

MINNESOTA MEDICINE

SEPTEMBER 2015

TURNING POINTS

EIGHT PHYSICIANS ON HOW THEIR CAREERS TOOK THEM PLACES THEY NEVER EXPECTED TO GO

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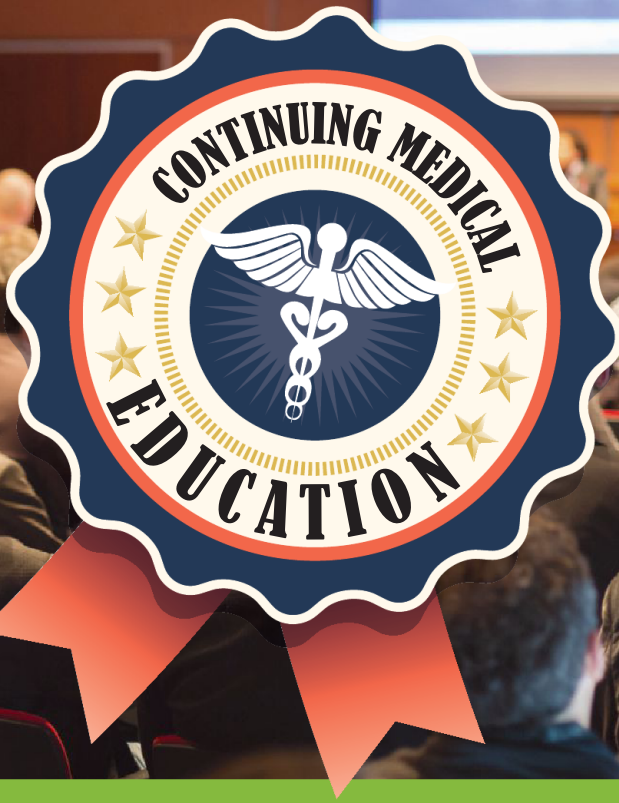
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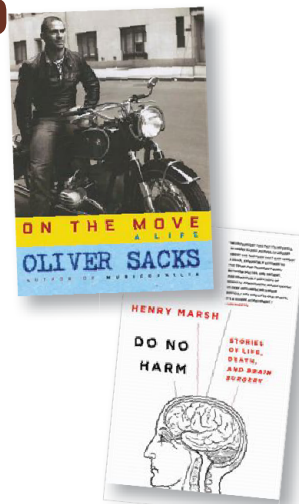
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Charles R. Meyer, MD, Editor in Chief

Previous medical careers were like a train trip with predictable, scheduled stops. Today's careers careen off on trunk lines or even go off the tracks for extended periods.

It's about the journey

At my age, I think a lot about my career, mostly career past rather than future. On one level, my professional life reads like a curriculum vitae, a mundane chronology of educational institutions attended and jobs held. On another level, it is a parade of offices used, partners coming and going, hospitals attended and extracurricular activities engaged in. I'm not sure my medical career traces a poetical arc, a smooth track from start to present. Perhaps it's more like a sine wave.

Indeed, fewer medical lives today follow the traditional straight-and-narrow path from undergraduate to medical school to residency to medical practice to retirement. Previous medical careers were like a train trip with predictable, scheduled stops. Today's careers careen off on trunk lines or even go off the tracks for extended periods. Physicians and physicians-in-training are not afraid to interrupt their career, or take their skills to distant or unique places.

Our physician profiles this month highlight a panoply of side trips—law degree, research, alternative medicine, history of medicine. Our perspectives dramatize the phases of a doctor's journey. One take-away from all of these pieces is to expect the unexpected.

Reminiscing about my own journey, even though I followed the traditional path, the unexpected appeared at every turn. I didn't expect to match at Mayo for residency. I didn't expect to land in Minneapolis, a city I had visited only once before coming to Minnesota. I didn't expect to have a partner leave my busy group a few years after I started. I never thought

I would get embroiled in medical staff activities at two hospitals. And I certainly never expected to have to close a practice I'd been in for 35 years.

More significant than the external events of a career are the internal changes that occur, shifts in attitude and outlook that can be as unexpected as the interruptions. Some are dysfunctional. The starry-eyed idealism of the neophyte medical student morphs into the sleep-deprived grumbling of a fourth-year on the treadmill of clinical rotations. Pushed by work demands and too little time, the first-year resident communicator can evolve into the fourth-year technical wiz with no time for people. And the young practitioner initially bent on helping people can quickly become more worried about the bottom line than a rash on the bottom.

But many changes are nurturing, lending enjoyment and fulfillment to a long professional life. Shortly after starting practice, I learned that you don't practice in a vacuum and that you are only as good as your front desk. Charging into practice prepared to make startling diagnoses and lifesaving treatments, I soon found that you are most remembered by your patients for your presence and your words. I get the most thank-you notes from the families of patients who died. And I discovered that, rather than knowing everything, the most important intellectual trait is knowing what you don't know.

I'm not sure which part of my sine wave, or arc, I'm on now. But I look forward to the next stop or trunk line.

Charles Meyer can be reached at meyer073@gmail.com.



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Guitar man

You won't find the usual pile of magazines, pamphlets about medical conditions and framed art in the offices of family physician James

Welters. His exam rooms at Northwest Family Physicians in Plymouth are a feast for the eyes, entertaining patients while opening the door for them to learn about the person behind the white coat.

Exam Room 1 is filled with music memorabilia including a Ramones T-shirt, a Clash poster, concert tickets and framed records from Welters' collection. Behind Door 2 are framed Peanuts comic strips, statues, posters and stuffed animals, some of which he collected and some of which were gifts from patients. The third exam room displays items from Rhode Island, highlighting Welters' time at Brown University as an undergraduate and medical student.

The decor reflects Welters' varied interests—which also include collecting Gretsch guitars, studying theology, RV camping and technology—and his intention to relate to his patients on a more personal level. “It humanizes it. I’m not just a doctor who’s a stiff figure,” he says of his decision to place pieces of his collections in the exam rooms. “We can have more friendly conversations that are not just about medicine. That style of interacting with patients carries over to the medical portion of the visit.”

A lifelong music lover, Welters bought his first 45 rpm record at age 9 (“Shambala” by Three Dog Night) and later became a huge fan of the Beatles, Graham Parker, Elvis Costello and R.E.M. He spent



James Welters, MD, with some of his Gretsch guitars and music memorabilia.

most of his youth visiting record stores across the Twin Cities, playing guitar and coronet, serving as a DJ for his college radio station and amassing a large collection of records, CDs and digital record-

ings. When his son became interested in the guitar, Welters decided to pick up the instrument again.

Playing piqued his interest in Gretsch guitars; Welters now looks for used ones to collect and restore. Gretsch guitars aren't quite as popular as Gibsons and Fenders, but they were favored by the Beatles' George Harrison, the Who's Pete Townsend and Brian Setzer of the Stray Cats. Welters enjoys finding uncommon models from the 132-year-old company. He'll often refurbish a Gretsch and sell it so he can buy another.

"It's a creative outlet. Here is this thing and how can I make it better?" he says. "I'm also on a quest to find the perfect guitar that has all the features I want. I like to play but I'm not very good. If I can't be a professional at least I can be a part of it."

Welters went on another quest in recent years, taking courses at United Theological Seminary in New Brighton as a non-degree student. "I wanted a deeper, richer understanding of religious doctrine rather than taking the Bible at face value," he explains.

An ardent fan of Apple computers from their earliest days (he had one of the first Macs and has been an early adopter of many of the company's products), Welters also enjoys staying current on technology and spends much of his vacation time on RV camping trips with his wife and 19-year-old son. From visits to Yellowstone to any spot near Lake Superior, he is in his happy place when he's hiking and camping.

Welters says he thrives on being a generalist both in medicine, where many of his patients have aged alongside him, and with his outside interests. "I have a restless mind," he says, "and a very tolerant wife." – SUZY FRISCH



Clinical hiatus, then what?

When anesthesiologist Claudette Dalton, MD, decided to take a few years off because of family obligations, her path to resuming practice was unclear. No wonder: Fewer than half of state medical boards surveyed in 2010 had a formal reentry policy.

In order to help physicians like Dalton, who wish to resume practice after taking time off, the Physician Reentry into the Workforce Project was established in 2005. Funded by the American Academy of Pediatrics, the project maintains a website that's a comprehensive resource for physicians across all specialties.

Although there are no formal reentry guidelines in Minnesota statute, physicians who left practice in good standing and seek relicensure must proceed as if they were applying for a license for the first time, says Ruth Martinez, executive director of the Minnesota Board of Medical Practice. "It's advisable to keep up with continuing education."

Dalton agrees, adding, "You really need to keep a part-time or volunteer toe in the water." In order to get back into practice, she held an unpaid OR position while working full time as assistant dean for medical education at the University of Virginia. Dalton, who has since retired, now works to improve the reentry process, serving on committees and task forces on reentry for the American Medical Association and Federation of State Medical Boards.

Kelly Towey, MEd, co-director of the reentry project, notes that the amount of help a returning physician will need depends, in part, on how long he or she has been out of clinical practice and whether their specialty is mostly procedural or mostly cognitive.

Dalton encourages physicians to find out what resources are available to help them with reentry before they leave practice: Is their group willing to oversee a reentry period? Are there formal reentry programs nearby that they can afford? How long can they stay out before tripping a regulatory trigger? "Be sure you can afford both the absence and the reentry," she says. "Neither is cheap." – JANET CASS

To learn more

The Physician Reentry into the Workforce Project (www.physicianreentry.org) offers information about reentry programs, personal accounts describing different reentry paths and barriers to returning to practice, and more. Search on "Inventory" to find a reentry checklist that is neither specialty- nor state-specific.



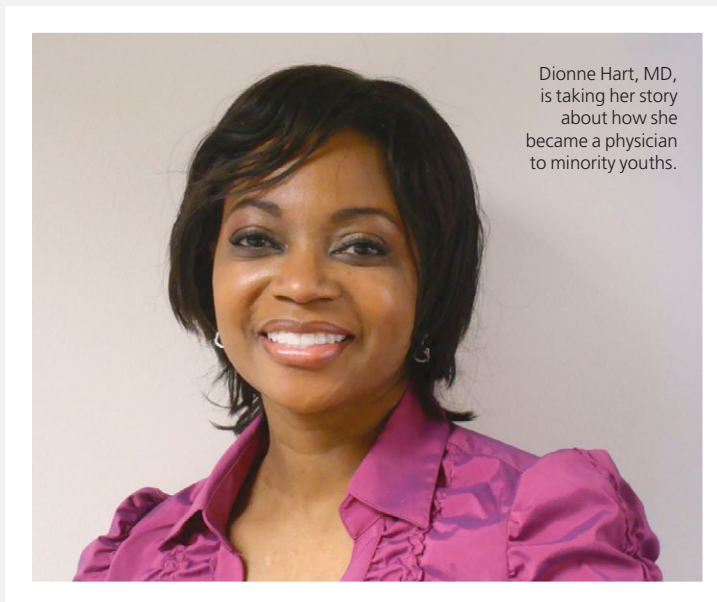
Nontraditional path

When a mentor recommended to Dionne Hart, MD, that she be included in a project highlighting African-American women physicians, Hart initially hesitated. How did her career as a psychiatrist compare with that of former Surgeon General Regina Benjamin, MD, and other accomplished, pioneering physicians?

Then Hart realized that by telling the story of her nontraditional path to medicine, she might convince African-American girls and young women that they, too, can become doctors. Hart's story is among those of about 75 African-American women featured in a book by Crystal Emery, *Against All Odds: Black Women in Medicine*. Jay-Sheree Allen, MD, a family medicine resident at Mayo Clinic, is also featured.

"There's a school of thought that if you can't see it, you can't dream it," Hart says. "African-American physicians have been quietly taking care of our families, our patients and our communities. If people read these stories and it inspires one child to pursue her dream, it will be worth it. We never know who we're going to reach with our stories, and that's why it's such an important project for all of us."

Hart grew up in the Chicago suburbs and always was interested in science and medicine. But she didn't get much encouragement to pursue either as a career. She married her high school sweetheart, had three children by the time she was 20 and



Dionne Hart, MD, is taking her story about how she became a physician to minority youths.

got divorced, all while earning a degree in psychology from the University of Chicago. After three years working as a social worker at a community mental health center, Hart decided to pursue her dream of becoming a physician. She graduated from Rush Medical College in Chicago and came to Mayo Clinic for residency in 2003.

Hart, who works in Rochester and the Twin Cities, provides psychiatric care for

severely ill patients. She became involved in advocacy activities as a result of her work with mentally ill people and her older brother's death from an undiagnosed aortic dissection in 2001. Hart created an advocacy and contract psychiatric consultation organization, Care from the Hart, and now devotes much of her free time to that and to working with the American Medical Association (AMA), where she is past chair of its Minority Affairs section, the Minnesota Medical Association, Minnesota Psychiatric Society, Zumbro Valley Medical Society and the National Medical Association, an organization for minority physicians. She also participates in the AMA's Doctors Back to School program, which aims to introduce minority students to minority physicians, who can serve as role models and offer encouragement to those considering health care careers.

Hart says sharing her story in Emery's book, which is scheduled for publication this fall, is an extension of this work. She plans to join the author on a national tour later this year, visiting schools and minority fraternities and sororities to encourage young people to pursue careers in health care. She also plans to do outreach at schools with on-site programs for young parents. As a former teen parent, Hart, who now holds five degrees, is most

interested in inspiring those young men and women to dream and achieve.

"I was a very good student and I didn't have all the tools I needed to make good choices," Hart says. "My path to medicine was circuitous, but it really helped me tell people that even if you don't take a straight path, there are ways to succeed and people will support you." – SUZY FRISCH



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New designation, new opportunity

Board certification for **integrative medicine** brings added credibility among physicians. But will it extend to insurers?

BY JEANNE METTNER

For about as long as Bernarda Zenker, MD, has been a family physician, integrative medicine has been the cornerstone of her practice. As a resident at the University of Oklahoma during the early 1990s, she began to witness how the side effects of medication were affecting her patients' response to therapies. Later on, while practicing in Alabama, she observed antibiotic-resistant infections cropping up with greater frequency. "I became fascinated—and remain fascinated—by what we do as physicians when antibiotics no longer work or the side effects of medications supersede the benefits," says Zenker, who now practices with Trinity Integrative Medicine in Burnsville. "I wanted to figure out new ways to treat these types of cases, particularly because they are becoming more prevalent."

That quest led Zenker to move beyond the traditional Western medicine philosophy of "treating the disease" into a realm of care that treats the "whole person"—the physical, spiritual and emotional aspects of a patient's health. She explored new therapeutic modalities such as acupuncture,

yoga, herbal remedies, nutritional supplements and stress reduction techniques. She also began using new diagnostic tools such as neurobiological testing to assess neurotransmitter levels and biochemical lab panels to assess the presence of oxidative stress, gastrointestinal disturbances and immune or inflammatory imbalances. With the help of a Bush Fellowship, she completed an integrative medicine fellowship with Andrew Weil, MD, at the University of Arizona's Center for Integrative Medicine (ACIM) in 2007.

Until recently, completing an integrative medicine fellowship was as much as Zenker and other physicians could do to demonstrate competency in the specialty. But in 2011, the ACIM began collaborating with the American Board of Physician Specialties (ABPS) to create a board certification in integrative medicine (see p. 12). This collaboration culminated with the ABPS offering the first exam for board certification in integrative medicine in November 2014. Zenker was one of about 160 physicians in the United States who took the exam and one of 121 who passed. In May 2015, another 30 physicians passed

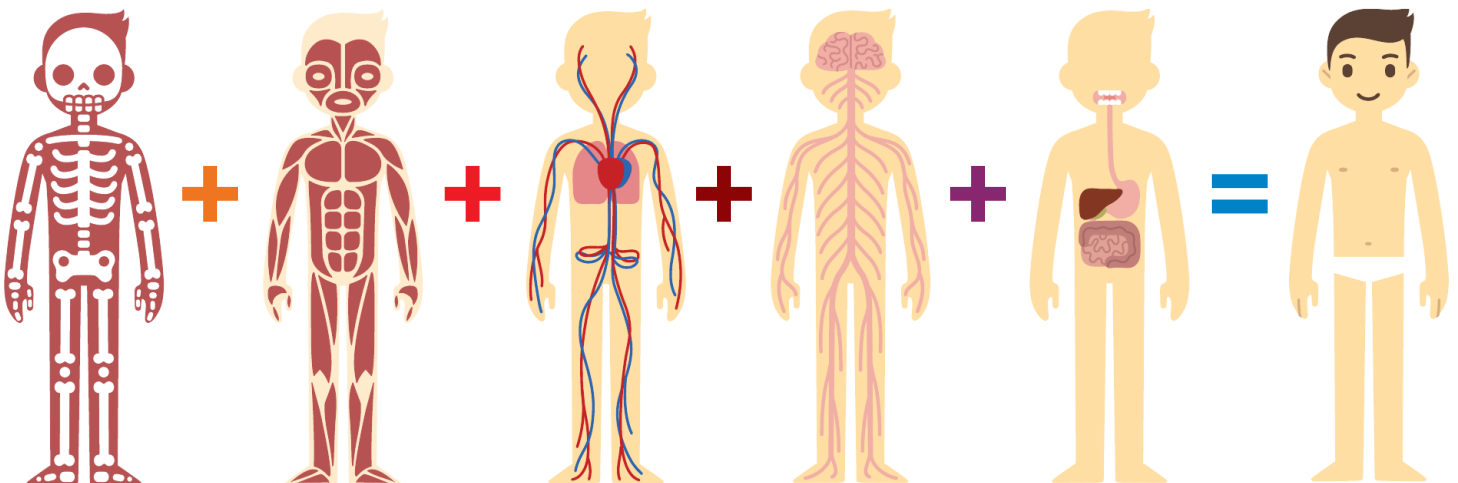
the exam. Thus far, four Minnesota physicians have received board certification.

Changing minds, changing coverage

Zenker says that, as with any board certification, certification in integrative medicine demonstrates competency and expertise. It also provides more credibility and standards for training and fellowships. "My colleagues in medicine definitely recognize that," she says.

She hopes insurers will do the same, as getting coverage for some of the services she offers has been a struggle. Before board certification was available, Zenker received calls from auditors who told her she was taking too long for a single visit and was potentially "upcoding" (creating an excess number of codes for visits, thus overcharging) by asking for reimbursement for services such as biochemical testing for respiratory concerns.

"I am addressing several body systems in one session, which means taking 45 minutes for a visit as opposed to 10, and I am also looking at underlying causes instead of just a symptom that they may



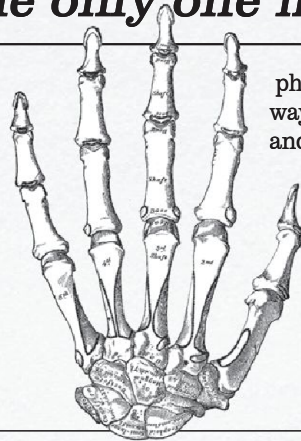
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be presenting with,” she explains. She adds that addressing the root of a medical problem can prevent more extensive treatment later on, thus reducing insurance costs.

Zenker says two of her colleagues who practice integrative medicine were recently dropped by insurers; both said it was because the insurance companies believed they were upcoding.

“The tools that integrative medicine physicians are using to diagnose and treat their patients are tools the health insurance auditors don’t always understand,” she says. “You have to play by their rules, and if you don’t, you are out of the game.”

Zenker hopes the new integrative medicine board certification will encourage insurers to become more knowledgeable about the specialty and the treatments it uses and reconsider some of their coverage decisions. “I’m hoping this credentialing will mean increased exposure, because with

increased exposure comes increased education and awareness,” she says.

Thus far, she’s not feeling encouraged.

After passing the boards, Zenker pre-emptively sent documentation to insurers detailing her credentials and the requirements for board certification. Three weeks later, one insurance company wrote back, indicating that it does not recognize the certification. “When I called them to discuss it, they said that integrative medicine therapies I offer are ‘doubtful to be helpful,’” she says. None of the other insurers have responded.

Jeff Schiff, MD, MBA, medical director for the state’s health care programs (which include Medicaid and MinnesotaCare), says when it comes to coverage decisions, evidence must

show that a diagnostic procedure is reliable (findings can be reproduced from lab to lab), measures something that is clinically meaningful, and that the measure can be used to improve

care. For treatments, evidence must show that a procedure or medication is effective, safe and at least as cost-effective as alternatives. He adds that private insurers also rely heavily on evidence-based data when making coverage decisions.

Schiff says some therapies considered to be in the realm of integrative medicine are covered by state programs. One of those is acupuncture for pain.

Zenker, who currently has a several-month-long wait for appointments, fears that if insurance companies continue to refuse to cover key lab procedures or drop coverage of her services altogether, the out-of-pocket costs will take a toll on both her patients and her practice. “If that happens, my options would be to become a ‘doc in a box’ or see my patients as I always have and get inadequate reimbursement for my services,” she says. **MM**

Jeanne Mettner is a Twin Cities writer and a frequent contributor to *Minnesota Medicine*.



Getting certified

To sit for the integrative medicine certification exam, physicians first must meet the American Board of Physician Specialties’ (ABPS) general requirements: unrestricted medical licensure (MD or DO) in any state in which they are licensed and completion of a residency program approved by the Accreditation Council of Graduate Medical Education, the American Osteopathic Association (AOA) or the Royal College of Physicians and Surgeons of Canada (RCPSC).

Physicians also must hold board certification in another specialty granted by either the ABPS, American Board of Medical Specialties, AOA or RCPSC and meet one of the following integrative medicine-specific requirements established by the ABPS’s American Board of Integrative Medicine (AOIM):

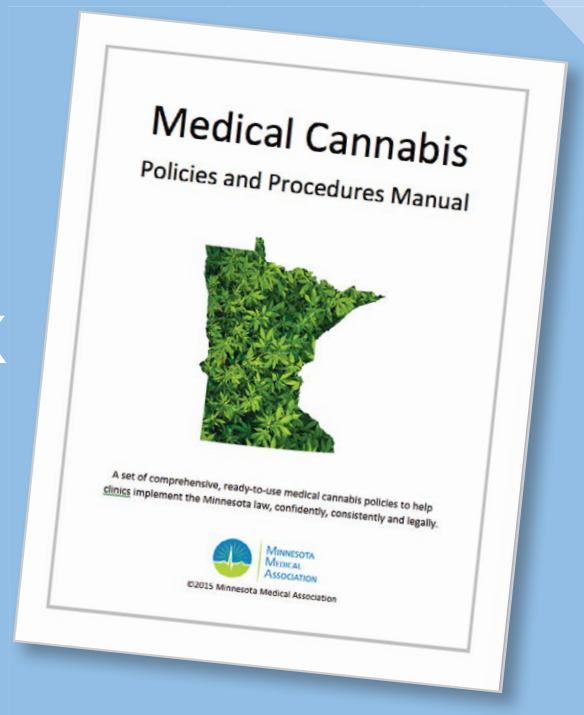
- completion of an ABOIM-approved fellowship in integrative medicine;
- graduation from an accredited four-year naturopathic college;
- graduation from an acupuncture college accredited by the National Certification Commission on Acupuncture and Oriental Medicine; or
- graduation from a Council on Chiropractic Education-accredited college.

Until December 2016, applicants may qualify if they demonstrate 500 points of integrative medicine experience and training. Points are awarded for the number years practicing integrative medicine (50 points for each year, up to five years), credits earned through completion of integrative medicine-related Category 1 or Category 2 CME, certification through the American Board of Integrative and Holistic Medicine (200 points), and/or completion of integrative medicine training in residency.

Once a physician receives certification, it is good for eight years, according to the ABPS.—JM



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TOOK THEM PLACES THEY NEVER EXPECTED TO GO



CAREERS RARELY FOLLOW A STRAIGHT LINE.

Although most physicians start out taking the tried-and-true path from pre-med studies to medical school to residency, once that ends, they can go in any number of directions. For some, the journey is about reaching for and grabbing onto opportunities outside of clinical practice; for others, it's about seeing what they do in fresh ways; and for others, it's finding ways to combine medicine with other passions.

For many, there have been turning points along the way, critical moments that led to reflection and self-examination, or a new desire to leave the world a better place. Following are stories of eight Minnesota physicians whose career paths led them places they never expected to go.

PATH TO PREVENTION

AMY GILBERT, MD, MPH, FAMILY PHYSICIAN, PIPE TRADES FAMILY HEALTH AND WELLNESS CENTER

Before I finished my residency in family and community medicine at St. Paul–Ramsey Medical Center (now Regions Hospital), I got a job as medical director of Family Tree Clinic in St. Paul, which provides reproductive and sexual health care. Family Tree was a constant in my life for 15 years. I worked there part time while I did general primary care at several other clinics, while doing a master's in public health at the University of Minnesota, and while doing a Bush Medical Fellowship. Only during the fellowship did I even think there could be life outside of Family Tree.

Then, in early 2009, a perfect storm hit the clinic. Because of the economic downturn, funders were barely giving half of what they had been giving. The Minnesota Family Planning Program kicked in, which enabled patients to get contraception at no cost but paid us about 45 cents on the dollar. Family Tree was hurting, and having a half-time medical director became untenable.

I was laid off and offered a contract for six to eight hours a week. At first, I thought, "That's my job. It's who I am." But I realized I couldn't do what I had been doing in six to eight hours a week and decided not to take it. It broke my heart.

For much of 2009, I was unemployed. I worked a few hours a week for the Annex Teen Clinic, HealthPartners Research Foundation and the Minnesota Department of Health's health care home initiative. It was difficult juggling balls and not making enough money. I had a conversation with Dr. Dave Thorson, who told me his group was looking for a female physi-



cian at its Highland clinic, which was a mile from my house in St. Paul. They wanted someone to provide full-scope primary care, which I hadn't done in years.

After focusing on reproductive health, going back was excruciatingly difficult.

Things had changed in terms of diagnostic tests and medications. I tried everything I could think of to relearn primary care. I followed other doctors around as they saw

taking their medications? But when I did that, I often would run behind in clinic.

Recently, I came across an ad for a job at the Pipefitters' Clinic in White Bear Lake (the clinic is run by Pipe Trades Services of Minnesota and serves members of the state's pipe trades unions and their families). It said each first visit was 60 minutes, followed by 30- to 60-minute visits. That grabbed my attention. So I called the clinic's office manager. I thought, What's the catch? He said they wanted to go upstream—to ask the patient with diabetes,

"Who does the cooking at your house?" "Who does the grocery shopping?" If it's his wife, invite her in; schedule an hour and talk about food and cooking and managing diabetes. I was drooling.

I thought about the patients I had been seeing who were stressed at work because their co-workers had been laid off and they feared they were going to lose their jobs, too, or they were working long hours or two jobs. They couldn't sleep, they were anxious and depressed. They had come to me asking for Prozac or Adderall or Ambien. What

they really needed was something besides pills—exercise, meditative practice, taking their dog for a walk. But in 15 minutes, it was easier to prescribe a pill.

The World Health Organization defines health as a state of physical, mental and social well-being. As I start my new job with the Pipefitters Clinic, I see my role as helping people begin to understand what that's all about.

ONE THING I FOUND I ESPECIALLY LIKED DOING WAS SPENDING TIME WITH PATIENTS AND ASKING ABOUT THINGS LIKE FOOD AND EXERCISE.

patients and used their EHR system. At Smiley's Clinic, a University of Minnesota residency training site, I arranged to sit in the precepting area and listen to residents and ask questions. One of my partners spent some of his mornings off doing his charting in the office and letting me ask questions.

After about a year, I realized I could function as a family physician. One thing I found I especially liked doing was spending time with patients and asking about things like food and exercise. Were they getting enough sleep? Why weren't they

RURAL RESEARCH RENOWN

BARBARA P. YAWN, MD, DIRECTOR OF RESEARCH, OLMSTED MEDICAL CENTER

I began my career as a family physician in Worthington, Minnesota. I was the first woman physician in the region, so I did a lot of maternity care. Rural practice was a wonderful way to learn and try things such as writing a newspaper column, teaching health classes in schools and having a weekly cable TV show about health.



I had done some research in medical school and residency and enjoyed it. So I started doing some studies in our practice. Roy, my husband, would work with me on them. One of our early studies on teens and sex, published in *Minnesota Medicine*, generated a lot of interest and led to interviews on national TV and

radio. Our second study was published in *JAMA*. That study, which was on preterm birth prevention, grew out of necessity. I was the physician in our group who lived closest to the hospital and who delivered babies. It felt like every blizzard meant another

preterm baby. I wanted to see if we could prevent some of those preterm births.

It was exciting to do work that led to knowledge transfer on a large scale. Helping one patient at a time was rewarding, but potentially having an impact on hundreds or thousands through research and publishing studies was even more rewarding. At that time, there were very few family physician researchers; most

studies were done in academic medical centers and involved patients who were very different from those I saw in practice. I saw an unmet need.

Receiving a Bush Fellowship in 1989 was a huge turning point. The fellowship allowed me to spend two years studying statistics and research design at the University of Michigan. The support of my family while I traveled there monthly, as well as the support of

my Bush fellowship mentors, pushed me to dream as well as plan while learning the research skills I needed.

Knowing that I wanted to continue to work in a primary care environment led to the decision to begin a new primary care-focused research department at the Olmsted Medical Center in Rochester, which was another turning point in my career. Over the past 20 years, our department obtained more than \$15 million in grants from the NIH, AHRQ, CDC and industry, focusing on the epidemiology of common primary care conditions (women's heart disease, irritable bowel disease, depression, asthma, herpes zoster); school-based screening (asthma, vision, idiopathic adolescent scoliosis); and translation of knowledge into practice. That work has had an impact on a number of U.S. Preventive Services Task Force recommendations including those on vision, scoliosis and postpartum depression screening.

I have been privileged to do many things during my research career, including serving on the Preventive Services Task Force, on the question-writing committee for Step 2 of the National Board of Medical Examiners' licensing exam, on several national and international guideline committees (asthma, food allergies, Von Willebrand's disease, sickle cell disease, obstructive lung disease and sexually transmitted diseases). In addition, I've served on many study sections to review grants for the NIH, AHRQ and CDC as well as for research-funding agencies in Spain, the Netherlands, Denmark, Germany and Turkistan.

Unfortunately, the limited number of primary care researchers, the increasing complexity of obtaining research funding and my impending retirement will result in the closing of our research department in the near future. But I will continue to do consulting. Research is too much fun and too rewarding to just walk away.

HELPING ONE PATIENT AT A TIME WAS REWARDING, BUT POTENTIALLY HAVING AN IMPACT ON HUNDREDS OR THOUSANDS WAS EVEN MORE REWARDING.

IN THE SERVICE OF HEALING

GREGORY A. PLOTNIKOFF, MD, MTS, FACP, INTEGRATIVE MEDICINE PHYSICIAN

As a child, I remember our neighbor, Mrs. Haney, died from an adenocarcinoma of unknown origin. Since then, I've felt called to bring both cure and healing to persons suffering from mysterious illnesses. As a result, some of my choices have led me down a path less-followed.

In high school, I received an American Cancer Society scholarship that allowed me to spend 12 weeks at the North Chicago VA Hospital. This was my introduction to clinical reasoning. Naturally, I assumed I would attend medical school right after college. However, during my sophomore year of college, I won an essay contest that took me to the First International Conference on Human Values in London. It was 1981, and I was introduced to the then-new concept of hospice. It seemed strikingly different from what I had experienced at the VA.

I wanted to learn more, so I started volunteering at Abbott Northwestern's inpatient hospice. I was moved by the experience and continued to serve during my remaining three years of college.

Working on Station 30 with great chaplains and nurses deepened my understanding of medicine as a form of ministry. I felt compelled to understand world cultures and religions, medical ethics and pastoral care before I became a hard-core medical student, so I consciously chose to postpone medical school and attend Harvard Divinity School.

After completing my med-peds residency in 1993, I accepted a faculty position in the departments of medicine and pediatrics at the University of Minnesota. However, my career really began several



years later when I was working as a clinician at the Community-University Health Care Center (CUHCC). There, I served as both a physician and as a "stealth chaplain." I listened deeply and learned how to ask good questions: "What would make

this a good visit for you today?" "As your doctor, what do you most want me to know about you as a person?" Being heard and cared for as a fellow human being was therapeutic for many. Working in this

MY CONCERN IS FOR THE 10 PERCENT OF PATIENTS NOT SERVED WELL BY THE CURRENT SYSTEM.

chaotic, inner-city, multicultural, primary care clinic introduced me to entirely new worlds, and resolving complex challenges provided me with great personal and professional satisfaction.

One unforgettable day, a patient looked me in the eye with the intensity of a mother bear protecting her cubs and said: "The drug you prescribed will cost me \$40 a month. I have three kids and make \$10 an hour. Prove to me I need it." I was speechless. I went to the University of Minnesota's medical library and read and read. I uncovered several ways of potentially achieving the clinical goal through low-cost, low-toxicity self-care. This led to hypotheses the patient and I tested to-

gether. They were evidence-informed. And they worked.

My work at CUHCC was a turning point in my life. My patients challenged me to understand Western medicine from a different perspective, which advanced my understanding of medicine as a profession in the service of healing. My need to practice a more complete medicine prompted me to seek additional training in traditional East Asian medicine, including acupuncture and *Kampo* herbal medicine. I now believe integrative medicine represents what medicine has always valued: re-

spectful patient advocacy in the service of healing. That means partnering with the patient to develop a treatment plan that optimizes well-being and minimizes harm.

For the past seven years, I saw people who were referred to the Penny George Institute for Health and Healing with complex illnesses that defied a unifying diagnosis or who had a diagnosis but no treatment plan. Although I was meeting a need,

I had very long waiting list.

My concern is for the 10 percent of patients not served well by the current system. In order to best serve those patients, I recently chose to join integrative psychiatrist Henry Emmons and his Partners in Resilience and practice highly personalized medicine that will incorporate advances in genomics, metabolomics and microbiomics.

I have come to understand that my mission is to be a resource for colleagues with patients who are stuck in a web of multiple subspecialists and multiple medications and not seeing improvement. And I feel compelled to teach, to share my insights and to support our collective efforts to practice a more complete medicine.

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THE ART OF MEDICINE

JON HALLBERG, MD, ASSOCIATE PROFESSOR OF FAMILY MEDICINE AND COMMUNITY HEALTH, UNIVERSITY OF MINNESOTA; MEDICAL DIRECTOR, MILL CITY CLINIC

My entire career, starting with medical school, has been full of critical turning points. I seriously thought about quitting med school after I failed a course in my first year—but I stuck it out. (This taught me dedication and perseverance.) I experienced panic attacks starting in my second year. (This made me more empathetic to the suffering of others.)

I knew early on that I'm wired to be a generalist. I love knowing a little about a lot. My participation in the Rural Physician Associate Program, during which I spent nine months in Red Wing, Minnesota, cemented my love of family medicine while simultaneously making me realize I didn't have what it took to be a rural physician.

My first job post-residency was in 1995 with a two-physician group in Minneapolis. I had met the two physicians, Dr. Gerald Mullin, a general internist-rheumatologist, and Dr. William Hedrick, a general internist-oncologist, during my training. They were so humble, and they treated patients, colleagues and staff with such respect and kindness. They made an enormous impression on me, and I know the way I practice medicine today is an extension of how they practiced.



My work with Dr. Mullin led to some unusual opportunities. His son, Peter, was a production assistant on several movies being shot in the Twin Cities in the mid-1990s. When members of the cast and crew needed medical attention, Peter sent them to his dad.

When I joined the group, I took over some of that work. One of Dr. Mullin's patients was a doc who worked with the Minnesota Twins. He was close to retirement and asked if I would be interested in becoming a team physician. A year and a half after that meeting, I got the gig, and that was 18 seasons ago. Another patient asked if I would review scripts for a health show on Twin Cities Public Television. That led to

doing on-screen spots and eventually to working with Minnesota Public Radio on the regional version of "All Things Considered."

Sadly, in 2000 the downtown Minneapolis clinic closed and, after a brief, intense scramble to find a new place to work, I joined the University of Minnesota Medical School faculty and started seeing patients in the university's Primary Care Center. In 2008, I helped to create the Mill City Clinic, located across the street from the Guthrie Theater in Minneapolis. I see patients there five to six days a week.

Since moving into the clinic, I've been stretching my creative muscle by writing and directing Hippocrates Cafe, live shows that use professional actors and musicians to make medical issues accessible and relevant.

If anyone had told me when I was in medical school that I'd be doing any of these things, I would have laughed. I don't think there's one thread that ties together my career. Rather, there are a few: an insatiable curiosity, serendipity, an affection for the arts and humanities, and a true love of helping others when and where needed.

I KNEW EARLY ON THAT I'M WIRED TO BE A GENERALIST. I LOVE KNOWING A LITTLE ABOUT A LOT.

THE REGULATORY ROUTE

MARK EGGEN, MD, ASSISTANT PROFESSOR OF ANESTHESIOLOGY, UNIVERSITY OF MINNESOTA; PRESIDENT, MINNESOTA BOARD OF MEDICAL PRACTICE

I practiced anesthesiology for 20 years with Midwest Anesthesiologists. I found clinical care rewarding, but I also needed something else to satisfy my soul. When I was in the OR taking care of one patient at a time, I wasn't able to have an impact on big-picture



problems—that health care in the United States is a mess, that it costs way too much, that the quality is way too low and that 35 million people don't have access to it.

In private practice, the mission is to take care of patients, and I found my interests starting to move further and further away from our organization's goals. I applied for an open seat on the Minnesota Board of Medical Practice (BMP), was appointed in 2009 and became president this year.

Regulatory work is what gets me out of bed in the morning. It's fun, it's interesting and it offers the chance to create a better path. As I pursued that work, it became more and more apparent to me that that's what I wanted to expend more energy on.

Thanksgiving Day 2012 was a turning point. We were invited to my partner's house for dinner. We have two standard poodles. About 9 a.m., I took the dogs for a walk. When I was out walking, my dogs and I were attacked by a pit bull. One of my dogs was almost fatally wounded.

After that, I had nightmares and trouble sleeping. If you don't sleep well, things don't go well. So I took a leave of absence to work through these issues. During that time, I examined things in close detail. I realized I was almost 50 and needed to

make a change. I said, "I'm going to stop working with this group; it's not what I need to be doing." I found, after 20 years of practice and living a frugal life, I could retire comfortably at age 49. So at the end of 2013, I retired.

After spending six months hanging around the house doing medical board stuff, it became apparent I needed somewhere to go. I met with Mike Wall, the new chair of the anesthesiology department at the University of Minnesota. Our half-hour appointment turned into an hour-and-a-half conversation. I went home and said to myself, "I think I want to work with this guy." Over six months, I was able to craft a .7-time position teaching in the department. I've been doing that for a year, and it's been a hoot.

I'm still involved in regulatory work. Last April, I was elected to the Federation of State Medical Boards, which represents all of the allopathic and osteopathic medical boards in the country. And recently, I've been involved with the interstate medical compact issue.

As president of the BMP, I was the lead person to testify in favor of a bill allowing Minnesota to join the compact that would streamline licensure in other compact-member states. It passed unanimously. That was satisfying, as I believe the compact will bring people to Minnesota to practice medicine either in person or through telemedicine, and expand access to care.

REGULATORY WORK IS WHAT GETS ME OUT OF BED IN THE MORNING. IT'S FUN, IT'S INTERESTING AND IT OFFERS THE CHANCE TO CREATE A BETTER PATH.

There are all kinds of other issues, big and small, that need to be worked on: How do you make anything in health care better? How do you protect the public? Can I be part of the solution? Those questions are really driving my career now.

PUBLIC HEALTH MEETS HISTORY

NEAL HOLTAN, MD, MPH, PHD, MEDICAL DIRECTOR, ST. PAUL-RAMSEY COUNTY DEPARTMENT OF PUBLIC HEALTH

After graduating from the University of Iowa's medical school in 1973, I came to Minneapolis for an internship and residency in internal medicine at what was then Hennepin County General Hospital. During those years, I had a sense that somehow I didn't really fit into the specialty; but I didn't know exactly why, other than that I did not relish the exacting details of physiology, pharmacology, biochemistry and other sciences as much as others did. I had been interested in preventive medicine during medical school, so during my last year at Hennepin I convinced Dr. Alvin Schultz, the chief of medicine, to allow me to take courses in the University of Minnesota School of Public Health's summer institute instead of doing rotations in another internal medicine subspecialty.

My interest in public health is intensely personal. At 18 months of age, polio affected my lower left leg and left me with a considerable disability. Anything that could prevent such a negative experience appealed to me. After residency, I enrolled in the School of Public Health's master's program and within a year completed the course work and thesis. During that year, I worked part time at Model Cities Health Center (now Open Cities) as a general internist. Eventually, I was offered a job at St. Paul-Ramsey Medical Center (now Regions Hospital).

Dr. Robert Mulhausen, who was chief of internal medicine there, was a great mentor. He graciously allowed me to go to Thailand for two months in 1979 to



volunteer with the American Refugee Committee. The next year he supported my idea to start the International Clinic to serve refugee and immigrant patients in St. Paul. At that time, I was also working half time doing refugee care and tuberculosis treatment for

St. Paul Public Health. I became medical director for St. Paul Public Health in 1987, and I continue in that position today.

AT 18 MONTHS OF AGE, POLIO AFFECTED MY LOWER LEFT LEG. ANYTHING THAT COULD PREVENT SUCH A NEGATIVE EXPERIENCE APPEALED TO ME.

In 1999, I was awarded a Bush Medical Fellowship. It was an opportunity to step back, stop working, learn and think. I realized that I was not suited to internal medicine because I like to focus on the big picture and not on the details. Why it took 20 years to figure that out, I'm not sure. I switched my specialty to preventive medicine and for the first time was truly happy practicing medicine. I gradually found

enough clients to work half time doing preventive medicine consulting.

The Bush Fellowship also led me to work toward a master's in the history of medicine at the University of Minnesota. In college, I had debated between majoring in history and pre-med. My uncle, Boyd Holtan, went to St. Olaf College (as did I), and he later went on to get a PhD. I always thought that was a real achievement for an Iowa farm boy. Years later, I went to a weekend-long birthday party for my partner's cousin. Several of the guests were history graduate students. Over the course of the weekend, I learned what it took to earn a PhD and wondered if I could do it.

The hurdles were sometimes difficult—finding time to attend classes, studying French and Norwegian (two languages other than English) so that I could pass reading proficiency examinations, studying for and taking written preliminary examinations and, finally, researching and writing a 200-page dissertation about public health genetics in Minnesota in the mid-20th century. I had to struggle to move beyond the rationalistic and reductionistic search for truth that underlies medicine to understand and embrace the postmodernistic relativism that motivates the work of modern historians. The whole process took 12 years.

In retrospect, I think the field of history suits me better than medicine because it is truly a big-picture endeavor. I believe my interests in history and public health relate perfectly and are symmetrical. Public health is about societal structures, politics, human interactions, popular movements and organizations, and so is history.



Pain, Opioids and Addiction LECTURE SERIES

The Minnesota Medical Association (MMA), the Steve Rummeler Hope Foundation (SRHF), and the University of Minnesota Medical School began a collaboration to bring medical education on the topic of opioids to medical students, residents, and practicing doctors. The lectures are recorded live at the University of Minnesota Medical School and made available for CME on the MMA website, with underwriting by the SRHF. The hope of the series is to create a medical curriculum on pain, opioids, and addiction, as it should be in a medical school setting: balanced, practical, evidence-based information free of commercial bias.

NEW >> Spring 2015 Lectures

VIDEO 1: "Opioid Therapy for Chronic Pain" Erin E. Krebs, MD, MPH, Associate Professor of Medicine, University of Minnesota and Minneapolis VA

VIDEO 2: "Opioid Addiction in Pregnancy" Amy Langenfeld, MSc, APRN, CNM, PHN, SANE-A

VIDEO 3: "How to Choose an Opioid: Practical Pharmacology" Charles Reznikoff, MD, Division of Addiction Medicine, Hennepin County Medical Center, Assistant Professor of Medicine, University of Minnesota Medical School

VIDEO 4: "A Differential Diagnosis for 'Pain'" Charles Reznikoff, MD, Division of Addiction Medicine, Hennepin County Medical Center, Assistant Professor of Medicine, University of Minnesota Medical School

VIDEO 5: "What is Buprenorphine?" Charles Reznikoff, MD, Division of Addiction Medicine, Hennepin County Medical Center, Assistant Professor of Medicine, University of Minnesota Medical School

Fall 2014 Lectures

VIDEO 1: "Opioid Addiction and Pain, A Quagmire for Healthcare Professionals" Marvin D. Seppala, MD, Chief Medical Officer, Hazelden Betty Ford Foundation

VIDEO 2: "An Editorial on Pain" Bret Haake, MD, MBA, HealthPartners Medical Group, Regions Hospital

VIDEO 3: "Pain Psychology, Mental Status Exam, and Non-Opioid Options for High Risk Patients" Charles Reznikoff, MD, Division of Addiction Medicine, Hennepin County Medical Center, Assistant Professor of Medicine, University of Minnesota Medical School. Adeya Richmond, PhD, LP, Senior Clinical Psychologist, Psychology Department, Hennepin County Medical Center. Sebastian Ksionski, MD, Pain Program/CMC Director, Hennepin County Medical Center

VIDEO 4: "Pain Management in the Emergency Department"

James R. Miner MD FACEP, Chief of Emergency Medicine, Hennepin County Medical Center, Professor of Emergency Medicine, University of Minnesota Medical School

All lectures are free of cost.

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MEDICINE AND THE LAW

MARTIN STILLMAN, MD, JD, INTERNIST AND MEDICAL DIRECTOR, INTERNAL MEDICINE CLINIC; ASSISTANT CHIEF OF AMBULATORY SERVICES, DEPARTMENT OF MEDICINE, AND MEDIATION AND CONFLICT RESOLUTION OFFICER, HENNEPIN COUNTY MEDICAL CENTER

I had considered medicine while I was an undergraduate student at the University of Minnesota but chose to pursue my interest in law because, at the time, it seemed a better fit. I was interested in contract law as well as sports and entertainment law, and working as a litigator appealed to me. During law school at the university, I enjoyed the pursuit of healthy discussion, debate and negotiation. However, as law school progressed, I didn't see the career fit I originally perceived.

Although I saw the meaningful ways lawyers could work with others, I wanted



to make the unique connections with individuals and families that come when physicians and patients jointly work to address illness and health. So with a different sense of self and perspective, I reconsidered what I had perhaps too briefly thought about before and decided to pursue medicine.

As a physician, I find my legal training valuable. Along with being able to apply a different way of thinking to the practice and teaching of medicine, I evaluate physician contracts, explain health law legislation and case law to others, try to reduce

malpractice risk in terms of reviewing care and documentation, and facilitate conversations or mediate conflict. In addition to practicing medicine as a general internist at Hennepin County Medical Center, I frequently teach students, residents and professional colleagues about areas of law and medicine. And for many years, I've taught the Law and Medicine section of the "Essentials of Clinical Medicine" course for second-year

medical students at the University of Minnesota.

Through my involvement with the American College of Legal Medicine, I initiated programming to explore ways in which people can utilize joint law and medicine degrees. I also enjoy lecturing on the law and medicine at national conferences. I currently serve on a number of advisory boards including those of the Hamline University Health Law Institute, the University of Minnesota's Joint Degree Program in Law, Science and Technology, and the American Arbitration Association Healthcare Dispute Resolution Advisory Council.

My career interests recently converged in a new way. In 2011, I became a qualified mediator for the State of Minnesota. This year, HCMC recognized that this could be a unique and valuable skill set, and I am now spending a portion of my time as the hospital's mediation and conflict resolution officer.

In this role, I assist in both the prevention and resolution of conflict between individuals or groups working in the hospital. This might involve helping a department establish standards of care when individuals within that department have different perspectives on how to approach similar patient care situations, or working with human resources to develop communication and team-building plans for a care team going through changes.

For me, this opportunity to break new ground by blending my legal and medical training to enhance relationships and practices is incredibly rewarding.

AS LAW SCHOOL
PROGRESSED,
I DIDN'T SEE
THE CAREER FIT
I ORIGINALLY
PERCEIVED.

FROM RESEARCH TO REGULATION

SUSAN ALPERT, PHD, MD, PRINCIPAL, SFA CONSULTING, LLC, A REGULATORY CONSULTANCY

My career path hasn't been traditional or straight. I did unusual things all along the way. In 1964, I took a gap year between high school and college, when they didn't have a term for such a year, and did a work-study program in Israel.



My plan was to go to medical school and do medical research. I did bench research in infectious diseases at Boston City Hospital for seven years after college. In year 5, I applied to medical schools. I was in my early 30s, and I didn't get in. My alternative was to get a PhD. So I went to graduate school in microbiology at NYU. Then, a mentor sent me an article about a program at the University of Miami for PhD scientists to get an MD. When I finished my PhD, that's what I did. I chose to keep going to school, although I was in my late 30s.

I did a traditional residency in pediatrics at Montefiore Medical Center in the Bronx and then did this unusual joint fellowship program with Children's National Medical Center in Washington, DC, and the FDA. The combination of taking care of patients and evaluating new drugs was a great experience.

I expected to finish my fellowship and do research, but this time as a physician-investigator. I wanted to work on the etiology of infectious diseases from the physiology side—to understand why one organism leads different people to develop different diseases. But instead I went to work for the FDA as a front-line drug reviewer and then as a branch chief. After six years, I became office director in the premarket side of medical devices. I was

responsible for the final sign-off for all class III premarket approval devices going to market. That, frankly, was one of my favorite jobs.

I was recruited out of the FDA by CR Bard Inc., a mid-size multinational medical technology company, as vice president for regulatory science. At the time, the term "regulatory science" wasn't yet in vogue. I learned about the business of medical technology, how to look at markets, at products, at finances—things

It is really my clinical research experience that has driven my career. I had no idea in 1969, when I took my first job in infectious disease research, that my career would come to this. I was going to do research and teach. I now do both. None of the other things I've done were part of my plan but they've been wonderful. I've seen how laws are written and regulations are developed; worked on a food safety initiative for the United States and written advice for the G8 on how to improve food safety on a global level. I didn't know this work existed when I started my career.

I HAD NO IDEA IN 1969,
WHEN I TOOK MY FIRST JOB IN
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you don't do in government. Then, I was recruited by Medtronic to lead their regulatory clinical and quality organizations. Now, I advise medical device, biotech, cell therapy and pharmaceutical companies on how to move their products into the U.S. market, and work with business students through the Carlson School's Medical Industry Leadership Institute at the University of Minnesota.

But opportunities presented themselves and have allowed me to do something that makes a difference in people's health. **MM**



THE ARC OF A CAREER

In this section, we share stories that illustrate the phases of a physician's career.

From a medical student's promise to her future patients, to a practicing physician's struggle when things don't go as planned, to a retired doctor's reflection on what it was like to take on one of the biggest public health challenges of the 20th century, these authors tell us about the people, events and experiences that mark a point along their journeys.

As you read, you may see yourself in some of their stories—or perhaps be inspired to write your own.

MY HIPPOCRATIC OATH

BY AMELIA BLACK

Help me to see and treat all my patients as whole beings—with stories, journeys, loss and wisdom.

Help me to practice kindness and care toward myself and make time for the things that lift me.

Help me to find meaning in the mundane, comfort in sadness and joy in the future.

I will care for my soul so that I can care for others.



AMELIA BLACK is a second-year medical student at the University of Minnesota. She wrote this during her first year for a class called "The Healer's Art." The course, which is taught in medical schools across the country, helps students appreciate the human dimension of health care.

WITH A LITTLE HELP

Why all the studying matters

BY KEVIN KAY

I was feeling overwhelmed as I reviewed first-year biochemistry alongside second-year pharmacology while trying to re-memorize bacterial gram stains and at the same time study nephritic and nephrotic syndrome. The amount of material was enormous.

Luckily, I was aided by an industry that compressed and distilled the information from years of medical school into digestible packets.

Although my clinical skills classes in the first two years had emphasized the individuality of every patient, prepping for Step

1 of the USMLE emphasized the classic presentation—or what I began to think of as the Platonic form of disease. For example, an acute myocardial infarction was the 60-year-old male smoker with “crushing” substernal chest pain. I began to look for him again and again on practice exams.

These Platonic forms quickly became friends of mine; I thought about them often. How is your family doing with all this, 60-year-old smoker with crushing chest pain? Did anyone set you up with a social worker, homeless alcoholic with lung abscess? Would you be offended if I told you about the mnemonic that every medical student is learning right now, 40-year-old woman with upper right quadrant pain? (Risk factors for cholelithiasis: fat, female, fertile and 40.)

After two years of jogging along the pathways of biochemistry, pathology and pharmacology, I was sprinting, quickly making associations and drawing conclusions. This was not all bad from my perspective. In answering a question that draws on two years of information of which I likely had only a tenuous grasp to begin with, I'll gladly take whatever help I can get.

Yet, as the days rolled on during the study period, a discouraging numbness set in. Some guy was in an accident and has multiple fractures: here comes the question about fat emboli. Some old lady can't remember who her kids are: I'm ready to ID the hippocampus on MRI. I began to give very little thought to these typecast actors and their small medical dramas. I scanned their stories looking for buzzwords. Oh, he was on a cruise? Rotavirus. Recently bought a hot tub? *Pseudomonas aeruginosa*.

I even found myself mentally tripping over the associations when I tried to break from studying, as if they were littered about my brain. Grabbing a beer with a friend made me think about hepatocytes rich with NADH and how that is associated with fatty alcoholic liver disease. At a Twins game, I caught myself thinking how the nitrosamines in the bacon in my sandwich are associated with squamous cell carcinoma but not adenocarcinoma of the esophagus.

This compression of stories into smaller and smaller packages isn't all bad. Pattern recognition is important; associations are important. The emergency physician who sees a 60-year-old smoker having a heart attack does not need to know about his children's T-ball league. Still, I worried about the change I noticed in myself. I was skimming questions, only looking for what was most testable.



KEVIN KAY is a third-year medical student at the University of Minnesota. He wrote this while studying for the USMLE Step 1 this past spring. (He passed.)

While studying one day, I got a text from a friend who had seen his doctor for joint aches and fatigue. He just received an email with his test results. “What does a positive antinuclear antibody (ANA) test mean?” he asked.

The ANA test is sensitive but not specific for Lupus, I found myself thinking instinctively. It was the first time in two years of medical school that something useful popped into my head at the time I actually needed it. I was genuinely surprised. My second-year rheumatology course, refreshed and distilled with Step 1 prep, had implanted an association (probably in the hippocampus) that I could actually use.

I explained to him that a negative ANA test can nearly rule out Lupus, but a positive ANA test does not mean he has Lupus and that he should follow up with his doctor—soon. In my mind,

IN MY MIND, THE CLASSIC LUPUS PRESENTATION OF A MIDDLE-AGED WOMAN WITH A “BUTTERFLY RASH” ON HER FACE THAT SPARES THE NASOLABIAL FOLDS SUDDENLY WAS REPLACED BY MY FRIEND, WHOSE PRESENTATION WAS NOTHING LIKE THAT.


the classic Lupus presentation of a middle-aged woman with a “butterfly rash” on her face that spares the nasolabial folds suddenly was replaced by my friend, whose presentation was nothing like that.

My friend’s entrance into my world of Platonic disease forms reminded me why I had done those two years of classroom work and the weeks of board prep. It’s because the people you care about (friends, family members, your patients) will ask you questions and you want to have answers.

I’ll carry those classic presentations with me into my clerkships and maybe even residency. But I’ll have my friend and his question with me much longer.

Hard-won knowledge intersecting with interest and empathy: That’s just the sort of thing you strive for in medical school.


Studying for boards can be a numbing slog through associations, facts and physiology. But with a little help from my friends, I’m learning just enough to get through. MM



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CLINICAL NOTE: MS. S, 25F

Questioning those giving career advice

BY JESSICA SAW

Chief complaint/purpose of visit

Previously healthy 25-year-old female third-year medical student here for outpatient evaluation of heavy heart and dispirited mind.



JESSICA SAW is a third-year student at Mayo Medical School. This piece, which received honorable mention in *Minnesota Medicine's* 2015 writing contest, was inspired by comments from friends, family members, advisors and mentors regarding her decision to pursue surgery. "Through my conversations with them, I have learned that although there has been great movement forward for women, subconscious biases still remain. I hope this piece generates conversation about women and their careers," she says.

History of present illness

The patient is interested in pursuing a career in surgery and reports "frustration and discouragement" after recently finishing her surgery clerkship. She reports having "fallen in love" with the specialty and feeling that she has "finally found her place and her people." The patient acknowledges that during the clerkship, she regularly woke at 3:30 a.m. feeling energized and smiled upon arriving at the hospital. She had no difficulty being on her feet all day, working long hours and studying for her shelf exams afterward.

The patient reports that during an advisory meeting to discuss her plans for residency, she was told to rethink her decision because of lifestyle considerations. Specifically, the patient was asked to consider the fact that having children as a female surgeon would be difficult. Afterward, the patient sought out other opinions and heard comments such as, "Your ovaries are going to get old," "You won't be able to go to your son's baseball games," and "Why not anesthesia?" The patient was not asked if she wished to have children. She reports "finding it odd that many people view childbearing as a reason to not pursue a career one is passionate about." Furthermore, she notes that her male colleagues interested in surgery were not asked if they could handle being a father while pursuing a demanding career.

The patient also reports having received enthusiastic support from surgeons, both female and male. Male surgeons directed her to female surgeons who have been able to find work-life balance—with or without marriage, with or without children. The patient spoke to many female surgeons, all of whom expressed disappointment, but not surprise, that she has encountered negative comments about her career goal.

Overall, the patient is confused by the mixed messages she is receiving. She reports knowing she wants to be a surgeon and feels personal matters will work themselves out.

Past medical/surgical history

Throughout her first two years in medical school, the patient was advised to pursue dermatology, radiology, anesthesia and other specialties that would "allow for better family life."

During a small-group discussion in her first year, the patient was surprised that marriage and family life were basic themes in discussions about work/life balance. At that point, the patient was

a recent college graduate and had not yet given thought to marriage and raising a family.

Social history

No history of smoking or tobacco use. One alcoholic mixed drink approximately every two weeks. No illicit drug use. Lives in an apartment with one roommate. Single.

Allergies/adverse reactions

Stone fruits; develops rash reactions upon interacting with persons with rigid views on gender roles.

Systems review

Nil significant

Vital signs

Blood pressure: 110/70 mm Hg; pulse: 65 bpm; temperature: 37.5°C

Physical examination

General appearance: Smartly dressed and well-groomed, appears confident and highly apt

Skin: Tough

Eyes: Strong; gaze direct

Heart: Sunken sounds, faint murmurs of fleeting goals

Lungs: Bilateral wheezes of desires restricted within inner cavities
Abdomen: Hyperactive bowel sounds significant for hunger to pursue chosen career

Impression/report/plan

Patient wanting to pursue a career in surgery presents with confusion and discouragement because of advice from faculty.

#1 Generalized discouragement due to social norms and external opinions

Because of the culture surrounding her, the demanding nature of surgery and her biological clock, patient is likely feeling discouraged about her chosen career. Although she realizes it is important to consider these issues within the context of the difficult training ahead, she must not let them become barriers to pursuing her passion.

Patient is advised to continue to think carefully about choosing a career in surgery, not because it is demanding for a woman, but because it is demanding. I advised her to be sure of her unique needs and wants. I encouraged her to realize her full potential and her passion. I also encouraged others around her to respect and not question her decision to pursue career over family. It was a pleasure caring for this patient, and I look forward to hearing about her bright future as a surgeon. MM

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ROSE

When things don't go as planned

BY JOHN EIKENS, MD

I am eyeing my coat. It's 4:30 on Friday afternoon, and my work is done. The evening doctor is here. I've passed the torch and am going to make a clean exit. I am off for the weekend. Then the day nurse comes in and says, "Rose in 2403 has a low oxygen reading." Damn, this is my patient, I had better go see her.

Rose has pancreatic cancer that has metastasized. She also has pneumonia, which I think is treatable, and is anemic. I just met her two hours ago. I gave her antibiotics. She is just above the threshold for transfusion, but I elected to give her two bags of blood. By strict interpretation of the rules, I probably shouldn't have. But I thought it might help her overall weakness. Other than blood and antibiotics, we don't have much to give her.

Rose is 69, young by hospital standards. I quickly note her family members standing several feet from her bed like a small choir. They are motionless. One look at their faces and then at Rose tells me we have a problem. She has suddenly gone from needing two liters of oxygen per minute to needing four. It's never good to suddenly need more oxygen. And it is never good to have a patient deteriorate after you have seen them and started treatments.

I have another problem: I assured my girlfriend that I would be home soon. This had better not hold me up.

I meet Rose's husband and two daughters, who are here now. One of the daughters, perhaps 22 years old, has dark brown eyes that flash at me. I had better do something. I make my first move in the chess game: "Let's get a portable chest X-ray, stat," I say, trying to sound calm and confident, a talent I have perfected over the years. Rose has a subtle increase in her breathing rate, and I know that's bad. I am not sure what is happening. She was fine two hours ago. We started giving her blood and now something has changed for the worse. Perhaps the blood I gave her has overloaded her heart, which is known to be weak, and she is unable to pump the blood out of her lungs. Now I wish I hadn't ordered that blood. Feeling the weight of expectation and those brown eyes looking at me, I decide to leave the room and wait for the X-ray to be done.

"Dr. Eikens, Rose is looking worse," Linda, the nurse, tells me. Feeling guilty that I left the room, I look at my watch and sigh. "OK, I'll get in there."

Rose now looks distressed. She is sitting on the bed, back straight, muscles tense, working hard to breath. I have to do something other than just order another test. She might be fluid overloaded from the blood, I think.



JOHN EIKENS is a family physician and hospitalist with Fairview Lakes Health Care Center in Wyoming, Minnesota. This story received honorable mention in *Minnesota Medicine's* 2015 writing contest. It was written after a tense day. "Medicine is complicated and, despite your best intentions, some days things just don't go the way you want them to," he says of his inspiration for this piece.

"Give her 40 of Lasix," I say. She looks bad, and I think we should probably move her to the ICU. But I also think there is a good chance that she could improve rapidly with the Lasix. A move to the ICU would take a lot of time and be an acknowledgment that there is a big problem, which I don't want to do at this point.

My girlfriend texts me, "How's it going?" Uncharacteristically, I don't respond.

Linda reappears. "She's looking worse." I wonder where the hell the X-ray tech is. I need that chest X-ray.

Once more I enter the room. Rose is in florid distress. The brown-eyed daughter glares at me, locking her eyes on me. I am not sure what is going on, and Rose looks terrible, gasping for breath, oxygen level sinking. "Let's get her on BiPAP," I say. "Get respiratory therapy on the phone."

"Can you get a BiPAP up here right away?" I say on the phone in the hall.

"How about if I come up and assess things first?" the respiratory therapist says.

"OK," I say, but I wish they would just bring the BiPAP.

I go back in the room. Rose looks like she is on the edge. BiPAP isn't enough, she needs to be intubated. I have continually been one step behind. I am not sure at this point whether to get Rose to the ICU or to try to get her intubated here in her room, where there is less help and equipment. I feel indecisive, which is not something I generally want to portray. "Get anesthesia," I say.

The anesthetist arrives. I have never seen him before. He must be new. Or perhaps he has been around and I just haven't seen him. The anesthetist sets up to intubate Rose, who at this point, is struggling. I turn to her family and say, "We need to have you guys step out, so we can put a breathing tube down Rose's windpipe and get her on a ventilator."

I turn to Rose. "Is this what you want?" As she nods her head yes, the brown-eyed girl looks at me and says, "Do everything." The family is ushered out.

My girlfriend texts me again, "When will you be home?"

The anesthetist starts the intubation. Generally, I will jump in and do the intubation, but my confidence is low. I stand back; I notice that he hasn't given Rose a paralyzing agent. This would be standard procedure but once it is given, there is nothing to fall back on—the patient is unable to breathe on her own. As the laryngoscope goes in to Rose's throat she starts to vomit. Things are going from very bad to worse. As Rose gasps, I am sure she has sucked vomit into her lungs. We suck it out as best we can. The anesthetist starts to put the scope back in her mouth. "Are you going to paralyze her?" I ask timidly. "No, I don't think I need to," he says as he slips the tube into the patient's throat.

Rose is intubated, and we start to force the air into her lungs. By this point, the nurses have called for a rapid response team (something I considered briefly 15 minutes earlier but dismissed, thinking I could get control of the situation). Lots of people have showed up and taken places around the room, standing silently and looking at Rose. "Can somebody get a cart so we can get her

to the ICU?" I say. Now I am getting mad, and you can hear it in my voice.

As I leave the room and head for the ICU, where I can hide behind a computer and do the orders, the charge nurse catches me. "The family doesn't think everything is being done for Rose." I know they are right, but I don't want to hear other people tell me this, as if I didn't know it myself.

In the ICU, I decide I had better call my girlfriend. "It's a cluster here," I say.

"I made dinner reservations for 7 and invited Kevin and Sue as well as Pete and Tom," she says.

Suddenly, I realize this is a surprise for my birthday, which is this weekend. It's 7:30 and the restaurant is 40 minutes away. "You guys go ahead. I don't think I can make it." I know this is not going to sit well, but I just don't feel that I can quickly shift gears.

I file into the family room. I am usually pretty good at damage control. I decide I had better take some responsibility for the situation. "I gave your mom some blood, and I think this might have caused acute heart failure. I am sorry things were so chaotic," I say. "Sometimes it's hard to know if we should move patients to the ICU first or try to stabilize things first on the floor where we have less help." I look up at the brown-eyed girl. I can see she doesn't buy this. Her father and older sister stand silently with her. "Rose is really sick, we're not exactly sure what is wrong, and I don't know what's going to happen now. You just need to know that this is life-threatening." I try feebly to wrap things up, so I can gracefully exit. "Dr. Ward is on duty tonight, and he will take good care of your mother."

Guilt gets the best of me. I call my girlfriend back and tell her that I will come to the restaurant even though I will be late. I don't want to make my friends watch me eat, so I decide to have a drink and don't order food.

Over the weekend, I occasionally flip on my computer and check the medical record to see how Rose is doing. It appears to me that my friend Bill is doing a great job taking care of her. She is alive but remains on the ventilator.

Monday morning arrives. I am back on duty at the hospital. Over the weekend, I decided I would not take over care of Rose. I don't want to face those eyes again. But I change my mind. I need to face down my fears. I assume care, and Rose has a rocky course. The brown-eyed girl questions all of my decisions. I notice now that she inherited those eyes from her mother.

Ultimately, Rose makes a surprising recovery. We get her off the ventilator. She is grateful and doesn't remember much about the initial decline. I have a strong sense that no matter how brief her recovery is, it is worth it to her and her family. The brown eyes have softened. I have been somewhat redeemed, but not completely. ■■■

CLEARING THE AIR

Looking back on a public health battle

BY A. STUART HANSON, MD

When I started at the St. Louis Park Medical Center in 1971 as a freshly-minted internist and aspiring pulmonologist, I expected to spend my career seeing patients. During my first five years of practice, I worked hard to establish myself as a good internist and pulmonologist. In fact, I studied so hard for the internal medicine boards that I suffered blurred vision in my right eye caused by macular swelling. When the stress abated, my vision improved. But the

same thing happened in my left eye while I was preparing for my pulmonary boards two years later. All that time, I saw patients and spent time volunteering, teaching pulmonary rehabilitation. After five years, I took on the part-time position as medical director of our 65-physician multi-specialty group.

I saw medical administration as having possibilities. Continuing to work one on one with former smokers who had chronic lung diseases that were entirely preventable held less appeal. I was interested in getting involved in smoking prevention. I didn't know yet how involved I would become.

I was thrust into the fight against tobacco when Minnesota passed a clean indoor air law in 1975. As medical director of our group, I had started figuring out how to implement the law in our buildings. It was no small undertaking. In those days, we had ashtrays in our waiting rooms. Doctors smoked in their offices; nurses and other staff smoked in their break rooms. Patients had to answer two questions before they were admitted to the hospital: "What is your insurance?" and "Do you want a smoking or nonsmoking room?" At the cafeteria in our office in St. Louis Park, patients and staff lit up during coffee and lunch breaks. We were not outliers. This was the norm.

As we began designating smoking areas and banning smoking from other places, we ran into problems. Dividing the cafeteria into smok-

ing and nonsmoking sections didn't work very well. Smokers complained they didn't have enough room and nonsmokers complained about smoke drifting into their area. Allowing some employees to smoke in their offices raised questions about fairness. Staff lounges became centers of conflict. Nonsmokers wanted them smoke-free. Smokers did not want to go outside.

The law was raising issues that were dividing our staff. In the pulmonary medicine department, we discussed what we should do. All agreed the right thing to do was to eliminate smoking from all of our buildings and grounds. As medical director, it was up to me to listen to others and then act. In 1979, I brought the idea of going completely smoke-free to our Board of Trustees. When they asked for my recommendation, I swallowed hard and suggested we make all our buildings and grounds smoke-free. When asked how we could do that, I responded, "I don't know, but I'm willing to learn."

We formed a workgroup representative of our 300 employees and medical staff, then surveyed all the staff to find out about their experiences, attitudes and smoking status. We published the results in a clinic newsletter and recommended locating one smoking area in each office building, with the intent of phasing out smoking in all our buildings and grounds over two years, starting January 1, 1980.

Then the debate really began. Hallway conversations were often heated. Dissenters sent comments to the workgroup and letters to the governing board. Supporters expressed themselves as well.

We learned that by concentrating all the smokers in one area, we had indirectly highlighted the problem of poor air quality. The air was noticeably cleaner



A. STUART HANSON is a retired pulmonologist. He is still involved in tobacco control efforts. As a member of the Twin Cities Medical Society's Physician Advocacy Network, he is working on issues related to e-cigarettes and flavored tobacco. This story is one of many that will appear in a memoir he is writing.

in waiting rooms, break rooms, offices and lunch rooms. Both the smokers and the nonsmokers thought that was a good thing. What we did not anticipate was the adverse reactions to the smoking areas. Nonsmokers found the areas offensive and tried to avoid them. The smokers found them inconvenient and unpleasant, as they noticed the secondhand smoke was more concentrated. Employee attitudes were changing and support for going fully smoke-free was increasing.

On January 1, 1982, we became the first medical group in the country to go smoke-free in all of our buildings and grounds. As the medical community began to take an interest in what we had done, I started making presentations outside of our group.

Interested physicians came by to see first-hand what we had done. In 1983, the Hennepin County Medical Society proposed a resolution to the MMA calling for a smoke-free society by the year 2000. When the MMA House of Delegates met that May, I was attending as a new alternate delegate to the American Medical Association (AMA) House of Delegates. The Smoke-Free Society 2000 resolution passed the MMA, with an addendum that the Minnesota delegation was to advance it at the AMA. The chairman said, "Hanson, you're a pulmonologist. You take this damn smoking resolution."

When I brought our resolution to an AMA reference committee, several delegates from other states spoke in favor of it. By the time the resolution was on the floor of the House, it had gained enough support to pass. Now, both the MMA and AMA were on record as supporting the idea of making society smoke-free by 2000. We had 17 years to make it happen—or not.

But first, we had to get our own house in order. At the time, most MMA committee meetings started with dinner and drinks. Ashtrays were plentiful, and by the end of the evening the room would be filled with smoke. How could we change this culture? I used my experience at Park Nicollet as a template, starting with a sur-

vey to assess attitudes, then designating a smoking room with the idea of eventually going smoke-free in all MMA offices and wherever MMA meetings were held. Although a few resisted, everyone knew it was the right thing to do.

Over the next two years, we brought resolutions to the AMA to do the same. I knew the AMA's board chair and executive director smoked. But when I found out the AMA president was a closet smoker and the house speaker and another board member jointly owned tobacco farms in Georgia, I knew we had taken on a major project.

Large pockets of resistance remained, which scuttled several efforts. Finally, I publicly exposed the leadership's tobacco associations at a reference committee meeting. The *Chicago Sun Times* ran a story about the meeting and filled in the details, including the names of the resisting leaders. The chair of the reference committee invited me to meet with the committee, and we drew up a multipoint resolution that included making the AMA offices and meetings smoke-free. The

comprehensive resolution passed and became official AMA policy. Sadly, the chain-smoking board chair and the executive director both died within five years of smoking-related diseases. The president completed his term and did not return. I do not know what happened to the tobacco farms in Georgia.

Since my involvement in the tobacco policy arena began, much has changed in our state. All public buildings are now smoke-free. Smoking rates among adults have fallen to less than 15 percent as compared with around 30 percent in the 1970s. The state won a settlement against tobacco companies in 1997, and the proceeds are being used to fund initiatives to make quitting smoking is easier and more affordable.

We have come a long way in the last 40 years, and the work I have been involved in has been both personally and professionally satisfying. However, the vision of a smoke-free society is still in the future. Would 2030 be a reasonable target? MM

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The physician as memoirist

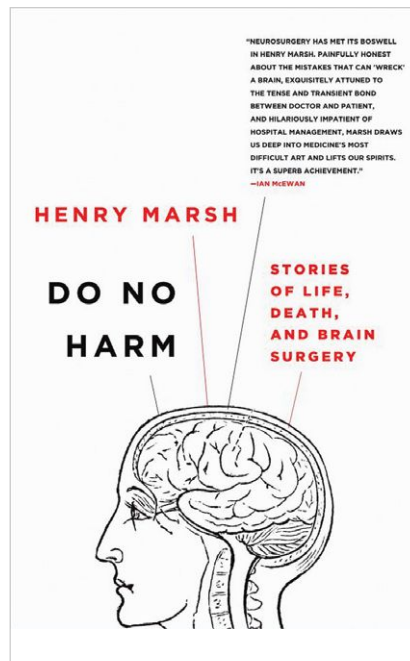
In *On The Move* and *Do No Harm*, two physicians share stories that shaped their careers.

REVIEW BY CHARLES R. MEYER, MD

Physicians should make terrible memoirists. Writing memoir is an art of introspection. Physicians' thoughts are frequently directed outward with little time or inclination to reflect on what they are doing or what they have done. Memoir's revelations are frequently unflattering, confessions of flaws or foibles divulged to the reading public. Physicians are often aloof scientists whose detachment is advantageous in analyzing their patients' problems. And memoir takes time to record and sort out the events of a life and provide context that will resonate with readers. Physicians constantly operate in a drought of time.

Yet, two neuroscientists have recently published memoirs that belie these generalizations. Renowned English neurosurgeon Henry Marsh, whose medical exploits in the Ukraine were documented in the movie *The English Surgeon*, has bared his foibles in *Do No Harm: Stories of Life, Death, and Brain Surgery*. And neurologist Oliver Sacks, author of best-sellers *Awakenings* and *The Man Who Mistook His Wife for a Hat*, describes a roller coaster life in science replete with personal details more sensational than scientific.

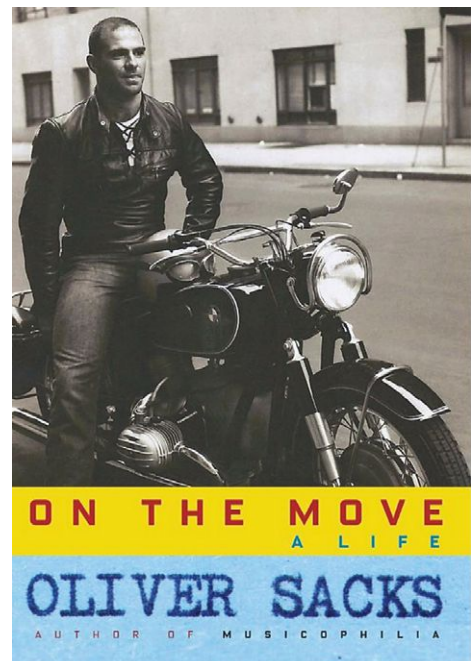
Henry Marsh's memoir could have been subtitled "A Saga of My Mistakes." In case after case, he recounts arteries nicked during delicate brain operations and surgical misadventures with disastrous outcomes. His tale of missteps begins during training when he ignored a patient's dire symptoms, walking out of the room only to return seconds later when the patient arrested with ventricular tachycardia. He recalls, "It used to be called *angor animi*—the anguish of the soul—the feeling that



Do No Harm: Stories of Life, Death, and Brain Surgery by Henry Marsh, St. Martin's Press, 2015

some people have, when they are having a heart attack, that they are about to die. Even now, more than thirty years later, I can see very clearly the dying man's despairing expression as he looked at me as I turned away."

Early in his career, Marsh found error hard to reconcile with his image of the perfect physician, a race of "all-important, invulnerable young doctors like myself." But experience and age changed that: "Now that I am reaching the end of my career this detachment has started to fade. I am less frightened by failure—I have come to accept it and feel less threatened by it and hopefully have learned from the mistakes I made in the past. I can dare to be a little less detached. Beside, with advancing age I can no longer deny that I am



On the Move: A Life by Oliver Sacks, Alfred A. Knopf, 2015

made of the same flesh and blood as my patients and that I am equally vulnerable. So I now feel a deeper pity for them than in the past—I know that I too, sooner or later, will be stuck like them in a bed in a crowded hospital bay, fearing for my life." *Do No Harm* is his reconciliation with his very human vulnerability.

Oliver Sacks' *On the Move* is also a story of the flesh beneath the impersonal crust of the physician-scientist. Schooled at Oxford, Sacks initially aimed for the life of a researcher: "I still had hopes of being a real scientist, a bench scientist, even though my research at Oxford had ended disastrously and should have warned against any repetitions" until a sage mentor advised him to concentrate on clinical medicine where he would "do less harm."

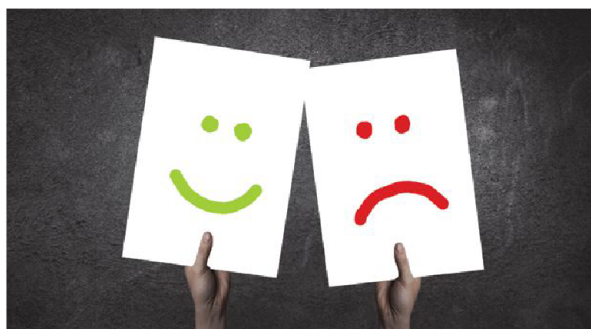
His clinical life became a gold mine of patient anecdotes he styled for a lay readership, mixing approachable descriptions of neurological physiology and pathology with touching human portraits. His breakthrough came in 1966, when he started working with survivors of the 1920s encephalitis lethargica epidemic who were hospitalized at the Albert Einstein School of Medicine's Beth Abraham Hospital. Encouraged by the recently reported successful treatment of Parkinson patients with high doses of L-dopa, he gave his patients L-dopa and documented their startling responses. He chronicled this work in his book *Awakenings*, which was later made into a movie starring Robin Williams.

Sacks acknowledges the risks of exposing patient stories to the outside world and the inevitable distortion introduced by fictionalizing them, which led him to back away from the content of the movie *Awakenings*: "I was not quite sure how I felt about the script, for while in some ways it aimed at a very close reconstruction of how things had been, it also introduced several subplots which were entirely fictional. I had to renounce the notion that it was, in any way my film: it was not my script, it was not my film, it would largely be out of my hands."

Although his professional and literary endeavors comprise a large part of *On the Move*, Sacks' colorful personal life makes the tale all the more riveting. Stories of the avid motorcyclist, obsessive bodybuilder and outlandish risk-taker with drugs spice up what otherwise could be a drab narrative of scientific forays. Some of the most revealing passages depict his coming to terms with his homosexuality.

So, memoir *can* be a physician's genre. Full, sometimes exciting careers leavened with wit, humility and self-awareness make a good read. **MM**

Charles Meyer is editor in chief of *Minnesota Medicine*.



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Looking at Medicine's FUTURE

2015 ANNUAL CONFERENCE PREVIEW

Later this month, the MMA, with a little help from two national speakers, will pull out a crystal ball and gaze into the future. What comes into view may be enlightening or a bit scary but it's guaranteed to be provocative.

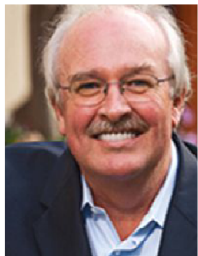
On September 25 and 26, close to 200 physicians and physicians-in-training are expected to gather at the Doubletree by Hilton Park Place in St. Louis Park to consider what medicine might one day look like, discuss policy, earn CME credits, inaugurate new leaders and much more.

The MMA's 2015 Annual Conference will offer a range of timely and relevant sessions on topics physicians from all practice settings and specialties will find useful.

"We've packed a lot of activity into only a day and a half," says Donald Jacobs, MD, MMA president. "Great speakers, great discussions and great camaraderie with your peers."

Keynote speakers

Health care futurist Ian Morrison, PhD, will kick things off with his presentation, "**The Future of the Healthcare Marketplace: Playing the New Game,**" on Friday morning. Morrison is an internationally known author and consultant specializing in long-term forecasting and planning with an emphasis on health care and the changing business environment.



Ian Morrison, PhD

As president emeritus of the Institute for the Future and a founding partner of the Strategic Health Perspective, a joint venture between Harris Interactive and the Harvard School of Public Health's Department of Health Policy and Management, Morrison has written, lectured and consulted for government, industry and nonprofit organizations in North America, Europe, the Middle East and Asia.

The Saturday morning keynote speaker, Kyra Bobinet, MD, MPH, will present "**Scanning Tomorrow's Technology.**" Bobinet is a physician and innovator who translates neuroscience into behavior change and health engagement. She teaches patient en-



Kyra Bobinet, MD, MPH

gagement, mobile health technology and health design at Stanford School of Medicine, and is a member of Stanford's Anesthesia and Informative Medical Lab and Persuasive Tech Lab.

Bobinet is also CEO and founder of engagedIN, a behavior design firm, and has created health apps and evidence-based programs that deal with mind-body and metabolic medicine. Her clients include government agencies, health care organizations, biotech firms and Fortune 100 companies.



Educational programs

The Annual Conference lineup also includes educational breakout sessions led by both national and local speakers. They include:

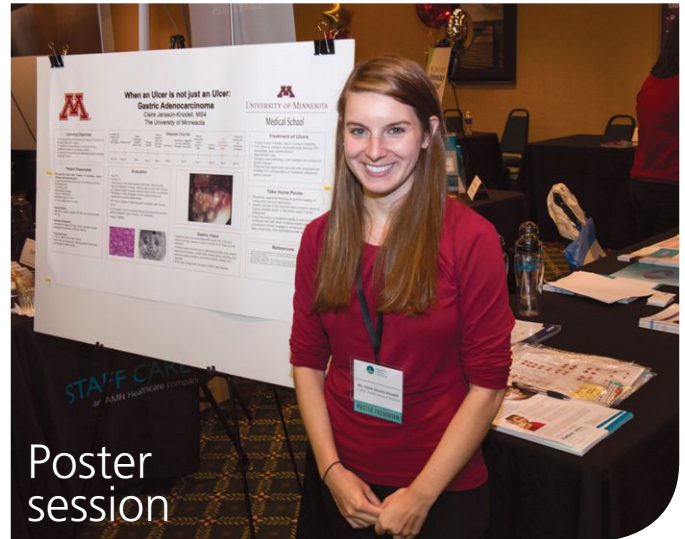
- "Changing Patient Behavior through Motivational Interviewing"
- "How Your Mobile Device Can Make You a Smarter Doc"
- "Reclaiming the Joy in Your Practice"
- "Who Heals the Healer? Resiliency-Building Tips for Those Who Care for Others"
- "Emerging Technologies for Physicians" (panel discussion)
- "Improving Patient Care and Safety through Strong Team Communications"



Policy discussions

Want to talk policy? The conference will offer forums on:

- **Value-based payment**, which will explore the use and growth of value-based payment models and identify challenges associated with their design and implementation.
- **End-of-life issues**, which will examine the public and third-party payer policy changes that could improve advance care planning and end-of-life care.
- **Open issues**, which will feature a review of several topics brought forth by physicians from across the state.



Poster session

For the second year, the Annual Conference will host a poster session featuring the work of Minnesota medical students, residents and fellows. Attendees will have the chance to view the exhibits, talk with poster creators and vote for a “people’s choice” award winner.



President's Inaugural

On Friday night, David Thorson, MD, will be ushered in as the new MMA president at the President’s Inaugural dinner. The MMA will also thank outgoing president Donald Jacobs, MD, for his service to the association. The MMA Foundation will present its President’s, Community Service and Distinguished Service awards during the evening.



Preconference activities

Member Jon Hallberg, MD, a longtime Minnesota Public Radio contributor, will host his Hippocrates Cafe program at the Doubletree the Thursday night before the conference. The show will feature professional actors from the Guthrie Theater and musicians, who will explore health care topics through song and story. The show will include readings from *Minnesota Medicine*.

For more details and to register, visit www.mnmed.org/ac2015.

News Briefs



MMA members appointed to Health Care Financing Task Force

In late July, three MMA members were named to the state’s new Task Force on Health Care Financing, which will analyze and recommend options for Minnesota’s public insurance programs. The appointments include **Marilyn Peitso**, MD, a pediatrician with CentraCare Health; **Todd Stivland**, MD, CEO, Bluestone Physician Services; and **Penny Wheeler**, MD, president and CEO, Allina Health.

The 29-member group, which held its first meeting August 7, is tasked with advising the governor and Legislature on strategies that will increase access to and improve the quality of health care for Minnesotans enrolled in public insurance programs. These strategies will include options for sustainable financing, coverage, purchasing and delivery of all publicly supported insurance options including Medical Assistance and MinnesotaCare as well as coverage purchased through MNsure with the help of federal tax credits and cost-sharing subsidies. Ultimately, the task force will make recommendations on future funding of health care programming—including the role of the provider tax—by January 15, 2016.

On the calendar

Event	Date	Location
Preconference Hippocrates Cafe	Sept. 24	Doubletree Park Place Hotel, St. Louis Park
2015 Annual Conference	Sept. 25-26	Doubletree Park Place Hotel, St. Louis Park
REMS (risk evaluation and mitigation strategy) seminar on opioids	Oct. 1	Black Woods Banquet Center, Duluth

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



MMA acts fast to exempt physicians from new aesthetician law

In late July, the MMA’s legal team was able to work with state groups to prevent enactment of a law that would have required physician clinics that offer cosmetology, esthology or nail services to obtain a salon license.

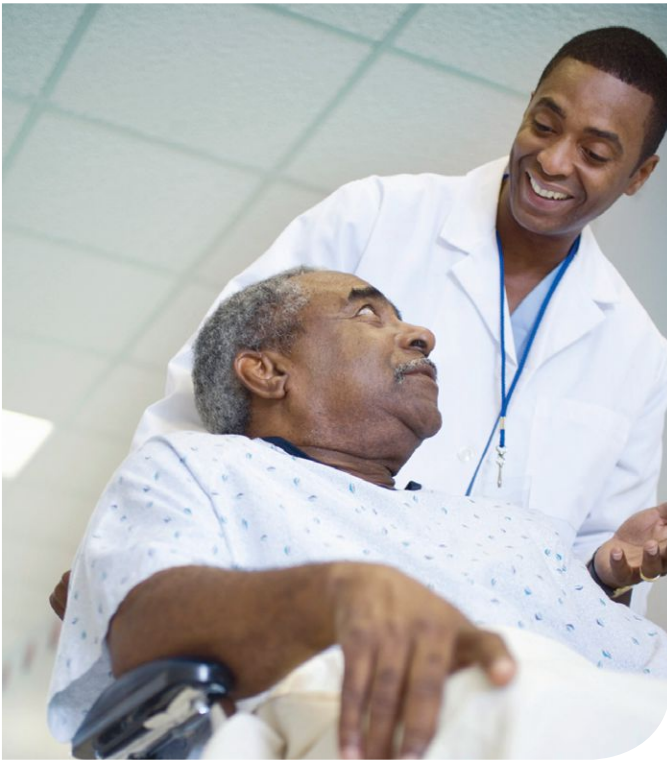
During the last legislative session, a bill quietly passed that would have required physician clinics offering these services to obtain a salon license beginning August 1. “Thanks to a couple of members who shared this issue with us, the MMA was able to prevent inappropriate oversight of medical practice,” MMA President Donald Jacobs, MD, said in an email to Minnesota physicians. “Although this legislation affected only a small number of our members, we felt it was important to take a stand and devote extra resources to protect the practice of medicine.”

More than 100 public health advocates gather for summit

Physicians, nurses, public health professionals and others discussed ways to make Minnesota the healthiest state in the nation at an all-day event in August on the University of Minnesota-St. Paul campus. The Twin Cities Medical Society and the Minnesota Public Health Association hosted the event. The MMA, UCare, Minnesota Department of Health and HealthPartners were co-sponsors.

The purpose of the summit was to understand why Minnesota lost its status as the healthiest state in the nation. Participants focused on actions they can take to improve health and achieve health equity in Minnesota.





Analysis of data reveals nearly \$2 billion in preventable care

A study released by the Minnesota Department of Health (MDH) in July revealed that nearly 1.3 million patient visits to emergency departments and hospitals (both admissions and readmissions) in 2012 were potentially preventable. These visits cost employers, health plans and individuals about \$1.9 billion, MDH reported. This accounted for about 4.8 percent of total health care spending in the state that year. This volume of spending does not, however, represent real potential savings because not all identified events were actually preventable and avoiding them in the future may require new investments elsewhere in the system, the MDH said. The numbers come from analysis of the state's all-payer claims database. The MMA has supported using the database to improve understanding of health care service utilization, cost and variation.



New AMA tool designed to transform practice

The AMA has created a new online resource to save physicians time, reduce stress and allow staff to work more efficiently.

Called STEPS Forward, it is designed to increase physician and team satisfaction, enabling practices to provide higher quality care, experience greater engagement with patients and enhance patient satisfaction. It is available for free at www.stepsforward.org. The modules provide clear directions for implementation, video examples, case studies describing successful implementation and downloadable tools to simplify changes for your practice. Twenty-five modules will be available by the end of the year.

The project grew out of a partnership between the AMA and RAND Health to explore causes of physician dissatisfaction in the medical practice setting and better understand its implications. A resulting study, published in 2013, identified a number of factors that led to physician dissatisfaction. They included barriers to delivery of high-quality care, poor usability and time demands of EHRs, clerical work produced by regulatory requirements and conflicting leadership priorities.

The AMA continues to refine the STEPS Forward modules and is seeking feedback from physicians. In addition, the AMA, in collaboration with the Medical Group Management Association, is sponsoring an innovation challenge through which groups can submit their own ideas for practice transformation. Several \$10,000 prizes will be awarded and the best ideas will be developed into additional STEPS Forward modules.



Physicians could be reimbursed for talking end-of-life with Medicare patients

In early July, the federal government proposed paying physicians, nurse practitioners and other health care providers for discussing end-of-life care with their Medicare patients. The proposed rule would build on the current Centers for Medicare and Medicaid Services' (CMS) payment to physicians for advance care planning discussions that occur during a patient's annual wellness visit. This new proposal would allow reimbursement for advance care planning consultations regardless of when they occur and expands it to include nonphysicians.

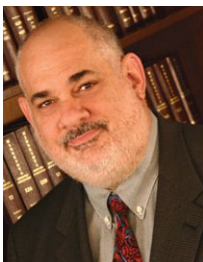
"This is encouraging news for physicians and other health care providers who are having these conversations," says Ken Kephart, MD, medical director of Honoring Choices Minnesota. "They can be lengthy talks and often doctors don't get paid for them. With this proposed change, physicians and others are encouraged to have these important discussions, knowing they will be compensated." Honoring Choices Minnesota is an effort of the Twin Cities Medical Society and its Foundation to encourage families and communities to have discussions regarding end-of-life care choices.



Dave Thorson, MD

MMA in Action

The MMA met with Medica and United HealthCare representatives to discuss their Premium Designation Program. MMA President-Elect **Dave Thorson**, MD, **Robert Meiches**, MD, MMA CEO, **Janet Silversmith**, MMA director of health policy, and board members **Randy Rice**, MD, and **Mike Tedford**, MD, attended. The goal of the meeting was to gather more information about the current program methodology; the MMA expressed its opposition to individual physician-level performance analysis, however.



Robert Meiches, MD

Terry Ruane, MMA director of membership, marketing and communications, and **Brian Strub**, manager of physician outreach, attended the American Association of Medical Society Executives (AAMSE) Annual Conference July 22-25 in Portland, Oregon. AAMSE, the professional association of more than 1,300 medical society executives and staff specialists, advances the profession of medicine through education, communication of knowledge, leadership development and collaboration. Member organizations include county, regional, state, state specialty, national, national specialty and international medical societies, as well as affiliated health care organizations and industry partners.



Janet Silversmith



Terry Ruane

In August, **Teresa Knoedler**, MMA policy counsel, discussed the state's new medical cannabis law with physicians at PrairieCare in Woodbury. She also addressed the topic at the MMGMA Summer Conference in Breezy Point, Minnesota, in late July. **Kathleen Baumbach**, MMA manager of physician outreach, also attended the conference.



Brian Strub

Dave Renner, MMA director of state and federal legislation, and **Eric Dick**, MMA manager of state legislative affairs, attended the AMA State Legislative Strategy Conference in San Diego in early August. This meeting included lobbyists from state medical societies and national specialty societies from across the country. Renner also chaired the meeting of the



Teresa Knoedler

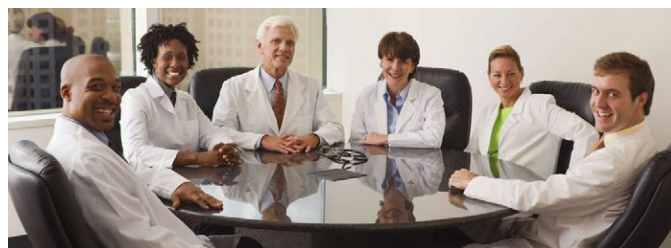
AMA's Advocacy Resource Center's Executive Committee while at the conference.

Dick is representing the MMA on the Task Force on No-Fault Auto Insurance Issues, a group created by the Legislature to study issues related to no-fault automobile insurance, some of which affect physicians such as the medical exam process, treatment standards and fee schedules. The group, which also includes representatives from the insurance industry, other health care providers and attorney groups, will deliver its recommendations to the Legislature by February 2016.

In late July, **Tyler Steer**, contract program manager for the MMAF's Physician Volunteerism Program, and **Dennis Kelly**, Foundation CEO, met with West Side Community Health Services Medical Director Mary Nesvig, MD, and East Side Clinic Director Michele Van Vranken, MD, to discuss their participation in the program.

Member **Richard Wehseler**, MD, a family physician with Affiliated Community Medical Center, received the 2015 Distinguished Alumni Award from the University of Minnesota-Morris.

The MMA Quality Committee met in July with representatives from the Minnesota Health Action Group, who provided information and updates on the Bridges to Excellence program, the largest employer-based pay-for-performance program in Minnesota.



CHANNEL YOUR PASSION Join a committee

The MMA is seeking volunteers to serve on its policy committees.

As a committee member you

- influence the MMA's direction,
- acquire new leadership skills, and
- network with physicians who care about the same issues you do.

If you are interested in volunteering, send an email to mma@mnmed.org and indicate the specific committee. An MMA staff person will follow up with you.

It is easy and only includes four evening meetings annually. If you can't make a meeting in person, you can also call in.

For specific committee assignments, go online to: www.mnmed.org/committee.



MINNESOTA
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VIEWPOINT

A look into medicine's future

After last year's Annual Conference, our members and other attendees asked for presentations about the future of health care. It's a big ask. We'd all like to know what's on the horizon in medicine.

Well, we listened and have procured two of the nation's leading voices in examining both the future as well as strategy for adapting to impending change. Our keynotes—Ian Morrison, PhD, and Kyra Bobinet, MD—are great presenters. I've had the pleasure of seeing their work up close. I'm certain that their observations will give all of us a new perspective on the possible outcomes of a period of profound change in health care in the United States.

It's my hope that you will take that perspective and use it to help us shape the future of medicine in Minnesota. Along with Morrison and Bobinet, this year's Annual Conference will feature a series of policy discussions that will tackle issues of great importance to the MMA and physicians in general.

The debate and recommendations from these forums will help our Board make decisions about MMA policy. It's all part of the democratic process that helps us guide the future of medical practice in our state.

This year's forums will focus on a couple of timely topics. One will explore the use and growth of value-based payment models and identify challenges associated with their design and use. Our goal will be to identify potential MMA actions to improve implementation and physician understanding of these models.

Another forum will look at improving end-of-life care. We'll examine advance directives, futile care and ethical issues such as physician-assisted suicide.

Finally, an open-issues forum will include a discussion of whether to add medical cannabis to the state's prescription monitoring program, among other topics. As you know, the launch of Minnesota's medical cannabis program has been controversial. Currently, pharmacists are the ones who work with patients to determine dosage and other particulars when it comes to medical cannabis.

We expect highly engaging discussions at all of the forums. The more of you we hear from, the better our deliberation on forming useful policy for physicians in our state.

Last year, more people attended the conference than any other annual meeting in recent years. I hope this year we will have even more come, given the speakers and subject matter of each forum. Also, it's being held at a great venue; the Doubletree Hotel is recently remodeled and located close to the shops and restaurants of the West End in St. Louis Park. If you have not yet registered, please go to www.mnmed.org/AC2015 and do so today.

I hope to see you there.



Douglas Wood, MD
MMA Board Chair

Our members and other Annual Conference attendees asked for presentations about the future of health care. We listened and procured two of the nation's leading voices in examining both the future as well as strategy for adapting to impending change.

The A, B, C, Ds of Opioid Prescribing for People Living with Cancer

BY CORY INGRAM, MD, MS, FAAHPM, JIM DEMING, MD, AND ANDY BOCK, MD

This article reviews guidelines for safe and effective opioid prescribing by primary care physicians for people living with cancer-related pain. It also offers tips for community clinicians on initiating, titrating and managing opioids for pain management.

Pain management is important to people living with cancer, as cancer-related pain often compromises their quality of life. Approximately 20% of patients with metastatic or recurrent cancer report moderate to severe pain,¹ although the prevalence of pain in patients across all stages of cancer has been reported to exceed 59% in those undergoing treatment and be even greater in those for whom treatment is no longer an option. It has been estimated that as much as 42% of cancer-related pain is preventable and that patients often receive inadequate treatment for their pain.^{2,3}

Patients frequently turn to their primary care physician for cancer-related pain, and opioids are often necessary for its management. However, a recent report from the Institute of Medicine, “Dying in America,” noted that health professionals are not always prepared to deliver primary palliative care (treating pain and other physical symptoms, addressing a patient’s non-physical concerns and providing advance care planning).⁴⁻⁶

We propose a simple “A, B, C, D” approach to safe opioid prescribing for cancer-related pain. The A stands for *assessment* of opioid naivety, B is for *breakthrough dosing*, C is for *constipation* and D for *details* of opioid management. Here is an example of how this approach can be used.

Case

Mrs. B is a 43-year-old woman who is undergoing treatment for a metastatic malignancy. She has multiple painful bone lesions. Mrs. B. lives in a small community in rural Minnesota and presents to her primary care clinic with cancer-associated pain. As her primary care physician, you have been caring for her for many years and are eager to get her pain under control. You review her medical records, take a history (she has no allergies), evaluate her pain and examine her. You want to prescribe opioids to help alleviate her pain. But what should you know and what protocol should you follow?

A for Assessment

The first step in opioid prescribing is assessment of opioid naivety. Opioid-naive patients are those who do not receive opioid analgesic on a daily basis and have not developed a significant tolerance to opioids. The FDA defines opioid tolerance as taking at least 60 mg of oral morphine, 30 mg of oral oxycodone, 8 mg of oral hydromorphone daily or an equivalent analgesic dose of another opioid daily for at least one week.⁷ If Mrs. B is opioid-naive, she typically should be started on a short-acting opioid at 5 mg to 15 mg of oral morphine-equivalent as needed every four hours. Suggested starting doses of opioids for naive patients are available in most pain textbooks and on many online reference sites. The time to peak effect of these short-acting opioids is 60 minutes.

This mandates reassessment of Mrs. B’s pain and any side effects of the medication 60 minutes following a dose. Initiation of long-acting opioids is not typically recommended for opioid-naive patients.

B for Breakthrough Dosing

If Mrs. B is opioid-tolerant, then administration of a breakthrough dose (a short-acting opioid dosed at 10% to 20% of her total oral morphine equivalents from the previous day) can be administered safely. Once again, the time to peak effect of short-acting opioids is 60 minutes, and this interval can be used to monitor for side effects and effectiveness of pain relief. For example, if Mrs. B is taking 60 mg of long-acting morphine twice daily, a starting breakthrough dose would be 12 mg to 24 mg of short-acting morphine every two to four hours as needed. If these doses are inadequate, titration is required (this is discussed later on in the section on the details of opioid management).⁷

C for Constipation

Opioid-related constipation is prevalent and persistent. It is as important to manage as a patient’s pain.⁸ Typical recommendations for addressing constipation include using a stimulant laxative such as senna, plus a stool softener such as docusate. Typical dosing of senna combined with docusate in a single pill is usually two tablets once daily. Polyethylene glycol

is often added once daily as a preventive measure. Constipation treatment is titrated with the goal of the patient having one soft bowel movement a day. Typically, we recommend that patients not add over-the-counter fiber supplements to their diet as this likely will worsen their constipation.^{7,8}

D for Details of Opioid Management

The details of opioid management include the following: opioid titration, end-dose failure, oral morphine equivalents, opioid rotation and incomplete cross-tolerance, use in special populations, transdermal fentanyl use and patient education.

Opioid titration

Titration of short- and long-acting opioids is limited to 50% to 100% increases. Whether Mrs. B is opioid-naïve or opioid-tolerant, titration of her short-acting opioids should be 50% to 100%. For example, if she is opioid-naïve and 5 mg of short-acting morphine proves inadequate to control her pain, a titration to 7.5 mg or 10 mg every four hours as needed would be safe. If she is opioid-tolerant and taking 60 mg of long-acting morphine twice daily and an increase in long-acting opioid is needed, then a dose increase to 90 mg or 120 mg twice daily would be the typical titration, followed by careful monitoring for side effects and pain relief.

End-dose failure

Assuming medications are being administered appropriately, when 12-hour pain medications don't last 12 hours or when transdermal fentanyl lasts less than 72 hours it is considered end-dose failure. It is important to ask patients if this is happening, as more than 50% of patients may experience it. End-dose failure is typically experienced before the next long-acting dose is due and is experienced as a return of baseline pain in contrast to breakthrough pain, which is typically an exacerbation beyond baseline pain. If end-dose failure occurs, clinicians may dose the

12-hour medications every eight hours or the transdermal fentanyl every 48 hours.⁹ It is beneficial to note this on the prescription in order to prevent difficulties for the patient when filling the prescription.

Oral morphine equivalents

Oral morphine equivalents (OMEs) are the common currency of opioid dosing and are fundamental to determining equivalent doses of various opioids. This is important when switching from one opioid to another or from one form of medication to another. It is also important when making decisions about titrations and breakthrough dosing. For example, 1 mg of oral oxycodone is 1.5 mg of the OME. Similarly, 2 mg of hydromorphone is 8 mg of the OME. Knowing the oral morphine equivalent allows you to consider the comparable strengths of the opioids you are prescribing. Opioid conversion charts and calculators are readily available online and may be in your electronic health record.

Opioid rotation and incomplete cross-tolerance

Over time, patients may experience less effective pain relief from a particular opioid, or they may have intolerable and persistent side effects. These would be reasons to rotate them to a new opioid. Using an opioid conversion table or opioid calculator can determine the OME of their current opioid in order to guide future dosing. In rotating from one opioid to another, a patient may experience more effective analgesia from a lower-than-equivalent dose of another opioid. This is called incomplete cross-tolerance. As a result, the dose of the new opioid is initiated at a 25% to 50% reduction to account for the incomplete cross-tolerance. If we choose to rotate Mrs. B from a 60 mg twice-daily dose of long-acting oral morphine to another opioid, we may choose to move her to 30 mg twice a day of long-acting oral oxycodone to account for incomplete cross-tolerance.

Opioid use in special populations

Opioid dose reduction, longer dose intervals and careful titration are hallmarks of prescribing opioids to persons with end-organ failure. In patients with renal insufficiency, fentanyl and methadone are typically the safest choices when trying to avoid neurotoxicity, myoclonus, seizure and other toxic side effects. In patients with renal failure, hydromorphone and oxycodone should be used with caution and morphine and codeine should be avoided.¹⁰ For patients with hepatic failure, fentanyl is likely the safest alternative; morphine, oxycodone and hydromorphone may be used with caution; and methadone should be avoided.¹¹

Pain treatment typically depends on a patient's self-reported pain score. In the case of a person with advanced dementia¹² or whose mental status is temporarily altered because of delirium, pain assessment can be done using special evaluation tools (eg, Faces or FLACC). Such situations may warrant prescribing low-dose short-acting opioids by mouth and by the clock, rather than as needed.¹³

Transdermal fentanyl

Transdermal fentanyl can be effective in managing cancer-associated pain.¹⁴ Because transdermal fentanyl requires 12 to 18 hours to reach a steady state, a common recommendation when transitioning from long-acting oral opioids to transdermal fentanyl is for the patient to apply the patch and take their final dose of long-acting oral medication at the same time. Titrations of transdermal fentanyl should not be done more than once every 72 hours.¹⁵ As mentioned previously, transdermal fentanyl and other long-acting opioids are not typically recommended for opioid-naïve patients. When switching from a different opioid to transdermal fentanyl, a common estimate of the patch dose is, at most, one-half the total 24-hour dose of OME. If Mrs. B is opioid-tolerant and has taken five 20 mg doses of morphine orally in the previous 24 hours, it would be appropriate to switch her to a 50 µg/hour transdermal fentanyl patch.



Patient education

The prevalence of opioid-associated nausea in cancer patients who have not had previous episodes of emesis may be as high as 40%. Clinical approaches to treating these patients typically include education and prescribing prochlorperazine. It is helpful to inform patients that opioid-induced nausea usually subsides within one week of initiation. Prochlorperazine can help them get through that period. There is insufficient evidence to recommend rotation to a different opioid because of nausea.¹⁶

Conclusion

Clinicians working in many different settings encounter patients with cancer-related opioid-responsive pain. Treating their pain is important to reducing suffering and improving their quality of life. By following the A, B, C, Ds of opioid prescribing, most clinicians can safely provide primary palliative pain management for patients with cancer-related pain. If

you have questions about a particular case, palliative care specialists are often a phone call away and always willing to help. **MM**

Cory Ingram is an assistant professor of family and palliative medicine and director of palliative medicine in the Office of Population Health Management at Mayo Clinic. Jim Deming is director of palliative medicine at Mayo Clinic Health System in Eau Claire, Wisconsin. Andy Bock is an assistant professor of family medicine who serves as faculty within family medicine and palliative medicine at Mayo Clinic.

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Recent Outbreaks of Meningococcal Disease among Men Who Have Sex with Men

BY RICHARD N. DANILA, PHD, MPH, AND LYNN BAHTA, RN, PHN

Meningococcal disease outbreaks recently have occurred in several U.S. cities among men who are HIV-infected and who have had sex with other men. This article describes the first similar case of meningococcal meningitis serogroup C in Minnesota, which was confirmed this summer. It also offers vaccination guidance for physicians who care for patients who may be at high risk for the disease.

In mid-July 2015, the Ramsey County Medical Examiner's office notified the Minnesota Department of Health that an adult male living in Ramsey County had died of suspected invasive meningococcal disease. The decedent was known to be HIV-infected and a man who had sex with men (MSM). The health department sent isolates obtained from his brain at autopsy to the Centers for Disease Control and Prevention (CDC) for further characterization. The isolate was found to be indistinguishable by pulsed-field gel electrophoresis molecular subtyping, and very closely related by whole-genome sequencing, to isolates obtained by the Chicago Department of Public Health from cases in a concurrent 2015 outbreak of serogroup C meningococcal meningitis among MSM, most of whom were known to be HIV-infected. At the time, there had been seven cases in Chicago, including one fatality. The Chicago outbreak occurred among men who frequented bars and used social networking apps to find male sexual partners.

Discussion

Meningococcal disease is caused by the bacterium *Neisseria meningitidis*. About one out of 10 people carry this bacterium in their nose and throat with no signs or symptoms of disease. Sometimes, for reasons that are unknown, *N. meningitidis*

can invade the body and cause meningitis, sepsis, pneumonia or other diseases. Meningococcal infection is spread from person to person through coughing, kissing or other close contact; people who live in the same household as someone who is infected are also at risk. It is unclear why men who have sex with men seem to be emerging as a risk group or how it is spread among them. Persons who are HIV-infected seem to be at higher risk for developing the disease than those who are not HIV-infected.

Outbreaks similar to the one in Chicago have occurred recently in France, Germany, Belgium, Los Angeles and New York City.^{1,2} The New York City outbreak consisted of 22 cases, all of which occurred in 2012-13. Seven of those individuals died. The outbreak was linked to men who used

websites and mobile phone apps to connect with male sexual partners. The CDC also compared isolates from the Minnesota and Chicago outbreaks to those from the New York City outbreak and found them to be similar, although not as closely related as the Minnesota isolate was to the Chicago isolates.

The quadrivalent meningococcal vaccine is highly effective at protecting against four strains of the bacteria that causes meningococcal disease. To prevent the outbreak from spreading, mass vaccination campaigns were initiated in New York City and Chicago targeting MSM, including those who are HIV-infected. Clinics were held in venues where MSM congregate including community festivals, clubs and bars.



TABLE

Meningococcal vaccination guidelines for at-risk patients as related to the 2015 Midwest outbreak

PREVIOUS VACCINATION STATUS	NOT HIV-INFECTED	HIV-INFECTED
Never vaccinated	1 dose MCV4 (Menactra or Menveo)	2 doses MCV4, 8 weeks apart
Received 1 dose in the last 5 years	No dose necessary	1 dose MCV4
Received 2 doses in the past 5 years	No dose necessary	
Received 1 or more doses more than 5 years ago	1 dose MCV4	

The U.S. Advisory Committee on Immunization Practices recommends the use of meningococcal vaccines to control outbreaks that involve serogroups found in the currently licensed vaccines (A, C, Y, W-135 and B).^{3,4} Quadrivalent vaccines that protect against A, C, Y and W-135 are recommended for the current serogroup C meningococcal disease outbreak.

There are two quadrivalent meningococcal vaccine types, a polysaccharide capsule vaccine and a protein-conjugated vaccine.³ Because the conjugate vaccines induce immune memory and subsequent boosting, the CDC recommends that persons who are at risk for meningococcal disease be given the protein conjugate

meningococcal vaccine, regardless of their age. This includes persons 56 years of age and older for whom neither conjugate meningococcal vaccine is FDA-approved. Either of the two meningococcal conjugated vaccine products, Menactra or Menveo, may be used to immunize persons at risk. Those who have been previously vaccinated may require a booster dose. The Table provides guidance for vaccine decision-making.

Conclusion

The Minnesota Department of Health is working with clinics that serve MSM to promote meningococcal vaccination and encourages physicians and other health care providers to immunize anyone who expresses concern about their risk related to the current outbreak. If you have questions or need to report a suspected case of meningococcal meningitis contact the Minnesota Department of Health at 651-201-5414. **MM**

Richard Danila is the deputy state epidemiologist and Lynn Bahta is an immunization clinical consultant with the Minnesota Department of Health.

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For more information about meningococcal meningitis and the 2015 outbreak, go to the Minnesota Department of Health website, www.health.state.mn.us/divs/idepc/diseases/meningococcal/update.html.



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Diagnosis and Management of Latent Tuberculosis in Minnesota's Foreign-Born Population

BY MATTHEW GOERS, MD, AND ANN SETTGAST, MD, DTM&H

Although the overall incidence and prevalence of tuberculosis (TB) is relatively low in the United States, the disease remains a significant problem among certain populations. Refugees and immigrants migrating from endemic countries are especially at risk for TB, and in Minnesota the majority of cases are found in this population. Given that the vast majority of these cases are caused by reactivated latent infection rather than primary infection, the key to disease control and prevention is the successful diagnosis and management of latent TB in immigrants and refugees from endemic areas. This article details the appropriate approach to screening, diagnosis and management of latent TB in the hope that all physicians are better equipped to aid our state's foreign-born population and improve public health.

Nearly one-third of the world's population has been infected with *Mycobacterium tuberculosis*. In 2012 alone, there were 8.6 million new cases and more than 1.3 million deaths from tuberculosis (TB).¹ Tuberculosis is a leading cause of infectious disease deaths around the world, second only to HIV/AIDS. Fortunately, the overall incidence and prevalence of TB has been steadily declining in the United States and other industrialized nations over the past decade. Today, TB is most prevalent among people living in the developing world; as such, it is also prevalent among those emigrating from endemic areas.²

Minnesota is one of the leading states for refugees relocating to the United States, surpassing Florida, Texas, New York and California in terms of refugees per capita.^{3,4} Many of these refugees come from areas highly endemic for TB. This places Minnesota in the unique position of being able to make an impact on the nationwide burden of TB. From 2009 to 2013, there were 746 confirmed cases of active TB in the state; of those, 82% were in foreign-born patients (Figure 1).⁵ In the vast majority of these

cases, TB occurs as a result of reactivated latent infection rather than primary infection.⁶ Therefore, the key to controlling and preventing the disease is the successful diagnosis and management of latent TB in high-risk populations such as immigrants and refugees from endemic areas.

Latent TB Infection

Latent TB infection (LTBI) is defined as a positive TB screening test in the absence of clinical disease. Available screening options include tuberculin skin testing (TST) with a purified protein derivative (PPD) or serum testing with a serum interferon gamma release assay (IGRA) such as the QuantiFERON Gold (QFT-G) or the T-SPOT. Although a person with latent disease will have a positive test, he or she will show no signs or symptoms that suggest active disease (no productive cough, fever, night sweats, weight loss or lymphadenopathy). In addition, a chest X-ray will reveal no abnormalities suggestive of TB. A person with latent disease does not pose a health risk to others and is not contagious.

Who and When to Screen

The purpose of LTBI screening is to identify patients at increased risk for developing active TB who would benefit from treatment. This approach benefits the individual as well as the public, as it decreases the prospect of active and communicable disease transmission. The Centers for Disease Control and Prevention (CDC) currently recommends screening all individuals at high risk for exposure. This includes all foreign-born persons from high-incidence countries as well as those in other high-risk groups (Figure 1).

All refugees and foreign-born adults permanently immigrating to the United States are screened for active infectious TB prior to their arrival. In 2007, the CDC implemented a culture-based testing algorithm that dramatically decreased the number of imported cases of active TB.⁶ However, the CDC does not require foreign-born persons older than 15 years of age to be screened for latent TB.

Recognizing that LTBI remains the leading cause of active cases of TB in the United States, the Minnesota Department

of Health includes screening for LTBI in its recommendations for health screenings for all newly arrived refugees. Historically, guidelines have recommended screening foreign-born persons from high-incidence countries who have been in the United States for fewer than five years.⁷ However, studies have shown that TB can reactivate in those who have lived here much longer. In 2004, more than 50% of TB cases were in persons who were born in other countries but had resided within the United States for more than five years. In fact, even among foreign-born individuals who have lived in this country for more than 20 years, annual rates still far exceed those of persons born in the United States.⁸

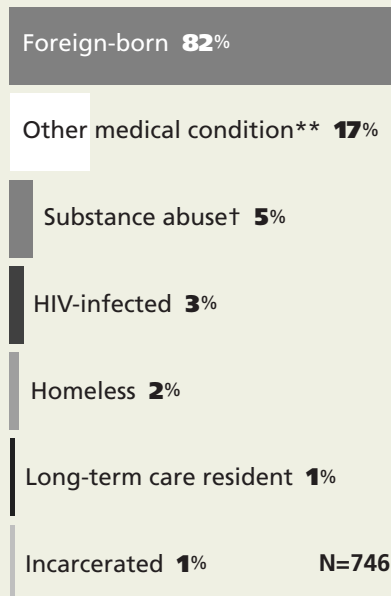
Recent studies have suggested that all immigrants and refugees should be screened for LTBI at least once regardless of how long they have been in the United States. In one study of 123,114 immigrants, cases of active TB were more prevalent among individuals screened one year after arrival, with overall rates of LTBI reactivation showing no decline even eight years after arrival.⁸ In addition, based on CDC data from 2012, 5,334 (85.0%) of the 6,274 reported TB cases in foreign-born persons were in those who had been in the United States more than one year.⁹ Given that reactivation (or re-exposure) can occur at any time, and is not limited to the first few years after relocation to the United States, all foreign-born patients seen at HealthPartners Center for International Health are screened for TB regardless of when they arrived in this country.

Key Points

- In Minnesota, rates of active tuberculosis (TB) in foreign-born populations exceed national trends (82% of active cases vs. 64% nationally).
- Given recent trends, all immigrants and refugees from areas endemic for TB should be screened for latent tuberculosis infection (LTBI) regardless of time since arrival.
- Interferon Gamma Release Assays (IGRA) are the preferred method for screening foreign-born persons for TB given the high use of BCG vaccination in endemic regions.
- Extrapulmonary TB is more common than pulmonary TB in foreign-born populations residing in Minnesota.
- Treatment of LTBI should be provided by local public health departments to limit MDR-TB and complications of therapy.

FIGURE 1

Tuberculosis cases by risk category,* Minnesota, 2009 to 2013



*Risk categories are not mutually exclusive

†Alcohol abuse and/or illicit drug use

**Conditions or therapies that increase risk for progression from latent TB infection to active TB disease, not including HIV/AIDS

Note: Foreign-born persons make up a disproportionate share of active TB cases in Minnesota as compared with other high-risk groups. The rate exceeds the national trend, where foreign-born individuals account for 65% of total cases per year.

Source: Minnesota Department of Health

Which Test to Order

As compared with PPD, IGRAs have demonstrated similar sensitivity (70% to 78% vs. 77%) and superior specificity (96% to 99% vs. 59% to 97%).¹⁰ The superior specificity is primarily because IGRA testing is not affected by a patient's Bacillus Calmette-Guerin (BCG) vaccination status. The BCG vaccine is commonly used in TB-endemic areas to limit childhood mortality and development of miliary TB; false-positive tuberculosis skin test (TST) results are common in patients who have received the vaccine. Therefore, an IGRA is the recommended test for evaluation of LTBI in foreign-born persons.

Although they are uncommon, false-negative and indeterminate QFT-G results may occur for myriad clinical reasons. Because a person must have intact cell-mediated immunity to mount a response to the antigen, one cause of false-negative results is immune compromise (eg, that caused by HIV or malignancy). Other factors can lead to indeterminate results, including insufficient sample volume or improper specimen handling. Because of this, it may be important to contact the laboratory to discuss the conditions by which a sample was rendered indeterminate.

When a Person Has a Positive Test Result

The first step in managing an individual who screens positive for TB is to rule out active TB with a thorough history, physical and chest X-ray. Once latent TB infection has been confirmed, it is important to offer reassurance. Tuberculosis may have significant social, cultural and religious implications for some individuals, and its diagnosis can be associated with personal stress and social stigma. Therefore, it is helpful to address a patient's current understanding of TB before providing them with further education. Although most foreign-born patients will be familiar with TB, they may not be familiar with the concept of latent infection and may need further explanation to fully understand the concept. A useful analogy is to explain that they have a type of TB that is "asleep" and must be treated so the mycobacterium does not "wake up" or become active and make them sick. Patients should be counseled about the need for therapy at this stage of disease. They need to understand that therapy substantially reduces their risk of reactivation and contracting future active disease.

After initial counseling, all patients with LTBI should be urged to undergo

treatment. If available, treatment should be provided in a local public health clinic. Many primary care clinics have the capacity to manage LTBI; however, adherence and safety are significant concerns. Recent studies have shown large rates of nonadherence among patients on LTBI therapy who are treated at outpatient clinics (completion rates are as low as 42.9%).¹¹ This can contribute to worsening rates of drug resistance, an especially salient concern given the recent emergence of multidrug-resistant TB.¹¹ Furthermore, with monthly clinical monitoring by a local public health department, patients may avoid the potentially life-threatening complications of anti-tuberculous medications such as INH and rifampin/rifapentine. Therefore, if a patient has access to a local public health department, it is recommended that he or she be referred there for treatment.

Additional Testing

Because a positive TST or IGRA does not distinguish between active tuberculosis and latent infection, additional testing (including acid-fast bacilli smears and cultures) may be necessary. Further testing should be done at the discretion of the physician and will vary by case. The physician should contact the Minnesota Department of Health or an appropriately trained infectious disease physician to discuss the next steps (eg, admission to a hospital vs. home therapy) if the patient has signs of active TB. Of note, recent trends have shown an increased incidence of extrapulmonary TB. Among foreign-

born patients with TB presenting to Minnesota clinicians from 2009 to 2013, 54% had extrapulmonary manifestations, most commonly TB of the lymph nodes (Figure 2).⁵ Thus, evaluation and imaging beyond chest X-ray should be based on the patient's history and examination.

Treatment of Latent Tuberculosis

Although treating latent TB is important, it is essential to first rule out active TB disease. An appropriate amount of time should be allowed for confirmation of final test results (such as AFB cultures) prior to treatment of latent TB. Thus, if there is any suspicion or concern for active disease, treatment for latent disease should be delayed while tests are pending so as to limit treatment failure and the development of drug-resistance. When LTBI is confirmed, it may be treated with a variety of drugs based on a patient's comorbidities and preferences. As previously mentioned, it is recommended that treatment for LTBI be facilitated through a patient's local public health department in order to ensure adherence and limit potential side effects and antibiotic resistance. If that is not possible, patients may be treated and managed at their local clinic as long as they are closely monitored each month for toxicity. Currently, the most commonly used treatment regimen is nine months of isoniazid therapy. Additional treatment regimens are listed in the Table, and further recommendations are available on the CDC website.

TABLE

Treatment regimen options for the management of latent tuberculosis

DRUGS	DURATION	INTERVAL	MINIMUM NUMBER OF DOSES
Isoniazid	9 months	Daily	270
		Twice weekly*	76
Isoniazid	6 months	Daily	180
		Twice weekly*	52
Isoniazid and rifapentine	3 months	Once weekly*	12
Rifampin	4 months	Daily	120

*Use directly observed therapy

Source: Centers for Disease Control and Prevention (www.cdc.gov/tb/topic/treatment/ltbi.htm)

FIGURE 2

Tuberculosis cases by site of disease, Minnesota, 2009 to 2013

FOREIGN-BORN PERSONS

Pulmonary only **46%**

Extrapulmonary* **54%**

U.S.-BORN PERSONS

Pulmonary only **68%**

Extrapulmonary* **32%**

*Includes cases with or without concurrent pulmonary disease

Note: Foreign-born persons in Minnesota with active tuberculosis have higher rates of extrapulmonary manifestations compared to foreign-born persons nationally (32% of cases). The most common sites involved included the lymphatics (54%), musculoskeletal system (15%), pleural cavity (11%), peritoneal cavity (5%), genitourinary tract (4%) and meninges (4%).

Source: Minnesota Department of Health www.health.state.mn.us/divs/idepc/diseases/tb/stats/tbepislidesnotes.pdf.

Conclusion

Public health efforts have markedly decreased rates of active TB among persons born in the United States. However, the rate among foreign-born persons has remained relatively unchanged for the past decade. From 2010 to 2014, more than 10,710 refugees were screened for TB upon their arrival in Minnesota. Of those screened, 23% tested positive for latent TB.¹² Because most active TB cases in Minnesota arise from patients with latent TB and, given the large burden of latent TB in our foreign-born population, it is important that Minnesota physicians and all other health care providers offer immigrants and refugees appropriate screening for and management of LTBI. **MM**

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Resources

For patients

All patients with diagnosed latent and active tuberculosis (TB) have access to free prescriptions through the Minnesota Department of Health's TB Prevention and Control Program (www.health.state.mn.us/divs/idepc/diseases/tb/meds/index.html)

For providers

Minnesota Department of Health—Tuberculosis Information (www.health.state.mn.us/tb)

Minnesota Department of Health—Tuberculosis Statistics (www.health.state.mn.us/divs/idepc/diseases/tb/stats/index.html)

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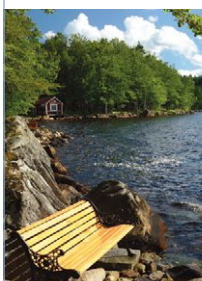
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Family Medicine

St. Cloud/Sartell, MN

We are actively recruiting exceptional full-time BE/BC Family Medicine physicians to join our primary care team at the HealthPartners Central Minnesota Clinics - Sartell. This is an outpatient clinical position. Previous electronic medical record experience is helpful, but not required. We use the Epic medical record system in all of our clinics and admitting hospitals.

Our current primary care team includes family medicine, adult medicine, OB/GYN and pediatrics. Several of our specialty services are also available onsite. Our Sartell clinic is located just one hour north of the Twin Cities and offers a dynamic lifestyle in a growing community with traditional appeal.

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• Infectious Disease	• Geriatrician	• Urgent Care
• Internal Medicine	• Pediatrics	• Urologist

For additional information, please contact:

Kari Lenz, Physician Recruitment
karib@acmc.com, 320-231-6366
Richard Wehseler, MD
rickw@acmc.com



Family Medicine opportunity in Baxter, Minnesota

Cuyuna Regional Medical Center (CRMC) is seeking a Family Medicine physician for its Baxter Clinic. Located in the Brainerd Lakes Area, CRMC's Baxter Clinic opened in December 2013.

Family Medicine

- Full time "outpatient" position equaling 36 pt contact hours per week
- 1 in 11 Peds call schedule.
- Multi-specialty support with 40 + physicians and APC's

Baxter Community

- Population – 7,781 (Brainerd/Baxter 22,759)
- Median resident age 38.7 years
- Clinic located in heart of Baxter community

This position supported by subspecialty providers in cardiology, internal medicine, OB/GYN, orthopaedics, urology, surgery, oncology and more. Very competitive comp package, generous sign-on bonus, relocation and full benefits. Within two hours of Minneapolis/St. Paul, you will find a personal and professional fit in Baxter, MN.

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• ENT (Part-time)	• Psychiatrist
• Geriatrician (Part-time)	• Pulmonologist
• Hospitalist	• Urologist (Part-time)
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Applicants can apply online at www.USAJOBS.gov

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Threads

BY SIU-HIN WAN, MD

Threads, born of cotton bolls,
Full of excitement, joy and ever-longing curiosity.
From all parts of the globe, from all walks of life we come,
Brought together by fate, held together by a common purpose.

Seeing a white coat brings great pride.
A symbol of a profession
Dedicated to serve,
Serving as a beacon of hope.

Wearing a white coat
Brings realization of the weight of the cloth.
The realization of the tremendous responsibility
That accompanies tremendous power.

The most arduous time of my life,
Is also the best time of my life.
Why do we endure the hardships along the way?
To prepare for the day when a human life rests within our hands.

To don a white coat is not only to heal,
But to listen, to empathize,
To become one with the patient's plight.
To be in relationship.

A compass on our shoulders,
Providing direction, even when the path is dark.
Reminding us what it means to be a healer:
A complete coat, not just a single piece of cloth.

Woven together,
Threads of unity provide an unbreakable strength
For upholding the ideals of the profession to which we belong.
Yet a single thread
Can alter the entire fabric.



Siu-Hin Wan is a cardiovascular diseases fellow in the clinician investigator program at Mayo Clinic. "This piece was inspired by the people I've encountered throughout my medical training. When people of diverse backgrounds work toward a common goal, it creates a unique and proud culture."

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