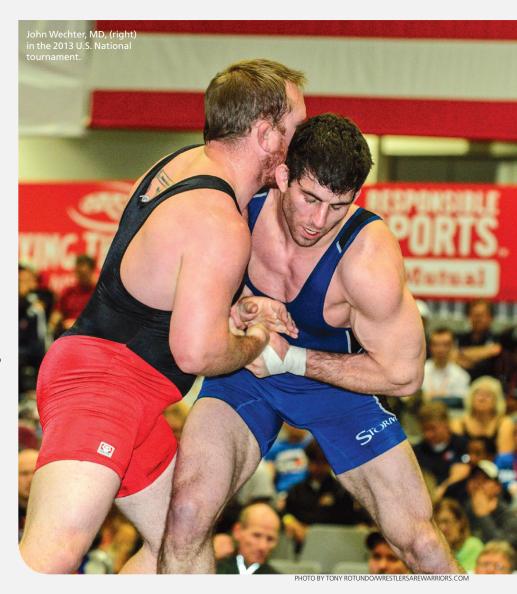
With bulging muscles, a
Roman nose and a treetrunk neck, John Wechter,
MD, looks like a potential
Olympian.

In April, the soft-spoken 35-year-old orthopedic surgeon from Willmar nearly earned a trip to Rio de Janeiro this summer, placing fourth in his weight class at the U.S. Olympic Greco-Roman Wrestling Trials in Iowa City.

A world-class athlete, Wechter is ranked third in the United States in the 98 kg (215 lbs.) weight class. In addition to qualifying for the Olympic trials this year, he also did so in 2004 and 2008 but didn't make the teams. Then in 2009, he dislocated his shoulder so badly he was unable to wrestle for two and a half years. Wechter came back to win his weight class at the U.S. Nationals in 2013. That earned him first seed to represent the United States in the World Team Trials. But when he tore his adductor longus in the first round, it ended his bid.

By then Wechter had the wrestling world's attention because he was able to accomplish all of this while working 80-hour weeks in residency, making it to only 10 percent of practices with the Minnesota Storm Wrestling Club in Minneapolis, while his opponents trained full time. In 2014, he took second at Nationals and became the U.S. World Team alternate.

Focus and determination have always been Wechter's hallmarks, whether in the operating room or on the wrestling mat. At Saginaw High School in Michi-



wrestling "without much success," he says. He continued with the sport at Michigan State University "where I improved, but still wasn't happy with my performance." (His obstetrician father had already in-

gan where he grew up, Wechter started

(His obstetrician father had already inspired Wechter to become a doctor.) With encouragement from his friend, Ramin Mammadov, an international wrestling

champion who came to Michigan State from Azerbaijan, Wechter switched to Greco-Roman style wrestling.

Unlike in high school and college wrestling, Greco-Roman wrestlers can't use their legs to take down an opponent. Nor can they grab their opponent below the waist. That narrows the options for scoring

points and opens the possibilities for big, often explosive throws and take-downs. Body locks, head locks, arm drags, bear hugs and gut-wrenches are used to take down the opponent or turn him so his back faces the mat.

Wechter did his residency at the University of Minnesota and his hand surgery fellowship at Regions Hospital in St. Paul because he wanted to wrestle with the Minnesota Storm. He says Minnesota is one of three places in the country where you have to train if you're serious about making the World or Olympic teams, the others being northern Michigan and the U.S. Olympic Training Center in Colorado Springs.

Once Wechter finished his fellowship in July 2015 he joined Affiliated Community Medical Center in Willmar. He now trains 12 to 14 hours each week, spending 20 days each month in Minneapolis with the Storm and 10 days in Willmar, where he works with the high school wrestling coach, an accomplished wrestler himself.

Wechter's training regimen is equal parts weight lifting, aerobic conditioning and wrestling. His coaches have described him as having "almost freak strength and power," but Wechter knows that's not enough. "Some guys make the Olympic team even though they aren't the strongest in their weight class," he says. "Technique is just as important."

Wechter says he studies films of himself and his opponents. "It's a very cerebral sport, where small changes make you better and technique trumps strength every time," he says. "Speed and knowing when to make your next move are key. Some guys have only one or two good moves, but they're champions because they're really good at knowing when to make that move."

Although he won't be competing in Rio this summer, Wechter will be cheering on his teammates. And he'll be doing it alongside his biggest fans: his wife, Katie, and their three children, ages 1, 3 and 8.

- HOWARD BELL



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Unscripted lessons

red Hafferty, PhD, has been studying and writing about medical education for more than 40 years. A medical sociologist, he is professor of medical education at Mayo Clinic, Rochester. In Hafferty's most recent book, *The Hidden Curriculum in Health Professional Education* (co-edited with Joseph O'Donnell, Dartmouth Press, 2015), he explores the wealth of learning that takes place outside the formal curriculum. He recently spoke with Kim Kiser about the role of the hidden curriculum in medical student, resident and other health professionals' training.

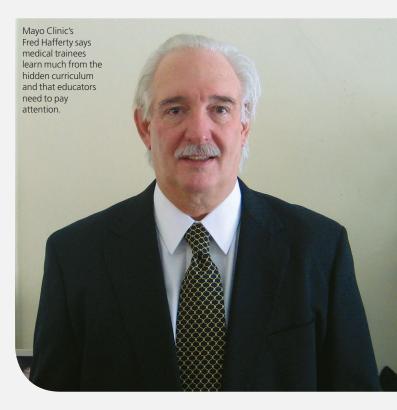
What is meant by the term "hidden curriculum"?

The hidden curriculum is a conceptual framework for thinking about learning that takes place within the context of becoming a health professional. It seeks to explore the difference between "the talk" (what schools say they do) and "the walk" (what schools actually deliver).

It includes the teaching and learning that takes place on rounds, at the bedside. It's the role-modeling, the conversations and interactions among physicians and students. It's also those messages that are reinforced by the work environment and organizational practices. For example, if a medical school designates a course as "elective," it sends a message that the course isn't as important as those found in the required curriculum because not everyone has to take it. If a medical school's primary place of learning is the lecture hall and there is little space for small-group learning, the actual layout of the building tells both students and faculty that lectures are what's important. Trainees (including new faculty members) constantly are reading their environments in an attempt to make sense of what is important and not important, what they should be paying attention to and what they should not be paying attention to, what they should be doing and not be doing. The hidden curriculum tries to home in on these "lessons."

Can you give an example of how this plays out in a clinical setting?

There's a lot of stuff we can't formally teach—how to deal with issues of power and hierarchy, how things "get done" (eg, workarounds), how to deal with particular types of patients. Students learn these things by observing how their attending handles a situation, for example. And the lessons they learn may change with the attending.



What can practicing physicians do to better understand how their actions might influence medical students and other trainees?

Attendings and residents, who happen to do a lot of teaching, are constantly on stage, whether they're aware of it or not. Being a role model is not necessarily a comfortable place. You may do an excellent job of modeling compassion in a particular situation or it might be the opposite. You have to be willing to reflect on how you're coming across. And that can be very hard to do in an environment where you have a lot of responsibilities.

Why did you decide to focus on interprofessional education?

Interprofessional education represents a new educational venue, and it comes with new challenges. How do you make education work when each sector—nursing, medicine, pharmacy, for example—is coming from its own organizational and cultural background? It's just not enough to come up with a formal curriculum and put everyone in the same classroom. There's a lot more that has to be dealt with that happens within the workplace, especially around teamwork and collaboration.

Is the hidden curriculum a hindrance or help?

The hidden curriculum is neither good nor bad. It asks you to be sensitive to the messages organizations such as medical schools, residency programs, hospitals and clinics send out within the context of the work they do. Those messages may or may not jibe with what's being taught in the formal curriculum. The goal is to make it work for you and not work against you.

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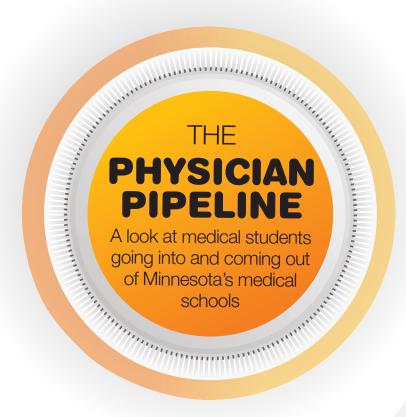
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→SHORT TAKES | WORKFORCE





NUMBER OF APPLICATIONS (MD-ONLY PROGRAMS. 2015)

Twin Cities: 4,118

Duluth: 1,628 Mayo: 4,347

82% of successful University of Minnesota Medical School applicants were involved in medically related work.



NUMBER ENROLLED LAST FALL

Twin Cities: 160

Duluth: 60

Mayo: 46

In 2017, Mayo Medical School will double in size with the opening of its Arizona campus.

THE INCOMING

The class of 2019



MALE/FEMALE RATIO

Twin Cities: 67 male/93 female (42%/58%)

Duluth: 28 male/32 female (47%/53%)

Mayo: 20 male/26 female (43%/57%)

Nationally, males make up 52% and females 48% of the class of 2019.



AVERAGE AGE

Twin Cities: 24

Duluth: 23

Mayo: 25

More and more students take time off between undergraduate and medical school. Some have had previous careers in engineering, the arts, architecture and the military.

THE OUTGOING

Those matching for residency in 2016



NUMBER MATCHING

University of Minnesota*:

Mayo Medical School: 61

*Students from Duluth transfer to the Twin Cities medical school after their second year.

WORKFORCE | SHORT TAKES









GPA/MCAT AVERAGE

Twin Cities: 3.72/31.89 **Duluth: 3.68/28.44**

Mayo: 3.8/33

In addition to having good grades and MCAT scores, 73% of successful University of Minnesota Medical School applicants were involved in community service or volunteer work.



MINNESOTA RESIDENTS

Twin Cities: 137

Duluth: 55

Mayo: 8

80% of students in the Duluth medical school come from hometowns with a population of less than 20,000



STUDENT DIVERSITY

Twin Cities: 36% (58 multicultural students); 19% of the class are members of groups underrepresented in medicine (African American, Hispanic/Latino, American Indian, Hmong)

Duluth: 18.3% (11 students); Native American students account for seven of

Mayo: 46% (21 students); Asian Indian students account for eight of the 21



TOP UNDERGRADUATE **MAJORS**

Twin Cities: Biology, chemistry, biochemistry

Duluth: Biology, chemistry, cell and

molecular biology

Mayo: Biology, chemistry, physics, biochemistry, biomedical engineering



TOP RESIDENCY **SELECTIONS**

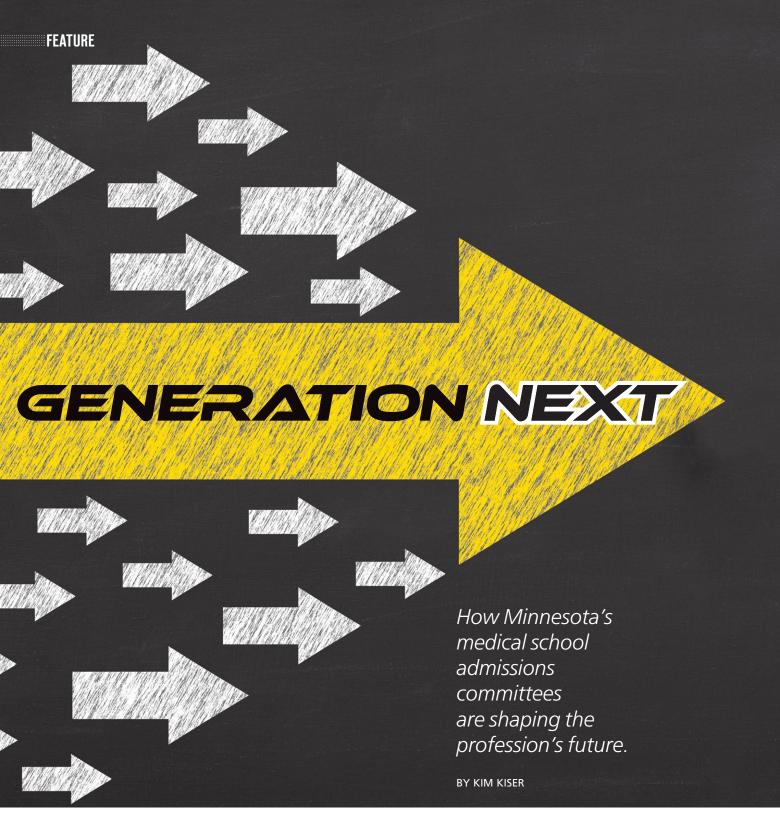
University of Minnesota: Family medicine (17%), internal medicine (17%), pediatrics (10%)

Mayo: Surgical specialties (22%); internal medicine (12%), emergency medicine and pediatrics (9% each)



PERCENTAGE REMAINING IN MINNESOTA

University of Minnesota: 40% Mayo: 36%



athan Chomilo, MD, remembers applying to medical school before a simple Internet search made it easy to find out what schools wanted in a candidate and how their admissions process worked. "Every school had different prerequisites, and not all of them had good websites," he recalls. "A lot of information about the

application process came from message boards where students talked about their interview experience."

Chomilo, who entered the University of Minnesota Medical School in the fall of 2005, says his experience applying to and interviewing for medical school honed an interest in how he and his classmates were chosen. As a second-year student, he volunteered as an admissions ambassador,

leading tours of the campus for prospects who came for interviews. In his fourth year, he was elected to the medical school's admissions committee as a student representative.

Now practicing internal medicine/pediatrics with Park Nicollet Health Services, Chomilo has returned to that committee. He views serving on it as an opportunity to be part of something bigger: "We have the

opportunity to shape the next generation of our profession," he says. "And that's a unique responsibility."

As admissions committees undertake the heavy lifting of building the physician corps of the future, what do they look for in candidates? And how do today's applicants differ from those who came before them?

A big job

Understanding what goes into the selection process begins with understanding how medical school admissions works. The cycle begins in June, when prospective students begin submitting their applications through the American Medical College Application Service (AMCAS), which is operated by the Association of American Medical Colleges (AAMC). The AMCAS application is used by nearly all medical schools in the United States. Prospective students indicate on the form the schools in which they're interested.

At Minnesota's medical schools (the University of Minnesota Twin Cities and Duluth medical schools and Mayo Medical School), admissions staff take the first pass at applications to make sure prospective students meet the minimum requirements such as having taken the necessary prerequisite classes and achieved a certain MCAT score. At Mayo, members of the admissions committee (see "Admissions committees at a glance,") then review the applications of those who pass the initial screening. Admissions officers from both University of Minnesota medical schools send selected students a supplemental questionnaire that asks about their reason for wanting to go into medicine, the extent to which they've explored the field, their commitment to improving the human condition and their dedication to life-long learning among other things. Committee members then review both the primary applications and supplementary questionnaires and select individuals to interview.

Applicants who are selected for an inperson interview meet with committee members, get a tour of campus and talk with current students. Those who pass

ADMISSIONS COMMITTEES AT A GLANCE

Who makes up the committees?

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, TWIN CITIES

34 members; 21 faculty, six third- and fourth-year medical students, seven representatives of physician organizations, including the MMA and Twin Cities Medical Society, or retired faculty

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL, DULUTH

19 members; 14 faculty, one community physician, three retired faculty/ staff, one staff member

MAYO MEDICAL SCHOOL

25 members; 10 faculty, eight third- and fourth-year students, three residents, two emeritus faculty, one community member (may or may not be an MD), one operations specialist (a nonvoting member)

muster with the full admissions committee receive an offer the following spring.

The entire process takes nearly a year and can involve multiple meetings and discussions on the part of committee members. "We want to make sure you can really say why someone should or should not be admitted," says Julia Joseph-DiCaprio, MD, MPH, assistant chief of provider services and senior medical director of primary care at Hennepin County Medical Center, who has served on the University of Minnesota's

Twin Cities medical school committee since 2010.

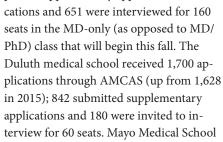
Committee members interviewed for this article agree that the job of winnowing down the candidates has become more difficult as the number of applicants has increased in recent years. According to the AAMC, 52,550 individuals submitted applications through AMCAS in 2015, a 6.2 percent increase over the previous year. First-time applicants increased by 4.8 percent to 38,460. A total of 20,630 students enrolled in medical school last fall.

Minnesota's medical schools have seen similar increases. "The number has gradu-

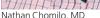
66 WE HAVE THE OPPORTUNITY TO SHAPE THE NEXT GENERATION OF OUR PROFESSION, AND THAT'S A UNIQUE RESPONSIBILITY."

-NATHAN CHOMILO, MD

ally gone up," says Dimple Patel, associate dean of admissions at the Twin Cities medical school. The Twin Cities school received 4,226 applications through AMCAS during the current cycle (the school received 4,118 in 2015). Of those, 2,694 completed supplementary appli-









Julia Joseph-DiCaprio, MD, MPH



J. Michael Bostwick, MD



Ray Christensen, MD

received 4,522 applications (up from 4,347 in 2015), screened 1,785 applicants and interviewed 249 for 46 positions in the MD-only class.

Chomilo says candidates' GPA and MCAT scores have crept upward as well. "And they have very polished applications," he says, acknowledging that a whole industry has been built around preparing students for medical, law and business school, upping the ante among those competing for a limited number of positions.

"I joke and say I would never get into medical school these days," Joseph-DiCaprio says. "These applicants are so much more qualified. They're dedicated and hard-working and all are really committed to the advancement of others."

INCREASING DIVERSITY

As a medical student at the University of Minnesota in the mid 2000s, Nathan Chomilo, MD, was passionate about trying to encourage more students from diverse backgrounds to pursue medicine. In his second year, he started a mentoring program that paired medical students with Twin Cities high school students from underrepresented populations who were interested in medicine and health care. Chomilo, who practices internal medicine/pediatrics with Park Nicollet Health Services and is a member of the medical school's admissions committee, admits his efforts were "short lived." However, the university went on to create the Minnesota Future Doctors Program, which prepares students from underrepresented groups for medical school. Eleven graduates of the program are members of the class of 2019 at the University of Minnesota Medical School, Twin Cities.

"They've done an excellent job," Chomilo says of the program. "It's very helpful for those of us on the admissions committee because we know what it takes to get into and complete that program. We have a good sense of the students in the program and know that they will succeed in medical school and beyond."

The University of Minnesota, Duluth's Center of American Indian and Minority Health, which is housed in the medical school, offers a six-week summer enrichment program for Native American undergraduate students who are interested in health care careers as well as a preadmissions workshop for those who wish to apply to medical school.

Ray Christensen, MD, a family physician and member of the admissions committee at the Duluth medical school, says he would like to see similar programs for Latino, Hmong and Somali students. "Along I-90 in rural Minnesota, 30 percent of students are Latino," he says. "How do we get more of those students ready for medical school?"—K.K.

Looking for more than academics

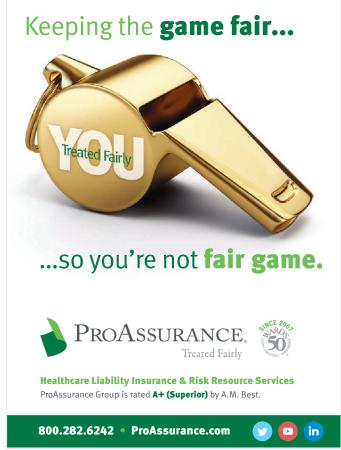
Although having a solid grounding in science is important (and must be demonstrated through MCAT scores), the journey to medical school at the University of Minnesota has changed in the last 10 years. No longer must students follow a narrow path as undergraduates. Chomilo, who recalls having to take calculus as a college senior in order to meet a requirement, served as a student member of then Dean Deborah Powell's Task Force on Qualifications for Admissions in 2007, which took a hard look at the prerequisites for medical school. At the time, prospective students had to complete 15 courses—the equivalent of about two years of college. "Dean Powell was interested in a more holistic admissions process," Chomilo recalls. "She recognized that if you're required to take courses just to get into medical school, it doesn't allow you to develop other interests."

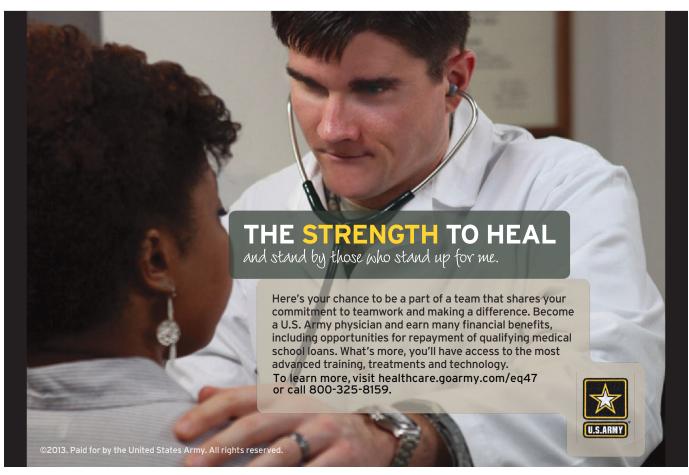
The task force recommended changing the requirements from nine semesters of science to six (one of biology with a lab, one of chemistry with a lab and four additional semesters of science), dropping the calculus requirement and condensing the humanities requirement from two semesters of English and three of humanities to one humanities or social science course.

"The idea was to develop more well-rounded students who are more attuned to what they hope to accomplish in their career personally and professionally," Chomilo says. "They also have a chance to see if medicine is the best thing for them or if, along the way, something else is more their calling." Mayo requires two semesters of biology with a lab, two of inorganic chemistry with a lab, two of organic chemistry with a lab, two of physics with a lab and one of biochemistry.

But it's an applicant's outside activities, experience and personal story that sets them apart in the eyes of admissions committee members. "The student needs to take the opportunity in their application and in their interview to make a good accounting of themselves, to explain how all the things they've done make them into the kind of person they are or they're becoming," says J. Michael Bostwick, MD, senior associate dean of admissions for Mayo Medical School.

"Metrics are nice—MCAT scores, GPA—but that doesn't make the story for us. We want a student who has social responsibility, who has shown altruism and who's given back intensively," says Ray Christensen, MD, a family physician and University of Minnesota Medical School, Duluth faculty member who has served on their admissions committee since 2004. He says many who apply to the Duluth program, whose mission is to train primary care physicians for rural Minnesota, have volunteered or served with organizations such as the Peace Corps or AmeriCorps.





In addition, many have had exposure to health care. Some have worked as personal care attendants or CNAs in nursing homes during their undergraduate years. Others worked on research teams or served as medical scribes before applying to medical school. "Being a scribe gives you a very good idea of what the day-to-day routine of a physician is like," Chomilo says.

Bostwick says that while having exposure to patients and medicine is important, showing leadership and initiative are the true game changers. "Did the student make the most of the opportunities he or she had? Not every student has the opportunity to do basic science or medical research. It's not going to exist on every undergraduate campus. But did they explore what they could? Do they have the work ethic? The organizational skills?" he says.

Bostwick recalls one student who came from a school that was strong in agriculture but not medicine. "She took every possible opportunity to get exposure to medicine, and she did well on her MCAT," he says. Another spent a year in college being treated for cancer and wrote a book about her experience. "She's deeply committed to helping children with serious illnesses. And she comes with a very compelling story that she's using to inform her plans," he says.

In addition, applicants are a bit older than they used to be. According to Patel, only 25 to 30 percent of those admitted to the Twin Cities medical school come straight out of undergraduate school. "The rest take time to do other things—maybe improve their academic profile, or gain experience and knowledge of the profession," she says. Bostwick says at least half of Mayo's class of 2019 spent at least two years doing other things before applying. "No longer is it the four years of undergraduate work and a little shadowing with the local physician like it was back in my day," he says.

In many cases, applicants already have one career under their belt. All three Minnesota medical schools have students who've spent time in the military. The current first-year class at Mayo has two

NONTRADITIONAL STUDENTS BRING A MATURITY THAT'S IMPORTANT. "THEY'VE LEARNED HOW TO DEAL WITH LIFE AND PEOPLE." - RAY CHRISTENSEN, MD

West Point graduates, and the second-year class has a student who attained the rank of colonel before coming to medical school.

Students at the Twin Cities medical school have worked in the culinary arts, theater, engineering, social sciences and other health professions. One Mayo student worked as an architect for 10 years; another was an opera singer in New York; yet another worked as a clothing designer before pursuing medicine.

Christensen says such nontraditional students bring a maturity that's important. "They've learned how to deal with life and people," he says.

Choosing a class ... building a profession

Bostwick admits there's an art to building a medical school class. "We start thinking very early on about how we can come up with a class that represents the breadth and depth of our country, if not the world," he says, adding that there's no formula. "We try to get a class that has all kinds of passionate people."

Bostwick says they look closely at applicants who are first-generation Americans or who've had a difficult start and managed to change the course of their life. "We do require they demonstrate their academic prowess through the MCAT, but we may forgive a low GPA early on if they've gone on and made something of themselves." He describes one student who came to the United States from the former Soviet Union at age 10 knowing little English. "He blazed an amazing academic path and is now in medical school," Bostwick savs.

Admissions committees are also looking for those who are representative of the population they will serve—and perhaps are more willing to work in communities where physicians are most needed. "If you look across the state, we're becoming much more diverse," Chomilo says. "The University of Minnesota trains the vast majority of physicians in Minnesota, and we're behind in having physicians who look like the communities they're serving." That's changing. Nearly 20 percent of the 2019 class at the Twin Cities medical school come from underrepresented populations (see "Increasing diversity," p. 14).

At the Duluth medical school, 11 members of the class of 2019 are from minority groups including seven Native Americans. In addition, more than 90 percent of the class come from communities within Minnesota, and 80 percent hail from towns with populations under 20,000. "If you're going to train someone to practice rural medicine [where there's currently a shortage of physicians], they ought to come from rural areas," Christensen says. "People like to go back to where they grew up."

Bostwick believes having more students with diverse and unusual backgrounds will make medicine a richer, more diverse and more interesting profession. "Those students will come out confident in their medical skills and bring what's special and unique about them to the medical field," he says. "And that's good for patients." MM

Kim Kiser is editor of Minnesota Medicine.



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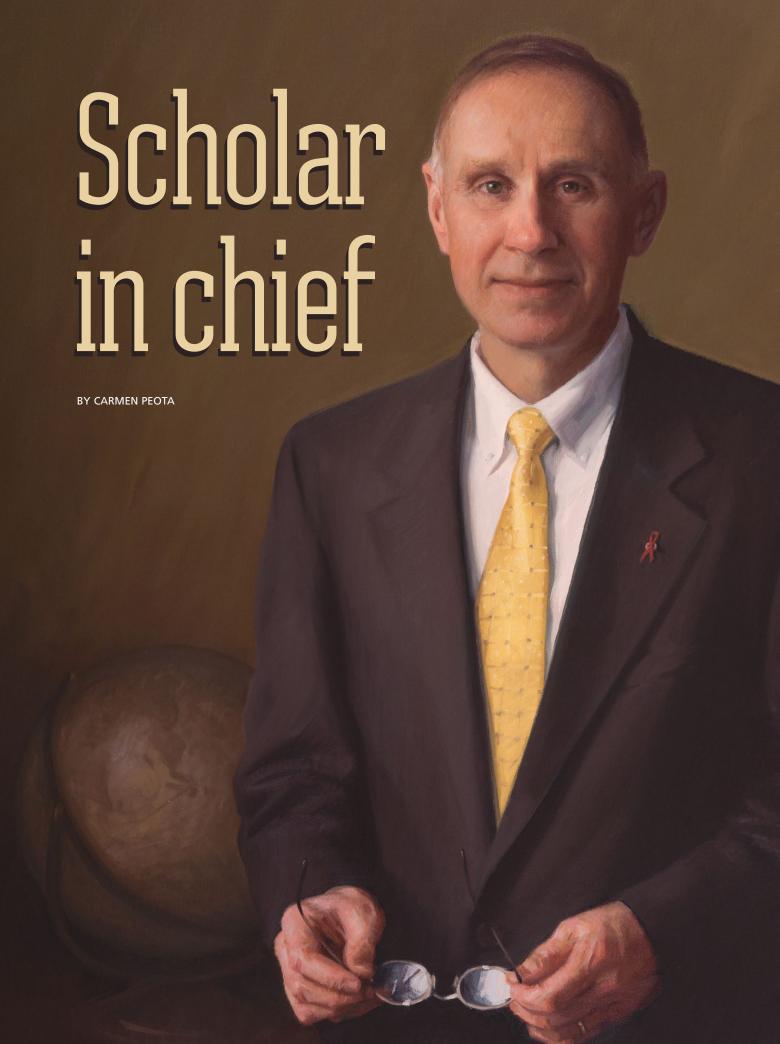
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Can **Brooks Jackson** help the University of Minnesota Medical School become one of the nation's top institutions? A look at the dean's progress so far.

t 9:45 a.m. on a Friday, Brooks Jackson, MD, is buying a sandwich. The dean of the University of Minnesota Medical School and vice president of the Academic Health Center cuts a rather unassuming figure as he stands at the small counter, eyeing his choices before deciding on turkey.

That the medical school's top doctor is snacking well before noon isn't surprising. He gets up before 5 a.m. every day in order to work in an hour-long run along the Mississippi River near his home in downtown Minneapolis. Running is a longtime habit. In fact, as of May 25, he will not have missed a day in 37 years.

Jackson runs in all kinds of weather, usually alone and outside, averaging six miles a day (it used to be more like eight, he admits). He even runs when he's sick. "It makes you get well faster," he says, quickly adding, "At least, I think it does, but I don't have good data to support that."

It's a joke a researcher makes. And Jackson is first and foremost that, a fact that is obvious when you walk into the dean's suite and see, tacked to the wall, the 14 papers he's published since moving back to Minnesota two years ago. Over his career, he's published more than 200, been on the receiving end of hundreds of millions of grant dollars, and, most importantly, done groundbreaking work on preventing mother-to-child HIV transmission.

Jackson's prodigious scholarship is in large part why he now occupies the dean's suite. The committee charged with selecting a new dean a few years back had set out to find someone who could help restore the stature of the medical school. In Jackson, they saw a scientist—someone who knew how to do research, publish and get funding. Moreover, he knew how to motivate others to do the same. During the years he led the department of pathology at Johns Hopkins, it had gone from fifth to first in the nation in terms of NIH funding.

"He was leading a stellar department of pathology that had outstanding academic performance, outstanding clinical performance and was a renowned training program," says Bobbi Daniels, MD, who cochaired the search committee. In addition, he never lost touch with teaching—he taught nearly every Hopkins medical student how to draw blood-and continued to see patients.

He was a leader, a clinician, a teacher. But most of all, he was a scholar.

The potential and the problems

When approached about the position, Jackson was interested. He had done a residency and fellowship and been part of the University of Minnesota faculty in the 1980s, and his wife, a Carlson School graduate, was from the state. He liked that the medical school was set in the middle of a major university in the middle of a major city with many cultural offerings. He liked that it was part of the Academic Health Center. "We're one of the very few academic health centers that has all these

great other schools: pharmacy, nursing, veterinary medicine, dentistry." He saw potential.

He also knew the medical school had experienced "real troubles," as he puts it. Once renowned, especially for cardiology and transplant medicine, it had been struggling since the 1990s, when a scandal over ALG, an immunosuppressive agent used in kidney transplantation, gave it a very bad black eye. In fact, in 1993, Elizabeth Craig, MD, then a member of the university's Board of Regents, was quoted in the Los Angeles Times as saying, "The impression of the public is the university has gone to pot." Its image was hardly helped when the university decided to sell its hospital to Fairview Health System in 1997 because of financial problems, nor when it lost about a hundred tenured faculty in the wake of the sale. To many, it had lost its way.

One who has been outspoken about that is Robert Wilson, MD, a former professor of cardiology who came to the university in 1986 from the University of Iowa to develop an interventional cardiology program. The university appeared to be "lurching from crisis to crisis," he says. "There really wasn't a lot of planning or visionary management." When the hospital was sold to Fairview, he says, "the wheels came off."

Fairview's and the university's missions weren't aligned, he explains. For example, when Wilson approached leaders about buying CT equipment for a new coronary

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angioplasty technique, he was told to wait. "I went to them and said, 'This is important and we need to develop [expertise] in this.' The response was, 'Well that might be a good idea. Let's see how other people do this and if it works.' That told me I was no longer at a major academic institution," he says. They were to follow the pack rather than lead it. "We coasted and the rest of the world sped ahead," Wilson says of the decade that followed.

More recently, though, the medical school has been working to catch up. In 2013, the faculty created an ambitious strategic plan that set as its target being at the forefront of learning and discovery. The plan called for improvements in research, education and clinical care and laid out specific strategies for achieving them, such as hiring early-career faculty with the potential for excellence in research and "cluster" hiring, bringing in groups of researchers to work together. Moreover, it called for a leader who could transform the culture of the medical school "by demanding and supporting excellence."

Jackson liked the plan and the fact that the school was in motion. It had tightened its relationship with Fairview, launching the M Health brand, which it was marketing with an exciting new campaign. A new clinic and surgery center was under construction. And the medical school had hired some of those promising young faculty members. "It's clear that now more than ever, we are extremely well-poised for the future," he said in a video shortly after arriving in 2014.

Asserting himself

Almost immediately, as a member of a Blue Ribbon Committee created by the governor to improve the medical school, Jackson had an opportunity to further define that future. Borrowing from the faculty's idea of cluster hiring, he suggested creating "medical discovery" teams. The university would identify areas where it could be world class, recruit a national leader to head each team and hire eight to 10 faculty members who would work together on a common scientific problem. "They'd all be bringing their own grants,"

Jackson says, kick-starting the U's efforts to climb from its No. 32 spot on NIH funding lists and to lead scientific achievements. With input from an external panel, medical school faculty identified its four areas of focus: addiction, the biology of aging, optical imaging and brain science, and rural/American Indian health disparities. Last year, the Legislature approved \$12 million per year for two years, and the U began recruiting for the teams. It is currently conducting final interviews with several candidates.



The idea reflects Jackson's core belief that the medical school needed to be more strategic about where it was investing its resources. "You don't want to sprinkle resources all around," he says.

Jackson soon started expressing his belief that all full-time medical school faculty needed to be engaged in scholarship. To him, that meant faculty had to publish. "You can't be a top-notch medical school unless your faculty, as many as possible, are publishing," he says. "You're not going to get funding, not going to get national awards, not going to be asked to be on

national committees, not going to attract the best students. It's how you have impact. People are not going to adopt a new way of practicing medicine or a new procedure unless it's been studied, peer-reviewed, validated. If you want to change the practice of medicine, you've got to publish!"

Jackson was insistent and set the bar high: Faculty needed to publish at least once a year in a peer-reviewed journal. He worked with technical experts to develop software to help track their progress. He created new incentives for department

One of Brooks Jackson's priorities is making medical school more affordable, and he's proud that the university has kept tuition flat for four years and decreased fees. "Students have so much debt, it's affecting their choice of specialty," he says. "I really feel they should follow their passion."

chairs, basing part of their salaries on the productivity of those in their departments. And he installed a "Wall of Scholarship" on the second floor of the Phillips-Wangensteen Building, a central spot in the medical school complex with lots of foot traffic, showcasing papers by current faculty members that have been cited a thousand or more times in the medical literature.

Some like Stephen Haines, MD, who chaired the department of neurosurgery for a dozen years, were pleased with the new push to publish. In fact, Haines says it was helpful to have the dean supporting an idea he'd been pushing for years. "It's

part of being a faculty member of a medical school. That's what you sign up for," he says.

Others pushed back. One was Macaran Baird, MD, chair of family medicine and community health, who was concerned that the new mandate to publish might put some of his already hardworking faculty members who had focused on clinical care and teaching in jeopardy. "I felt it takes a balance of clinical, educational and research agendas," he says. "I didn't understand at first how that balance was going to be struck."

Baird challenged Jackson in meetings and alone, asking how people who hadn't been expected to publish could be expected to do so now. He says the dean listened but didn't waver. "He understood [the concern] and thought we could do better." Even as Baird pushed back, Jackson held his ground. The process of conducting research—formulating a good question, reviewing the literature, designing a study, gathering data and then writing about it, would sharpen their thinking. If they published their findings, they'd get feedback from across the country, even the world, he explained.

Jackson described his own painstaking process and then told how he'd been meeting with a graduate student for six months trying to come up with a research question. That struck a chord: "If he's one of the world's greatest people in pathology and it takes him six months to define a research question, why do we think we can do it in an afternoon, which is what we've been doing?" Baird says. "He has probably saved more lives than this entire medical school put together with his research on lowering the rate of transmission of HIV in mothers and infants. We could probably learn from this fellow."

Leading by example

Soft-spoken yet articulate, Jackson persuades by simply explaining his own actions. He doesn't ask the faculty to do anything he doesn't do. Research? His 14 papers on the wall are proof of that. Clinical care? He does that, too, seeing patients



Known as "a research guy," Jackson has been involved in clinical trials in Uganda since 1989. He estimates he's been to the country 65 times.

Why the man matters

To Michael Wall, MD, chair of the department of anesthesiology, having a dean who's an academic heavyhitter matters, especially when it comes to recruiting new faculty. And that is in large part what Wall has been doing since he arrived at the University of Minnesota in 2013.

Shortly after he became chair, most of the anesthesiology faculty left for private practice. That, coupled with a number of retirements, left the department with low numbers. Wall had to rebuild almost from the ground up. Last year, he hired 10 new faculty members; this year 16 are coming on

One of those is Mike Todd, MD, former chair of the University of Iowa's department of anesthesiology and editor-in-chief of Anesthesiology. Todd will hold a new position: vice chair of research. Wall explains that Todd's signing on with the university is largely because of a chance meeting between Todd and Medical School Dean Brooks Jackson, MD.

Wall had invited Todd to be the inaugural speaker at a new lecture series designed to spotlight anesthesiology research. The morning of the day of the lecture, Wall happened to be meeting with Jackson, who asked him what was new. Wall told him about the upcoming lecture, and the dean asked him if he could come. "I said, 'Sure you can come. You're the dean," Wall says.

That evening, Jackson sat next to Todd during dinner, and the two talked for an hour. After the lecture, Todd came to Wall and asked if he'd consider him for the new vice chair for research position he was trying to fill. Todd was retiring from Iowa but still loved research and mentoring junior faculty. He also liked what he had heard from the dean.

Would he have decided to come to Minnesota if he had been sitting next to someone else that night? "It's hard to know, but probably not," Wall says. "Brooks is a research guy, and they hit it off." - C.P.

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one weekend a month at the hospital and clinics. Education? He still mentors students and trainees

Jackson says his walk-in-their-shoes approach actually serves his own purposes. By working in the clinic and hospital, for example, he sees firsthand the issues he hears about. "There's nothing like experiencing problems if you want to make the system better," he says. "I understand their frustration about an Epic software or coding issue or when I can't get a procedure done that I need for a patient."

"He talks the talk, walks the walk," says Michael Wall, MD, head of the anesthesiology department, who interacts regularly with Jackson at meetings of the clinical faculty heads. Wall adds that he's also straightforward. "He's got a transparent moral compass. You know where he's headed."

Bevan Yueh, MD, MPH, chair of the department of otolaryngology/head and neck surgery as well as of the board of University of Minnesota Physicians, holds a similar view. "He exudes honesty. He tells you where he is. He tells you what he wants. ... He has no hidden agenda. It's nice leadership for this time."

It's a style that appears to be working in the latest round of conversations between the medical school and Fairview. Jackson and Fairview interim CEO Dave Murphy are in discussions about a full-fledged merger between the two institutions, an idea that's been floated in the past but always sank under its own weight. "They got together and started talking about what they could do together. Those two have been the force to initiate discussions we've never had before," Yueh says.

The idea is to create a new entity called University of Minnesota Health. The hope is that the university and Fairview can move from what Daniels, who also was one of the architects of M Health, calls "functional integration" to complete "structural integration," and form an integrated academic health system that will extend the university's reach to all of the places where Fairview now has a presence.



Unanticipated medical career

After graduating from Kenyon College in 1975, where he majored in history, Brooks Jackson had no intention of going to medical school. He went instead to Dartmouth's Tuck School of Business and earned an MBA. That led to a hospital administrator job in the pathology department at Dartmouth–Hitchcock Medical Center. A year later, he started at Dartmouth Medical School. "Business school was much harder than medical school," he says, explaining that it required more problem-solving, while medical school was more about memorization.

Jackson says having a larger network would give more patients access to the university's experts and the university access to more patients. It also would enable the university to expand its clinical trials, something he says needs to happen, and provide more training spots for residents, medical students and allied health professions students.

Whether the merger will happen remains to be seen, but Jackson is giving it all he's got, spending half his time on the negotiations.

The rest of his time is split between his "normal" duties and responding to problems that arise. One is a very thorny issue that started 12 years ago in the psychiatry department when a patient in a clinical trial died. Continued allegations about the mishandling of that trial and the university's response have led to multiple investigations of not just the psychiatry department but also the U's institutional review board and overall research methods.

In March, Jackson, along with University President Eric Kaler and Medical School Vice President for Research, Brian Herman, PhD, testified before a legislative committee about the university's efforts to improve in these areas. In prepared remarks, Jackson reassured lawmakers that with newly instituted policies and

procedures, the university could ensure the safety of research participants. It was a top priority. Then in response to a question about how the university was going to rebuild trust among staff and faculty, Jackson spoke off the cuff, as if to say the new policies and procedures were only part of the issue. The key, he said, was to get investigators to be more inclusive, to build relationships, to consider staff and participants partners. It was insight from a researcher who has been involved with more than 100 clinical trials himself.

Although Jackson knows the medical school has its problems, he believes it is moving in the right direction. He sees his role less as steering the ship and more as stoking the fire to keep it going. "What we're trying to do is accelerate the speed," he says. Will it get it to where he wants itthe No. 1 spot in national rankings during his tenure? Jackson admits even he isn't sure. "I probably won't be able to do that in my lifetime, but I want to be able to make a significant contribution to getting us there," he says. In the meantime, he is taking all the steps he can. One by one. The job, he admits, is a lot like a long run—a marathon. MM

Carmen Peota is a Minneapolis writer and former editor of Minnesota Medicine.



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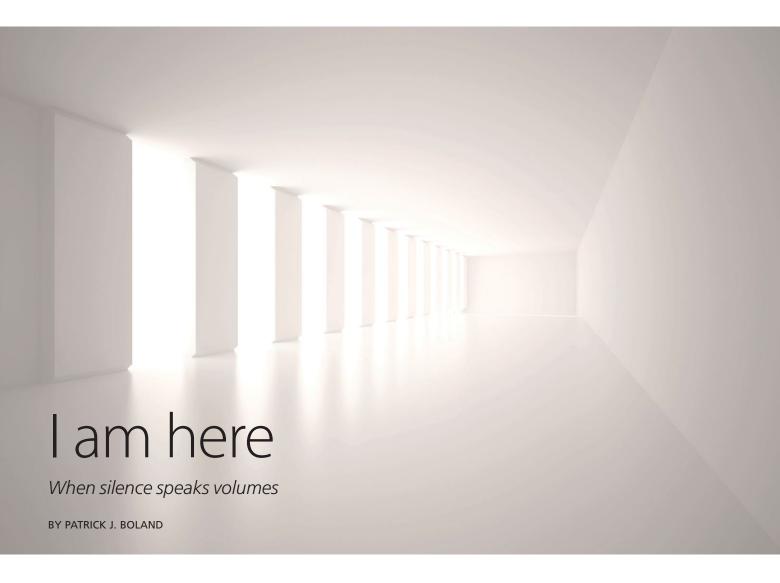












t was a Thursday when an ambulance brought my aunt to the hospital. Her breast cancer had metastasized to her femur, and the bone had shattered.

The next day, she traded stories and jokes with my parents from her bed. They learned from my uncle that she had three months to live.

When my sister and I visited her the following morning, she was unconscious. Her breathing was heavy, uneven. An hour later, after I dropped off my sister at school for play practice, I sobbed over my steering wheel in a corner of the parking lot.

I drove back to the hospital. Within an hour of my return, my aunt passed away.

Afterward, I could only think of how I had stood silently in her room that morning; of her labored breathing and the hum of the air conditioner; of my uncle's words: "Tina, Patrick and Kelly are here. They came to say hello"; and of how I stood there unable to summon the strength to simply say, "Hi, Aunt Tina, I am here."

I have never forgotten my silence.

Our conversations were long and animated. He would ask me about my life, my running, my education or fuss over whether I was wearing appropriate clothing for the cold weather. I would listen to his recounting of the latest of his medical maladies and his sometimes "colorful" descriptions of the nurses or residents.

I listened as he talked about his pain meds and physical therapy. About how he could no longer see. About how he could no longer walk. About the back pain that would wake him at night. About the loneliness that would engulf him. Many times

we laughed about the food in the cafeteria or the latest failures of the local college football team. Other times, I would try to comfort him as he sobbed; his head would heave and tears would roll, all in utter silence.

I remember one time in particular when he asked me what the year was. "Six years ... I've had this for six years," he murmured. "And all I can do is sit here and wait to die."

I did not know what to say.

When did I decide to commit myself to medicine? It could have been during one of those clichéd childhood moments we all reference in retrospect. But I doubt it. After all, I wanted to be a train conductor, courtesy of Thomas the Tank Engine. As my mom will tell you, the intricacies of

trains were my singular obsession during grade school.

It could have been the first time I heard about replacing an eardrum with a piece from the outer ear—a procedure called "cartilage tympanoplasty." Then again, maybe it was the moment in which I first heard the surgeon's rhythmic, almost musical cant: "irrigation, please..." "suction..." "suture..." Or perhaps it was the nerdy thrill of actually seeing a dermatome outside of that one medical textbook, p. 487, figure 13.5.

Perhaps it was the day I stood with two young parents as their wheezing, 3-month-old baby tested positive for RSV. Or when I placed my stethoscope on a scar and heard the repaired heart of a young boy with Down syndrome. Or when I stood near a 32-year-old woman as she heard sound on her left side for the first time following an aggressive ear surgery. In those moments, I knew I wanted to have a real and palpable role in shaping patients' care.

More likely, it happened during those silent moments. The day I could not find the voice to say hello to my aunt when I visited her in her hospital room. The winter afternoon when my friend at the hospital began to cry. Or during the car ride with a friend who shared her unfulfilled plans for suicide.

What do you say when words are inadequate? When people expect you to make things better but you are helpless to change them? I didn't know. But I could see that it is not only illness, but isolation, that destroys people. Above all else, I decided to go into medicine to break the silence.

Although I may not be able to be my patients' No. 1 confidante or their go-to for moral support, I want to be someone they can trust when all else fails, even when there is not a single thing I can do to cure them. Ultimately, that is the real side of life, and that is the real role I intend to play as a physician.

I want to be there when no one else is. And in those times, I will not remain silent. For I know that what they need to hear is simply, "I am here." MM



Patrick Boland is a third-year medical student at the University of Minnesota who blogs at www.patrickjamesboland.com. He wrote this essay while pondering what can be done when medicine has no more to offer. "Where does that leave us as physicians? Where does that leave us as human beings?"



Family medicine

Inspired by their grandfather's legacy, two brothers reflect on their time together in medical school.

BY DOMINIC DECKER AND JOSEPH DECKER

unk beds were a staple in our house. These sturdy bedroom fixtures became a symbol of our brotherhood. In a household of five siblings, they represented the daily compromise of shared space. They also were where Joe, being four years older than Dom and having dibs on the top bunk, could display his seniority. Additionally, they were a quiet place where we listened to our father tell us bedtime stories. It was in those bunk beds where we first heard stories about our grandfather, a family physician, whose legacy cultivated our earliest interest in medicine. Now, at the ages of 32 and 28, we are both graduating from the University of Minnesota Medical School, the alma mater of the grandfather we never met.

Charles Decker's figure loomed large, yet mysterious, over us as children, even though his untimely death when our father was 14 prevented us from personally knowing him. Dr. Decker, as our aunts and uncles reverently called him, was brought to life in stories shared both at bedtime and during family gatherings—stories about house calls he made, babies he delivered, his capable presence in his St. Paul neighborhood.

We learned that Dr. Decker often went out of his way to look after his patients. One story that was passed down was about an elderly patient who was living alone and struggling to care for herself and her home. During a house call, Dr. Decker discovered there was no food in her refrigerator or pantry. He left her, drove to the



The authors' grandfather, Charles Decker, MD, as a family medicine resident at Mercy Hospital in Janesville, Wisconsin, in 1942-43.

grocery store and returned with food in hand. This act of kindness revealed much about how our grandfather approached the doctor-patient relationship.

Now more than 75 years after Charles Decker graduated from the University of Minnesota Medical School, we have the privilege of continuing on as the next generation of Drs. Decker.

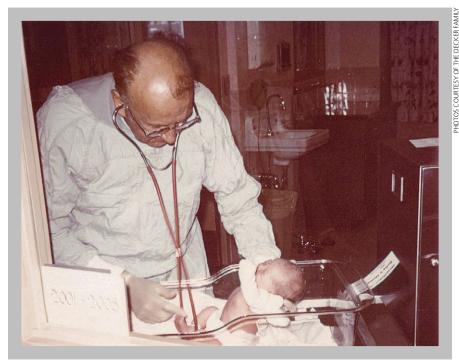
Growing up, our different ages and interests often led us on divergent paths. We overlapped in grade school for four years, then went on to different middle

and high schools. We graduated from high school and eighth grade in the same year. As adolescents preoccupied with our own activities and friends, we didn't talk much about the future. Yet individually, we were grappling with the question of career. And unbeknownst to each other, we found ourselves recalling stories of Dr. Decker and wondered if medicine might be an option.

It was during college that we each began to feel certain that medicine was the only field that would offer both challenge and fulfillment, although we both completed English degrees. Afterward, Dom worked as an emergency department scribe before earning a master's degree in narrative medicine. Joe worked as an operating room technician and later in pacemaker and ICD sales for Boston Scientific. During those years, we separately met physicians who inspired and mentored us. Our mutual interest in medicine finally turned into a shared passion.

As we applied to medical schools, we shared MCAT study resources, discussed personal statements and offered support as we waited to hear about admission decisions. On a spring day in 2012, we received telephone calls each within several minutes of the other informing us of our acceptance into the University of Minnesota. Although we had other options, our grandfather's being an alumnus and the opportunity to go to school together made our decision obvious.

During our first two years of medical school, as we started to build the foundation of our medical knowledge during



Charles Decker in 1970 working in a newborn nursery.

countless hours in lecture halls, our relationship as brothers began to blossom. We engaged with one another daily, sharing new knowledge and clarifying difficult concepts, speaking to each other about medicine as only two English majors could.

More importantly, we overcame challenges together. We sat near each other during seemingly endless exams, often exchanging anxious yet reassuring glances before our tests were handed out. After each exam, we were the first to congratulate one another. We felt a great pride in seeing each other succeed, knowing the sacrifice and diligence that goes into each passing grade in medical school. It was like we were once again childhood bunkmates.

The camaraderie brought about by our shared experience in the classroom became the bedrock of our relationship and served us throughout our clinical years as well. We processed countless stories together—both tragic and uplifting—and in doing so have started to learn what it

means to be a doctor and practice medicine.

For each of us, our time on the palliative care service at Hennepin County Medical Center stands out. On this rotation, we had the unique opportunity to work with terminally ill patients. Having completed the rotation within several

months of each other, we spoke often about the spectrum of emotions that accompany a dying patient and their family. We talked about family meetings, in which acceptance and gratitude prevailed, and also about devastating disease processes that sadly seemed to steal our patients far too quickly.

By processing our own raw emotions with each other, our bond deepened in ways that simply had not been possible before.

The hospital, in the heart of downtown Minneapolis, brought us in contact with

a large number of underserved patients. Some brought all of their personal belongings with them in a suitcase. Others didn't have a safe place to go after being discharged. The experience gave us insight into what our grandfather saw when he opened his patient's empty refrigerator. And it broadened our understanding of the doctor-patient relationship, an alliance that Charles Decker had artfully mastered decades earlier.

The unique nature of our situation has not been lost on us. We were particularly aware of that on Match Day, as we stood next to each other, envelopes in hand, nervously waiting to find out where we had been placed. When we learned we had both matched into our first-choice programs, we were overcome with happiness for ourselves and for each other. Our mother caught this seminal moment on camera, panning back and forth, somehow perfectly capturing each of our reactions.

Although geography will separate us during residency, the bond we have formed during medical school will continue to sustain us as we each become Dr. Decker. We leave medical school with a transformed understanding of medicine and with a strengthened relationship as brothers and, now, colleagues. MM



Dominic Decker and Joseph Decker are 2016 graduates of the University of Minnesota Medical School. Both will begin internal medicine residencies in June; Dominic at Brown University and Joseph at the University of Minnesota. As English majors, they considered writing a natural outlet to process their emotions in the quest for a better understanding of themselves and their patients. This essay is their first joint piece of writing.



White coats lobby their legislators

PHOTOGRAPHY BY KATHRYN FORSS

ore than 100 physicians and physiciansin-training met with their legislators in St. Paul on March 23 as part of the MMA's annual Day at the Capitol event.

Physicians, residents and medical students from across the state gathered to discuss with lawmakers the need to reform medication prior authorization, ensure the sunset of the provider (sick) tax and strengthen the state's immunization laws.

The day ended with a reception at the Doubletree by Hilton in St. Paul with Rep. Erin Murphy (DFL-St. Paul). Rep. Tara Mack (R-Apple Valley) was scheduled to speak to the group earlier in the day but was unable to attend because of a legislative conflict.

"We had a great turnout once again," says Dave Renner, MMA director of state and federal legislation. "It's always encouraging to see physicians, students and residents take time out of their busy schedules to get involved in the legislative process. Lawmakers always tell us how influential it is to hear directly from their constituents."









- Erin Peterson, MD
- 2 Medical student Salman Ikramuddin
- 3 Medical student Kim Uy
- Medical students Stephen Palmquist and Courtney Moors









- **5** LRT came in handy to get from downtown St. Paul to the Capitol.
- Physicians and physicians-in-training didn't let the spring snow slow them down.
 Carrie Borchardt, MD, shares a laugh with Sen. Greg Clausen.
- 10 Medical student Aaron Kramer; Douglas Pryce, MD; T. Michael Tedford, MD; and Elizabeth Elfstrand, MD, enjoy a moment with their legislator.
- Robert Moravec, MD.
- Maria Loerzel, MD, and her fellow Willmar physicians speak with Rep. Dave Baker.



News Briefs



Prior auth bill progresses in Senate, stalls in House

An MMA-backed bill that will help patients get needed medication in a timelier manner and reduce the hassles physicians face with prior authorization continues to live on in the Senate.

Sen. Melisa Franzen (DFL-Edina) amended her bill (SF 934) in an attempt to address critics and reduce the cost to the state associated with it, while keeping elements critical to protecting patients. So far, the House version of the bill has not been heard in committee despite vigorous efforts by the MMA and the Fix PA Now coalition.

"We continue to be disappointed that the House did not hear this important issue in committee," says Dave Renner, MMA director of state and federal legislation. "But we're continuing to work with legislators who want to fix PA now."



Bill to fight drug abuse with PMP gains traction

Legislators remain interested in finding solutions to the issue of prescription drug abuse, particularly opioid abuse. A House bill (HF 1652) that would enhance the state's Prescription Monitoring Program (PMP) has passed through several committees.

Under the proposed legislation, the PMP would be allowed to use its database to substantiate investigations of prescribers accused of criminal activities or impairment as a result of abuse of a controlled substance. The bill further allows PMP staff access to the database during an investigation of a prescriber accused of inappropriately prescribing controlled substances. The House bill has been amended to include mandatory registration of all prescribers.

Importantly, the bill does not require consultation of the PMP before a prescription can be written, a step some legislators have sought. The MMA and other physician groups have raised concerns about the administrative burden such a mandate would have on physicians and other prescribers.

Push to re-instate provider tax dies

The MMA testified in opposition to a bill that would re-instate the 2 percent provider (sick) tax in mid-March. Ultimately, efforts failed and the tax is still set for repeal on December 31, 2019.

Dave Renner, the MMA's director of state and federal legislation, argued that:

- The tax is regressive, selective and falls most heavily on the sick
- The tax was repealed in 2011 with bipartisan support because there was less need for the Health Care Access Fund (HCAF), which gets its revenue from the tax, with the passage of the
- Both the General Fund and HCAF have surpluses
- The tax would add more than \$720 million to the overall cost of health care in 2021, if it continues past its current 2019 sunset date.

Opposition to the provider tax has been a top priority for the MMA.



Work group on reducing health care costs meets

A new MMA steering committee that will focus on health care affordability in Minnesota began meeting in late March. The group is calling its effort the MARCH (Minnesota Action to Reduce Costs in Healthcare) Campaign.

The group's charge is to focus on administrative burden and inefficiencies; prescription drug costs; and low-value and unnecessary care.

The committee includes representatives from a range of specialties and group sizes and will meet approximately six to eight times in 2016. It is chaired by Macaran Baird, MD. Other members include: Katherine Clinch, MD; David Herman, MD; Kenneth Holmen, MD; Kourtney Kemp, MD; Phillip Kibort, MD; Thomas Kottke, MD; Lisa Mattson, MD; Robert Nesse, MD; George Schoephoerster, MD; Kevin Smith, MD; Mike Tedford, MD; Laamy Tiadjeri, MD; Robert Wieland, MD; Douglas Wood,

MD; and James Woodburn, MD. Janet Silversmith, MMA director of health policy, staffs the committee.

Avera Marshall lawsuit enters next phase

Attorneys representing three physicians who are suing the administration of Avera Marshall Regional Medical Center filed an opening brief in the Minnesota Court of Appeals in mid-February. The MMA and AMA Litigation Center are providing financial support for the physicians' appeal.

Last October, the Lyon County District Court in Marshall, Minnesota, ruled that the medical center administration has the authority to amend the medical staff bylaws without approval from two-thirds of the medical staff. The three physician plaintiffs, as well as others, dispute this.

The ruling came 10 months after the Minnesota Supreme Court ruled in favor of the medical staff in its case against the administration. The Court said that the staff is a legal entity that may bring suit on behalf of its member physicians, and that bylaws agreed to by a hospital and its medical staff constitute a contract to which both parties must adhere. However, the Court did not decide on whether the hospital's administration could unilaterally change the medical staff bylaws. It remanded this issue to the District Court.

Following the District Court's ruling, the physician plaintiffs decided to continue fighting the hospital administration.

MMA meets with Congress members to discuss health care

Two MMA members and two staffers met with members of Minnesota's Congressional delegation in late February in Washington, DC, to discuss the new MACRA regulations, among other topics.

The MMA contingent included: MMA Trustee Randy Rice, MD, MMA member and AMA Board member Maya Babu, MD;

On the calendar

Event	Date	Location
Physician Social – Twin Cities	May 25	Surly Brewery, Minneapolis
Payment Reform Forum with Harold Miller	June 1	University of Minnesota's Continuing Education and Conference Center, St. Paul Campus
Physician Social - Rochester	June 8	Cambria Showroom, Rochester
2016 Annual Conference	Sept. 23-24	DoubleTree by Hilton, St. Louis Park

Check the MMA's website (www.mnmed.org/events) for more information and to register.

MMA CEO Robert Meiches, MD; and Dave Renner, MMA director of state and federal legislation. They met with Rep. Erik Paulsen, Rep. Rick Nolan and Sen. Al Franken, and with staff from the offices of Rep. Betty McCollum and Sen. Amy Klobuchar.

Along with MACRA, the group discussed:

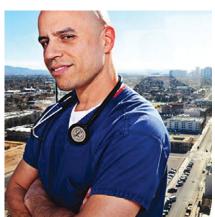
- reducing administrative work related to "meaningful use" requirements for EHRs
- efforts to combat the opioid abuse crisis by educating prescribers on appropriate use of narcotics and increasing the commitment to treat drug addiction
- the MMA's new MARCH campaign, which is targeting health care costs.

The MMA group was in the nation's capital to attend the AMA's National Advocacy Conference.

Rapping MD and best-selling author signed for Annual Conference

The MMA has signed a rapping MD from Las Vegas and a bestselling psychiatrist to headline its 2016 Annual Conference. Zubin Damania, MD, (aka ZDoggMD) and Damon Tweedy, MD, will keynote the event on September 23-24 at the Doubletree Park Place in St. Louis Park.

Damania, who produces award-winning medical rap videos that educate and entertain, will discuss physician burnout and resiliency and perform one of his songs.



Zubin "ZDoggMD" Damania, MD



Damon Tweedy, MD

The former Stanford hospitalist has spoken at a variety of medical association events including those held by the Wisconsin Medical Society, Texas Medical Association and the American Medical Student Association.

Damania will discuss:

- the root causes of dysfunction in the U.S. health care system
- the causes, signs and symptoms of provider burnout

- how to communicate with patients through social media
- new models of health care delivery and financing.

Tweedy is author of the *New York Times* bestseller *Black Man in a White Coat*, which was selected by *Time* magazine as one of its Top 10 nonfiction books of 2015. Tweedy has written and lectured on the intersection of race and medicine, publishing articles in the *New York Times*, *Washington Post* and *Chicago Tribune*, in addition to *JAMA* and the *Annals of Internal Medicine*.

Tweedy will discuss health care disparities in his talk, "Is there a black doctor in the house?"

Tweedy is a graduate of Duke University School of Medicine. He completed both his medical internship and psychiatry residency at Duke Hospital. He is currently an assistant professor of psychiatry at Duke University Medical Center and a staff psychiatrist at the Durham VA Medical Center.

MMA begins leadership nomination process

The process for nominating physicians for 2016-17 MMA leadership positions is underway. Leaders will be elected during the MMA's second member-wide electronic election this fall. Nominations from members and component medical societies will be accepted through May 20.

The available offices include: president-elect, three MMA trustee positions, two AMA delegate positions and three AMA alternate delegate positions. One of the three MMA trustee positions must be filled by a member from the Northwest Trustee district, while the remaining two positions will be elected from the at-large membership.

The nominating committee will meet in early June 2016 and later in July to recommend a slate of candidates for each position. Ballots will be electronically distributed on August 12 to all members who have provided the MMA with an email address. The election will be open for 30 days. Results will be announced no later than September 23, the start of the MMA Annual Conference. If you are interested in submitting a nomination or have questions contact George Lohmer at glohmer@mnmed.org or 612-362-3746.

National expert to address payment reform

The MMA will host a payment reform discussion with Harold Miller June 1 from 5:30 to 8 p.m. at the University of Minnesota, St. Paul campus. Miller, president and CEO of the Center for Healthcare Quality and Payment Reform, works at the local, state and national levels on initiatives to improve the quality of health care services and change the fundamental structure of health care payment systems in order to make it more value-based. Miller is also an adjunct professor of Public Policy and Management at Carnegie Mellon University.

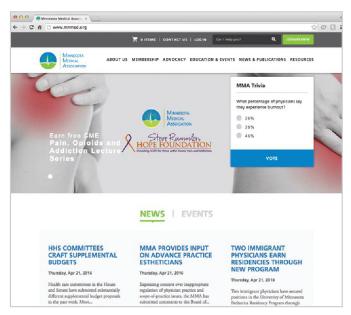


Social events set for physicians, residents, students

The MMA will hold free networking events in Minneapolis and Rochester for physicians and physicians-in-training this spring. The metro social will take place May 25 from 5 to 8 p.m. at Surly Brewery, 520 Malcolm Avenue SE in Minneapolis. The Rochester event will take place June 8 from 5 to 8 p.m. at the Cambria Gallery, 400 South Broadway in Rochester. The events are a celebration of medicine, a thank you to members, and a welcome to new and prospective members. Hors d'oeuvres and drinks will be served.

MMA asks court to rule on contract

On March 30, 2016, attorneys representing the MMA filed an action seeking declaratory judgment in Hennepin County District Court requesting that MMIC, the Edina-based medical liability insurance company, honor the contract the two parties agreed to in 2011. On March 16, 2016, the MMA received a letter from MMIC's legal counsel informing the association that MMIC would no longer pay the agreed-to royalty. Minnesota physicians and the MMA created MMIC in 1980 and have had a long-term relationship to improve the medical liability environment in the state.



MMA debuts new website

The MMA has launched its new website (www.mnmed.org). It features a revamped home page with links to the most popular pages on the site, plus easier access to the award-winning magazine, *Minnesota Medicine*. The home page also has a new polling feature and a live Twitter feed. We hope you find the site easier to navigate.

Election preview

BY PHIL RAINES

What's at stake for medicine this November? Plenty. This year, the entire Minnesota House of Representatives and Senate are up for election. Because it's a presidential year, more voters are expected to turn out. This could potentially upset the current balance of party control in each body.

Here's a look at what's happening in the Senate and House:

Senate

Although the DFL currently holds a 39-28 majority, control of this body following the election is uncertain. The Senate GOP need to pick up only six seats currently held by Democrats to shift the balance of power. Although the 2014 election was about as favorable to Republicans as possible, this year's dynamic seems completely different.

The big question is whether rural DFL senators will face challenges and whether the higher anticipated turnout of a presidential year will help them.

House

The GOP holds a 73-61 majority in the Minnesota House. Republicans nearly swept all rural areas of the state in 2014 but gained no traction in the Twin Cities metro area. In fact, only one Republican Representative lives inside the 494/694 beltway.

Will the GOP maintain its advantage in the House? Will it hold its ground in rural areas, which favor conservative social issues? Or will the DFL reclaim seats they lost in 2014?

How the election could affect the MMA

Once the dust has settled, the MMA will work with legislators on both sides of the aisle to achieve the best outcome for physicians and their patients. Here's how the parties weigh in on the MMA's top two issues:

Provider (sick) Tax Repeal. The MMA strongly supports the December 31, 2019, repeal of this tax. Although Republicans generally favor the repeal, their support of the underlying programs the tax funds is softer. There are also DFL legislators who support repeal of the tax (some even call for immediate repeal), but many are concerned with the impact a repeal will have on the public subsidy programs for low-income Minnesotans.

If Republicans retain control of the House, it is likely that the repeal will stay in place, especially if the state continues to have a budget surplus. If the DFL controls both bodies, or if there is a significant budget deficit, the repeal may be put on hold.

Prior Authorization Reform - Similarly, there are Republicans and Democrats who support legislation to fix the flawed prior authorization process. The support has been less strong among some Republicans who favor market-based solutions to hold



down pharmaceutical costs. If the Republicans make gains in the Senate and continue to control the House, it will make passing a PA reform bill more difficult. If the DFL wins majorities in both bodies, the bill will likely pass easily.

The MMA is working hard to cultivate relationships with legislators on both sides of the aisle; long-term fixes must have bipartisan support.

Phil Raines is the MMA's manager of grassroots and political engagement.

How you can get involved

The MMA asks all physicians to get out and vote in the upcoming election. The MMA also urges you to get to know your lawmakers (regardless of whether you agree with them on all of the issues) and offer to serve as a resource on medical issues.

The MMA can help you become politically active through:

- Action Alerts/Issue Updates. When legislation is pressing, the MMA sends Action Alert emails asking physicians to write their legislators. The alerts take just a few minutes to read and respond to, and you can always post to legislators' Facebook or Twitter accounts.
- Capitol Rounds. If you missed the Day at the Capitol, the MMA is happy to set up your own personal advocacy campaign and tour of the Capitol. Our staff maintains contact with all legislators and will provide talking points and accompany you to meetings.
- District Dialogues. Legislators need to have a roster of physicians who can help them understand what really happens in health care. The MMA can set up a meeting with a lawmaker at a clinic or coffee shop in your district, giving you and your colleagues an opportunity to share what is affecting you and your patients.

To learn more about how you can become a resource for legislators in your community, please contact the MMA (praines@mnmed.org).

VIEWPOINT

Physicians MARCH toward lower costs

e have a problem. Health care is unaffordable. This is hardly a surprise, but the scale of the problem often leaves us feeling helpless. As physicians, we have all seen the effects of unaffordable health care on our patients. It can take many shapes—delayed treatment, unfilled prescriptions, insurance with out-of-reach deductibles, personal debt. Something has to change. And who better to lead this change than physicians?

A tough job? Sure, but we've done the hard work before; the MMA isn't afraid of stepping out front on important issues. We stand up to the tobacco industry; we stand up against insurance company hassles; we stand up for access to care for low-income Minnesotans; we stand up for the physician-patient relationship. And we've demonstrated our ability to lead and bring about big changes.

Before the Affordable Care Act, Minnesota moved forward on its own with comprehensive state-based health care reform. That was the direct result of work by the MMA. Based on the MMA's *Physicians' Plan for a Healthy Minnesota*, we created the Healthy Minnesota Partnership for Reform and brought together physicians, legislators, educators and leaders of health plans, hospitals, clinics and consumer groups to rally around a set of reform proposals. The group developed legislation in 2007 that laid the groundwork for the passage of Minnesota's precedent-setting 2008 reform bill.

Now it's time to stand up for affordable health care. The MMA is launching a new initiative this spring called MARCH, which stands for Minnesota Action to Reduce Costs in Healthcare. The initiative's steering committee is being led by the University of Minnesota's Mac Baird, MD, a long-time engaged member, and includes 16 other physician leaders and clinicians.

It is easy to point fingers when we talk about the rising cost of health care both in Minnesota and throughout the country, but the reality is that there is plenty of blame to go around. The MMA's MARCH effort will look at external drivers of health care costs and also at what physicians can and should do to control those costs. MARCH expects to start its work by focusing on three issues: prescription drug costs, administrative inefficiencies and low-value care.

Share your thoughts, ideas and experiences with the MMA. And stay tuned for updates on how your profession is helping to lead the way in making health care in Minnesota more affordable.



Dave Thorson, MD MMA President

It is easy to point fingers when we talk about the rising cost of health care...but the reality is that there is plenty of blame to go around.



Come celebrate the practice of medicine!

Enjoy free food and beverages along with your colleagues at a free, casual event for physicians, residents and medical students.

It's a thank you to members, and a welcome to new and prospective members.

Twin Cities

Wednesday, May 25 5 - 8 pm Surly Brewing Company 520 Malcolm Ave. SE Minneapolis, MN 55414



Rochester

Wednesday, June 8th 5 - 8 pm Cambria Gallery 400 S. Broadway #105 Rochester, MN 55904

We ask that you **RSVP/register at www.mnmed.org/socials** to help ensure there is enough food and beverages for all attendees.

SPONSORS:







You've been served with a subpoena Now what?

Answers to physicians' frequently asked questions

BY CHRISTINE HINRICHS, JD, AND JESSICA KLANDER, JD

ost medical professionals can expect at least once in their career to be served with a subpoena demanding that they provide protected health information. This can be intimidating for those who are unfamiliar with the law and the way the courts work. Most physicians are keenly aware of the importance of keeping a patient's health information private, but they are unsure about what information they should or should not provide in response to a subpoena. This article answers common questions about subpoenas. It also addresses how you can protect yourself if you are served.

What is a subpoena and what is its purpose?

A subpoena is essentially a demand that you provide information in the form of documents and/or oral testimony. Being served with one does not mean you have been or will be sued by your patient (only service of a Summons and Complaint can commence a lawsuit). That being said, a subpoena should be taken seriously and handled quickly and correctly.

You may be served with a subpoena duces tecum, a subpoena for an appearance, or both. A subpoena duces tecum requires you to produce documents (likely your patient's medical records) by a certain date. If you have received a subpoena duces tecum, forward it to your organization's health information office. Your patient's medical records belong to the organization, and only the organization is authorized to release them.

A subpoena for an appearance requires your attendance at a legal proceeding to

provide oral testimony. The proceeding could be an informal conference, a deposition, a court hearing or a trial. The subpoena should include the date, time and location of the appearance. It also should include contact information for the attorney who is requesting the documents and/or your oral testimony.

What should I do if I am subpoenaed?

Your first call should be to your manager and/or your in-house or outside legal counsel. Although you do not necessarily need an attorney to represent you, it may be best to have one review the subpoena and assist you in responding. Your organization's representative or legal counsel can provide guidance regarding: 1) whether or how you should respond to the subpoena; 2) how to prevent improper and/or inadvertent disclosure of protected health information; and 3) how to avoid waiving your rights when responding to the subpoena.

It is not uncommon for a subpoena to be accompanied by a letter from the attorney requesting that you contact him or her directly to discuss it. Although you are not prohibited from calling the attorney or the patient, it may be unwise to do so, as the attorney requesting the information does not represent you, cannot give you legal advice, and does not have you or your organization's best interests in mind. And while you are not prohibited from contacting the patient to discuss the subpoena, there may be legal reasons why you shouldn't.

What if the patient's attorney calls me directly and asks for information?

If you receive an informal request for records or information about your patient's care without a subpoena, hang up and notify your manager or attorney immediately. Without the patient's authorization permitting release of the requested health information (a requirement under the federal Health Insurance Portability and Accountability Act [HIPAA] and Minnesota Health Records Act), 2 you should never answer questions or provide documents about a patient. And if you provide off-the-cuff responses to the attorney's questions, you may unwittingly become part of the lawsuit.

What are my rights and responsibilities when responding to a subpoena?

Both federal and state rules state that a party cannot place an "undue burden" on the person being subpoenaed.3 However, what constitutes an "undue burden" is not clearly defined and varies depending on the state and/or federal rules that apply in your situation. That caveat aside, there are some general principles that apply. For instance, a subpoena should provide a "reasonable time" for you to comply.4 This will certainly depend on the type of information being sought. A request for you to show up to testify or provide documents the next day is generally considered unreasonable. In addition, you generally should not be required to drive any further than 100 miles to provide testimony or documents.5 Moreover, you may be entitled to

compensation for the time you spend preparing for and responding to a subpoena.6 Under most circumstances, the attorney serving the subpoena should be willing to work with you on location, timing and reimbursement in order to accommodate you and your schedule.

What happens to the information or testimony I provide in response to a subpoena?

It is important to remember that all conversations you have about a subpoena or the information requested by it, other than communications with your legal counsel, can be discovered and inquired about in a deposition, hearing or trial. Such information has the potential to be harmful, unflattering or, at the very least, unnecessary. Plus, the more you talk about the subpoena, the more questions you will be asked during the proceeding. Although you are free to discuss the subpoena to coordinate your absence at work, you would be well-advised to limit any other discussions/questions/communications to those with your legal counsel as those communications will remain confidential.8

What is my obligation regarding medical records?

As a physician, you do not have the authority to release a patient's medical records, as they belong to your organization. If you are responsible for providing health records, remember that any request for documents, even with a subpoena, must be accompanied by a qualifying court order authorizing disclosure of the information being requested or the patient's written consent.9 If you are being asked to provide documents and oral testimony, you should obtain separate authorizations for the release of the medical records.¹⁰

When authorization is obtained, the disclosure is subject to the "minimum necessary" standard.11 That means you must only provide the documents expressly authorized by the court order or patient's consent. For instance, if the authorization consents to the disclosure of records within a certain time frame, only provide the documents specified and not the entire medical record. If the subpoena request is inconsistent with the authorization, seek clarification from the court or the patient's attorney, if possible. When in doubt, rely on the authorization, not the subpoena, when determining which documents to disclose. Also, remember that authorizations do expire, so be sure that the authorization you have received is still effective.

Many requests seek disclosure of the "entire medical file." The "medical file" includes all health information contained in the patient's written or electronic file, including billing statements, progress notes, imaging/labs and physician notes.12 It does not include internal investigations or peer review notes, which may be prohibited from disclosure by federal and state peer review protections.13

In addition, an authorization for consent to release "the entire medical file" does not permit the release of information pertaining to a patient's chemical/ substance abuse treatment records or psychotherapy notes. A separate release is required expressly consenting to the release of such records or notes.14 Moreover, there are situations in which a court order may be insufficient to release chemical/ substance abuse treatment records¹⁵ or where a patient's authorization may not justify the release of psychotherapy notes.16 For instance, if a physician determines that providing information would be detrimental to the patient's physical or mental health or is likely to cause the patient to inflict self-harm or to harm another, the physician must not disclose the information. Under those circumstances, it is best to seek the advice of an attorney.

What should I do if I am unable or unwilling to comply with the subpoena?

If you decide you are unable or unwilling to comply with a subpoena, you should seek the advice of an attorney regarding how best to proceed. You should never ignore the subpoena, even if it fails to comply with state or federal laws or fails to provide the proper authorization. Your failure to comply with the subpoena's terms without adequate cause may result

in your being held in contempt of court.¹⁷ There are, however, certain actions that can be taken to prevent problems. For instance, you could contact the attorney who issued the subpoena to determine whether the deficiencies can be rectified. If your concerns are not adequately addressed by the patient's attorney, you can seek relief from the court. You (or, preferably, your attorney) may initiate a proceeding, referred to as a "motion to quash," which asks the court to release you from all or some of your obligations to respond to the subpoena.18

What should I do to prepare for oral testimony?

You may or may not remember the patient or the treatment you provided that is the subject of the subpoena request. But even if you do, you should review the patient's chart to refresh your memory and prepare for your testimony. HIPAA allows for the use of protected patient health information for "health care operations," which includes conducting legal services.19 Under these HIPAA provisions, you do not need the patient's consent to review the chart.

You should avoid talking to the patient or about the patient with your colleagues in order to help you remember. Testimony about a patient based on such a conversation is speculative. The general rule in these proceedings is to tell the truth, and the truth is only what you remember. If you do not remember details beyond what is in the patient's medical record, it is perfectly acceptable to say "I do not recall."

Can I bring a patient's medical record to the hearing?

Not unless you are specifically ordered to do so and your organization received a court order or written authorization from the patient permitting the release of those records. In most instances, the attorney asking you questions will have a copy of the relevant patient records. If you need to refresh your memory, ask to see the records during the proceeding. If you are not provided with the documents and you do not have an independent recollection,

simply say you don't know or cannot remember.

What should I do if I'm asked about the care given by another physician?

It is unnecessary for you to comment about another physician's treatment decisions, which may be outside your area of expertise, if you were not present at the time and if you do not have the full story. Unless you have first-hand knowledge of the situation (for example, if you were involved in the decision or you saw the patient at that time), such testimony would be considered speculative. Some attorneys may try to get around this by asking hypothetical questions. Often, hypotheticals are incomplete or missing information you might need in order to make a treatment decision. Think carefully before responding or decline to answer hypothetical questions all together.

What if I'm asked my opinion about standard of care or the cause of a patient's injuries?

In general, you are not obligated to answer opinion questions. You are being called to testify as a treating physician, not as an expert witness. Additionally, expert opinions are considered proprietary and without compensation, you are not obligated to divulge any opinions. If you are asked about the standard of care or causation in a particular case, tread carefully and think about whether you have the information necessary to provide a full and complete answer. If you don't, simply say so.

Being asked to appear at an "informal conference" is different. An informal conference allows attorneys to ask treating physicians about their treatment and care of patients who have brought a medical malpractice case against another physician. You may be asked to give opinions on standard of care or causation, but there are limits as to what sort of opinions you are obligated to provide. If you are asked to appear at such a conference, you should obtain legal counsel to represent you and offer guidance on your rights and responsibilities.

The bottom line

If you have an understanding of the process, being served with a subpoena can be less painful. Although there are many variables to consider when responding to a subpoena, perhaps the most important thing to remember is that you need proper authorization to provide a patient's protected health information—no matter what. If you are ever unsure of what is being requested or how to respond, ask your organization's leadership and/or your legal counsel for assistance. MM

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The Opioid Epidemic and the Minnesota **Board of Medical Practice**

BY STEVEN J. WAISBREN, MD, PHD

America is suffering from an epidemic of opioid misuse that has been attributed to the narcotic prescribing practices of physicians. This article focuses on the State of Minnesota and the role that its Board of Medical Practice (BMP) played in this crisis. It presents a review of guidelines issued by the BMP over the last 30 years, showing that it followed national trends in emphasizing increased prescribing of narcotics for pain up until last year, when a much more cautious and nuanced approach to opioid prescribing was advised.

hose of us who applied for our medical license 25 years ago remember having to trudge over to the offices of the Minnesota Board of Medical Practice (BMP) for an in-person interview to confirm that we were indeed the person who appeared on our application. We also may recall being required to watch a 15-minute video encouraging us to be more aggressive in treating patients who complained of pain. Fast forward to today: Prescription opioid abuse is front-page news, and the president of the United States has announced broad initiatives aimed at combating it and the related heroin epidemic. More prescriptions are written for narcotics than there are patients in the United States. Americans, constituting only 4.6% of the world's population, consume 80% of the global supply of opioid pain medications.² Each year, there are more than 16,200 deaths from opioid use in the United States.3

In Minnesota, the problem is less severe. Minnesotans are less likely than people in other states to be prescribed narcotics. On a per capita basis, we rank 44th overall in prescription morphine equivalents consumed. We receive only a quarter of the narcotics on a per-person basis than

residents of Nevada, the highest ranking state, and about 60% less than the mean for all the other states. Still, deaths from opioid use are on the rise. Data collected by the Minnesota Department of Health and reported in the Minneapolis Star Tribune show that 317 deaths in the state in 2014 were linked to prescription opioids, up from 23 in 2000.5,6

The contrast between today and a quarter century ago is sharp. Many are trying to understand how we got to where we are and who is to blame. Some point to physicians, saying they have been too quick to prescribe opioids. Although the ultimate responsibility for inappropriate prescribing does indeed fall on individual providers, it must be pointed out that physicians have taken their cues on opioid prescribing from their medical societies and boards.

This article looks at the role the BMP appears to have played in bringing on the opioid epidemic in Minnesota and how it is now beginning to respond to this crisis.

A Delicate Balance

Most historians who have examined the origins of the current epidemic look back to November 11, 1996, the day James Campbell, MD, president of the American Pain Society, introduced the phrase "pain as the 5th vital sign." During his presidential address, he contended that if physicians assessed pain "with the same zeal" as they addressed other vital signs, they would be more likely to treat it properly. "We need to train doctors and nurses to treat pain as a vital sign," he said. "Quality care means that pain is measured and treated." In Minnesota, the push to prescribe more narcotics for pain actually began years before Dr. Campbell's presentation. Even then, the practice was controversial.

In the Fall 1988 edition of the BMP's newsletter, Update, an article titled "A Delicate Balance" addressed the somewhat conflicting issues surrounding narcotics for treatment of pain. The report stated: "Despite the unequivocal efficacy of these drugs in treating pain, there is great controversy surrounding their usage. Some argue that physicians tend to overprescribe opioids for chronic pain, while others argue that for acute pain, physicians underprescribe these potentially useful drugs. Both arguments are correct."8 Among the list of reasons for underprescribing opioids is "opiophobia"—the fear of turning

hospitalized patients into addicts upon discharge, fear of respiratory depression and the sentiment that having some pain "strengthens moral character." (The term "opiophobia" was not coined by the BMP. Earlier articles, including one written in 1985, encouraged physicians not to succumb to the fear.⁹)

A 1990 Minnesota Board of Medical Examiners report presented a more nuanced argument. It concluded that underprescribing was a concern in the treatment of acute pain and cancer pain, and that aggressive treatment with a controlled substance may be necessary for these types of pain but that "the use of narcotics for chronic benign pain is usually not indicated." ¹⁰

That same year, the BMP, along with the Minnesota Medical Association, held a number of continuing education seminars on this topic. Recommendations were based on national guidelines and included a detailed nine-step program: 1) make an accurate diagnosis, 2) create a treatment plan including the use of nonaddictive modalities and referrals to appropriate specialists, 3) document the failure of nonaddictive treatments, 4) confirm that the patient was not drug-seeking, 5) obtain consent from the patient prior to prescribing medications that have addictive potential, 6) monitor the patient at regular intervals, 7) keep records of the quantity of medications prescribed, 8) have ongoing contact with the patient's family and 9) confirm that steps 1-8 were followed. Underlined in these recommendations was the following: "What's important is how well you manage a patient's care, and create a record of that care, not what you prescribe."10

Continued Push

The issue of pain control continued to be a major concern for the BMP, so much so that the 1988 "Delicate Balance" article was reprinted and distributed to all Minnesota doctors in the fall of 1993. Four years later, in 1997, just as the fifth vital sign revolution was beginning, *Update*

published a long article on the assessment and management of acute pain.11 This report, which coincided with the introduction and marketing of Oxycontin, appeared to contradict the 1990 recommendation that "the use of narcotics for chronic benign pain is usually not indicated." In contrast, the 1997 report concluded that "in carefully selected chronic pain patients, opioids may provide substantial benefit and can be maintained for years with acceptable side effects, including a low risk of iatrogenic addiction and a manageable amount of tolerance.... in the right patient, opioid maintenance can work, allowing the patient to restore function and hope."11

The liberalization of recommendations for the treatment of chronic pain was consistent with the widely accepted sample guidelines published by the Federation of State Medical Boards (FSMB) a year later. 12 The FSMB's model guideline, adopted by many medical boards including Minnesota's, stated that "The Board recognizes that controlled substances, including opioid analgesics, may be essential in the treatment of acute pain due to trauma or surgery and chronic pain, whether due to cancer or non-cancer origins." The sample guidelines went on to address the issue of opiophobia: "Physicians should not fear disciplinary action from the Board or other state regulatory or enforcement agency for prescribing, dispensing or administering controlled substances, including opioid analgesics, for a legitimate medical purpose and in the usual course of professional practice. The Board will not take disciplinary action against a physician for failing to adhere strictly to the provisions of these guidelines." The guideline also stated that "the Board will judge the validity of prescribing based on the physician's treatment of the patient and on available documentation, rather than on the quantity and chronicity of prescribing."

The momentum to push Minnesota physicians to prescribe more narcotics

continued unabated resulting in the 2007 publication of a Minnesota BMP Work Group's report "Appropriate Prescribing of Controlled Substances for the Management of Pain."13 The language in this report was extreme in concluding that "undertreated or untreated pain when controlled substances are indicated is a public harm, a serious departure from the prevailing standard of care, and a violation of the Medical Practice Act." What was a physician to do? What provider in the state has not had a drug-seeking patient claim that they remain uncomfortable and unable to function normally after no discernible source could be found for the severity of their symptoms? Such statements by the BMP were, it appears, designed to pressure physicians to prescribe narcotics for their patients or face the threat of corrective or disciplinary action.

This same report appeared to actively discourage primary care physicians from referring patients to pain management specialists. A finding of a shift or migration to pain specialists for these patients "indicated that primary care practitioners were abdicating their responsibility to manage pain patients within their practices out of fear of having their prescriptions monitored by the data base, and hence a deviation from acceptable standards."13 Furthermore, the report discouraged "interventional techniques to manage pain as a substitute" to pharmaceutical management because they carried a far higher dollar cost and a "significantly higher risk of complications."13 The report went on to say that such a shift from the use of pharmaceuticals to interventional techniques constituted a deviation from the standard of care and would subject Minnesota physicians to corrective action.

Thus, as recently as 10 years ago, primary care physicians were being given little choice but to care for these patients themselves and encouraged to prescribe for them relatively inexpensive narcotics. These reports and guidelines did not suggest that the emphasis should have been

on finding and eliminating the source of the chronic pain.

In 2009, a Joint Statement on Pain Management by the Minnesota boards of Medical Practice, Nursing and Pharmacy reaffirmed the earlier report imploring providers in our state to "effectively address the dimensions of pain and to provide maximum pain relief with minimal side effects." The statement noted that "the effects of unmanaged pain are serious and wide-ranging and yet, pain is widely under-treated." The boards recognized that experts were "more concerned about patients receiving sufficient pain relief" than the potential abuse of these narcotics. 14,15

A Change of Course

Over the past seven years, the pendulum has swung back. The emphasis of the most recent joint statement from the boards of Medical Practice, Nursing and Pharmacy is dramatically different from that of the one published in 2009. Instead of stressing the undertreatment of pain, the 2015 statement centers on the growing concerns of prescription drug misuse and overdose. Nowhere to be seen are suggestions to prescribe more "cost-effective" narcotics or recommendations to curb referrals to pain-management specialists. Instead, the boards recommend using a multi-disciplinary approach to identify all treatment options including pharmacologic and nonpharmacologic modalities. "Consider the integration of nonmedication and multimodality therapeutic approaches and set functional goals."16

It is important to remember that practicing physicians have many layers of oversight: their employers, the hospitals in which they admit patients, malpractice insurers and third-party payers. Still, none of these has the ability to completely shut down a doctor's practice. Only the Minnesota Board of Medical Practice has the authority to determine whether a physician is practicing within the "minimal standard of care" and has the right to see patients. Thus, it can be argued that their recommendations carry more weight than any

other supervisorial entity. It appears that when it came to making recommendations about treating pain, the Board followed national initiatives and was trying to "do the right thing" at the time. The emphasis on "better" treatment of pain by prescribing more narcotics appeared consistent with the general trends in our country.

The finding that Minnesota providers were much less likely to prescribe narcotics than their peers in other states suggests that the BMP either failed in its previous efforts to encourage physicians to prescribe narcotics for pain or that physicians in our state were ahead of the curve and more prudent in the judicious use of these potentially abused drugs than those elsewhere. It is also fair to note that the BMP does not establish the standards of care but encourages Minnesota physicians to practice within the norms of their communities. Yet, given the dangers of overprescribing opioids, it makes sense that the BMP should now pursue efforts to curb opioid use with same vigor it had when it encouraged their use in the past. Minnesota physicians need to take the lead with our governing and regulatory bodies to better address this crisis. MM

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Being an Effective Teacher Five Tips for Busy Clinicians

BY JASON SZOSTEK, MD

Teaching is challenging, and most clinicians have little-to-no formal training on how to teach. For many, the extent of their experience has been limited to teaching medical students during residency. Many clinicians would benefit from learning about effective teaching practices. This article offers practical tips to help busy clinicians who teach medical trainees of all levels.

"ee one, do one, teach one" is an adage with which most, if not all, physicians are acquainted. It captures the essence of the medical education paradigm of learning through observation and implementation. It also implies that being content-competent is adequate for being an effective teacher.

Multiple studies, however, have demonstrated that most of the characteristics of effective teaching are not related to having medical expertise. ^{1,2} Thus, effective teaching transcends the physician-teacher's own mastery of knowledge, skills and attitudes—the domains of learning as defined by Bloom's taxonomy.³

Unfortunately, most physicians receive little, if any, formal training on how to teach and may be unaware of effective teaching practices and techniques.4 Many medical schools offer faculty-development opportunities for educators; however, patient care responsibilities, research, administrative tasks and lack of awareness may limit some from participating. Physicians who work in the community not only face these same barriers but also lack access to such opportunities. The goal of this article is to empower all physician-teachers by offering practical tips they can use when working with medical students, residents and fellows.

1. Create a Positive Learning Environment

Studies of what makes an effective learning experience consistently identify the importance of a positive learning environment—one in which a learner can safely and com-

fortably engage with the content and the teacher. 1,5,6 Teacher behaviors that may foster such an environment include listening to the learner, encouraging learner participation, avoiding dogmatism, demonstrating respect for the learner, and conveying enthusiasm for the learner and the topic. 1,2,5,6

There are a number of ways to create a positive learning environment. One is to encourage students to articulate what they want to learn. For example, following a case presentation, one might ask the learner what he or she wants to gain from the discussion about the case. By allowing the learner to articulate what he or she wants to learn, the teacher conveys interest in the learner, gains the learner's buy-in, and communicates that he or she expects the learner to have their own needs, goals or interests. The goal is a learner-centered dialogue rather than a teacher-centered monologue, which is a natural tendency.

To encourage learners to share their thoughts and willingly engage in such a dialogue, the teacher can show respect for the learner's ideas. Even if the learner is wrong, the teacher can correct them while still being respectful of their thought process and their willingness to commit to an answer. The teacher also can communicate enthusiasm for the learner's growth and success through words, body language and eye contact. Maintaining eye contact, leaning in and nodding can convey that the teacher is present and invested in the learner. Finally, the teacher can acknowledge that it is acceptable to have limitations. By saying "I don't know" when they

don't have an answer, teachers can help lift the false veil of omniscience learners perceive in them and that they believe may be necessary.

Teachers may need to consciously implement these behaviors in order to help create an environment in which the learner thrives.

2. Establish Clear Goals and Expectations for the Learner and the Teacher

Learners are best-positioned to succeed when teachers are explicit about their goals and expectations. Yet many teachers fail to articulate these, assuming they're obvious or implied. Trainees know that teachers can have widely varying expectations and goals, and they want their instructors to be explicit about them. For example, consider articulating how much time medical students should spend with patients, how long their presentations should typically be, what elements of the case presentation they should communicate and how much of a diagnostic/therapeutic plan they should develop independently. By communicating expectations, the teacher has a basis for assessing the learner's performance and the learner has clear goals to work towards. When learning goals are not clear, both teachers and students can experience confusion and frustration. Therefore, it is important to ensure learners know what is expected of them.7

When developing goals, consider making them specific, measurable, actionable, realistic and time-sensitive (SMART). For example, a teacher may wish to set a goal

regarding length of case presentations. Instead of saying that presentations should be kept short, they might instead say: "By the end of the rotation, give all case presentations in five minutes or less." The goal is time-specific (it should be accomplished by the end of the rotation), measurable (the presentation can be timed), actionable (the learner can demonstrate the behavior and receive feedback), and realistic (although potentially challenging).

At the outset, consider meeting briefly with the learner to discuss goals and expectations. Involving learners in setting goals early on engages them, encourages self-reflection and identifies their interests. 1,2,5 For example, in a recent encounter, a learner set a goal of developing an algorithm for approaching a patient with hyponatremia. Having such a specific goal allowed the teacher to address the learner's interest, making the time more worthwhile and useful for both.

During the initial meeting, the teacher might also ask the learner about his or her expectations of the teacher; the teacher also might articulate what the learner can expect of him or her. Thus, both the teacher and learner can begin with a clear understanding of what they can expect from one another. This can be useful when the learner is assessing the teacher's performance and vice versa.

3. Teach Digestible Amounts **Across the Domains of Learning**

A common tendency amongst teachers is to teach more than a learner can remember or understand. By providing a vast amount of information, it is easy to lose the learner—and the point—as there are limits to the learner's attention span, the amount of time they have and their ability to remember what they learn. Therefore, consider limiting teaching points to one or two per case. Also, consider setting a time limit on the teaching session.

As a guide for identifying teaching points, consider using Bloom's taxonomy, which separates learning into three distinct domains (Figure 1).3 This framework artificially compartmentalizes these domains although they are not mutually exclusive (skills inherently require some knowledge, skills may be driven by attitudes, etc.).

By considering these domains separately, the teacher can identify a teaching

FIGURE 1

Bloom's taxonomy

Knowledge: Cognitive Domain

- Medical decision-making
- Medical knowledge

Skills: Psychomotor Domain

- Physical exam
- Procedures and surgeries
- · Communication including case presentations, interactions with colleagues and phrasing of consult questions, patient interactions
- Note writing

Attitudes: Affective Domain

 Professionalism, values, emotions, feelings

point that goes beyond medical knowledge and decision-making. For example, the teacher might say: "When asking a patient about medication adherence, consider asking how many times a week they miss their medication. Asking in this way may promote candor by communicating that you understand that patients may miss doses."

There are a number of other teaching frameworks that can help a teacher focus. These include:

• The One-Minute Preceptor. This makes the student responsible for coming up with an answer, probing for supporting evidence, teaching general rules, reinforcing positives, correcting mistakes and identifying the next learning experience. An example of how this approach, also known as the 6-Step Microskills, can be used is provided in Figure 2. Note that the teacher may choose not to sequentially follow all the steps in each case. When time is limited, a teacher may decide to teach a

- general rule and provide one element of feedback.9
- SNAPPS (Summarize briefly the history and findings, Narrow the differential to two or three possibilities, Analyze the differential, Probe the preceptor by asking questions, Plan management, and Select a case-related issue for selfdirected learning).10
- The Five-Minute Moment. This is a method for teaching physical exam skills by 1) attaching a memorable story or fact to convey the importance of the skill and promote retention and 2) demonstrating the exam finding while explaining how to clinically interpret it and avoid common mistakes.11

4. Deliberately Assess the **Learner's Performance**

"Evaluation" is the teacher's assessment of the learner's performance, whereas "feedback" is communication of that assessment. Thus, evaluating a learner's performance is essential to providing effective feedback. So how does one assess a learner's performance? As mentioned earlier, the goals and expectations agreed on by both the teacher and learner may serve as the basis for doing this. Assessing performance takes focus and attention. That can be challenging if the clinicianteacher's attention is on the patient and not on the learner.

Using frameworks such as the Accreditation Council of Graduate Medical Education's (ACGME) core competencies and Bloom's taxonomy may be helpful. Although created for graduate medical education assessment, the ACGME core competencies are commonly used in medical education to assess students' performance through the lenses of patient care, medical knowledge, interpersonal and communication skills, professionalism, practice-based learning and improvement, and systemsbased practice.¹² By using either of these frameworks, the teacher can assess different aspects of the learner's performance in a clear, systematic manner.



5. Provide Learners with Feedback on their Performance

If the teacher has cultivated a positive learning environment, established goals

FIGURE 2

The One-Minute Preceptor or 6-Step Microskills approach

1. Get a commitment

Teacher: In this 76-year-old woman with osteoporosis who has been on alendronate (and adherent) for eight months, do you consider her recent T12 compression fracture, resulting from a fall from standing height, a treatment failure?

Learner: Maybe ... but probably not.

2. Probe for supporting evidence

Teacher: Tell me about your rationale.

Learner: I think that bisphosphonates are intended to reduce fracture risk and that a patient experiencing one fracture while on therapy is not indicative of treatment failure, but I'm not certain.

3. Teach a general rule

Teacher: In general, consider bisphosphonate treatment failure in patients who experience two or more fractures while on therapy.

4. Provide positive feedback/tell them what they did right

Teacher: Continue to ask patients about their adherence to medications (behavior) because their adherence or non-adherence can drastically influence your management plan (criterion).

5. Provide negative feedback/tell them what they did wrong

Teacher: Next time you have a patient on a bisphosphonate who sustains a fracture, ask yourself if this is a treatment failure (behavior) because the patient may need a different treatment plan (criterion).

6. Identify the next learning steps

Teacher: What more do you want to learn about in regards to osteoporosis treatment?

Learner: I want to look into other definitions of bisphosphonate treatment failure and also into other treatment options.

with the learner and evaluated the learner's performance using a clear, systematic approach, the teacher will be better prepared to deliver feedback and the learner will be better prepared to receive it. How that feedback is delivered is very important. The teacher may wish to phrase it in a way that communicates what they think of the learner's performance or behavior and not what they might think of the learner himself.13

In addition to communicating an assessment of a particular behavior (behavior-specific feedback), the teacher may consider communicating the criterion for that assessment so the learner understands what makes their behavior effective or less effective.¹³ For example, the teacher might say: "The way you communicated bad news was effective because you started the conversation with a valuable question: What is your understanding of your current medical situation? That allowed you to determine where to begin the conversation (criterion)."

Providing behavior-specific feedback with a criterion encourages learners to keep doing what they're doing or consider changing their behavior. Performancespecific or behavior-specific, criterionbased feedback may be formative or summative. Formative feedback is specific to the behavior and may be offered following a case presentation, a medical decision, a physical exam maneuver, a patient interaction, a review of a learner's patient note, etc. Summative feedback can provide the learner with an understanding of their overall performance or their performance in a particular area. It might sound like this: "Overall, your performance was truly outstanding, and these are the elements of your performance that resulted in that assessment...."

Providing learners with feedback, both formative/summative and positive/negative, helps them understand which behaviors to continue and which ones to change. Furthermore, providing learners with more comprehensive feedback on their knowledge, skills and attitudes may help them more fully develop as physicians.

Conclusion

Teaching is undeniably challenging. It forces many clinicians to go outside their comfort zone. Physicians can become better teachers by learning even a little about effective teaching practices. By learning these practices, it is possible for both teachers and learners to get more out of the time they spend together. MM

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What is a Good Doctor?

BY ALAN M. JOHNS, MD, MED

Health systems, medical societies, medical school faculty and academic leaders have all attempted to define the characteristics of a good physician. What has been absent in these endeavors is the patient's voice. This article explores patients' definitions of the term "good physician" found in the literature and in a recent informal qualitative study of retired university staff and faculty. Common themes include communication, expertise, compassion and respect for patient autonomy. This work will be used to inform changes to the curriculum for first-year medical students at the University of Minnesota, Duluth.

need a doctor. Can you recommend someone?" Many of us have been asked this by patients, family members and friends. When faced with this question, I often have to stop and think. Sometimes, I'll ask the person about their preferences. Do they want someone young or mature? Male or female? Would they prefer a clinic in their neighborhood or a downtown location? Their usual response: "I don't care. I just want a good doctor."

There have been numerous attempts to identify what constitutes a good doctor. Medical schools and residency programs use as criteria a physician's research activity, publications and ratings by peers. Health systems use quality metrics related to patient care such as chronic disease management data, timely chart completion, number of patients seen and online educational modules completed. City and regional magazines devote entire issues to identifying "best doctors" based on recommendations of their peers. Medical societies recognize physicians through yearly awards. All of these efforts are missing one important perspective: the patient's.

The Missing Perspective

A PubMed search using the term "good physician" produced only three articles and a thoughtful editorial that considered the patient's perspective. In one of the articles, Pellegrino identified medicine, law, ministry and some academic occupations as "learned professions." What distinguishes them from others, he wrote, is their focus on the welfare of the people they serve. In the case of physicians, they commit themselves to patients whenever they ask the question, "What can I do for you?" Pellegrino further stated that patients look for virtues such as trust, benevolence, intellectual honesty, courage, compassion and truthfulness in members of the medical profession.1

Two other articles reported results from studies in which patients were asked directly to identify characteristics of good physicians. Schattner, Rudin and Jellin surveyed 445 hospitalized and ambulatory adult patients over one month. The patients were asked to pick the four most important attributes of a good physician from a list of 21. The results showed a variety of opinions, with only six patients making identical choices. The attributes most frequently chosen were "experienced" (50%), "patient" (38%), "informed" (36%) and "attentive" (30%). Other frequently chosen attributes were: "representing the patient's interests," "truthfulness," "up-todate knowledge" and "respectful of patient preferences."2

Bendapudi and colleagues asked patients to identify ideal physician behaviors. In their study, they contacted 192 patients from Mayo Clinic by phone and asked them to describe a "best physician" experience and identify ideal physician behaviors. This qualitative study found the ideal physician is confident, empathetic, humane, personal, forthright, respectful and thorough.3 Technical skills were

not specifically discussed, although the authors said they thought patients generally assume their physician is technically competent.

In his review of Bendapudi's article, Li stated "The quality of care and the quality of caring are inseparable." 4 Li also noted the ideal clinical encounter involves caring by both the physician and the health

I recently gave a talk about medical education to a group of retired university faculty and staff. They were a bright, motivated group who returned to college to continue their learning. During the question-and-answer session, I decided to take advantage of their collective wisdom as patients. I asked them to work together to describe "a good physician." I wanted to compare the common themes in their discussion with those in published articles on the topic.

The retired faculty and staff identified many of the same qualities a noted in the published articles. Participants said good physicians do the following: They listen, explain, work as partners with the patient, work in teams with other providers, are available and have expertise. These correlate with Schattner's identified attributes of a good physician and Bendapudi's list of ideal behaviors. Some of the retired faculty and staff indicated that a focus on prevention should be on the list of desired qualities. The group also felt physician assistants and nurse practitioners should be held to the same standards. Interestingly,

in my group and in the published studies time spent with a patient was rarely mentioned as an indicator of a good physician. Perhaps that is because time is not always a good metric for "caring." Some physicians are able to demonstrate the virtues patients are looking for during a 10-minute visit; conversely, others can spend an hour with a patient and leave them cold.

Communication is Key

The findings from this literature review and qualitative study will be used in a curriculum redesign presently underway at the University of Minnesota Medical School, Duluth. Many of the attributes identified relate to communication skills. For that reason, greater emphasis will be placed on those skills in an introductory course on fundamentals for success as a primary care physician. Students will be made aware of the literature related to patient preferences in the way physicians communicate. Scenarios may be developed to illustrate what patients want in a physician. As part of the redesign, actors

and real patients rather than faculty may assess students' communication skills.

The new curriculum also should emphasize how to appropriately use an electronic health record (EHR) while talking to a patient. In a review of articles on the EHR's effect on physician-patient communication, Shachak and Reis noted that EHRs have the potential to negatively influence patientdoctor communication.⁵ One article in the review found screen-gazing was present during 40% of patient visits and heavy keyboard use was noted in 24%.5 Teaching appropriate methods for EHR use such as getting fingers off the keyboard and eyes off the screen will encourage better connection between patients and future physicians.

Conclusion

After reviewing the scant literature, doing the exercise with retired faculty and staff, and reflecting on my 36 years as a general internist, I've concluded that being a good physician comes down to listening, caring and engaging patients in their medical care. Patients hunger for our personal

attention in an increasingly impersonal health care system. We need to teach the next generation of physicians how to give them what they deserve. MM

Alan Johns is associate dean for curriculum, medical education and technology at the University of Minnesota Medical School, Duluth.

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About this section

Each year, Minnesota Medicine highlights research and clinical work undertaken by Minnesota medical students, residents and fellows. The goal is to not only showcase the good work these medical trainees are doing but also to inform readers about pertinent topics.

This year, nearly 30 trainees submitted brief papers describing original research or interesting cases. The manuscripts were evaluated with regard to these and other questions: Did the authors provide an adequate description of the case or the problem? Was their methodology sound? Did they conduct an adequate review of relevant scientific literature? Do the findings or does the case have implications for practice or further research? The reviewers selected seven submissions for publication in this issue. Others will be published in future issues.

We thank both those who submitted their work and our reviewers: Angela Buffington, PhD; Peter Kernahan, MD, PhD; Zeke McKinney, MD, MHI, MPH; and Barbara Yawn, MD.

Extratesticular Liposarcoma

BY NOELLE HOVEN, MD, AND JAMES BOYUM, MD

64-year-old-male presented with left scrotal swelling that had progressed over several years. Presentation was delayed, and physical examination during a urologic consultation demonstrated watermelon-sized swelling of his scrotum with significant lymphedema. The patient denied left testicular pain but indicated discomfort because of the size of his scrotum. His initial imaging assessment included a testicular ultrasound that showed multiple complex solid and cystic masses throughout his left scrotum without definite visualization of the left testicle. Testicular tumor markers, including alpha fetoprotein and beta hCG, were negative. A contrast-enhanced computed tomography (CT) exam showed a large complex left extratesticular scrotal mass (Figure 1). The patient underwent a radical left orchiectomy, left hemiscrotectomy, left retroperitoneal lymph node dissection and complex scrotoplasty. He was discharged from the hospital two days later.

Discussion

Tumors in the scrotum are generally classified as intratesticular or extratesticular. Statistically, intratesticular tumors are more likely to be malignant than extratesticular tumors, which are typically

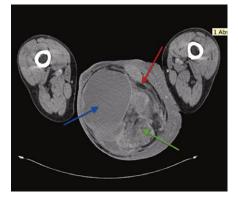




Figure 1. CT images demonstrate a large, complex extratesticular left scrotal mass containing fat (red arrow), cystic components (blue arrow) and enhancing solid components (green arrow).

benign.¹⁻³ Extratesticular tissue includes the epididymis, vestigial remnants, tunica vaginalis and spermatic cord.

The majority of extratesticular abnormalities include epididymal head cyst/ spermatocele, scrotal fluid collections (eg, hydrocele or pyocele), hernias and inflammatory lesions (eg, epididymitis).3 The most common extratesticular soft-tissue neoplasm of the scrotum is a lipoma, which represents up to 45% of extratesticular masses.^{1,3} Other benign nonepididymal mesenchymal masses of the scrotum include leiomyoma, neurofibroma, granular cell tumor and fibrous pseudotumor. Most malignant extratesticular tumors are sarcomas that arise from the spermatic cord. These neoplasms include liposarcoma, rhabdomyosarcoma, leiomyosarcoma and malignant fibrous histiocytoma—all of which are rare. 1,2

This was a case of liposarcoma, which typically presents as an enlarging, painless scrotal mass.³ This patient's tumor was classified as a myxoid liposarcoma with areas of dedifferentiation (Figure 2); it measured 25.4 x 21.5 x 20.0 cm and weighed

Extratesticular liposarcoma is a rare neoplasm. Cases are typically reported individually or in larger studies of liposar-

coma throughout the body; the mean age of presentation is 63 years. 1,3,4 Radical orchiectomy is the primary treatment. Liposarcomas are the most radiosensitive of sarcomas. Therefore, radiation therapy can be used to treat intermediate or high-grade tumors.3 Local recurrence has been described in up to 25% and metastasis in 10% of patients. Positive lymph nodes can be seen in nearly 40% of cases; in this case, suspicious lymph nodes shown on CT were negative upon histopathologic analysis.3

Ultrasound is the best imaging modality for initial testicular evaluation given its accessibility, low cost and ability to produce high-resolution images in realtime.^{2,3} However, ultrasound findings can be inconclusive given variable and nonspecific characterization.2 CT and/or MRI is often the next step in evaluation. CT is useful for excluding an inguinal hernia and for characterizing the morphology of a mass and staging a mass. The wide field of view and high-contrast spatial resolution of MRI is useful for localization, defining anatomic relationships and tissue characterization (eg, fat, fibrosis, blood products, etc.).^{2,3}

In summary, extratesticular liposarcoma is a rare neoplasm treated with orchiectomy. It tends to have a prolonged clinical course and potential for recurrence and metastasis. MM

Noelle Hoven is a resident and James Boyum is a staff radiologist and assistant professor in the department of diagnostic radiology at the University of Minnesota.



Figure 2. Myxoid liposarcoma surgical specimen

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Learning points

- Testicular tumors are generally classified as intra- or extratesticular. Intratesticular tumors are usually malignant, and extratesticular tumors are most likely benign.
- Ultrasound is the initial imaging modality of choice for evaluation of the testes. Further characterization of a testicular abnormality can be achieved with contrastenhanced CT or MRI.
- Liposarcoma is a rare extratesticular neoplasm. Such tumors often present as a painless, enlarging mass that can be mistaken for other benign extratesticular abnormalities including an inguinal hernia. An extratesticular liposarcoma is most commonly treated with radical orchiectomy and sometimes with radiation and chemotherapy, depending on histologic grade and staging.

Toxic Epidermal Necrolysis in a Pediatric Patient

BY SOLVEIG HAGEN, KATHERINE GREY AND SARA HYLWA, MD

oxic epidermal necrolysis (TEN) is a life-threatening exfoliative skin reaction that lies on a spectrum with Stevens-Johnson syndrome (SJS). Recently, Mycoplasma pneumoniae-induced rash and mucositis (MIRM) has been described as a separate-but-similar entity. MIRM is more common in children and is characterized by prominent mucositis with a sparse (often vesiculobullous) skin eruption—although cases mimicking TEN have been described.1

Case

Two weeks after an 11-year-old female was started on sulfasalazine for juvenile idiopathic arthritis, she developed redness of her cheeks, bullae of the lips and vaginal erosions. The eruption rapidly progressed to a diffuse erythematous rash (60% body surface area) studded with large tense bullae (30% body surface area), involving the trunk and proximal extremities. She was seen at a local hospital, diagnosed with SJS/TEN, started on IVIg at 0.5 mg/kg/ day and transferred to Hennepin County Medical Center for burn-unit-level care.

Upon admission, she exhibited epidermal detachment with positive Nikolsky sign (epidermal separation with shear force) and prominent mucositis of the lips (Figure 1) and vagina. A biopsy demonstrated full-thickness epidermal necrosis without significant inflammation, consistent with TEN. Infectious disease work-up revealed positive Mycoplasma IgM antibodies. Chest X-ray showed interstitial and airspace opacities. IVIg was increased to 0.78 mg/kg/day for five days, azithromycin was started for possible MIRM, and the patient underwent surgical debridement with xenograft placement (Figure 2). Prednisolone acetate solution, cyclosporine emulsion and artificial teardrops were recommended for ocular involvement. Vaginal dilators and intravaginal triamcinolone 0.1% cream were recommended to prevent vaginal strictures; a Foley catheter was placed to prevent urinary strictures. Four days after presentation, skin sloughing had stopped and re-epithelialization begun. The patient's mucositis resolved without cicatrix formation.



Figure 1. Patient's lips demonstrate hemorrhagic crusting and severe mucositis characteristic of TEN.

Discussion

This case illustrates the diagnostic challenges associated with exfoliative mucocutaneous disease. Although our patient's disease was most likely secondary to sulfasalazine ingestion, the potential role of Mycoplasma pneumonia could not be dismissed, given her striking mucositis, young age and positive Mycoplasma IgM serology. Most cases of MIRM show sparseto-moderate skin involvement rather than a TEN-like appearance (Table 1).

Optimal treatment of SJS/TEN is not well-elucidated. Early identification and discontinuation of the inciting drug are





Figure 2. Left: Patient's skin prior to debridement and xenograft placement. Right: Patient's skin following debridement and xenograft placement.

most important. Prompt transfer to a burn unit for aggressive skin care improves the chance of survival.2 Although multiple medical therapies have been studied (Table 2),3-7 IVIg is often the mainstay of treatment.8 In severe cases, early debridement removes sloughed skin-a nidus for infection.9 Coverage with xenograft, collagen or cadaveric grafts promotes wound closure and may change the local cytokine milieu, favoring cessation of detachment.9 Children with TEN are at greatest risk for airway compromise early in the disease process because of airway edema; prompt bronchoscopy is recommended with repeat bronchoscopy within 24 to 48 hours if symptomatic.8 Without timely and comprehensive treatment, serious long-term sequelae may ensue including dyspigmentation, nail changes, dry-eye syndrome, chronic conjunctivitis with scarring and vulvovaginal synechiae.10

Dermatologists and primary care physicians need to be aware of these rare-but-serious diseases. MM

Solveig Hagen and Katherine Grey are medical students at the University of Minnesota. Sara Hylwa is with Hennepin County Medical Center's Parkside Occupational and Contact Dermatitis Clinic and the University of Minnesota department of dermatology.

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TABLE

Clinical features of SJS, TEN and MIRM

	SJS	SJS-TEN OVERLAP	TEN	MIRM
Mucosal involvement	2+ sites	2+ sites	2+ sites	Predominant mucosal involvement
Skin findings	Erythematous to dusky macules Flat atypical targets Bullae Necrosis	Erythematous to dusky macules Flat atypical targets Bullae Necrosis	Erythematous to dusky macules Flat atypical targets Bullae Necrosis	Vesiculobullous targetoids Macules
Epidermal detachment (% body surface area)	< 10%	10-30%	> 30%	< 10% (usually)
Cause	Medications Herpes simplex virus Mycoplasma pneumoniae	Medications	Medications	Mycoplasma pneumoniae

TABLE 2

Proposed systemic treatments for SJS/TEN

THERAPY	PROPOSED MECHANISM OF ACTION	EVIDENCE-BASED RECOMMENDATIONS
Systemic corticosteroids	Anti-inflammatory; reduces immune response to exogenous agent	Equivocal for SJS; inconsistent results with some studies showing increased morbidity (risk of sepsis) Not recommended for TEN; associated
Human intravenous immunoglobulin (IVIg)	Autoantibodies versus Fas in IVIg prevent Fas/FasL-mediated apoptosis	with increased mortality Equivocal; considered first-line therapy despite studies demonstrating spectrum of outcomes
Cyclosporine	Immunosuppressive; inhibits apoptosis by down-regulating NF-kB	May improve outcomes; associated with reduced mortality compared to IVIq
Tumor necrosis factor (TNF)-alpha inhibitors	Inhibition of TNF-alpha prevents apoptosis	Equivocal; thalidomide is associated with increased mortality, although other TNF-alpha inhibitors may provide benefit as second- or third-line therapies in severe cases
Cyclophosphamide	Inhibit cell-mediated cytotoxicity	Not recommended; associated with increased mortality
Plasmapheresis	Eliminates pathogenic elements found in plasma	Limited data; generally safe

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Gluteal Compartment Syndrome: Successful Management with Combined Angioembolization and Surgical Decompression

BY JOHN R. SPRATT, MD, PETER A. BRETZMAN, MD, PAUL M. LAFFERTY, MD, AND MICHAEL D. MCGONIGAL, MD

raumatic gluteal compartment syndrome (GCS) can result from high- or low-energy blunt trauma. Most cases present with concomitant hip or pelvic fracture. We report a case of traumatic GCS without fracture that was managed using a hybrid strategy that combined angioembolization and fasciotomy.

Case

A healthy 52-year-old male was brought to our institution by EMS after being struck by a motor vehicle while riding his bicycle. He was hemodynamically normal on arrival and throughout his course. His primary complaint was severe pain in his right hip that was accompanied by numbness and subjective coolness in the extremity. Exam revealed 0/5 strength and decreased sensation in the right leg with a normal vascular exam. The patient's right buttock was tensely distended and ecchymotic, and he had severe pain with passive range of motion of the hip. Compartment pressures were not measured. The remainder of the examination was normal. Laboratory evaluation was unremarkable, including a serum hemoglobin of 12 mg/ dL. CT scan of the abdomen and pelvis demonstrated extravasation of contrast within the right buttock (Figure 1), suggesting the diagnosis of GCS related to a gluteal artery injury.

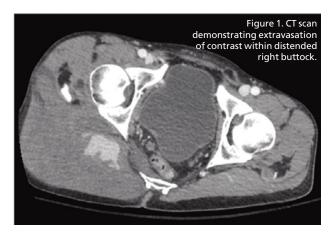
The patient underwent emergent selective angiogram of the right pelvis. It demonstrated active extravasation from a distal branch of the right internal iliac artery, thought to be the inferior gluteal artery, into a large pseudoaneurysm cavity in the

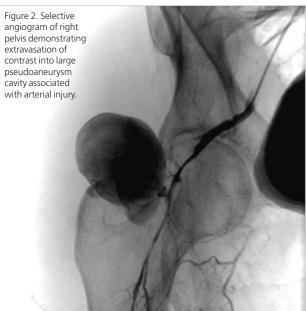
right buttock (Figure 2). Coil embolization of the bleeding vessel was performed proximally and distally to the site of extravasation; a completion angiogram demonstrated no further filling of the pseudoaneurysm cavity (Figure 3).

The patient was then brought to the operating room, where he underwent right buttock fasciotomies via the middle segment of a Kocher-Langenbeck approach. When the fascia of the gluteus maximus was incised, the muscle was tensely distended and approximately 500 cc of clot was evacuated from the space. No active hemorrhage was noted. The fascia lata also was incised with no bleeding or clot noted. The wound was closed primarily over drains.

Full strength returned to the right lower extremity within hours

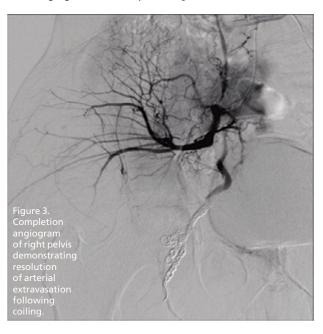
postoperatively. He was discharged home on postoperative day 7 without residual paresthesia. He was ambulating without assistance within two weeks following discharge.





Discussion

Traumatic gluteal compartment syndrome is a rare and dangerous condition resulting from both high- and low-energy blunt trauma. Diagnosis is generally made through a combination of clinical exam and imaging. The necessity of compart-



ment pressure measurement in this setting is controversial.²⁻⁵ In a review of 28 cases of GCS, six (21.4%) were traumatic in nature, all of which were managed with surgical decompression alone. In our patient, we used angiography to identify and

> control intracompartment hemorrhage, which was followed by surgical decompression. This approach prevents ongoing bleeding at the time of exploration, which may be difficult to control because of an individual patient's anatomy. It also is superior to immediate decompression in properly selected cases. MM

> John Spratt is a resident in general surgery at the University of Minnesota. Peter Bretzman, Paul Lafferty and Michael McGonigal are with Regions Hospital in St. Paul.

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Drug-Induced Lupus: Treating One Ailment Can Lead to Another

BY CLAIRE JANSSON-KNODELL, MD, AND MARY JO KASTEN, MD

65-year-old male with a history of papulopustular rosacea presented to rheumatology with a six-month history of polyarticular joint pain, night sweats and an unintended 12-pound weight loss. He reported pain in his DIP joints, PIP joints, feet and knees. Associated symptoms included 15 minutes of morning stiffness, dry eyes and subjective weakness. He had no rash, joint swelling or erythema. His pain improved with NSAIDs and time. He had been taking minocycline for papulopustular rosacea for five years. Minocycline was discontinued

after consulting an internist about night sweats, so that cultures could be obtained off antibiotics. His arthralgias rapidly improved, and all symptoms were nearly resolved 10 days after stopping minocycline.

On exam his vitals were normal. He was in no distress and appeared well. Skin exam revealed no rash. There was no lymphadenopathy or organomegaly. Cardiopulmonary exam was unremarkable. Musculoskeletal exam revealed no synovitis in any joint; Heberden's and Bouchard's nodes were present. His joints had normal range of motion. His motor strength was 5/5 on neurologic exam.

White blood cell and platelet counts were normal. The patient was mildly anemic with hemoglobin of 13.2 g/dL. These labs were obtained prior to discontinuing minocycline and showed C-reactive protein elevated at 46.7 mg/dL and sedimentation rate elevated at 47 mm/hour. Rheumatoid factor and anti-cyclic citrullinated peptide antibody (anti-CCP) were negative. Antinuclear antibody (ANA) was weakly positive at 2.4. Nonrheumatologic etiologies for his positive ANA were considered and deemed less likely by history and physical exam (Table). Additional

studies showed a positive double-stranded DNA antibody.* Hand X-rays ruled out an erosive arthritis.

The patient's history, positive ANA and clinical course of improvement after discontinuing minocycline were indicative of drug-induced lupus. This phenomenon was observed in the setting of underlying osteoarthritis.

Discussion

Drug-induced lupus is an autoimmune disorder characterized by having at least one clinical feature of lupus (malar rash, photosensitivity, discoid rash, oral ulcers, arthritis, serositis, proteinuria, seizures or psychosis), no prior history of lupus, a positive ANA and improvement with elimination of the offending medication.1

Drug-induced lupus is a relatively rare phenomenon. A matched case-control study in the United Kingdom found only three medications-hydralazine, carbamazepine and minocycline (odds ratio 4.23)—have a causal relationship with drug-induced lupus.2 It occurs in only one in 1,000 patients exposed to minocycline.3 Eighty-four percent of cases of druginduced lupus have been reported in females—usually young women being treated with minocycline for acne.4 Arthralgia is the most common presenting feature in drug-induced lupus and is seen in 73% to 100% of patients. 5 Clinical features usually include constitutional symptoms, arthralgias, arthritis, serositis and myalgias. Typically, features of lupus resolve quickly with discontinuation of the offending agent, but lab abnormalities can persist for months to years. The treatment for drug-induced lupus is discontinuation of the offending agent.

*With minocycline-induced lupus, the ds-DNA antibody is more likely to be positive than the antihistone antibody: 92% versus 13%. This discrepancy makes the ds-DNA antibody a more useful diagnostic test. (Source: Schlienger RG, Bircher AJ, Meier CR. Minocycline-induced lupus. A systematic review. Dermatology. 2000;200:223-31.)

Other diseases associated with a positive ANA

Viral diseases

EBV

HCV

HIV

Parvovirus 19

Bacterial diseases

Subacute bacterial endocarditis **Syphilis**

Malignancies

Lymphoproliferative diseases

Paraneoplastic syndromes Inflammatory bowel disease

Interstitial pulmonary fibrosis

Source: Diseases Associated with a Positive ANA. www.uptodate.com/contents/image?imageKey=RHEU M%2F89802&topicKey=RHEUM%2F1822&rank=1% 7E150&source=see_link&search=ana&utdPopup=true] Courtesy of Donald B Bloch, MD. Graphic 89802

Conclusion

This case illustrates the potential of iatrogenic complications: creating a second illness by treating the first one. Although drug-induced lupus is somewhat rare, it is a potential complication of treatment with a medication such as minocycline. Recognizing that this patient's arthralgias may not have been caused by osteoarthritis alone was essential in determining the cause of his inflammatory arthropathy. The case highlights the importance of a broad differential for new and unusual joint pain in the setting of co-existing degenerative joint disease and a high index of suspicion for the adverse effects of medications—even if those medications have been well-tolerated in the past. MM

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Spider Bites: More than Meets the Eye

BY ANGELA R. OLERICH, DO, KEITH STELTER, MD, AND SUSAN LAABS, MD

asal cell carcinoma is the most common skin malignancy in the United States, and its incidence continues to rise. Risk factors include environmental exposure and genetic predisposition. Prevention of morbidity and mortality focuses on early screening, diagnosis and treatment.

Acute myeloid leukemia (AML) is the most common leukemia in adults. It is a group of defined hematopoietic neoplasms characterized by proliferation of precursor myeloid cells with reduced potential to mature. Patients with AML usually present with vague, generalizable symptoms secondary to their pancytopenia.³

Figure 1. Left ear lesion

Figure 2. Upper back lesion

Case

A 68-year-old Caucasian male, who was self-employed as a farmer and had not seen a primary care physician in more than 40 years, presented to the emergency department reporting severe pain and an ulcer located on his left ear that had persisted for several months. He said the symptoms started following a spider bite more than a year earlier. Initially, he noticed a silverappearing lesion in his antihelix that had progressed over months, becoming more painful and eventually necrotic in the center. He attempted to tamponade the then nickelsized bleeding lesion with tissue (Figure 1) and indicated the pain had become excruciating in the past few weeks. He also reported a similar lesion on his upper back, noting the mass had been growing for four to five years (Figure 2). He believed he had been bitten by a spider there as well. The mass on his upper back measured 3x3 cm. He described it as "not terribly bothersome" compared with the one on his left ear, which was causing him substantial pain. The patient also reported increasing fatigue over several months, which had notably worsened in the last few weeks. He was admitted to our hospital service for work up.

Initial labs revealed significant pancytopenia with a hemoglobin of 3.4, white blood cell count of 1.0 and platelet count of 16,000. Further peripheral blood smears and bone marrow biopsy were performed revealing AML. The AML was difficult to classify with cytology. The patient underwent biopsies of both the border of the necrotic area of his left antihelix and the mass on his upper back. Both were revealed to be basal cell carcinoma, nodular type. The patient's AML was given priority for treatment over the basal cell carcinoma. He underwent multiple platelet and red blood cell transfusions. The decision was made for a trial of chemotherapy. After one month, the patient entered hospice because of his inability to tolerate chemotherapy. He died approximately three months after initial presentation.

Discussion

This case highlights two issues: The first is the importance of having an established relationship with a primary care physician or other clinician. This patient had not been seen by a physician for many years. Citing that he was raised only to seek medical care when it was "really needed," he was not aware of the need for routine visits and preventive screenings. Had our patient had an established relationship with a primary care provider, he may have felt comfortable making an appointment to discuss his ongoing and evolving symptoms.

The second is the need for skin screening whenever patients are in their physician's office using USPSTF screening guidelines. Basal cell carcinoma is 100% curable when it has not metastasized and 95% curable when it has.⁴ Physicians should be especially diligent with those patients who have risk factors for skin

(continued on page 56)

Pediatric Ingestion of Rare-Earth Magnets: A Growing Problem

BY KENDALL MCEACHRON, MD, BRENT BAUMAN, MD, AND BRADLEY SEGURA, MD, PHD

ccidental ingestion of foreign bodies is a well-known cause of morbidity in the pediatric population. Unfortunately, the incidence of small-magnet ingestion (particularly those made of alloys of rare-earth elements) has been increasing since 2006. It is particularly dangerous when multiple magnets are ingested individually. Unless ingested simultaneously, magnets may connect between multiple loops of bowel leading to potential obstruction, perforation and fistula formation.^{2,3} Physicians, public health officials and parents need to be aware of this danger associated with magnets commonly used on refrigerators, in jewelry and in other household items.

Case

A 2-year-old boy presented to the emergency department following 12 hours of nausea, vomiting, poor oral intake and worsening abdominal pain. Family members stated that he swallowed a magnet the previous evening while playing with his sister. His mother noted that the child had ingested rocks and other small objects in the past, seemingly without complications. The child's maternal aunt works at a factory that produces rare-earth magnets and brings these for the patient and his older sister to play with. His mother stated that he had previously ingested these magnets.

The patient presented to the ED with a temperature of 37.9°C and elevated heart rate (145 beats per minute). On physical exam, he was noted to be lethargic; however, abdominal exam elicited diffuse tenderness to palpation and attempts on the part of the patient to push away the examiner's hand. The patient's white blood cell count was $12,400/\mu L$ (normal: 5,500

to 15,500), with an absolute neutrophil count of $8.6/\mu L$ (normal: 0.8 to 7.7) and an elevated C-reactive protein of 110 mg/L (normal: < 8.0). Abdominal plain films revealed a foreign body in the right lower quadrant and gas-filled loops of bowel in a nonobstructive pattern. There was no intra-abdominal free air (Figure).

The patient was taken to the operating room for an urgent diagnostic laparoscopy to exclude small bowel injury and potential fistulization. Laparoscopy demonstrated dilated loops of bowel, dense adhesions and free fluid in the pelvis; therefore, the procedure was converted to laparotomy. One perforation was found at the base of the cecum and an additional pair of perforations were found at 40 cm and 60 cm, respectively, proximal to the ileocecal valve. These perforations were associated with chronic-appearing fistulization of the two involved small-bowel segments with

Figure. Supine (top) and upright (bottom) abdominal plain films. The right lower quadrant shows a radiopaque cylindrical foreign body measuring 8 x 6 mm. Scattered air-fluid levels are nonspecific. No pneumatosis, portal venous gas or free air is present.



several magnets as lead points. The cecal perforation was repaired with partial cecetomy. The ileo-ileal fistula was taken down and the two bowel perforations were repaired primarily with suture. Intraoperative fluoroscopy confirmed removal of all foreign bodies. The child did well postoperatively and was discharged seven days later.

Discussion

Since 2006, there have been changes to the mandatory standards pertaining to the use of rare-earth-variety magnets in children's toys.4 However, these standards do not extend to other household items.1 As with the boy who presented in our ER, children will treat these magnets as toys if allowed. Our patient does not have developmental delay, pica or other hyperoral disorders. Children who do are at even greater risk of injury from magnet ingestion. Physicians, public health officials and parents need to press for changes to the standards for rare-earth magnet use in items other than toys and, in the meantime, support public health initiatives to better protect children from this avoidable source of morbidity. MM

Kendall McEachron and Brent Bauman are general surgery residents at the University of Minnesota. Bradley Segura is an assistant professor in the department of surgery and a pediatric surgeon at the University of Minnesota Masonic Children's Hospital.

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Spider Bites: More than Meets the Eye

(continued from page 54)

cancer such as personal and family history, UV radiation exposure, advancing age and fair skin. The latter three risk factors were relevant for our patient. It is recommended that all persons between 20 and 40 years of age undergo routine skin screenings every three years and that they get screened annually after age 40.5 MM

Angela Olerich is a resident in the University of Minnesota Family Medicine Residency Program in Mankato. Keith Stelter is associate director of the program and a family physician at Mayo Clinic Health System's EastRidge Clinic in Mankato. Susan Laabs is a family physician at Mayo Clinic Health System's NorthRidge Clinic in North Mankato.

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Effective Treatment of Decompression-Related Spinal Cord Injury with a Novel Hyperbaric Oxygen Treatment: A Case Report

BY KERRI CHUNG, DO, AND DIANE MORTIMER, MD

64-year-old male, who was an expert scuba diver, suffered decompression sickness upon accidentally ascending from a 220-foot dive in less than two minutes instead of the planned 45 minutes. He initially required emergent treatment for severe cardiopulmonary and gastrointestinal symptoms. As these conditions improved, it became clear that he had sustained a spinal cord injury (SCI). His spinal cord perfusion pressure was compromised by inert nitrogen gas bubbles that settled in his blood vessels and tissues as a result of the decompression pathology. MRI demonstrated ischemic-type abnormalities at C2-7, T3-4 and T7-8.1

Medical management included a two-week course of hyperbaric oxygen (HBO) recompression therapy. Air pressure and oxygen levels in the chamber were increased in an attempt to facilitate the safe escape of injurious bubbles from the patient's body. By post-injury day 4, however, his neurological status had not yet stabilized. He was then taken for an unprecedented 53-hour HBO session with pressures simulating a depth of 165 feet. Additional treatments involved one to two hours at pressures simulating depths of up to 100 feet. Traditional treatments, by contrast, last an hour at pressures simulating depths of less than 60 feet.2,3

Prior to his prolonged and deep HBO treatment, this patient was able to weakly shrug his shoulders and had patchy sen-

sation in the left upper limb. Afterward, his motor and sensory function steadily improved. At one week post-injury, his American Spinal Injury Association Impairment Scale (AIS) classification was C6-B, or sensory incomplete. That is, he had sensation but demonstrated no reliable motor function in his shoulders, elbows and wrists.

On day 14, he was admitted to an acute rehabilitation unit. He made impressive functional progress as he worked with the SCI rehabilitation team. At six weeks post injury, his AIS classification was T1-C, or motor incomplete, meaning he had consistent motor and sensory function throughout his upper limbs. Upon discharge from rehabilitation, he could move his upper and proximal lower limbs and had intact sensation in most dermatomes. He was able to self-propel a manual wheelchair but was unable to transfer from a bed to a chair independently because of chronic shoulder issues that limited his ability to bear weight. Once in a chair, however, he was independent with upper body activities.

The patient was discharged to another rehabilitation facility closer to his home eight weeks post-injury and continued his recovery there. One year later, he is active in his community and has returned to his teaching job part-time. He uses a wheelchair for mobility as well as other adaptive devices.

Discussion

Ischemic SCI in divers who develop decompression sickness during rapid ascent is often catastrophic. Survival and recovery are not assured even with widely accepted treatment protocols.4 In this case, prolonged and deep HBO therapy helped treat this patient's injury in a manner that, to our knowledge, has not been previously described. MM

Kerri Chung is a third-year resident in the physical medicine and rehabilitation program at the University of Minnesota. Diane Mortimer is a staff physician in physical medicine and rehabilitation at the Minneapolis Veterans Affairs Medical Center.

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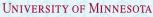
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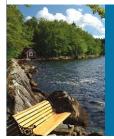
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Grace anatomy

BY ROBERTA M. BEACH

Every person in this room has already Given one gift simple and profound: Difficult to give, harder to receive. For each life and death, information provided Is limited enough to fold Into one small square of gauze. All deserve recognition. And yet ... Stand at attention. Here. This man. How he died is not what is most important. His life? If you could only imagine. The aorta, coronary arteries Valves (cusped and semilunar), ventricles, atria ... He would have taught everything You need to know. And more. How to tell a patient a test was false Positive, a wife the situation is serious But her husband should survive A grandmother she needs open-heart surgery And will be healed for her grandchild's wedding. Many times he entwined empathy, hope And sorrow into handpicked bouquets Placing vases in the angled plasma light Of hospice windows, certain his blooms Would last. For patients. For himself. Always respect who he was What he will teach you And, if you play requests Listen to Bach while you memorize The vascular system.



Roberta Beach is a cardiology administrative coordinator with M Health.

On what inspired this poem: "One of our retired cardiology professors died and donated his body to the University of Minnesota's Anatomy Bequest Program. Several weeks later, during a conversation with a member of his family, I was asked what seemed to be a rhetorical question: 'I wonder where he is now... physically?' 'Grace Anatomy' began as an attempted answer. Having read about anatomy students and their complex reactions to gross lab, I also wanted to address these. Every physician who was involved in medical education and becomes an anatomy donor is not yet finished being a teacher."



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