

MINNESOTA MEDICINE

JUNE 2014

REINVENTING THE INTERNIST

INTERNAL MEDICINE
PROGRAMS CHANGE UP
THE WAY THEY TRAIN
PHYSICIANS

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MED-PEDS: A small-but-thriving
specialty PAGE 10

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KEYNOTE

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- Shana Sniffen, M.D. | HealthEast Roselawn Clinic
- Tamiko Morgan, M.D., FAAP | CMO/medical director with Metropolitan Health Plan and Associate Professor at the University of Minnesota
- Walter B. Franz III, M.D. | Mayo Clinic

LOCATION

Wilder Center | 451 Lexington Parkway North, St. Paul

TIME

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6-8 pm Program

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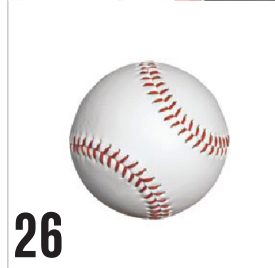
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MINNESOTA MEDICINE

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

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PHOTO BY SCOTT WALKER

Charles R. Meyer, M.D., Editor in Chief

Medicine is like most professions. You use about 20 percent of the knowledge you acquired during your training.

The specialized generalist

In 1977, I emerged from my residency a fully-armed general internist. The weapons in my bandolier included procedures like spinal taps and thoracenteses, experience in handling the sickest of patients including those hospitalized in the coronary and intensive care units, and an encyclopedia of medical arcana gleaned from years of board preparation. I was ready to set the medical world afire and claim my place as the next William Osler.

During my first few years in practice, I used most of those weapons. I did my own spinal taps and thoracenteses. I took care of all of my hospitalized patients. In those pre-angioplasty, pre-intensivist days, I was the cardiologist for patients with myocardial infarctions and the intensivist for those on ventilators. The only things lacking from my Osler persona was the three-piece suit and the erudite epigrams.

Then slowly the bullets in my belt started getting picked off. I realized doing procedures took a lot of time, and I wasn't doing enough of them to keep my skills up. Neurologists did better spinal taps, pulmonologists did better thoracenteses and, soon, radiologists did them better than any of us. A cardiology group came to our hospital, and the treatment of MIs underwent a sea change. Good treatment was no longer just putting the patient in bed for days and treating their arrhythmia but giving them "clot busters" and opening their coronaries with balloon catheters. The early simple ventilators were mothballed, and the new ones had sprouted more dials than a 747. Weaning patients off of ventilators became more science than artful guesswork, and specialists such as pulmonologists and intensivists rightfully took over.

The last 10 years, with the blossoming of the hospitalist movement, has seen the largest chink removed from the generality of the general internist. Driven partly

by economics and partly by graduating residents' demand for a more humane lifestyle, new general internists in most urban areas are either hospital doctors or outpatient doctors. In my current clinic-only role, much of my knowledge about ill, hospitalized patients lies dormant.

Medicine is like most professions. When you get into the business, you use about 20 percent of the knowledge you acquired during your training. The recent shift in internal medicine practice has cut that percentage further. So in light of the 2014 reality of internal medicine practice, medical educators have been asking themselves whether their residency programs are truly preparing physicians for the world they will enter. Is an outpatient experience in residency wasting time for a future hospitalist? Are rotations in the intensive care unit necessary for an internist who will never see another ventilator after she starts in her clinic?

The challenge for educators everywhere is to be adaptable, taking stock of their world and deciding what is relevant for their trainees. For future internists in training, I hope they continue to sample the whole world of internal medicine. Knowing something about ICU care makes it easier to care for the post-ICU patients seen in the office.

So do I feel like a disarmed desperado, meekly making my way in the outpatient world with only a few tools to wield? Perhaps a bit, but once I get past the nostalgia I realize that having all those weapons makes me not quite an Osler but a better internist for today's daily work.

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



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The liberal arts residency

Doing an internal medicine residency is like majoring in liberal arts. It's the first step on a path that can lead in many directions—from a primary care clinic practice to hospital medicine or to one of many subspecialties.

This year, 3,167 seniors from U.S. allopathic medical schools matched into internal medicine programs, making it the most popular residency choice, according to the National Resident Matching Program (NRMP). It's also a growing specialty. This year, internal medicine programs offered 6,524 positions, 247 more than in 2013. Of those, 99.1 percent were filled.

Internal medicine was a popular choice for seniors graduating from Minnesota medical schools as well. At the University of Minnesota, 38 of the 225 graduating seniors matched into internal medicine programs, making it the second-most popular pick. (Family medicine was most popular, with 45 seniors matching into

programs.) At Mayo Medical School, eight of the 51 graduating seniors matched into internal medicine, making it the No. 1 choice.

The NRMP called the additional positions and high interest among seniors "good news" for primary care. But is that really the case? Will these future internal medicine program graduates end up practicing primary care? The American College of Physicians acknowledges that while interest in internal medicine is strong, only about 20 to 25 percent of internal medicine residents eventually go on to practice general internal medicine.

We asked seniors from Minnesota medical schools who matched into internal medicine programs what they plan to do following residency. Like liberal arts grads, some are keeping their options open. Here's what a few had to say about why they chose this path and what they hope to one day do. —KIM KISER



Daniel Dudenkov

Daniel Dudenkov

Residency: Mayo Clinic, Rochester

WHY: It's a mix of everything that I feel I've grown passionate about during my medical school years. I've been interested in primary care for some time and was torn between family medicine and internal medicine. I do like the outpatient primary care environment. But the thing that swayed me was that I realized I wasn't that interested in obstetrics or pediatrics. Also I did a hospital medicine clerkship and fell in

John Albin

Residency: Massachusetts General Hospital

WHY: It's the specialty best aligned with my long-term clinical and research interests.

PLANS: To subspecialize in infectious diseases



John Albin

Carrie Evavold

Residency: University of Colorado-Denver

WHY: The breadth of medical problems, ability to provide continuity of care, opportunity for further specialization

PLANS: Either hospital or critical care medicine



Allison Appelt

Allison Appelt

Residency: UCLA

WHY: I love that with internal medicine I get to care for my patients as whole beings. I won't be focusing on just one part of them. I love the challenge of creating broad differentials and the mystery of finding the correct diagnosis. But I'm most excited about being an advocate for my patients when they need it most.

PLANS: To become an academic hospitalist



Carrie Evavold

love with it and the complexity involved in it. With internal medicine, I can focus on outpatient primary care and get trained in hospital medicine. It opens a lot of doors.

PLANS: At this point, I would say to do general internal medicine. I would like to do a mix of outpatient primary care and hospital medicine. I probably see myself in an urban setting—an environment where I can be involved in teaching students and residents. Also I could see myself working in an underserved part of the inner city. If I could combine all those, it would be great.

Aaron Crosby

Residency: University of Utah

WHY: I love the idea of being a complete doctor—being able to seamlessly move from a gentle discussion about end-of-life care to a patient who requires an understanding of the nuances of molecular medicine and finally to running an ACLS code properly to give a patient a chance at resuscitation. I love how internal medicine embraces the biopsychosocial way of looking at medicine, and I believe it is positioned to find innovative solutions to the daunting challenges presented by our health care system.

PLANS: Unsure. I would be happy doing any of the subspecialties or primary care or working as a hospitalist.



Aaron Crosby



David Knorr

David Knorr

Residency: Weill Cornell Medical Center/NYP Hospital, New York

WHY: I enjoy taking care of adults and the complexity of their various presentations. Also, mentors who demonstrated that you can have a successful research career while continuing to practice medicine were integral to my decision.

PLANS: To subspecialize in hematology/oncology



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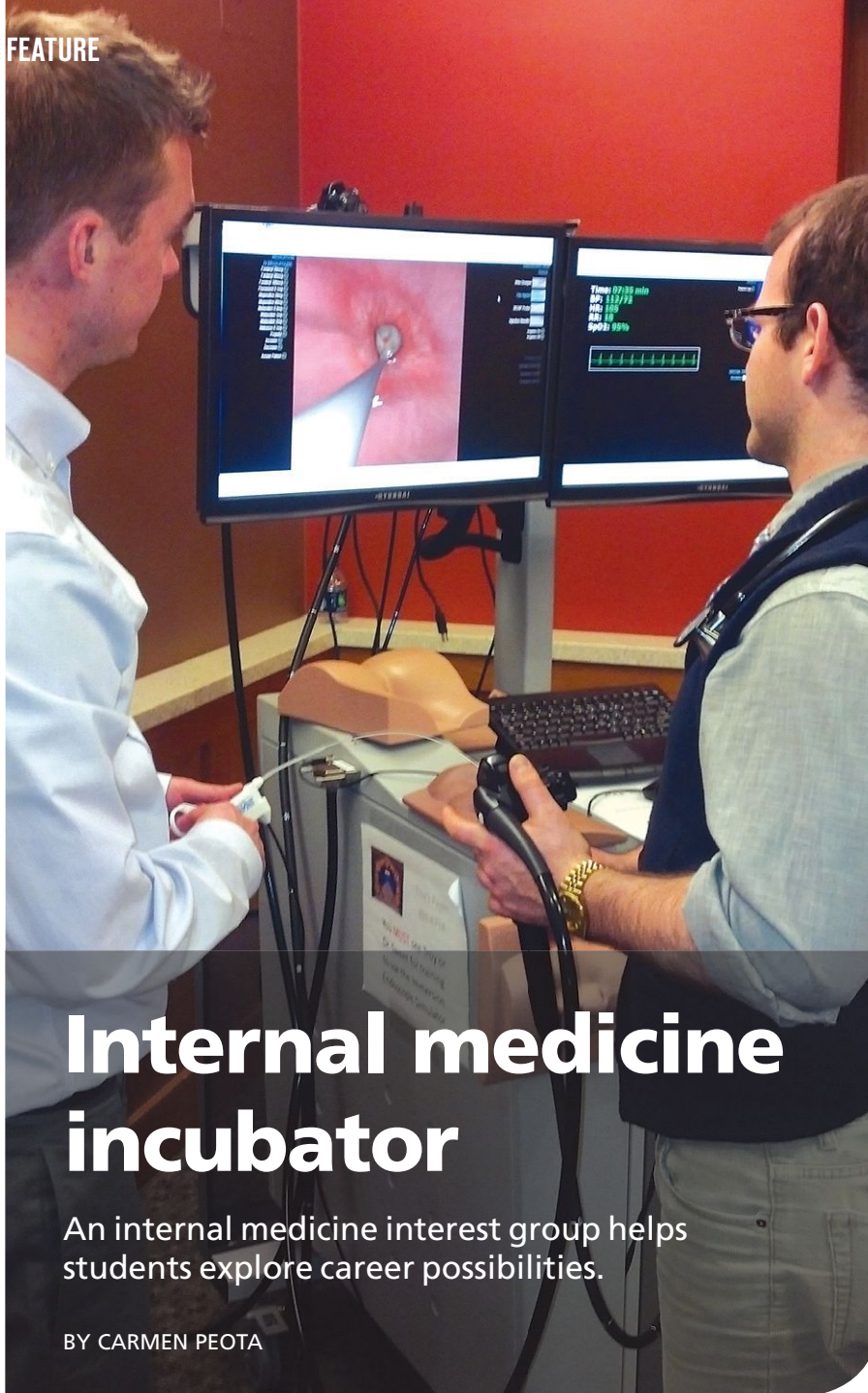
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Internal medicine incubator

An internal medicine interest group helps students explore career possibilities.

BY CARMEN PEOTA

Erica Levine started medical school at the University of Minnesota last September already thinking she wanted to go into internal medicine. She had shadowed her grandparents' internist in St. Paul and been impressed with the way he addressed his patients and asked about events he knew had happened in their lives. "That's why you go into medicine—to help people and be part of their life," she says. "It was refreshing to be reminded that that part of medicine still exists."

Zach Grice-Patil and Alex Schwegman also arrived at the university thinking in-

ternal medicine might be right for them. The first-year students both had worked as scribes prior to medical school and had watched physicians work up close. Grice-Patil, who worked in an emergency department, found himself wondering what happened to patients after they left. "I enjoyed the setting, but it did kind of leave me wanting to find out more about the patients' diagnoses and prognoses," he says, explaining that that's where his interest in internal medicine was conceived. Schwegman had simply liked what he'd seen of internal medicine physicians. "In general,

they were really great at communicating what their treatment would be. And they treated their patients like partners," he says. "Also, they made sure their patients knew what was going on. They'd say, 'Can you tell me in your own words what we're going to do next with your treatment?'"

Despite their early interest, all three students wanted to know more about the specialty and attended events planned by the university's student-led internal medicine interest group to find out. This year, they took in such things as the residency dinner, where they heard directors of Minnesota's internal medicine residency programs describe their programs' similarities and differences, and a skills night, where they tried their hand at placing a central line and other procedures an internist might do. The three students have now stepped up to help lead the group next year.

New enthusiasm

Levine says interest groups serve an important function, as they help first- and second-year students sift through their options so they can plan ahead, "so that when it comes time to plan our clinical schedules, you have some things crossed off your list—and you're making sure that you're set for when you apply for residency." She says most of the groups try to make their events as accessible to as many students as possible. "A lot of the times, if something fits into your schedule, you'll go to it even if you're not 100 percent interested in that group, just to get a feel for the culture and see what else is out there."

This year's internal medicine interest group leaders want to continue traditions such as sponsoring the residency dinner and skills night, but they have fresh ideas as well.

Levine would like to make it easier for students to find shadowing opportunities, perhaps creating an event where students can meet practicing physicians. "There's such a huge internal medicine culture in the Twin Cities. It would be great to tap into all these residencies and the people who graduated from them and connect students with physicians who are willing to



Medical students listen intently at last year's residency dinner, an annual event that showcases the area's residency programs.

have them shadow," she says. "We want to make connecting a little bit easier."

Grice-Patil would like to see the university's interest group connect with the one at Mayo Medical School. This year, he attended an event at Mayo, where he met practicing internists, residents and students. He thinks students from both campuses would benefit from having the chance to learn about each others' realms and meet faculty from the two schools. "There are opportunities to do away rotations at Mayo. It's easier to find those if you have a contact," he notes, pointing out that Mayo students would benefit as well.

Why so much interest?

One thing the group's leaders do not have to do is drum up interest in internal medicine among students. The interest is there,

Internal medicine has an interest group "because of the volume of people who are interested in it and the subspecialties that come after residency."

— Zach Grice-Patil

according to Grice-Patil. "I don't think internal medicine needs an interest group *per se*. It has one because of the volume of people who are interested in it and the subspecialties that come after a residency," he says. Levine points out that it's not

surprising that many students at the university are considering going into internal medicine. "Because the university is top-10 ranked for primary care, it really draws people who want to do primary care," she notes.

Still, the interest group is needed, as it helps students find their professional direction. Levine, Grice-Patil and Schwegman admit that even though they want to pursue internal medicine, they have not fully settled on a career path. Schwegman plans to shadow a critical care specialist this summer. Grice-Patil is thinking about the combined emergency medicine/internal medicine program. And Levine says she's not yet 100 percent sure what direction her career will take.

All three students hope the interest groups' events will assist them in homing in on a decision. **MM**

Carmen Peota is managing editor of *Minnesota Medicine*.

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A small-but-thriving specialty

Med-peds is an option for those who want to keep their options open.

BY MICHELE ST. MARTIN

Sarah McIntire, M.D., always wanted to be a pediatrician, but in her third year of medical school, she began to have doubts about limiting herself to pediatrics. “I was driving to Idaho talking on the phone to a friend about doing a pediatrics rotation, and I said that I didn’t know if I could wrap my head around just doing peds,” she says.

McIntire found out she didn’t have to. By doing an internal medicine-pediatrics (med-peds) residency, she could become board-eligible in both specialties. But finding a program wasn’t easy. Only 367 slots exist in 79 programs in the United States. McIntire, who’s from Washington State, discovered there were no med-peds residency programs in her home state and only a handful on the West Coast.

Although McIntire considered family medicine, which also involves caring for both adults and children and has many more training options (3,109 positions in 480 programs), she ultimately chose med-peds. She is now completing her third year in the University of Minnesota’s residency program. “I wanted a more in-depth pediatrics experience than you get in family medicine,” she says. “I didn’t only want to be prepared for well-child visits but also to be able to treat the unusual conditions, make the uncommon diagnoses in peds.”

Med-peds vs. family medicine

What sets med-peds apart is its emphasis on caring for sicker patients. “Family medicine is more focused on preventive medicine, and treating 80 to 90 percent of the cases that come before them—the most common complaints. Med-peds physicians do that as well, but we also enjoy the detective work that goes along with diagnosing and managing a medically and psychosocially complex patient,” says Michael Aylward, M.D., who directs the University of Minnesota’s residency program—one of the country’s largest with about 40 residents.

Aylward explains that medical students who are interested in hospital medicine, acute medicine and challenging diagnostics tend to choose med-peds over family medicine. “There’s the opportunity to care for adult survivors of childhood diseases

such as asthma and those with cystic fibrosis and congenital heart disease who are living to adulthood,” he says.

During their four years of training, med-peds residents spend 24 months in internal medicine and another 24 months in pediatrics. Med-peds programs provide about 19 more months of both internal medicine and pediatric medicine training than family medicine residency programs do. And unlike family medicine, they don't provide training in obstetrics or general surgery.

The med-peds curriculum includes not only general internal medicine and pediatrics but also normal newborn care; neonatal, pediatric and adult intensive care; emergency care; behavioral pediatrics; adolescent medicine and geriatrics. In addition, residents may do subspecialty rotations in allergy/immunology, gastroenterology, cardiology, endocrinology/metabolism, hematology/oncology, immunology, infectious disease, nephrology, neurology, pulmonology, rheumatology and sports medicine.

Residents work in both ambulatory and hospital settings including the neonatal ICU and pediatric emergency department. “The requirement is that each med-peds residency include one-third of its rotations in outpatient clinics,” Aylward says.

Diverse training, diverse careers

Such diverse training leads to a variety of career options. Med-peds graduates go into primary care and hospital medicine in approximately equal numbers, with a smaller percentage going on to fellowships, Aylward says. According to the National Medicine-Pediatrics Residents' Association (NMPRA), 26 types of fellowship programs accept med-peds graduates. They include generalist fellowships only open to med-peds residents, combined adult-pediatrics fellowships in areas such as cardiology and neurology, and fellowships such as adolescent medicine and global health that are open to a wide variety of residents.

Aylward says dual board certification makes med-peds residents attractive to employers. “Internal medicine is reimbursed [by insurance] at a higher rate

Med-peds as a specialty

Med-peds had its beginnings in 1949, when a two-year rotating internship in internal medicine and pediatrics was first established. But after losing both faculty and resident support, the two-year internships were replaced with a one-year post-graduate training option in medicine-pediatrics. In 1967, the American Board of Pediatrics and the American Board of Internal Medicine approved the current four-year med-peds residency model that leads to dual board eligibility.

By the 1980s, med-peds began coming into its own. Internal medicine and pediatrics departments began to receive more government funding for residency programs. At the same time, advancements in medicine were allowing children with diseases such as cystic fibrosis and sickle cell anemia to live well into adulthood, and adult-onset diseases such as type 2 diabetes were starting to appear in children. Thus, these young patients needed specialists who could treat them over their entire lifespan.

Residency programs began to proliferate. According to the National Med-Peds Residents' Association, the number of programs in the United States grew from nine in 1980 to 79 in 2013. In 2014, 374 med-peds positions were offered during the Match; 362 were filled.—M.S.



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than pediatrics, and employers know that med-peds residents can do both,” he says. He’s seen recent graduates go on to work in community clinics, primary care clinics and in palliative care and hospital settings. Nationally, more than 50 percent of med-peds physicians hold an academic position in addition to practicing, according to the



Sarah McIntire, M.D.

NMPRA. Aylward says many graduates of the University of Minnesota’s program stay in the Twin Cities and mentor med-peds residents; a number of them also hold faculty appointments.



Michael Aylward, M.D.

Like McIntire, Lauren Haveman, M.D., a fourth-year med-peds resident at the University of Minnesota, chose med-peds because she wanted to care for both adults and children. Initially, she thought she

wanted to work as a hospitalist, but instead she decided to go into primary care. Like many who choose med-peds, Haveman is interested in working with patients with serious conditions. “I truly want to handle more complex pediatric patients, those who need specialty care—critical care, pulmonology, cardiology,” she says.

But that’s not Haveman’s only reason for selecting the specialty. While in medical school at Ohio State University, she spent five weeks at a hospital in Durban, South Africa, caring for patients with HIV/AIDS and tuberculosis. That experience sparked an interest in working overseas, something both Haveman and her husband, a pediatrician who is completing a fellowship, eventually plan to do. “When it comes to global health, I don’t want to just be trained in one specialty, such as pediatrics, and then treating adults, too,” she says. One reason Haveman chose Minnesota’s program was because of its strength in

global health. As a second-year resident, she spent five weeks working in Tanzania.

Professional flexibility

McIntire finds herself torn between hospital medicine and primary care. “Hospital medicine is fast-paced, fascinating,” she

says. “But I like the idea of having the option to do outpatient medicine; it’s more family-friendly, more conducive to working part-time.”

With one more year of training to go, she’s still keeping her options open. **MM**

Michele St. Martin is a St. Paul freelance writer.

Another combined specialty

Hennepin County Medical Center (HCMC) in Minneapolis is home to one of a dozen combined emergency medicine (EM)/internal medicine (IM) residency programs. It was started in 2006 in response to requests from University of Minnesota medical students who had heard about such programs elsewhere and wanted an option in the state.

Residents in the program spend their time alternating between three-month EM and IM rotations, some of which are in the clinic. (EM/IM residents see their primary care patients in HCMC’s internal medicine clinic.) They are instructed by both EM and IM faculty and gradually assume more responsibility in the hospital. By year three, they begin taking a leadership role in the emergency department. By year five, they serve as chief residents of the program. They leave prepared to practice either emergency or internal medicine or do a fellowship in an area such as critical care.

Anne Pereira, M.D., M.P.H., who co-directs the EM/IM program with Richard O.

Gray, M.D., says trainees tend to go on to work in one of three settings: rural hospitals, where they can provide both emergency and general medical care in the hospital; international settings, where they might be involved in disaster response or program leadership; or academia. She points out that the five-year program allows residents time to do research and identify an academic interest. They have six months during which they can explore specialties in depth, undertake a clinical research project, explore pathways programs in global health or primary care, or improve their procedural proficiency. She notes many times residents’ interests lie between the two specialties. They might focus on observational care (which is provided to patients who don’t meet Medicare standards for hospital admission) or transitions between the ED and ICU. Or they might take on a larger issue such as finding ways to get heavy ED users into primary care.

Pereira says having physicians with the ability to see things through the lens of two specialties can benefit a hospital. For example, the fifth-year residents at HCMC have organized a quarterly conference, during which a clinical scenario is presented and faculty, residents and students from both the EM and IM departments discuss it. “It’s not only their clinical training but the appreciation they have across boundaries,” she says explaining why EM/IM physicians are valuable. “They’re living half in one world and half in another, and that enhances communication between departments.” —Carmen Peota

HCMC’s EM/IM program at a glance

CURRENT RESIDENTS: 9
GRADUATES: 8
APPLICANTS EACH YEAR: 100
RESIDENCY SLOTS: 2



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REINVENTING THE INTERNIST

INTERNAL MEDICINE
PROGRAMS CHANGE UP
THE WAY THEY TRAIN
PHYSICIANS

BY SUZY FRISCH

About 15 years ago, when Amy Oxentenko, M.D., trained as an internal medicine resident at Mayo Clinic—and later completed a fellowship in gastroenterology and hepatology—residents were spending about 70 percent of their time treating patients in the hospital. And many were spending their limited clinic time in continuity or primary care clinics rather than subspecialty clinics.

As a result, a number of residents graduated feeling more proficient caring for patients in the hospital setting than in the clinic. Some felt so unprepared to handle certain problems on their own that they made many referrals to subspecialists. “If you don’t train in an outpatient GI or cardiology clinic, it may be harder as a general internist to take care of those patients in an outpatient setting,” Oxentenko says.

In 2010, Mayo sought to address some of those concerns and revamped its internal medicine residency program. One of the changes was to create an even split between the time residents spend doing hospital and clinic rotations. Now when residents are in the clinic for a month-long block, they can fully concentrate on those patients and not be distracted by the needs of hospital patients.

“It reflects the kind of balance we feel people need to be well-trained in outpatient medicine because that’s where most of them will spend the majority of their time as practicing physicians,” says Oxentenko, internal medicine residency program director and associate chair of Mayo’s Department of Medicine.

Shifting landscape

The changes at Mayo and Minnesota’s three other internal medicine residency programs reflect the shift in thinking about the training regimen for internists that has occurred recently.

About 15 years ago, multiple factors were prompting leaders of residency programs across the country to look closely at internal medicine training. They perceived a disconnect between education (with its strong emphasis on hospital care) and practice (which often revolves around caring for sick patients in the clinic). At the time, ambulatory care rotations were more of an afterthought. They rarely taught residents how to coordinate care among specialists or how to care for very sick, chronically ill patients. Nor did they show off innovative practices or technologies (EMRs, web scheduling, monitoring patient care) or reflect emerging concerns such as the health care requirements of the growing elderly population or the need for improved cultural competence.

Program leaders also were aware that many young internists were choosing to



MINNESOTA'S INTERNAL MEDICINE RESIDENCY PROGRAMS

- Abbott Northwestern Hospital, Minneapolis
- Hennepin County Medical Center, Minneapolis
- Mayo Clinic, Rochester
- University of Minnesota

subspecialize or focus either on hospital medicine or ambulatory care rather than do both. According to a 2012 American College of Physicians survey of third-year residents, 12 percent intended on becoming hospitalists, 22 percent general internists and 60 percent planned on pursuing a subspecialty.

In 2005, the Alliance for Academic Internal Medicine Education Redesign Task Force developed recommendations for improving internal medicine training. Among their suggestions:

- Organize internal medicine training around core skills such as clinical examination and diagnostic reasoning
- Develop more resident-centered education that fits intended career paths



- Improve ambulatory training to better connect residents' inpatient and outpatient responsibilities.

Since the recommendations came out, programs have beefed up their outpatient curricula, while also shifting their residents' schedules in the way Mayo's

program did. Many have adopted more defined blocks of time—say four weeks of working only in the hospital and one week only in the clinic, says David Fleming, M.D., president of the American College of Physicians (ACP).

“Anecdotally, more systems are going to a four-plus-one schedule, and residents really love it. It's made all the difference in resident satisfaction and their attitude toward general internal medicine,” he says. “Before, they were finishing training and going to fellowship, or they were more comfortable in the hospital and went to work there.” Now, they're getting a broader view of their options.

Thomas Maust, M.D., an internal medicine chief resident at the University of Minnesota Medical Center, Fairview, believes having a block of time committed to outpatient care is extremely valuable, no matter what one's intended career path may be. “You see what a general internist does on a day-to-day basis and you see very sick patients in the clinic without the vast resources of the hospital,” he says. “You learn how to triage well in an outpatient setting and to evaluate whether a patient needs to go to the emergency department today or be directly admitted to the hospital or to see me again later in the week.”

At Abbott Northwestern Hospital in Minneapolis, internal medicine residents spend about three months each year in various outpatient settings including a continuity clinic, a suburban clinic, and specialty clinics such as those for orthopedics or dermatology. This helps them understand what it's like to work with patients from a variety of socioeconomic

MORE CUSTOMIZED TRAINING

An emerging trend in internal medicine residency programs is creating more opportunities for residents to tailor programs to fit their interests. This includes offering electives and pathways programs. For years, the University of Minnesota has allowed internal medicine residents to explore primary care, hospital medicine, global health and physician-scientist career paths. It recently added a clinician educator pathway. Of each 30-member residency class, about one-third of the residents are formally enrolled in a pathway, while about half informally take advantage of various pathway offerings, says Alisa Duran, M.D., program director of the university's internal medicine residency.

Pathways participants delve deeper into their focus area through additional training and/or seminars. Residents in the university's primary care pathway might spend about half of their time in outpatient settings, compared with one-third for other residents, and they become part of care teams at the Minneapolis VA Medical Center (one of three sites where University of Minnesota residents rotate). These residents do more team-based coordination of care, work more closely with faculty mentors and get additional opportunities to rotate in areas such as dermatology, mental health or neurology.

The clinician educator pathway includes monthly educational seminars, a teaching workshop, a scholarly project with an education focus, and the opportunity to teach premed or medical students.

“We're really trying to tailor our education offerings to the learner and what drives and fulfills them,” Duran says.

Mayo and HCMC offer similar pathways programs, with Mayo providing opportunities for clinical research and HCMC opening doors for global health or primary care. HCMC's Global Health program prepares residents for a global health course at the University of Minnesota and a one-month international travel rotation in their third year to places such as El Salvador, Kenya or Nepal. Residents in the primary care pathway have weekly sessions on chronic care management and practice management, as well as leadership seminars and a curriculum on caring for the homeless.

Although it doesn't have a formal pathways program, Abbott Northwestern Hospital's internal medicine program allows residents to cover eight core rotations while also giving them blocks of elective time in their second and third years to explore areas such as allergy, gastroenterology, hospital medicine, radiology or HIV medicine.—S.F.

backgrounds, says Robert Miner, M.D., Abbott Northwestern's internal medicine residency program director and a hospitalist. "We're trying to give them different perspectives."

Fostering innovation

Building on the work of the Alliance task force, as well as recommendations of the Association of Program Directors in Internal Medicine and the ACP, the Accreditation Council for Graduate Medical Education launched the Educational Innovations Project (EIP) in 2005. It aimed to encourage experimentation and innovation in residency training and foster the development of residency programs that could serve as models for other institutions across the country. It selected 17 residency programs—including Mayo Clinic's and Hennepin County Medical Center's (HCMC)—to help develop new approaches to graduate medical education.

One of HCMC's first initiatives was to untether residents' hospital and outpatient experiences. Residents now spend time in separate hospitalist and ambulatory blocks, and they work with practice partners who handle their clinic patients while they are on the hospital wards. Previously, residents spent about a half day each week working in a continuity clinic. Those clinic hours often were cancelled, shortened or rescheduled because of ongoing patient care needs in the hospital, says Anne Pereira, M.D., M.P.H., residency director at HCMC, who will become assistant dean for clinical education at the University of Minnesota later this summer. "Residents would graduate feeling a high level of competence in taking care of hospitalized patients," she says. "They didn't have the same level of confidence in taking care of patients in the clinic."

In the remodeled program, HCMC's internal medicine residents spend about 40 percent of their time either working in the clinic—roughly two half days a week—or doing consults without having primary responsibility for hospitalized patients. About 60 percent of their time is spent admitting patients and taking on primary responsibility for their care in the hospital.

In a survey of residents who experienced both the earlier arrangement and the EIP structure, HCMC found they favored the EIP model. "It really improved their attitude toward the primary care clinic; they were less resentful of it," Pereira says. "And more were willing to

contemplate a career in ambulatory medicine."

For Abigail Taylor, M.D., a third-year resident, HCMC's program has been excellent preparation for going to work at a CentraCare primary care clinic in St. Cloud this summer. "When you see someone in the clinic and you don't know

EXPANDED CURRICULA

Internal medicine residency programs are teaching about topics that go beyond patient care. Some of the programs in Minnesota are providing residents with opportunities to learn about such things as patient-centered medical homes, quality improvement, and providing high-quality, low-cost care.

At the University of Minnesota, all internal medicine residents now attend bi-monthly lectures on communicating about value-based care, reducing waste and choosing diagnostic tests and treatments. In addition, information about cost and value are now included in weekly morbidity and mortality conferences. "Nationally there are not a lot of programs with an active, high-value care curriculum—about 15 percent," says residency program director Alisa Duran, M.D. "This is something that's evolving quickly and it's something that's critical in medical education that we're making a mandatory part of residents' training."

In addition, residents at Abbott Northwestern Hospital learn about quality improvement and helping hospital patients transition effectively to either home or a facility for additional care, breaking down each step of the process and talking about all of the issues that come up. Residents even rotate to long-term care facilities where discharged patients go for physical therapy or other rehabilitation, says program director Robert Miner, M.D.

At Mayo Clinic, residents attend a weekly morbidity and mortality conference, where every second-year resident completes a systems audit of a case. They interview all caregivers involved and propose initiatives that could prevent problems in the future. Says program director Amy Oxentenko, M.D., "They are using real-life scenarios to improve care." —S.F.



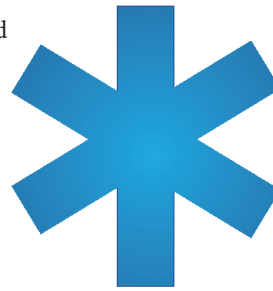
the hospital side of care, it's hard to treat them," she says, adding that she now can appreciate both perspectives. "You can look through their record and understand it better and develop better treatments for them."

More changes afoot?

Despite the changes, the perennial question is whether internal medicine should split its residency into two paths: one for hospitalists and one for ambulatory internists. In recent years, many more graduates have headed toward careers as hospitalists in pursuit of better pay, more predictable hours, no call duty and less ad-

after a patient has been discharged from the hospital.

Alisa Duran, M.D., program director of the internal medicine residency at the University of Minnesota, believes splitting training into two programs would be a mistake. "If you only do one or the other during residency, you're missing out," she says. "It gives you a more complete perspective as a physician to have done both, and it makes you better at providing safe transitions of care for patients because you know what the outpatient environment is like. ... And it's important to see a disease in all of its dif-



dents once told me, at the end of your residency, you will never wish to have seen fewer patients. You don't want to see a patient with something you haven't seen or heard about for the first time without first see-

ing it in training," he says. By shortening internal medicine residencies to two years, "You are one-third less likely to have seen something, and that can be scary."

Making progress

Although it's still early, it appears some of the recent changes to residency programs are having their intended effect—providing residents with a more well-rounded experience and changing their view of clinic medicine. Sara Reppert, M.D., chief internal medicine resident at Mayo Clinic, believes having experienced Mayo's 50/50 structure will be useful when she finishes training this summer. Reppert will become a staff internist at Mayo and will spend most of her time in an outpatient clinic working with patients seeking further evaluation, treatment options or follow-up care. In addition, she will spend several two-week blocks each year working in the hospital and with residents. "Delinking the experiences has been really helpful because you can focus on hospital care or clinic care, and you can figure out how they correlate," she says.

HCMC's Pereira has noticed that when residents have the opportunity to work with a team of other professionals in a clinic, they are more attracted to outpatient care. "That's been a success," she says. "We're seeing more residents wanting to do primary care." MM

Suzu Frisch is a Twin Cities freelance writer.

A VERSATILE SPECIALTY

Internal medicine is considered one of medicine's most versatile specialties. Physicians can practice general medicine—doing work that might encompass preventive care, addressing one-time problems and managing chronic conditions—or one of these subspecialties:

- Adolescent medicine
- Allergy and immunology
- Cardiology
- Endocrinology
- Gastroenterology and hepatology
- Geriatrics
- Hematology
- Hospital medicine
- Infectious disease
- Nephrology
- Oncology
- Pulmonology
- Rheumatology
- Sports medicine

ministrative work. (In Minnesota, 20 percent to 45 percent of internal medicine residents go on to become hospitalists.) At issue is whether working in a hospital requires different training than working in an ambulatory or primary care setting. Hospitalists must know how to provide acute care in the most effective and cost-efficient way. They also must be able to guide patients' transitions to home, nursing homes or transitional care settings after discharge so they don't return with complications. Clinic-based internists will spend the bulk of their time managing patients with chronic conditions. They're also the ones who provide follow-up care

ferent stages."

Pereira adds, "There's still a belief in the academic community that you need to understand both venues to effectively practice in one or the other."

Another suggestion has been to shorten the three-year residency to two years for those who plan on subspecializing. Some programs in other states already offer a shortened residency for those headed to a fellowship. The ACP's Fleming says he wouldn't be surprised if that notion catches on; he also wouldn't be surprised to see more programs providing "specialization" for general internists in primary care, ambulatory care or hospital-based medicine.

Maust, who is continuing on for a three-year fellowship in gastroenterology, says he wouldn't have wanted a shorter residency, especially considering residents' limits on their duty hours. "As one of the chief resi-

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^a1.8 mg dose when used alone for 52 weeks.

^bVictoza[®] is not indicated for the management of obesity. Weight change was a secondary end point in clinical trials.

^cIn the 8 clinical trials of at least 26 weeks' duration, hypoglycemia requiring the assistance of another person for treatment occurred in 11 Victoza[®]-treated patients.

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Indications and Usage

Victoza[®] (liraglutide [rDNA origin] injection) is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus.

Because of the uncertain relevance of the rodent thyroid C-cell tumor findings to humans, prescribe Victoza[®] only to patients for whom the potential benefits are considered to outweigh the potential risk. Victoza[®] is not recommended as first-line therapy for patients who have inadequate glycemic control on diet and exercise.

Based on spontaneous postmarketing reports, acute pancreatitis, including fatal and non-fatal hemorrhagic or necrotizing pancreatitis has been observed in patients treated with Victoza[®]. Victoza[®] has not been studied in patients with a history of pancreatitis. It is unknown whether patients with a history of pancreatitis are at increased risk for pancreatitis while using Victoza[®]. Other antidiabetic therapies should be considered in patients with a history of pancreatitis.

Victoza[®] is not a substitute for insulin. Victoza[®] should not be used in patients with type 1 diabetes mellitus or for the treatment of diabetic ketoacidosis, as it would not be effective in these settings.

Victoza[®] has not been studied in combination with prandial insulin.

Important Safety Information

Liraglutide causes dose-dependent and treatment-duration-dependent thyroid C-cell tumors at clinically relevant exposures in both genders of rats and mice. It is unknown whether Victoza[®] causes thyroid C-cell tumors, including medullary thyroid carcinoma (MTC), in humans, as human relevance could not be ruled out by clinical or nonclinical studies. Victoza[®] is contraindicated in patients with a personal or family history of MTC and in patients with Multiple Endocrine Neoplasia syndrome type 2 (MEN 2). Based on the findings in rodents, monitoring with serum calcitonin or thyroid ultrasound was performed during clinical trials, but this may have increased the number of unnecessary thyroid surgeries. It is unknown whether monitoring with serum calcitonin or thyroid ultrasound will mitigate human risk of thyroid C-cell tumors. Patients should be counseled regarding the risk and symptoms of thyroid tumors.

Do not use in patients with a prior serious hypersensitivity reaction to Victoza[®] or to any of the product components.

Postmarketing reports, including fatal and non-fatal hemorrhagic or necrotizing pancreatitis. Discontinue promptly if pancreatitis is suspected. Do not restart if

pancreatitis is confirmed. Consider other antidiabetic therapies in patients with a history of pancreatitis.

When Victoza[®] is used with an insulin secretagogue (e.g. a sulfonylurea) or insulin serious hypoglycemia can occur. Consider lowering the dose of the insulin secretagogue or insulin to reduce the risk of hypoglycemia.

Renal impairment has been reported postmarketing, usually in association with nausea, vomiting, diarrhea, or dehydration which may sometimes require hemodialysis. Use caution when initiating or escalating doses of Victoza[®] in patients with renal impairment.

Serious hypersensitivity reactions (e.g. anaphylaxis and angioedema) have been reported during postmarketing use of Victoza[®]. If symptoms of hypersensitivity reactions occur, patients must stop taking Victoza[®] and seek medical advice promptly.

There have been no studies establishing conclusive evidence of macrovascular risk reduction with Victoza[®] or any other antidiabetic drug.

The most common adverse reactions, reported in ≥5% of patients treated with Victoza[®] and more commonly than in patients treated with placebo, are headache, nausea, diarrhea, dyspepsia, constipation and anti-liraglutide antibody formation. Immunogenicity-related events, including urticaria, were more common among Victoza[®]-treated patients (0.8%) than among comparator-treated patients (0.4%) in clinical trials.

Victoza[®] has not been studied in type 2 diabetes patients below 18 years of age and is not recommended for use in pediatric patients.

There is limited data in patients with renal or hepatic impairment.

In a 52-week monotherapy study (n=745) with a 52-week extension, the adverse reactions reported in ≥ 5% of patients treated with Victoza[®] 1.8 mg, Victoza[®] 1.2 mg, or glimepiride were constipation (11.8%, 8.4%, and 4.8%), diarrhea (19.5%, 17.5%, and 9.3%), flatulence (5.3%, 1.6%, and 2.0%), nausea (30.5%, 28.7%, and 8.5%), vomiting (10.2%, 13.1%, and 4.0%), fatigue (5.3%, 3.2%, and 3.6%), bronchitis (3.7%, 6.0%, and 4.4%), influenza (11.0%, 9.2%, and 8.5%), nasopharyngitis (6.5%, 9.2%, and 7.3%), sinusitis (7.3%, 8.4%, and 7.3%), upper respiratory tract infection (13.4%, 14.3%, and 8.9%), urinary tract infection (6.1%, 10.4%, and 5.2%), arthralgia (2.4%, 4.4%, and 6.0%), back pain (7.3%, 7.2%, and 6.9%), pain in extremity (6.1%, 3.6%, and 3.2%), dizziness (7.7%, 5.2%, and 5.2%), headache (7.3%, 11.2%, and 9.3%), depression (5.7%, 3.2%, and 2.0%), cough (5.7%, 2.0%, and 4.4%), and hypertension (4.5%, 5.6%, and 6.9%).

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BRIEF SUMMARY. Please consult package insert for full prescribing information.

WARNING: RISK OF THYROID CELL TUMORS: Liraglutide causes dose-dependent and treatment-duration-dependent thyroid C-cell tumors at clinically relevant exposures in both genders of rats and mice. It is unknown whether Victoza® causes thyroid C-cell tumors, including medullary thyroid carcinoma (MTC), in humans, as human relevance could not be ruled out by clinical or nonclinical studies. Victoza® is contraindicated in patients with a personal or family history of MTC and in patients with Multiple Endocrine Neoplasia syndrome type 2 (MEN 2). Based on the findings in rodents, monitoring with serum calcitonin or thyroid ultrasound was performed during clinical trials, but this may have increased the number of unnecessary thyroid surgeries. It is unknown whether monitoring with serum calcitonin or thyroid ultrasound will mitigate human risk of thyroid C-cell tumors. Patients should be counseled regarding the risk and symptoms of thyroid tumors (see **Contraindications and Warnings and Precautions**).

INDICATIONS AND USAGE: Victoza® is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus. **Important Limitations of Use:** Because of the uncertain relevance of the rodent thyroid C-cell tumor findings in humans, prescribe Victoza® only to patients for whom the potential benefits are considered to outweigh the potential risk. Victoza® is not recommended as first-line therapy for patients who have inadequate glycemic control on diet and exercise. Based on spontaneous postmarketing reports, acute pancreatitis, including fatal and non-fatal hemorrhagic or necrotizing pancreatitis has been observed in patients treated with Victoza®. Victoza® has not been studied in patients with a history of pancreatitis. It is unknown whether patients with a history of pancreatitis are at increased risk for pancreatitis while using Victoza®. Other anti-diabetic therapies should be considered in patients with a history of pancreatitis. Victoza® is not a substitute for insulin. Victoza® should not be used in patients with type 1 diabetes mellitus or for the treatment of diabetic ketoacidosis, as it would not be effective in these settings. The concurrent use of Victoza® and prandial insulin has not been studied.

CONTRAINDICATIONS: Do not use in patients with a personal or family history of medullary thyroid carcinoma (MTC) or in patients with Multiple Endocrine Neoplasia syndrome type 2 (MEN 2). Do not use in patients with a prior serious hypersensitivity reaction to Victoza® or to any of the product components.

WARNINGS AND PRECAUTIONS: Risk of Thyroid C-cell Tumors: Liraglutide causes dose-dependent and treatment-duration-dependent thyroid C-cell tumors (adenomas and/or carcinomas) at clinically relevant exposures in both genders of rats and mice. Malignant thyroid C-cell carcinomas were detected in rats and mice. A statistically significant increase in cancer was observed in rats receiving liraglutide at 8-times clinical exposure compared to controls. It is unknown whether Victoza® will cause thyroid C-cell tumors, including medullary thyroid carcinoma (MTC), in humans, as the human relevance of liraglutide-induced rodent thyroid C-cell tumors could not be determined by clinical or nonclinical studies. In the clinical trials, there have been 6 reported cases of thyroid C-cell hyperplasia among Victoza®-treated patients and 2 cases in comparator-treated patients (1.3 vs 1.0 cases per 1000 patient-years). One comparator-treated patient with MTC had pre-treatment serum calcitonin concentrations >1000 ng/L, suggesting pre-existing disease. All of these cases were diagnosed after thyroidectomy, which was prompted by abnormal results on routine, protocol-specified measurements of serum calcitonin. Five of the six Victoza®-treated patients had elevated calcitonin concentrations at baseline and throughout the trial. One Victoza® and one non-Victoza®-treated patient developed elevated calcitonin concentrations while on treatment. Calcitonin, a biological marker of MTC, was measured throughout the clinical development program. The serum calcitonin assay used in the Victoza® clinical trials had a lower limit of quantification (LLQ) of 0.7 ng/L and the upper limit of the reference range was 5.0 ng/L for women and 8.4 ng/L for men. At Weeks 26 and 52 in the clinical trials, adjusted mean serum calcitonin concentrations were higher in Victoza®-treated patients compared to placebo-treated patients but not compared to patients receiving active comparator. At these timepoints, the adjusted mean serum calcitonin values (-1.0 ng/L) were just above the LLQ of between-group differences in adjusted mean serum calcitonin values of approximately 0.1 ng/L or less. Among patients with pre-treatment serum calcitonin below the upper limit of the reference range, shifts to above the upper limit of the reference range which persisted in subsequent measurements occurred most frequently among patients treated with Victoza® 1.8 mg/day. In trials with on-treatment serum calcitonin measurements out to 5-6 months, 1.9% of patients treated with Victoza® 1.8 mg/day developed new and persistent calcitonin elevations above the upper limit of the reference range compared to 0.8-1.1% of patients treated with control medication or the 0.6 and 1.2 mg doses of Victoza®. In trials with on-treatment serum calcitonin measurements out to 12 months, 1.3% of patients treated with Victoza® 1.8 mg/day had new and persistent elevations of calcitonin from below or within the reference range to above the upper limit of the reference range, compared to 0.6%, 0% and 1.0% of patients treated with Victoza® 1.2 mg, placebo and active control, respectively. Otherwise, Victoza® did not produce consistent dose-dependent or time-dependent increases in serum calcitonin. Patients with MTC usually have calcitonin values >50 ng/L. In Victoza® clinical trials, among patients with pre-treatment serum calcitonin <50 ng/L, one Victoza®-treated patient and no comparator-treated patients developed serum calcitonin >50 ng/L. The Victoza®-treated patient who developed serum calcitonin >50 ng/L had an elevated pre-treatment serum calcitonin of 10.7 ng/L that increased to 30.7 ng/L at Week 12 and 55.5 ng/L at the end of the 6-month trial. Follow-up serum calcitonin was 22.3 ng/L more than 2.5 years after the last dose of Victoza®. The largest increase in serum calcitonin in a comparator-treated patient was seen with glimepiride in a patient whose serum calcitonin increased from 19.3 ng/L at baseline to 44.8 ng/L at Week 65 and 38.1 ng/L at Week 104. Among patients who began with serum calcitonin <20 ng/L, calcitonin elevations to >20 ng/L occurred in 0.7% of Victoza®-treated patients, 0.3% of placebo-treated patients, and 0.5% of active-comparator-treated patients, with an incidence of 1.1% among patients treated with 1.8 mg/day of Victoza®. The clinical significance of these findings is unknown. Counsel patients regarding the risk for MTC and the symptoms of thyroid tumors (e.g. a mass in the neck, dysphagia, dyspnea or persistent hoarseness). It is unknown whether monitoring with serum calcitonin or thyroid ultrasound will mitigate the potential risk of MTC, and such monitoring may increase the risk of unnecessary procedures, due to low test specificity for serum calcitonin and a high background incidence of thyroid disease. Patients with thyroid nodules noted on physical examination or neck imaging obtained for other reasons should be referred to an endocrinologist for further evaluation. Although routine monitoring of serum calcitonin is of uncertain value in patients treated with Victoza®, if serum calcitonin is measured and found to be elevated, the patient should be referred to an endocrinologist for further evaluation. **Pancreatitis: Based on spontaneous post-marketing reports, acute pancreatitis, including fatal and non-fatal hemorrhagic or necrotizing pancreatitis, has been observed in patients treated with Victoza®. After initiation of Victoza®, observe patients carefully for signs and symptoms of pancreatitis (including persistent severe abdominal pain, sometimes radiating to the back and which may or may not be accompanied by vomiting). If pancreatitis is suspected, Victoza® should promptly be discontinued and appropriate management should be initiated. If pancreatitis is confirmed, Victoza® should not be restarted. Consider anti-diabetic therapies other than Victoza® in patients with a history of pancreatitis.** In clinical trials of Victoza®, there have been 13 cases of pancreatitis among Victoza®-treated patients and 1 case in a comparator (glimepiride) treated patient (2.7 vs 0.5 cases per 1000 patient-years). Nine of the 13 cases in Victoza® were reported as acute pancreatitis and four were reported as chronic pancreatitis. In one case with a Victoza®-treated patient, pancreatitis, with necrosis, was observed and led to death; however clinical causality could not be established. Some patients had other risk factors for pancreatitis, such as a history of cholelithiasis or alcohol abuse. **Use with Medications Known to Cause Hypoglycemia:** Patients receiving Victoza® in combination with an insulin secretagogue (e.g., sulfonylurea) or insulin may have an increased risk of hypoglycemia. The risk of hypoglycemia may be lowered by a reduction in the dose of sulfonylurea (or other concomitantly administered insulin secretagogues) or insulin. **Renal Impairment:** Victoza® has not been studied in directly nephrotic in animal studies or clinical trials. There have been postmarketing reports of acute renal failure and worsening of chronic renal failure, which may sometimes require hemodialysis in Victoza®-treated patients. Some of these events were reported in patients without known underlying renal disease. A majority of the reported events occurred in patients who had experienced nausea, vomiting, diarrhea, or dehydration. Some of the reported events occurred in patients receiving one or more medications known to affect renal function or hydration status. Altered renal function has been reversed in many of the reported cases with supportive treatment and discontinuation of potentially causative agents, including Victoza®. Use caution when initiating or escalating doses of Victoza® in patients with renal impairment. **Hypersensitivity Reactions:** There have been postmarketing reports of serious hypersensitivity reactions (e.g., anaphylactic reactions and angioedema) in patients treated with Victoza®. If a hypersensitivity reaction occurs, the patient should discontinue Victoza® and other suspect medications and promptly seek medical advice. Angioedema has also been reported with other GLP-1 receptor agonists. Use caution in a patient with a history of angioedema with another GLP-1 receptor agonist if it is unknown whether such patients will be predisposed to angioedema with Victoza®. **Macrovascular Outcomes:** There have been no clinical studies establishing conclusive evidence of macrovascular risk reduction with Victoza® or any other anti-diabetic drug.

ADVERSE REACTIONS: Clinical Trials Experience: Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice. The safety of Victoza® has been evaluated in 8 clinical trials: A double-blind 52-week monotherapy trial compared Victoza® 1.2 mg daily, Victoza® 1.8 mg daily, and glimepiride 8 mg daily. A double-blind 26-week add-on to metformin trial compared Victoza® 0.6 mg once-daily, Victoza® 1.2 mg once-daily, Victoza® 1.8 mg once-daily, placebo, and rosiglitazone 4 mg once-daily; A 26-week add-on to metformin + glimepiride trial, compared double-blind Victoza® 1.8 mg once-daily, double-blind placebo, and open-label insulin glargine once-daily. A double-blind 26-week add-on to metformin + rosiglitazone trial compared Victoza® 1.2 mg once-daily, Victoza® 1.8 mg once-daily and placebo; An open-label 26-week add-on to metformin and/or sulfonylurea trial compared Victoza® 1.8 mg once-daily and exenatide 10 mcg twice-daily. An open-label 26-week add-on to metformin trial compared Victoza® 1.2 mg once-daily, Victoza® 1.8 mg once-daily, and sitagliptin 100 mg once-daily. An open-label 26-week trial compared insulin detemir as add-on to Victoza® 1.8 mg + metformin to continued treatment with Victoza® + metformin alone. **Withdrawals:** The incidence of withdrawal due to adverse events was 7.8% for Victoza®-treated patients and 3.4% for comparator-treated patients in the five double-blind controlled trials of 26 weeks duration or longer. This difference was driven by withdrawals due to gastrointestinal adverse reactions, which occurred in 5.0% of Victoza®-treated patients and 0.5% of comparator-treated patients. In these five trials, the most common adverse reactions leading to withdrawal for Victoza®-treated patients were nausea (2.8% versus 0% for comparator) and vomiting (1.5% versus 0.1% for comparator). **Withdrawal due to gastrointestinal adverse events mainly occurred during the first 2-3 months of the trials. Common adverse reactions:** Tables 1, 2, 3 and 4 summarize common adverse reactions (hypoglycemia is discussed separately) reported in seven of the eight controlled trials of 26 weeks duration or longer. Most of these adverse reactions were gastrointestinal in nature. In the five double-blind clinical trials of 26 weeks duration or longer, gastrointestinal adverse reactions were reported in 41% of Victoza®-treated patients and were dose-related. Gastrointestinal adverse reactions occurred in 17% of comparator-treated patients. Common adverse reactions that occurred at a higher incidence among Victoza®-treated patients included nausea, vomiting, diarrhea, dyspepsia and constipation. In the five double-blind and three open-label clinical trials of 26 weeks duration or longer, the percentage of patients who reported nausea declined over time. In the five double-blind trials approximately 13% of Victoza®-treated patients and 2% of comparator-treated patients reported nausea during the first 2 weeks of treatment. In the 26-week open-label trial comparing Victoza® to exenatide, both in combination with metformin and/or sulfonylurea, gastrointestinal adverse reactions were reported at a similar incidence in the Victoza® and exenatide treatment groups (Table 3). In the 26-week open-label trial comparing Victoza® 1.2 mg, Victoza® 1.8 mg and sitagliptin 100 mg, all in combination with metformin, gastrointestinal adverse reactions were reported at a higher incidence with Victoza® than sitagliptin (Table 4). In the remaining 26-week trial, all patients received Victoza® 1.8 mg + metformin during a 12-week run-in period. During the run-in period, 167 patients (17% of enrolled total) withdrew from the trial: 76 (46% of withdrawals) of these patients doing so because of gastrointestinal adverse reactions and 15 (9% of withdrawals) doing so due to other adverse events. Only those patients who completed the run-in period with inadequate glycemic control were randomized to 26 weeks of add-on therapy with insulin detemir or continued, unchanged treatment with Victoza® 1.8 mg + metformin. During this randomized 26-week period, diarrhea was the only adverse reaction reported in 25% of patients treated with Victoza® 1.8 mg + metformin + insulin detemir (11.7%) and greater than in patients treated with Victoza® 1.8 mg + metformin alone (6.9%).

mg once-daily, placebo, and glimepiride 4 mg once-daily. A double-blind 26-week add-on to glimepiride trial compared Victoza® 0.6 mg daily, Victoza® 1.2 mg once-daily, Victoza® 1.8 mg once-daily, placebo, and rosiglitazone 4 mg once-daily; A 26-week add-on to metformin + glimepiride trial, compared double-blind Victoza® 1.8 mg once-daily, double-blind placebo, and open-label insulin glargine once-daily. A double-blind 26-week add-on to metformin + rosiglitazone trial compared Victoza® 1.2 mg once-daily, Victoza® 1.8 mg once-daily and placebo; An open-label 26-week add-on to metformin and/or sulfonylurea trial compared Victoza® 1.8 mg once-daily and exenatide 10 mcg twice-daily. An open-label 26-week add-on to metformin trial compared Victoza® 1.2 mg once-daily, Victoza® 1.8 mg once-daily, and sitagliptin 100 mg once-daily. An open-label 26-week trial compared insulin detemir as add-on to Victoza® 1.8 mg + metformin to continued treatment with Victoza® + metformin alone. **Withdrawals:** The incidence of withdrawal due to adverse events was 7.8% for Victoza®-treated patients and 3.4% for comparator-treated patients in the five double-blind controlled trials of 26 weeks duration or longer. This difference was driven by withdrawals due to gastrointestinal adverse reactions, which occurred in 5.0% of Victoza®-treated patients and 0.5% of comparator-treated patients. In these five trials, the most common adverse reactions leading to withdrawal for Victoza®-treated patients were nausea (2.8% versus 0% for comparator) and vomiting (1.5% versus 0.1% for comparator). **Withdrawal due to gastrointestinal adverse events mainly occurred during the first 2-3 months of the trials. Common adverse reactions:** Tables 1, 2, 3 and 4 summarize common adverse reactions (hypoglycemia is discussed separately) reported in seven of the eight controlled trials of 26 weeks duration or longer. Most of these adverse reactions were gastrointestinal in nature. In the five double-blind clinical trials of 26 weeks duration or longer, gastrointestinal adverse reactions were reported in 41% of Victoza®-treated patients and were dose-related. Gastrointestinal adverse reactions occurred in 17% of comparator-treated patients. Common adverse reactions that occurred at a higher incidence among Victoza®-treated patients included nausea, vomiting, diarrhea, dyspepsia and constipation. In the five double-blind and three open-label clinical trials of 26 weeks duration or longer, the percentage of patients who reported nausea declined over time. In the five double-blind trials approximately 13% of Victoza®-treated patients and 2% of comparator-treated patients reported nausea during the first 2 weeks of treatment. In the 26-week open-label trial comparing Victoza® to exenatide, both in combination with metformin and/or sulfonylurea, gastrointestinal adverse reactions were reported at a similar incidence in the Victoza® and exenatide treatment groups (Table 3). In the 26-week open-label trial comparing Victoza® 1.2 mg, Victoza® 1.8 mg and sitagliptin 100 mg, all in combination with metformin, gastrointestinal adverse reactions were reported at a higher incidence with Victoza® than sitagliptin (Table 4). In the remaining 26-week trial, all patients received Victoza® 1.8 mg + metformin during a 12-week run-in period. During the run-in period, 167 patients (17% of enrolled total) withdrew from the trial: 76 (46% of withdrawals) of these patients doing so because of gastrointestinal adverse reactions and 15 (9% of withdrawals) doing so due to other adverse events. Only those patients who completed the run-in period with inadequate glycemic control were randomized to 26 weeks of add-on therapy with insulin detemir or continued, unchanged treatment with Victoza® 1.8 mg + metformin. During this randomized 26-week period, diarrhea was the only adverse reaction reported in 25% of patients treated with Victoza® 1.8 mg + metformin + insulin detemir (11.7%) and greater than in patients treated with Victoza® 1.8 mg + metformin alone (6.9%).

Table 1: Adverse reactions reported in ≥5% of Victoza®-treated patients in a 52-week monotherapy trial

Adverse Reaction	All Victoza® N=497 (%)	Glimepiride N=248 (%)
Nausea	28.4	8.5
Diarrhea	17.1	8.9
Vomiting	10.9	3.6
Constipation	9.9	4.8
Headache	9.1	9.3

Table 2: Adverse reactions reported in ≥5% of Victoza®-treated patients and occurring more frequently with Victoza® compared to placebo: 26-week combination therapy trials

Add-on to Metformin Trial			
Adverse Reaction	All Victoza® + Metformin N=724 (%)	Placebo + Metformin N=121 (%)	Glimepiride + Metformin N=242 (%)
Nausea	15.2	4.1	3.3
Diarrhea	10.9	4.1	3.7
Headache	9.0	6.6	9.5
Vomiting	6.5	0.8	0.4

Add-on to Glimepiride Trial			
Adverse Reaction	All Victoza® + Glimepiride N=695 (%)	Placebo + Glimepiride N=114 (%)	Rosiglitazone + Glimepiride N=231 (%)
Nausea	7.5	1.8	2.6
Diarrhea	7.2	1.8	2.2
Constipation	5.3	0.9	1.7
Dyspepsia	6.2	0.9	2.6

Add-on to Metformin + Glimepiride			
Adverse Reaction	Victoza® 1.8 + Metformin + Glimepiride N=230 (%)	Placebo + Metformin + Glimepiride N=114 (%)	Glargine + Metformin + Glimepiride N=232 (%)
Nausea	13.9	3.6	4.3
Diarrhea	10.0	5.3	1.3
Headache	9.6	7.9	5.6
Dyspepsia	6.5	0.9	1.7
Vomiting	6.5	3.5	0.4

Add-on to Metformin + Rosiglitazone			
Adverse Reaction	All Victoza® + Metformin + Rosiglitazone N=355 (%)	Placebo + Metformin + Rosiglitazone N=175 (%)	
Nausea	34.6	8.6	
Diarrhea	14.1	6.3	
Vomiting	12.4	2.9	
Headache	8.2	4.6	
Constipation	5.1	1.1	

Table 3: Adverse Reactions reported in ≥5% of Victoza®-treated patients in a 26-Week Open-Label Trial versus Exenatide

Adverse Reaction	Victoza® 1.8 mg once daily + metformin and/or sulfonylurea N=235 (%)	Exenatide 10 mcg twice daily + metformin and/or sulfonylurea N=232 (%)
Nausea	25.5	28.0
Diarrhea	12.3	12.1
Headache	8.9	10.3
Dyspepsia	8.9	4.7
Vomiting	6.0	9.9
Constipation	5.1	2.6

Table 4: Adverse Reactions in ≥5% of Victoza®-treated patients in a 26-Week Open-Label Trial versus Sitagliptin

Adverse Reaction	All Victoza® + metformin N=439 (%)	Sitagliptin 100 mg/day + metformin N=219 (%)
Nausea	10.3	4.6
Headache	10.3	10.0
Diarrhea	9.3	4.6
Vomiting	8.7	4.1

Immunogenicity: Consistent with the potentially immunogenic properties of protein and peptide pharmaceuticals, patients treated with Victoza® may develop anti-liraglutide antibodies. Approximately 50-70% of Victoza®-treated patients in the five double-blind clinical trials of 26 weeks duration or longer were tested for the presence of anti-liraglutide antibodies at the end of treatment. Low titers (concentrations not requiring dilution of serum) of anti-liraglutide antibodies were detected in 8.6% of Victoza®-treated patients. Sampling was not performed uniformly across all patients in the clinical trials, and this may have resulted in an underestimate of the actual percentage of patients who developed antibodies. Cross-reacting anti-liraglutide antibodies to native glucagon-like peptide-1 (GLP-1) occurred in 6.9% of the Victoza®-treated patients in the double-blind 52-week monotherapy trial and in 4.8% of the Victoza®-treated patients in the double-blind 26-week add-on combination therapy trials. These cross-reacting antibodies were not tested

for neutralizing effect against native GLP-1, and thus the potential for clinically significant neutralization of native GLP-1 was not assessed. Antibodies that had a neutralizing effect on liraglutide in an *in vitro* assay occurred in 2.3% of the Victoza®-treated patients in the double-blind 52-week monotherapy trial and in 1.0% of the Victoza®-treated patients in the double-blind 26-week add-on combination therapy trials. Among Victoza®-treated patients who developed anti-liraglutide antibodies, the most common category of adverse events was that of infections, which occurred among 40% of these patients compared to 38%, 34% and 35% of antibody-negative Victoza®-treated, placebo-treated and active-control-treated patients, respectively. The specific infections which occurred with greater frequency among Victoza®-treated antibody-positive patients were primarily nonserious upper respiratory tract infections, which occurred among 11% of Victoza®-treated antibody-positive patients; and among 7%, 7% and 5% of antibody-negative Victoza®-treated, placebo-treated and active-control-treated patients, respectively. Among antibody-negative Victoza®-treated patients, the most common category of adverse events was that of gastrointestinal events, which occurred in 43%, 18% and 19% of antibody-negative Victoza®-treated, placebo-treated and active-control-treated patients, respectively. Antibody formation was not associated with reduced efficacy of Victoza® when comparing mean HbA_{1c} of all antibody-positive and all antibody-negative patients. However, the 3 patients with the highest titers of anti-liraglutide antibodies had no reduction in HbA_{1c} with Victoza® treatment. In the five double-blind clinical trials of Victoza®, events from a composite of adverse events potentially related to immunogenicity (e.g. urticaria, angioedema) occurred among 0.8% of Victoza®-treated patients and among 0.4% of comparator-treated patients. Urticaria accounted for approximately one-half of the events in this composite for Victoza®-treated patients. Patients who developed anti-liraglutide antibodies were not more likely to develop events from the immunogenicity events composite than were patients who did not develop anti-liraglutide antibodies. **Injection site reactions:** Injection site reactions (e.g., injection site rash, erythema) were reported in approximately 2% of Victoza®-treated patients in the five double-blind clinical trials of at least 26 weeks duration. Less than 0.2% of Victoza®-treated patients discontinued due to injection site reactions. **Papillary thyroid carcinoma:** In clinical trials of Victoza®, there were 7 reported cases of papillary thyroid carcinoma in patients treated with Victoza® and 1 case in a comparator-treated patient (1.5 vs 0.5 cases per 1000 patient-years). Most of these papillary thyroid carcinomas were <1 cm in greatest diameter and were diagnosed in surgical pathology specimens after thyroidectomy prompted by findings on protocol-specified screening with serum calcitonin or thyroid ultrasound. **Hypoglycemia:** In the eight clinical trials of at least 26 weeks duration, hypoglycemia requiring the assistance of another person for treatment occurred in 11 Victoza®-treated patients (2.3 cases per 1000 patient-years) and in two exenatide-treated patients. Of these 11 Victoza®-treated patients, six patients were concomitantly using metformin and a sulfonylurea, one was concomitantly using a sulfonylurea, two were concomitantly using metformin (blood glucose values were 65 and 94 mg/dL) and two were using Victoza® as monotherapy (one of these patients was undergoing an intravenous glucose tolerance test and the other was receiving insulin as treatment during a hospital stay). For these two patients on Victoza® monotherapy the insulin treatment was the likely explanation for the hypoglycemia. In the 26-week open-label trial comparing Victoza® to sitagliptin the incidence of hypoglycemic events defined as symptoms accompanied by a fingerstick glucose <56 mg/dL) was comparable among the treatment groups (approximately 5%).

Table 5: Incidence (%) and Rate (episodes/patient year) of Hypoglycemia in the 52-Week Monotherapy Trial and in the 26-Week Combination Therapy Trials

Monotherapy	Victoza® Treatment N=497 (%)	Active Comparator Glimepiride N=248 (%)	Placebo Comparator None
Patient not able to self-treat	0	0	—
Patient able to self-treat	9.7 (2.04)	25.0 (10.66)	—
Not classified	1.2 (0.23)	2.4 (0.94)	—

Add-on to Metformin	Victoza® + Metformin N=724 (%)	Glimepiride + Metformin N=242 (%)	Placebo + Metformin N=121 (%)
Patient not able to self-treat	0.1 (0.001)	0	0
Patient able to self-treat	3.6 (0.05)	22.3 (8.87)	2.5 (0.06)
Not classified	0.1 (0.001)	0	0

Add-on to Victoza® + Metformin	Insulin detemir + Victoza® + Metformin N=163 (%)	Continued Victoza® + Metformin alone N=168 (%)	None
Patient not able to self-treat	0	0	—
Patient able to self-treat	9.2 (0.29)	13.0 (0.03)	—
Not classified	0	0	—

Add-on to Glimepiride	Victoza® + Glimepiride N=695 (%)	Rosiglitazone + Glimepiride N=231 (%)	Placebo + Glimepiride N=114 (%)
Patient not able to self-treat	0.1 (0.003)	0	0
Patient able to self-treat	7.5 (0.38)	4.3 (0.12)	2.6 (0.17)
Not classified	0.9 (0.05)	0.9 (0.02)	0

Add-on to Metformin + Rosiglitazone	Victoza® + Metformin + Rosiglitazone N=355 (%)	None	Placebo + Metformin + Rosiglitazone N=175 (%)
Patient not able to self-treat	0	—	0
Patient able to self-treat	7.9 (0.49)	—	4.6 (0.15)
Not classified	0.6 (0.01)	—	1.1 (0.03)

Add-on to Metformin + Glimepiride	Victoza® + Metformin + Glimepiride N=230 (%)	Insulin glargine + Metformin + Glimepiride N=232 (%)	Placebo + Metformin + Glimepiride N=114 (%)
Patient not able to self-treat	2.2 (0.06)	0	0
Patient able to self-treat	27.4 (1.16)	28.9 (1.29)	16.7 (0.95)
Not classified	0	1.7 (0.04)	0

*One patient is an outlier and was excluded due to 25 hypoglycemic episodes that the patient was able to self-treat. This patient had a history of frequent hypoglycemia prior to the study.

In a pooled analysis of clinical trials, the incidence rate (per 1000 patient-years) for malignant neoplasms (based on investigator-reported events, medical history, pathology reports, and surgical reports from both blinded and open-label study periods) was 10.9 for Victoza®, 6.3 for placebo, and 7.2 for active comparator. After excluding papillary thyroid carcinoma events (see **Adverse Reactions**), no particular cancer site type predominated. Seven malignant neoplasms events were reported beyond 1 year of exposure to study medication, six events among Victoza®-treated patients (4 colon, 1 prostate and 1 nasopharyngeal), no events with placebo and one event with active comparator (colon). Causality has not been established. **Laboratory Tests:** In the five clinical trials of at least 26 weeks duration, mildly elevated serum bilirubin concentrations (elevations to no more than twice the upper limit of the reference range) occurred in 4.0% of Victoza®-treated patients, 2.1% of placebo-treated patients and 3.5% of active-comparator-treated patients. This finding was not accompanied by abnormalities in other liver tests. The significance of this isolated finding is unknown. **Vital Signs:** Victoza® did not have adverse effects on blood pressure. Mean increases from baseline in heart rate of 2 to 3 beats per minute have been observed with Victoza® compared to placebo. The long-term clinical effects of the increase in pulse rate have not been established. **Post-Marketing Experience:** The following additional adverse reactions have been reported during post-approval use of Victoza®. Because these events are reported voluntarily from a population of uncertain size, it is generally not possible to reliably estimate their frequency or establish a causal relationship to drug exposure: Dehydration resulting from nausea, vomiting and diarrhea; Increased serum creatinine, acute renal failure or worsening of chronic renal failure, sometimes requiring hemodialysis; Angioedema and anaphylactic reactions; Allergic reactions: rash and pruritus; Acute pancreatitis, hemorrhagic and necrotizing pancreatitis sometimes resulting in death.

OVERDOSAGE: Overdoses have been reported in clinical trials and post-marketing use of Victoza®. Effects have included severe nausea and severe vomiting. In the event of overdose, appropriate supportive treatment should be initiated according to the patient's clinical signs and symptoms.

More detailed information is available upon request.

For information about Victoza® contact: Novo Nordisk Inc., 800 Scudder Mill Road, Plainsboro, NJ 08536, 1-877-484-2669

Date of Issue: April 16, 2013

Version: 6

Manufactured by: Novo Nordisk A/S, DK-2880 Bagsvaerd, Denmark

Victoza® is covered by US Patent Nos. 6,268,343; 6,458,924; 7,235,627; 8,114,833 and other patents pending. Victoza® Pen is covered by US Patent Nos. 6,004,297; 8,438,941; 8,419,956 and other patents pending.

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On choosing primary care

Four graduating medical students share their stories.

INTRODUCTION BY MONICA MAALOUF

I am often frustrated when people make assumptions about why or how physicians choose their specialties, when they assume a physician chose his or her path because of the money or the prestige, or because it has the least-demanding hours. For most of us, our path has been at least 10 years in the making and our motives are not so simplistic or selfish.

During the countless hours, months and years of training, we are exposed to the many different specialties and we begin our decision-making process. We decide whether or not we like surgery, whether we like delivering babies, doing procedures, caring for children, analyzing microscopic images, evaluating radiographic images, being in clinic, taking care of addicts, filing disability forms, having flexible hours, researching for cures. Every aspect of this process is deeply personal, and slowly we all realize what path we are being called toward.

In the following stories, four of us from the University of Minnesota Medical School's class of 2014 share why we feel called toward primary care.



More than technical skills

BY STEWART DECKER

Residency: Oregon Health and Science University Cascades East family medicine program

When I met James, he was dying. A high school drop-out who had become a drug dealer, he had a gunshot wound to the abdomen and scars that proved he was not unfamiliar with bullets or knives. I was on my ER rotation, and the skill with which the ER physicians faced this dying young man was inspirational. With James stabilized and on his way to the surgical floor, the ER physicians returned to their patients in the wings, ready for the next tragedy to burst through the door.

This experience was central to my decision to go into primary care. As with all my rotations, at first my ER rotation made me want to go into emergency medicine (after my psych rotation, I wanted to go into psychiatry, and the pattern held for every rotation afterward). But later after doing a rural family medicine rotation, I realized I had found the specialty for me. It supplied the breadth I desired. But there was something more than the scope of family medicine that drew me to it—and

More than technical skills

(continued from previous page)

it was something I learned most poignantly that night in the ER.

James' story demonstrated to me that physicians need more than technical skills. They need to understand their patients' socioeconomic situations as well as their risk factors; they need to know them as complex people rather than disease processes; and they need to view prevention as something that needs to be considered on both an individual and communitywide scale. Through these lenses, I see that James was not only a victim of a bullet but also of an underfunded educational system and a pervasive norm of violence. Having this expansive perspective is, to me, at the core of practicing primary care and the reason I love it.

I see primary care as an intervention that any physician can use. From the bariatric surgeon who talks to patients about smoking cessation to the plastic surgeon who shares a smoothie with a patient to prove that "yes, healthful food can taste good," every specialist can use it in their practice. After my experience with James, I knew that I wanted to specialize in it.

Part of the novel, not just one chapter

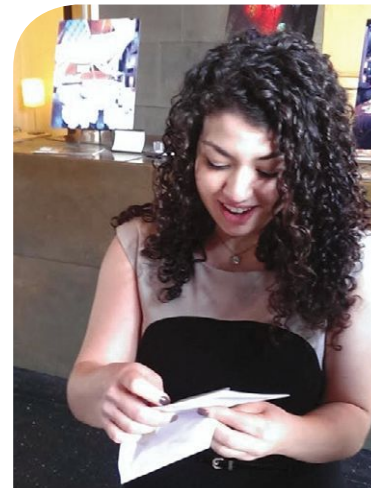
BY MONICA MAALOUF

Residency: NYU School of Medicine internal medicine program

My love for medicine is intricately related to my love for stories. As a physician, if you are fortunate enough, you may be invited to share in the most intimate aspects of another person's life, and to garner such an invitation is surreal and profoundly rewarding.

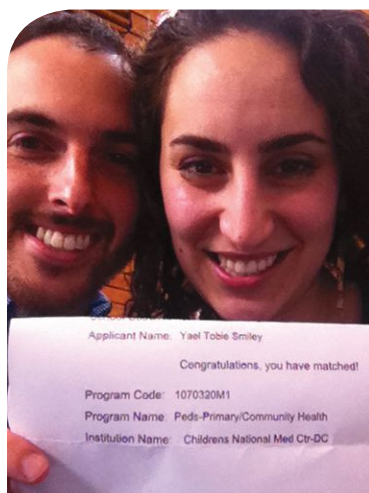
During medical school, I spent nine months training in Faribault, Minnesota, as part of the Rural Physician Associate Program. The experience gave me an opportunity to establish relationships with patients and to understand why some physicians choose careers in family medicine, internal medicine and pediatrics.

What stands out more than a year later are the conversations I had with patients: a corn geneticist presenting with abdominal pains telling me about his passion for working with farmers; a



An advocate for vulnerable children

BY YAEL SMILEY



Residency: Children's National Medical Center, Washington, D.C., pediatrics-primary/community health program

I was 4 years old when my brother Benjamin was born missing the terminal portion of his seventh chromosome. I grew up singing to him to keep him occupied while my mom bought groceries and explaining to kids at the park why my brother looked, spoke and walked differently. My identity has been shaped by my roles as his sister, caregiver and advocate. Like Ben's pediatrician did for us, I will spend my career coordinating care, supporting parents, and helping kids and families to not feel so painfully different.

Growing up supporting Ben solidified my commitment to being an advocate for patients. During medical school, I was surprised to learn that all of our medical care—the annual physicals, medications, emergency room visits, specialty care and inpatient care—is responsible for only about 10 percent of the overall health of our population. The remaining 90 percent comes from a combination of personal choices and social, racial and geographic forces (which, in turn, significantly affect the feasibility of many of our choices). I feel it is important to address these factors as I advocate for vulnerable children. Managing an asthma exacerbation simply isn't enough for my patient if her parents continue to smoke. Knowing how to treat an ear infection isn't useful if my patient can't come to the clinic because his family lost their insurance. We need to address the root causes of these

94-year-old suffering from neck pains telling me about her days as an Air Force pilot; a woman struggling to meet her family's needs telling me she needed help applying for disability coverage. Having the chance to understand a patient's circumstances and listen to stories about their life—rather than just about their symptoms—is what drew me to primary care.

Every area of medicine has its rewards, but I found myself perpetually frustrated when we would patch patients up in the hospital and then tell them to follow up with their primary care physician. I yearned for a sequel to each episode. I wanted to be part of the novel and not just one chapter.

I'll probably hate all the things that everyone hates about managing a panel of chronically ill patients in a busy clinic practice: filing paperwork, keeping up with countless charts, scrambling through work documents and insurance forms. But my reward will be listening to and being part of countless fantastic narratives. What a privilege.

illnesses and broken systems—the genetic and physiologic factors as well as the lifestyle choices, availability of insurance coverage and transportation, and access to safe housing. All of these play a large role in the health of children.

The field of primary care pediatrics is often disparaged because the preponderance of patients present over and over again with the same common illnesses: sore throats, ear pain, runny noses. Even if the illnesses become repetitive, the children never will. Every kid with a cold is wildly different from the child before her; each has a different home, a different personality, different needs and different strengths. I look forward to getting to know each one of them as they grow up.

Not simply undoing illness

BY BRIAN PARK

Residency: Oregon Health and Science University family medicine/preventive medicine program

Ask any physician and they'll tell you a career in medicine requires having a passion for problem-solving. Ask any patient and they'll tell you the traditional model of medical education prepares us to solve the wrong problems.

During my emergency medicine rotation, I was assigned to a patient whose chief complaint at intake was "tired." David was a bearded man in his 40s who was wearing a dirty Chicago Cubs cap and paint-speckled jeans. A prolonged conversation with him uncovered what no review of systems ever could: David was homeless. He had lost his job in Chicago and was passing through on his way to California to stay with friends.

"What did you want me to do, man?" he pleaded, looking at me with piercing green eyes. "I had nowhere else to go." David wasn't ill, nor was he just tired. He was sick-and-tired; sick-and-tired of housing instability, economic insecurity, fragmented social services and, now, a medical student serving as an avatar for a large system unable to help him.

Physicians are uniquely positioned to address the physiologic impairments of illness. But until we address the social, economic and structural contexts within which these conditions exist, we will be unable to completely heal our patients. I believe primary care provides the best hope for thinking about the right problems—the problems that permeate the lives of our patients.

I entered medicine not simply to undo illness but to help others live happy and fulfilling lives. It's as simple and as difficult as that. And it's why I decided to match into a combined family medicine/preventive medicine residency. Preventive medicine is the only specialty recognized by the American Board of



Medical Specialties that requires training in both clinical medicine and public health. I believe integrating primary care with public health in a manner that is meaningful to patients will be the grand challenge in the decades ahead. And I want to ensure that I am equipped to meet that challenge.

Meeting David in the ER reminded me that health does not occur solely at the bedside or in the exam room but in homes and in communities. As we hear a chorus of voices like David's, we will have to respond to them outside our medical complexes by creating safe spaces that encourage healthy behaviors, endorsing public policies that peel away the barriers to wellness and empowering patients to care for themselves and each other.

An M.D. degree does not make me an adept healer any more than an M.F.A. makes one a DaVinci. Medical school merely provides a set of tools to promote health. My M.P.H. work added a few more skills to my toolbox. I readily admit my toolbox is far from full yet. But I remain hopeful that with family and preventive medicine training, I'll get the tools I need to start working on solutions to the larger problems that affect our patients' health. The instructions to what we need to build are written within our patients—patients like David—and we must look to them to guide us. MM

PHOTO COURTESY OF JONATHAN ALPERN



The author with colleagues at Selian Hospital in Arusha, Tanzania.

A closer view

The realities of practicing medicine in Tanzania

BY JONATHAN D. ALPERN, M.D.

The walk from the house to the hospital took me along a hilly back road. Although the distance was about 8 kilometers, walking was more enjoyable than driving. It allowed me to look at my surroundings: potholes, children wearing packs on their way to school, men speeding on their motorcycles, the back face of Mt. Meru towering over a stretch of road adjacent to a cornfield. Along the way, I had to conquer a few steep inclines, the same ones traveled gracefully by Maasai women wearing sandals and balancing heavy buckets of water on their heads. An hour after I began my walk each morning, I would arrive at the hospital in time to catch the end of the chapel service, enjoy

chai with the other interns and begin rounds.

I was a third-year resident spending about two months in Arusha, Tanzania, volunteering at Selian Hospital. I had decided to go into medicine largely because of my international experiences, and this trip was another opportunity to determine whether or not I could see myself practicing abroad in a resource-poor setting. So while I was there, I became keenly aware of both the environment and people around me and how I was processing it all.

As I reflect on my time in Arusha, I realize I saw things as one might an impressionistic painting. Think of those by Georges Seurat, who used a technique called

“pointillism” to create images using dots. From far away, the images in the paintings are easy to see; but up close, sometimes all you can see are the dots.

At the beginning of my time in Tanzania, I felt as if I were staring at one of those paintings from far away. In other words, I thought I saw the picture pretty clearly, and it looked beautiful. The longer I was there, however, the more I felt like I was moving closer and closer to the painting. By the end of my trip, it was as though I was standing two feet from it, and there was much more to the image than I initially perceived.

I often felt this way about the patients I saw there. Initially, it would seem they had one diagnosis. But as I moved closer, I would see the complexity of their condition—hematemesis secondary to gastric varices with portal hypertension in a non-alcoholic with negative hepatitis B and C; three weeks of hemoptysis with a cavitory lesion seen on chest X-ray; purple heaped up lesions in the oropharynx of a patient with HIV; acute meningismus and severe headache in an HIV-positive patient with a CD4 count of 50; acute severe hypoxic respiratory failure in an HIV-positive patient with diffuse interstitial infiltrates on chest X-ray. HIV was diagnosed often and tuberculosis suspected often.

Certainly, there were times when the diagnosis was clear; however, most of the time it was not. For instance, many patients presented with findings consistent with pulmonary tuberculosis. We would begin treatment, but often these patients would have negative sputum AFB smears or a hemorrhagic pleural fluid sample, which suggested the possibility of an alternative diagnosis. Histoplasmosis, which mimics pulmonary TB in the immuno-

compromised, is difficult to test for in resource-poor settings. So we neither tested for it nor treated it. Suspected cases of pulmonary malignancy were never confirmed given the lack of diagnostic testing. I believe many of the patients who presented with varicels had infection with *Schistosomiasis mansoni*; however, without a liver biopsy, the verdict was always out.

My impressions of the local Tanzanians also changed. In general, I found them to be extremely welcoming and friendly. No matter where I went, I would be greeted with a smile. One day, as I was walking, a man about my age greeted me and kindly showed me around the village, taught me a few Swahili greetings and even introduced me to his family. During the week on my walk to work, I was greeted by Maasai women, children on their way to school, or young men asking me where I was from and what I was doing in Arusha. But almost every day children also ran up to me and said, "give me money," and even the nice man whom I met on the road was soon asking me for money.

The truth of a place and people is often less clean and tidy than our first impression. This is true of many things—the longer you get to know something or someone, the more you find out about their imperfections, their idiosyncrasies.

I am thankful my initial impressions of Tanzania were challenged. I'm glad I saw the reality—that practicing good medicine there is difficult and complicated. To be sure, I spent a very short amount of time there. And I know that if I were to commit to practicing there long term, my perspective would again change and I would have more insight into those situations that I now perceive as being so complicated. However, I also know that sometimes it is the outsider who is perhaps better able to see things clearly.

As I consider what it would be like to practice internationally long term, I realize it would mean living as a minority. It would mean understanding that, despite the fact that I am sinking in loan payments, I am rich. It would mean becoming comfortable with diagnostic uncertainties and learning how to treat patients based on a diagnosis that seems most likely rather than one that I can confirm.

During my short time in Tanzania, I learned to adapt. I found that praziquantel is an effective, cheap drug that can be given empirically to treat schistosomiasis. I came to consider the man who asked me for money a friend who just happened to be poor and in need of some cash. And I learned to put up some boundaries to allow for a semblance of a friendship with him.

We tend to perceive practicing medicine internationally the way we look at impressionistic paintings. We stand just far enough away to see the big picture and miss out on what makes the painting great. If you allow yourself to get close enough, you can see the true nature of a place, and it becomes that much more beautiful. MM

Jonathan Alpern is an internal medicine resident at the University of Minnesota.

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In between innings

A ballgame, an interview and an unforgettable patient

BY DOUG MCMAHON, M.D.



It was already after 8 p.m. I was exhausted, starving and wondering how I would find the energy to study when I got home, plus be back at the hospital by 6 the next morning.

The halls were bright, but the rooms were dark. A little light from the winter night outside shined through the windows into the old hospital. I looked at my list of patients and labs and, instead of walking out the front door, slowly headed to the south wing.

So tired, I walked without lifting my feet much, without raising my chin far off my chest.

When I got to Mr. Lee's room, I shook my head to wake up and appear energetic.

Knock, knock.

I waited a few seconds and then entered the dimly lit room. Mr. Lee was sitting in a chair with his feet on a table watching TV. He was terribly thin but because of his distended abdomen looked as if he were eight months pregnant. A smile crossed his gaunt face.

"Hi Dr. McMahon."

"Hi Mr. Lee."

I didn't ask how he was feeling because I knew the answer.

"How are your daughters?" I asked instead, as I knew this always cheered him up. He smiled as he told me about his daughters. Then he said, "My legs are so sore. Can you massage them?" I didn't think this was an unusual request because I knew Mr. Lee's stomach cancer was severe and the secondary cancers were causing him pain everywhere.

We sat for about a half hour. I massaged his legs until he started to drift off to sleep.



"Crack"

The ball bounced off the bat and flew toward the midsummer sun as the announcer, sitting two feet away from me in the open-air box at Midway Stadium, yelled, "That one is going to drop for a double!"

He nonchalantly added, "I have Dr. McMahon, an allergy specialist, here today," and quickly turned back to the game. "Adam Frost steps to the plate. We have one on, two outs."

Then he said, "Today we will be speaking with Dr. McMahon, who has graciously joined us for peanut-free day at the Saint Paul Saints."

"Crack"

The sound reverberated through the press box.

"Oh, a line drive to second base ... and the relay to first ... that ends the inning."

As I sat in the wooden press box wearing a headset on that warm summer afternoon, the announcer asked me a few questions about allergies. Then he asked me one that caused me to stop and think. "You must have seen thousands of patients. Do any of them stand out?"

In a moment I was back in 2004 at Georgetown Hospital, where I was a third-year medical student.

When I walked out of the hospital into the snow-speckled night, all I could think about was the reading I needed to do and the sleep I needed to get before I had to be back in the hospital.

The next morning, I walked back with the same black sky overhead. At the hospital, I was greeted by the bustling sounds and energy of the staff and as quickly as possible went back to seeing my patients. It wasn't until mid-afternoon when things finally calmed down that I realized I was switching rotations the next day and would no longer be working with the same group of patients. I decided to talk to all of my patients that afternoon and let them know they would be taken care of by someone else the next day.

When I got to Mr. Lee's room, he was in his chair. His yellow face and eyes slowly turned to me and he tried to muster a smile. I sat next to him and said, "Mr. Lee, I am changing services tomorrow



and someone else as qualified or more will be taking care of you."

I paused for a few moments and then continued, "I am sorry I was not able to cure you."

He looked up at me and his eyes showed the most energy I had seen in weeks as he said, "Dr. McMahon, you are the best doctor I have ever had."

As a third-year medical student, I felt like a failure. I certainly couldn't cure him, nor could I prolong his life. I didn't know quite what to say but said, "Well, you know, Mr. Lee, I am only a medical student and not a doctor." Then he said something I will never forget as long as I practice.

"I know I am going to die soon, and I have known for a long time that I didn't have much time left. Yet through all of this, you are the only one who still treated me, as well as my family, as a person rather than a disease. And for that I am forever grateful."

Mr. Lee passed away that night.

"Crack"

The sound of the bat brought me back to the press box. I didn't have much time between innings to say much in response to the announcer's question, so I simply answered, "Mr. Lee, a patient I had many years ago, and he didn't even have allergies."

Yet after all these years, Mr. Lee is the one patient who sticks in my mind, who lives on in my memory, reminding me to always treat patients as people and not the disease or disorder they have. **MM**

Doug McMahon is an allergist and immunologist at Allergy and Asthma Center of Minnesota located in Maplewood and Eagan.



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2014 LEGISLATIVE SESSION IN REVIEW

MMA makes great progress on priorities

BY DAN HAUSER

The 2014 Legislative session was brief, but the results were significant for Minnesota physicians and their patients.

Heading into February, the MMA had identified eight key priorities. Here's a quick summary of how they fared:

Regulating e-cigarettes
PASSED

Prohibiting minors from using tanning beds
PASSED

Strengthening the Prescription Monitoring Program to fight opioid misuse
PASSED

Restoring the newborn screening program
PASSED

Replacing Provider Peer Grouping with a data program that helps improve quality
PASSED

Ensuring an integrated team approach to health care with advanced practice registered nurses
AGREEMENT REACHED

Aligning Minnesota's data privacy practices with those of HIPAA
WASN'T HEARD

Ensuring the repeal of the provider tax
ACCOMPLISHED



PHOTO BY DAN HAUSER

"It was a very successful session," says Dave Thorson, M.D., the MMA's board chair. "Considering the length of the session and how much was on legislators' plates, it was amazing to see how effective we were at getting our priorities through. A number of laws were created that benefit the health of Minnesotans and that should make it a better state in which to practice medicine."

Following is a more in-depth look at key health care issues addressed this session.

Regulating e-cigarettes

Future e-cigarette use has been significantly restricted thanks to a bill Gov. Mark Dayton signed into law on May 21.

The legislation bans the use of e-cigarettes in hospitals, clinics and doctors' offices; licensed residential facilities for children and other health care-related facilities; buildings owned or operated by the state, home rule charter or statutory city, county, township, school district or other political subdivisions (including correctional facilities); facilities owned by Minnesota State Colleges and Universi-

ties and the University of Minnesota; any facility licensed by the Commissioner of Human Services; any facility licensed by the Commissioner of Health (but only if it is also subject to federal licensing requirements); and licensed day-care facilities including home day-care centers during hours of operation.

Language that would have expanded the state's Freedom to Breathe Act to include e-cigarettes and, thus, restrict their use in bars and restaurants was cut in conference committee. Although members of the committee favored the language, House leaders said they wouldn't have the votes to support it in a floor session.

"We wish we could have included e-cigarettes in the Freedom to Breathe Act," says Eric Dick, the MMA's manager of state legislative affairs. "But this is a very good start. We're making great progress."

The new law also includes provisions that prohibit e-cigarette sales from mall kiosks and require child-resistant packaging on e-cigarette liquids. It also prohibits e-cigarette use in public schools; requires e-cigarettes to be sold from behind the counter with all other tobacco products;

provides local governments with statutory authority to license and regulate the sale of e-cigarettes; and expands the prohibition on and the penalties for sales of all electronic delivery devices to minors.

Prohibiting minors from using tanning beds

Children under 18 years of age will no longer have access to artificial tanning devices as result of legislation signed into law by Gov. Dayton on May 21.

Beginning August 1, 2014, minors are barred from commercial tanning facilities and from using the tanning stations in condominiums, apartments and other



nonconventional facilities where a business is making money from tanning equipment.

“This legislation will protect our children from the harms of artificial tanning,” says MMA President Cindy Firkins Smith, M.D., a Willmar dermatologist. “The growing number of young patients I see with melanoma is shocking. There is no acceptable reason for our children to be using tanning beds.”

Current law allows children 15 years of age and younger to tan with parental consent while allowing those 16 and

(continued on next page)



Beginning in mid-2015, Minnesota patients suffering from a defined list of conditions will be able to gain access to medical cannabis. The physician’s role will be simply to verify that patients have one of the conditions.

The law, which passed on the last day of the legislative session, made Minnesota the 22nd state to allow the drug’s use as medicine.

Conditions for which a patient will be able to access medical marijuana include cancer with nausea, pain and wasting,

terminal illnesses with these same symptoms, HIV/AIDS, glaucoma, Tourette’s syndrome, ALS, seizures brought on by epilepsy, muscle spasms caused my multiple sclerosis, and Crohn’s disease.

Once one of these conditions is confirmed, patients will need to register with the Minnesota Department of Health, which will conduct observational research on those in the registry to gather data on the efficacy of the treatment. Patients will only have access to marijuana in an oil, pill or liquid form. Vaping will be allowed but

only of a liquid product. The bill allows for use of “full plant extracts” but not the leaf form of the plant.

The Health Commissioner will be responsible for determining dosages based on other states’ laws and available research. A state-approved pharmacist will dispense the drug at one of eight state-sanctioned distribution sites. The new law calls for up to two manufacturers of the drug, each of which can operate up to four distribution centers.

Authors are expecting that the registry will include more than 5,000 enrollees.

“While the MMA did not support the bill, we were neutral toward it when it became more consistent with the MMA’s recently adopted policy,” says Dave Thorson, M.D., MMA board chair. “It begins gathering clinical data so we can make more informed decisions in the future. It removes physicians from the role of recommending or prescribing a Schedule I substance, and it tries to assure some standardization of the product by limiting manufacturers and distributors. It also prohibits smoking the leaf form of the drug.”

(continued from previous page)

older to tan anytime without parental knowledge.

In addition, businesses must post a sign at the point of sale notifying consumers of the new law.

The legislation was supported by a coalition of physician and advocacy groups including the Minnesota Dermatological Society, the MMA, the Minnesota Academy of Family Physicians, the Minnesota

the criteria by which prescribers will be alerted to potential abuses. That same advisory group is to report to the Legislature on the criteria and process used for reporting to prescribers by January 5, 2016.

The law also allows prescribers to view data on a patient for a period of 12 months. PMP staff will have access to such data for 24 months to assess the program's operating needs, do trend analysis and conduct other studies.

In addition, the law requires patient consent to gain access to PMP data in certain cases. Patients must give consent in order for prescribers to have access to their data for nonprescription-related medical treatment. Consent is also required for licensed pharmacists who are providing pharmaceutical care to a patient.

The Health Professionals Service Program (HPSP), a program for health care professionals with substance abuse and other health issues, only has access to PMP records if a program enrollee gives consent. And, the HPSP is barred from giving that data to a licensing board except in limited cases.

The law also removes a requirement that a prescriber's name be hidden on prescribing records unless the prescriber consents to having it appear. Going forward, all prescribers' names will be included on individual records.

The Board of Pharmacy also must study the impact of the PMP on the extent to which patients are doctor shopping and whether to mandate the use of the program by prescribers and dispensers. The Board must submit its report to the Legislature in December 2016.

In addition to strengthening the PMP, the Legislature passed a law that makes naloxone (an opioid overdose antidote) available to first responders and allows people who witness an overdose to call 911 and receive limited immunity from prosecution.

"We're confident these new laws will help us in our efforts to curb prescription opioid abuse in Minnesota," Thorson says. Since forming its Prescription Opioid Task force in late 2012, the MMA has made the issue of opioid misuse a major focus, host-



ing several forums for members in 2013 and working with the Institute for Clinical Systems Improvement to create an acute pain assessment and opioid prescribing protocol.

Restoring the newborn screening program

In early May, Gov. Dayton signed into law a bill to restore Minnesota's newborn screening program. The legislation was strongly supported by physician groups, research advocates, hospitals and public health advocates including the MMA, the Minnesota Chapter of the American Academy of Pediatrics, Mayo Clinic, the University of Minnesota, Children's Hospitals and Clinics of Minnesota, and the March of Dimes.

Minnesota's newborn screening program tests for more than 50 congenital and heritable conditions in the hours after an infant's birth. The new law repeals artificially short time frames that govern how long samples and test results can be stored. The time frames, which were determined in 2012 in the wake of an unfavorable Minnesota Supreme Court decision, hindered both patient safety and the program's integrity.

Test development is also explicitly allowed under the new law, a practice that was made very difficult under the 2012 legislation. The new law also preserves



Chapter of the American Academy of Pediatrics and the American Cancer Society.

Strengthening the Prescription Monitoring Program to prevent opioid misuse

The MMA's fight to curb prescription opioid abuse, addiction and diversion won on two separate fronts this session. One new law strengthens the state's Prescription Monitoring Program (PMP); the other makes naloxone, a drug that reverses overdoses, more available to first responders.

The first law calls for the PMP to send an alert to a physician whose patient is potentially doctor shopping for opioids. The Board of Pharmacy's PMP advisory board (on which an MMA member sits) will set

current privacy protections for parents while offering additional “off ramps” for those who do not want the Minnesota Department of Health to store their child’s blood spots and data.

Replacing Provider Peer Grouping with a data program that helps improve quality

A new MMA-supported law permanently suspends the state’s efforts to develop a Provider Peer Grouping (PPG) program and instead authorizes new uses for the state’s All-Payer Claims Database (APCD).

The law now allows the database to be used for health care home evaluation, evaluation of new payment models, efforts to reduce hospital readmissions and small-area analysis on variations in care.

The legislation also forms a work group that will develop recommendations for the 2015 Legislature on how Minnesota should best leverage the APCD. The MMA will recommend two individuals to serve on this group. If you are interested in helping shape the use of this data, organizational structure/governance, external access, or privacy and security issues, contact Janet Silversmith, MMA director of health policy, at jsilversmith@mnmed.org or 612-362-3763.

The MMA worked closely with the Minnesota Hospital Association and the Minnesota Department of Health on the legislation.

The PPG program was scheduled to begin publicly reporting cost and quality information on hospitals and clinics later this year. However, numerous problems with the accuracy and validity of the data were discovered. The APCD is composed

of claims data from all public and commercial payers. It will provide a wealth of information useful for population-based studies on variation, utilization and illness burden across the state.

Ensuring an integrated team approach to health care with APRNs

A bill expanding the scope of practice for advanced practice registered nurses (APRNs) was signed into law by Gov. Dayton on May 13.

For more than a year, nurse and physician advocates have passionately debated this issue. The new law allows nurse practitioners and clinical nurse specialists to practice independently, but not without some restrictions. These APRNs will need 2,080 hours of on-the-job training before they can practice independently. In addition, they will not be able to identify themselves as “doctors” when treating patients, nor will they be able to interpret advanced imaging studies such as MRI, PET or CT scans.

The most controversial part of the bill dealt with the role of certified registered nurse anesthetists (CRNAs) in acute and chronic pain management. The two sides agreed on compromise language that maintains the requirement for CRNAs to have a collaboration plan with a physician for treating acute and chronic pain. In addition, CRNAs treating chronic pain patients will also need to have a written prescribing agreement with a physician who works at the same licensed facility.

The law creates an advisory committee to look at prescribing patterns, emerging practice trends and overlapping scope of practice issues. A provision in a separate bill also directs the Department of Health to gather data on the types of chronic pain treatments being provided by CRNAs and physicians.

“The final legislation is not what the MMA would draft, but we stopped contesting it after we agreed to language that would maintain the status quo for CRNAs treating pain patients,” says Dave Renner, MMA’s director of state and federal legislation.



Aligning Minnesota’s data privacy practices with HIPAA

Prior to the session, the MMA had hoped that legislation bringing the Minnesota Health Records Act into alignment with HIPAA, the existing federal standards governing the sharing of health information, would receive attention at the Capitol. However, the bill did not get a hearing.

Legislation related to data practices is not without controversy at the Capitol, and it soon became clear that this proposal faced an uphill battle, particularly given the MMA’s other work that dealt with data privacy in the PPG and newborn screening bills.

The MMA believes enhanced information sharing is crucial to the functioning of accountable care organizations, health care homes and total cost of care arrangements. Appropriately shared clinical data will increase the quality of patient care and decrease costs. The MMA will continue to partner with the Minnesota Hospital Association, the Minnesota Council of Health Plans and others to facilitate the sharing of clinically appropriate data to improve patient care.

Ensuring the repeal of the provider tax

In 2011, legislators voted for the phase-out and eventual repeal of the provider tax on December 31, 2019. The 2 percent tax has driven up the cost of health care and falls more heavily on sick and low-income Minnesotans. The MMA kept an eye on legislation this session to ensure the repeal stayed on track. Although there were rumblings that some legislators might try to



News Briefs



Minnesota MDs hit by tax scam

More than two dozen physicians across the state were affected by a federal income tax scam directed at doctors in the past few months.

They joined scores of doctors across the country who were hit by the scam in which unknown parties are fraudulently filing returns using physicians' names, addresses and Social Security numbers.

Victims have been unable to file their taxes electronically because a return has already been filed.

According to the *Krebs on Security* website: "Thieves steal or purchase Social Security numbers and other data on consumers, and then fraudulently file tax returns claiming a large refund. The thieves instruct the IRS to send the refund to a bank account that is tied to a prepaid debit card, which the fraudster can then use to withdraw cash at an ATM."

Physicians in Minnesota and the following states have been affected: Arizona, Connecticut, Indiana, Iowa, Kentucky, Maine, Michigan, Montana, New Hampshire, North Carolina, North Dakota, Oklahoma, Oregon and Vermont.

If you have been a victim of this scam you can access tools on the IRS website to help you protect your identity or call 800-908-4490.

Health disparities forum adds speakers

Health Commissioner Edward Ehlinger, M.D., will serve as the keynote speaker at an MMA-hosted forum on addressing Minnesota's health disparities and inequities June 17 from 5:30 to 8 p.m. at the Wilder Center in St. Paul.

In addition to Ehlinger, the event will feature a panel of physicians including Shana Sniffen, M.D., from the HealthEast Roselawn Clinic, Tamiko Morgan, M.D., FAAP, CMO/medical director from Metropolitan Health Plan and an associate professor at the University of Minnesota, and Walter B. Franz III, M.D., with Mayo Clinic.

The event will offer physicians an opportunity to share their best practices for working with minority populations and discuss the role physicians can play in addressing health disparities.

The cost is \$25 for members (\$40 for nonmembers and \$10 for students). The event is sponsored by the Minnesota Association of Black Physicians, the American Indian Cancer Foundation, and the Office of Minority and Multicultural Health at the Minnesota Department of Health.

To register, visit www.mnmed.org/disparities.

First Policy Council convenes

The MMA's new Policy Council met for the first time in late April to establish processes for the group and begin initial discussions about issues on which to focus.

At the 2013 MMA Annual Meeting, the House of Delegates voted to form the Council, which is intended to provide a

representative mechanism and simplified process for obtaining broad member input, feedback and ideas on critical health policy issues facing Minnesota physicians. Recommendations of the Policy Council will be submitted to the MMA Board of Trustees for consideration.

The Council is made up of 40 members, none of whom can be MMA committee chairs or MMA Board of Trustees members at the time of their appointment. Thirty-one members were appointed by component medical societies; five were appointed by the MMA board from non-staffed component medical societies or from among at-large members (ie, members for whom there is no component medical society); three were appointed from MMA Sections; and one is the MMA president-elect, Don Jacobs, M.D.

Visit the MMA website for a list of Council members and to learn more about the Council.

MMA members recognized for outstanding work

Dionne Hart, M.D.

The Minnesota Psychiatric Society (MPS) named MMA member Dionne Hart, M.D., as its Psychiatrist of the Year for 2014.

"Dr. Dionne Hart's dedication as a voice for psychiatric education, excellence in patient care and leadership in closing the gap treating minority patients made her our winner," MPS wrote in a statement on the selection. "Dr. Hart works tirelessly in the trenches, is involved in numerous organizations and promotes the mission of ending disparities in care."



Donald Jacobs, M.D.

Hart is a psychiatrist at the Federal Medical Center in Rochester, and chair of the MMA's Minority and Cross-Cultural Affairs committee and of the AMA's Minority Affairs Section. She also is active with the Zumbro Valley Medical Society as well as MPS.

"I'm a clinician by training and a patient advocate by choice," Hart says. "I appreciate this award and more importantly I appreciate the opportunity to serve my patients and learn from my colleagues."

Last November, Hart received the MMA Foundation's 2013 Minority Affairs Meritorious Service Award.

Cindy Firkins Smith, M.D.
MMA President Cindy Firkins Smith, M.D., received the Distinguished Alumni Achievement Award from the Minnesota State University, Mankato Alumni Association in late April.

The association considers alums who have achieved high rank or honor in their professions, have a widespread effect on their communities and are recognized for their achievements over the course of their careers.

Along with her duties as MMA president, Smith is a dermatologist practicing at Affiliated Community Medical Centers in Willmar. She also teaches dermatology part time as an adjunct professor at the University of Minnesota.

Sheldon Burns, M.D.

The Minnesota Academy of Family Physicians selected MMA member Sheldon Burns, M.D., as its 2014 Family Physician of the Year.

The award, which has been given out annually since 1981, is presented to a family physician who represents the highest ideals of the specialty of family medicine including by providing caring, comprehensive medical service; being involved in their community; and serving as a role model for medical students and residents.

Burns has been a family doctor in Minnesota for nearly 40 years. Along with his practice at Edina Family Physicians, he serves as medical director for the Minnesota Wild, Minnesota Lynx and the Minnesota Timberwolves. He's also been the team physician for the Minnesota Vikings since 1985.



Dionne Hart, M.D.



Cindy Firkins Smith, M.D.

Along with his medical duties in the Twin Cities, Burns has volunteered for 11 Olympic games and has been a member of four gold-medal-winning teams, including the 1980 men's hockey team, where he got his start as the assistant equipment manager.

Organizations participate in Choosing Wisely initiative

Seven Minnesota organizations have chosen to participate in an MMA-backed program to improve physician-patient dialogue about health care services that may be unnecessary.

The program is part of Choosing Wisely, which the ABIM Foundation, along with *Consumer Reports*, launched in April 2012. The initiative has set out to encourage physicians and patients to think and talk about medical tests and procedures that may be unnecessary and, in some cases, cause harm.

The seven organizations are Boynton Health Services, Emergency Physicians Professional Association, Integrity Health Network, Metro Urology, Ridgeview Clinics, Specialists in General Surgery and St. Croix Orthopaedics.

In April, representatives from these clinics took part in training at the Guthrie Theater. There, they learned to communicate better with patients.

In support of Choosing Wisely, national specialty societies have developed lists of commonly used tests or procedures that should be questioned and discussed by physician and patient. With more than 270 recommendations the Choosing Wisely campaign is for all physicians. Choosing Wisely has partnered with *Consumer Reports* to develop resources for patients that complement the specialty society recommendations.

"We have a diverse group of physician clinics participating who are working to incorporate the Choosing Wisely initiative and its guiding principles into their daily practice," says Janet Silversmith, MMA's director of health policy. "In a few months, we will share the experiences of these clinics with all Minnesota



Karen Boyle (left), a clinic administrator, and Kim Tjaden, M.D., role-play while at Guthrie Theater training for Choosing Wisely.

physicians. We hope to learn how to advance Choosing Wisely adoption in other practices and create an environment where both physicians and patients can say no to unnecessary care.”

The MMA is one of 21 grantees promoting the Choosing Wisely initiative across the country.

Speakers added to Annual Conference

Three national speakers have now signed on for the MMA’s first Annual Conference September 19 and 20 in Brainerd. The Friday morning speakers will be Dike Drummond, M.D., who will discuss physician well-being and wellness; John Nance, J.D., who will present a “Team Approach to Creative Problem Solving” and Quint Studer, founder of the Studer Group, who will present “Straight ‘A’ Leadership: Action, Alignment and Accountability.”

MMA launches online community for physicians

The MMA has launched an online community through LinkedIn called the “Minnesota Medical Association Physicians’ Lounge.” The Lounge is to be a site where doctors can talk with others about health care topics. The group is invite-only and exclusive to MMA members and staff. We hope to use the online community as a way to engage members on timely topics in Minnesota health care. If you are interested in taking part in the group, send an email to Dan Hauser (dhauser@mnmed.org).

MMA in Action

Barbara Daiker, MMA manager of quality, presented “Health Care Quality: What Is It?” to physicians and medical staff at Grand Itasca Clinic and Hospital in Grand Rapids in late April. She also attended a presentation, “Integrating Access to MN Prescription Monitoring Program Data with Health IT,” in mid-May in Roseville.

Teresa Knoedler, MMA policy counsel, spoke on medical malpractice to Mankato family medicine residents at the Mankato Clinic.

MMA President **Cindy Firkins Smith**, M.D., attended a Minnesota Dermatological Society meeting in late April. She also met with pre-med students at Minnesota State University, Mankato May 2.

The MMA co-hosted two sessions on “Working Effectively with Medical Interpreters.” One was for students of MMA member and UMD professor **Jacob Prunuske**, M.D., at the University of Minnesota Medical School, Duluth campus. The event was also sponsored by the Minnesota Academy of Family Physicians Foundation and the Lake Superior Medical Society. The other was for physicians and medical staff at Park Nicollet Methodist Hospital in St. Louis Park. The event was co-sponsored by the Minnesota Academy of Family Physicians Foundation.

In late April, **Brian Strub**, MMA manager of physician outreach, joined **Evelyn Clark**, MMA manager of grassroots and political engagement, in hosting four Mayo Medical School students in a lobby day at the State Capitol. The medical students met with Sen. Carla Nelson (R-Rochester), Rep. Tina Leibling (DFL-Rochester) and MMA’s legislative team — **Dave Renner**, director of state and federal legislation, and **Eric Dick**, manager of state legislative affairs. **Maria**



Barbara Daiker



Teresa Knoedler



Cindy Firkins Smith, M.D.



Brian Strub

Garcia, Praveena Narayanan, Kristin Nguyen and Earth Hasassri were the students who participated.

Janet Silversmith, MMA director of health policy, **Robert Meiches**, M.D., MMA CEO, Renner and Dick met with the Minnesota Department of Health leadership (Commissioner Edward Ehlinger, M.D., Deputy Commissioner Jim Koppel, and Assistant Commissioners Manny Munson-Regala and Aggie Leitheiser) to discuss legislative activities (the all-payer claims database/Provider Peer Grouping, medical marijuana, newborn screening), the Statewide Quality Reporting Measurement System, the pre-diabetes AMA project, prescription opioids and health disparities.

Silversmith, Meiches, Renner, Dick, Knoedler, Daiker and **Juliana Milhofer**, MMA policy analyst, met with the Minnesota Council of Health Plans staff to discuss legislative issues, prescription opioids, prior authorization for medication and Choosing Wisely.

Silversmith gave a presentation on MMA strategy and its legislative priorities at the Affiliated Community Medical Center Leadership Retreat in Alexandria in late April. She also attended the Choosing Wisely Grantee Summit in Washington, D.C., this spring.

George Schoephoerster, M.D., and Silversmith met with Sarah Drake from the Minnesota Department of Human Services in early May to discuss prescription drug prior authorization for Medicaid.

Kathleen Baumbach, MMA manager of physician outreach, attended the “Transition to Practice” event for residents in mid-May sponsored jointly by the MMA, University of Minnesota and Foster Klima.

VIEWPOINT

The art of compromise

It was once said that “Laws are like sausages, it is better not to see them being made.” In other words, it can get ugly whenever you have two conflicting sides going back and forth arguing the pros and cons of an issue. If you are not used to the political process, negotiations can be frustrating and leave you irritated that you didn’t get your way.

This process is hard for many physicians to embrace because we are cut from completely different cloth than politicians.

Physicians like to deal with facts, whereas politicians deal with perception and ambiguities. We take great pride in our autonomy, while politicians need to collaborate. We have one vote—our own. Politicians only succeed when they have a majority of votes. We prefer to take decisive action. The political process is designed to avoid rash decisions, to deliberate, consider, mull.

Is it any wonder why so many physicians find politics so frustrating? It’s completely foreign to how we carry out our day-to-day duties. And yet, this is the world in which we live.

Adding to the frustration is the growing trend of refusing to compromise because people see it as a sign of weakness. MMA leaders are glad not to be part of that game. Compromise is how the political world goes round. The sooner you accept it, the sooner you can work on negotiating a solution that turns each debate into a win-win outcome.

This past session provided us with a very good example of how physicians have to learn to deal with compromise. Overall, the session went very well for the MMA and Minnesota physicians. Most of our priorities became law; but one issue in particular really tested our resolve—the advanced practice registered nurses’ push for greater independence.

The clash over APRNs actually started—with a certain degree of animosity—last session. It continued over the summer and into the fall. By the time this session kicked off, both sides had dug in their heels pretty deep. The nurses accused us of protecting our turf. We said they were overstepping their bounds. This went on for months.

We asked them to remove certain parts of the legislation, and they refused. We asked for this and they asked for that. At many points in the process, it looked like we would never reach an agreement. But in the end, after a lot of hard work on both sides, we did. The APRNs attained their independence, but not until they agreed to require a year’s worth of experience. They also agreed to maintain the status quo with certified registered nurse anesthetists who need to continue working in collaboration with physicians when treating patients with acute and chronic pain.

Over the years, the MMA legislative team has found that the key to advocating is to maintain your principles as you work toward meeting your goals, knowing that the other side is doing the same. Reaching an agreement requires compromise, and we may not love the result, but it will be something that we can live with.

So, in the end, neither the nurses nor the physicians got all they wanted. In other words, we made sausage.



Dave Thorson, M.D.
MMA Board Chair

PHOTO BY STEVE WEVERKA

This past session provided us with a very good example of how physicians have to learn to deal with compromise.

Management of Diabetes during Ramadan

Practical Guidelines

BY MUNA SUNNI, M.B.B.CH., CAROL BRUNZELL, R.D.N., L.D., C.D.E., BRANDON NATHAN, M.D., AND ANTOINETTE MORAN, M.D.

Ramadan is a month-long period of heightened self-reflection about one's religion and one's relationships with others. During Ramadan, fasting during daylight hours is required. The fast is typically followed by a feast after dark. Although Muslims with certain medical conditions are allowed by Islamic law to abstain from fasting, many choose to fast during Ramadan for personal reasons. Diabetes is one of the most challenging conditions to manage during this time, and physicians and clinics with Muslim patients who have diabetes will need to be prepared if they are to support their patients who desire to fast. This article provides a general overview of Ramadan and offers practical guidance for managing adults and children with diabetes who are fasting during this important time in the Muslim calendar.

Ramadan, the ninth month on the Islamic lunar calendar, is a holy month for the world's estimated 1.6 billion Muslims.¹ This year, it begins near the end of June. Ramadan is considered an intensely spiritual time of renewed awareness of one's faith and relationships. Observing Ramadan by fasting and exercising self-control is one of the five pillars of Islam.²⁻⁸

Muslims are required to fast during Ramadan once they reach a certain level of maturity. Most children are considered mature enough to fast when they reach puberty, provided they are physically capable of doing so and have intact mental capacity.⁶ Abstinance from fasting is permitted under certain circumstances including during pregnancy, lactation and menstrual periods; when experiencing illness (including diabetes); when traveling beyond a certain distance; and when one is elderly.^{2,6,9,10} Despite the fact that people are allowed to omit fasting, many choose to fast for religious and social reasons.¹¹⁻¹³ Thus, for most Muslims, food intake during Ramadan usually consists of two main meals: the meal at sunset (*iftar*) and the meal before dawn (*suhour*).^{4,6,13} Some people snack at night between meals as well.

The large influx of Somali immigrants to Minnesota during the last two decades has increased the likelihood that physicians and other health care providers in

the state will care for Muslim patients. Some of those patients will be diabetic. Type 1 diabetes has been found to be relatively common in Somali children, and type 2 diabetes is increasingly found in Somali adults.¹⁴ Some of these diabetic patients will want to fast.

Understanding the cultural and religious traditions of patients can be important to providing optimal care.^{9,11} This article provides information about Ramadan in order to help physicians better care for their Muslim patients, especially those with diabetes who may choose to fast during this period.

Health Risks of Fasting Patients with Diabetes

Patients with diabetes who choose to fast face several risks. The main ones are hypo- and hyperglycemia, dehydration, weight gain and diabetic ketoacidosis.^{3,9,12,13}

Hypoglycemia and Hyperglycemia

Given that people's daily routines are different during Ramadan, blood glucose levels may be more variable, and hypoglycemia or hyperglycemia may occur more frequently during this time. In order to prevent hypo- or hyperglycemia during Ramadan, people with diabetes should:

- Test their blood glucose level more often. During the day time, while fasting, their blood glucose level should

be tested at least every four hours in order to determine whether medication changes are needed.

- Learn to recognize symptoms of hypoglycemia. Possible symptoms include shakiness, sweating, light-headedness, fatigue, hunger, tachycardia, headache and, in severe cases, loss of consciousness, seizures or coma. It is of utmost importance to take these symptoms seriously and to act promptly if one experiences them. Individuals with diabetes must carry carbohydrate-containing food items for emergency purposes and be willing to eat them if necessary even if they are fasting.
- Take care when exercising. Heavy exercise or any kind of strenuous physical activity while fasting could result in hypoglycemia.^{2,11,12} Intense activity should be undertaken with care, and blood glucose testing should be done frequently.
- Reduce their insulin intake during the day while fasting, if they are on insulin therapy. Although hyperglycemia is less likely to occur during a prolonged fast than during a period of normal eating, it can occur if the patient omits insulin, reduces their dose too much or becomes ill.
- Be aware that hyperglycemia may present with no symptoms at all. Thus, physicians should stress the importance of blood glucose monitoring.

Dehydration

When Ramadan occurs during a warm month, fasting can increase one's risk for dehydration. Further, hyperglycemia can contribute to dehydration.¹² Reduced urine output, dark concentrated urine, muscle cramps, dizziness, confusion and fatigue are some of the symptoms of dehydration. If a patient experiences light-headedness (especially upon standing) or confusion, it may be best for him or her to break the fast immediately and drink.

Weight Gain

It may seem counterintuitive, but weight gain may result during a fast because of reduced physical activity and excessive feasting after dark. Moderation in physical activity and food intake, and making healthy food choices is recommended.

Diabetic Ketoacidosis

Diabetic ketoacidosis (DKA) occurs when the body catabolizes protein and fat to generate alternative sources of energy when glucose is not available. It can occur when there's a state of absolute or relative insulin deficiency. Insulin deficiency can be exacerbated by illness or dehydration.¹² Fasting patients with type 1 diabetes may think they can discontinue taking insulin because they are not eating. They may not understand that they still need insulin, even if it is taken at a lower dose.

Although DKA occurs mostly in patients with type 1 diabetes, it can occur in children with type 2 diabetes as well. Therefore, it is important to be aware of the risk for development of ketones in patients with diabetes during Ramadan. It is also important to note that fasting/starvation can cause elevated ketone levels. DKA can be differentiated from starvation-induced ketosis by the presence of glucose elevation and by the presence of nausea, abdominal pain and vomiting.

A high blood glucose level and the presence of ketones in the blood or urine should be taken very seriously. If detected, the fast should be terminated immediately, and insulin and fluids be given. Subsequent insulin doses may need to be increased. This should be done under the

TABLE

Proposed Dose Adjustments to Insulin Therapy and Oral Hypoglycemic Agents during Ramadan

DIABETES TREATMENT	RECOMMENDED REGIMEN DURING RAMADAN
Insulin	
Once daily long-acting basal insulin (glargine, detemir)	Reduce dose by 10% to 30% Take at sunset meal (<i>iftar</i>)
Twice daily mixed insulin	Keep sunset meal (<i>iftar</i>) dose the same Reduce the second dose by 20% to 30% and take with pre-dawn meal (<i>suhoor</i>)
Rapid-acting insulin (aspart, lispro, glusuline)	Start with the same meal dose, but may need to increase sunset meal (<i>iftar</i>) dose by 10% to 20% to avoid hyperglycemia Same meal dose for pre-dawn meal (<i>suhoor</i>) If morning hypoglycemia occurs, reduce pre-dawn meal (<i>suhoor</i>) dose by 10% to 20% or omit it completely if needed
Insulin pump	Basal rate reduced by 20% Meal doses as per above (rapid-acting insulin)
Oral hypoglycemic agent	
Biguanides (metformin)	No change in total daily dose, but give with food
Sulphonylureas	No change in dose at sunset meal (<i>iftar</i>) Take half the dose at pre-dawn (<i>suhoor</i>)
GLP-1 receptor agonist	No change needed
Thiozolidinedione	Full dose at sunset meal (<i>iftar</i>) None at pre-dawn (<i>suhoor</i>)
Alpha glucosidase inhibitors	No change
DDP-4 inhibitors	No change

Sources: Azad K, Mohsin F, Zargar AH, et al. Fasting guidelines for diabetic children and adolescents. *Indian J Endocrinol Metab.* 2012;16(4):516-8; Khalil AB, Beshyah SA, Abu Awad SM, et al. Ramadan fasting in diabetes patients on insulin pump therapy augmented by continuous glucose monitoring: an observational real-life study. *Diabetes Technol Ther.* 2012;14(9):813-8; Al-Arouj M, Assaad-Khalil S, Buse J, et al. Recommendations for management of diabetes during Ramadan. *Diabetes Care.* 2005;28(9):2305-11; Aravind SR, Ismail SB, Balamurugan et al. Hypoglycemia in patients with type 2 diabetes from India and Malaysia treated with sitagliptin or a sulfonylurea during Ramadan: a randomized, pragmatic study. *Curr Med Res Opin.* 2012;28(8):1289-96.

direction of a diabetes care team. Early recognition and treatment of elevated ketones is crucial because DKA can progress rapidly and lead to illness requiring hospitalization or, in some cases, death.

Advising the Diabetic Patient

Muslim patients with diabetes who wish to fast should make an appointment to see their physician before Ramadan to assess their glycemic control and medications.^{8,11,13,15} The dose and/or the timing of medication administration may need to be changed.

The decision to allow or to recommend against fasting is best made on a case-by-case basis with the understanding that

both the patient and his or her physician may need to work out a compromise if the patient insists on fasting. Al-Arouj et al., who classified patients with diabetes into groups based on their estimated level of risk from fasting, offers some guidance.¹²

Generally speaking, patients at high risk, for whom fasting is not advised, include those with:

- Poor glycemic control (HbA1c >9%)
- History of significant hypoglycemia (ie, hypoglycemia associated with loss of consciousness or a seizure) during the three months before the start of Ramadan
- Lack of awareness of hypoglycemia

- DKA within three months before the start of Ramadan
- Renal failure (+/- dialysis)
- Diabetes during pregnancy
- Concomitant cardiovascular disease (history for myocardial infarction or coronary artery disease)

Patients who live alone, are elderly and have other health issues, or are prepubescent are also not advised to fast.

Patients at moderate risk when fasting include:

- Those with tight glycemic control (HbA1c <7.5%) who are on insulin or oral hypoglycemic agents such as sulphonylureas that increase the body's intrinsic insulin levels.¹²

Patients at low risk when fasting include:

- Those with tight glycemic control (HbA1c <7.5%) either managed by diet exclusively or medications that do not raise the insulin levels such as metformin or sitagliptin.¹²

Patients with diabetes should be encouraged to meet with a dietitian before Ramadan to discuss what they can do to avoid problems.¹¹ In general, they should be told to continue eating a healthy diet and avoid overeating, and to have *iftar* as early as possible and delay *suhour* as long as possible so that the fasting period is as short as possible.¹² They also should be told that they may have small snacks between meals during the night.

Patients with diabetes should choose healthy foods including those that contain healthy carbohydrates (especially for *suhour*).¹² These include traditional foods such as wheat and other whole grains such as teff (a fine cereal grain native to north-eastern Africa). They also should eat foods with high fiber content such as fresh fruits, vegetables and legumes and avoid foods that are high in processed sugar, saturated fat and trans-fat. In addition, patients should avoid excessive salt intake and frequently drink small amounts of water during the night.

Light exercise is encouraged, as people who engage in it may tolerate the fast better than those who remain sedentary.⁹ However, physical activity may also increase the

risk of dehydration and/or hypoglycemia. Intense exercise should be discouraged.^{2,11,12}

Specific Recommendations for Diabetes Management

Blood Glucose Monitoring

It is important to emphasize that blood glucose testing does not constitute breaking the fast (whereas, receiving IV fluids does).⁶ Frequent blood glucose checks during the day are necessary.¹¹ At a minimum, patients should test every four hours while fasting.

If a person's blood glucose level is <80 mg/dL in the early fasting hours or if it falls to ≤70 mg/dL at any hour of the day, the fast should be broken immediately to prevent hypoglycemia.¹¹ Regular testing can help guide insulin dose adjustment the next day. Patients should be warned ahead of time that it may take a few days to figure out the right insulin dose. If it is necessary to break the fast during the first day or two, they should be assured it is not considered a "failure"; it is simply what must be done to help them safely participate in Ramadan.

If a patient's blood glucose level is >250 mg/dL, he or she should be checked for ketones; if the patient is positive for ketones, advise breaking the fast immediately because it is important to drink plenty of water and to take extra insulin as per the prescribed diabetes regimen.

If their blood glucose level is >250 mg/dL with negative ketones, there is no need to break the fast; but consider giving a small dose of short-acting insulin (start with half the usual correction dose) and increasing the insulin dose the next day.

Medications

Discuss changing the timing and/or dosing of diabetes medications to better fit the fasting schedule (Table). Most patients require slightly lower doses than usual when fasting. Continuing the usual medication regimen may result in hypoglycemia. Several adjustments may be required in order to determine the correct regimen for the fasting patient during Ramadan. Therefore, patients should test their blood glucose level often and use that information to adjust medication doses as needed.

Conclusion

These guidelines may not be suitable for all diabetic patients during Ramadan. Physicians are advised to tailor therapies to each patient's needs.¹² Muslim patients should be encouraged to consult with their diabetes team both before the start of Ramadan and at the end of or immediately following it to discuss therapy plans for when fasting is over. **MM**

Muna Sunni, Brandon Nathan and Antoinette Moran are with the department of pediatrics, University of Minnesota Children's Hospital. Carol Brunzell is with the University of Minnesota Medical Center, Fairview.

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The Growth of Palliative Care

BY JACOB J. STRAND, M.D., J. KEITH MANSEL, M.D., AND KEITH M. SWETZ, M.D., M.A.

Palliative care specialists focus on meeting the needs of patients with serious and/or life-threatening illnesses. These physicians have expertise in managing complex pain and nonpain symptoms, providing psychosocial and spiritual support to patients and their families, and communicating about complex topics and advance care planning. The American Board of Medical Specialties has allowed 10 of its member boards to co-sponsor certification in Hospice and Palliative Medicine. Thus, physicians from specialties ranging from pediatrics to surgery now practice hospice and palliative medicine. At the core of this field, however, are physicians who trained as internists and are boarded by the American Board of Internal Medicine. This article discusses the central principles of palliative care and explores its growth in two areas: oncology and critical care medicine.

L.M. is a 48-year-old woman with metastatic, non-small cell lung cancer. She was diagnosed during an evaluation for low back pain, where imaging revealed metastatic lesions in her lumbar spine. L.M. met with her oncologist and made plans for systemic chemotherapy after she finishes radiation to her spinal metastases. She continues to have significant pain and worries about what she is going to tell her children and how she is going to plan for the future.

S.W. is a 79-year-old man with severe chronic obstructive pulmonary disease, type 2 diabetes and stage IV chronic kidney disease. He was admitted to the hospital's intensive care unit for health care-associated pneumonia and respiratory failure. During the next two days, his respiratory status does not improve and his renal function worsens. The nephrology team recommends starting hemodialysis, but S.W.'s wife worries about the questions being posed regarding her husband's "goals of care."

Both of these cases present examples of patients who are appropriate for and likely to benefit from a palliative care consultation, in which a palliative care clinician would work with a primary care team to address pain and other distressing symptoms and begin conversations about advance care planning and goals of care. Once considered part of the care offered to patients only at the end of life, palliative care is now recognized as being of value for anyone

with a serious or life-threatening illness at any stage and in any care setting.

Physicians who practice palliative care are board-certified in Hospice and Palliative Medicine, which is a distinct subspecialty recognized by the American Board of Medical Specialties (ABMS). As of 2012, new clinicians must complete a fellowship in hospice and palliative medicine to be eligible for board-certification. The ABMS allows 10 separate credentialing boards

and its subspecialties make up the bulk of those practicing palliative care.¹

This article explores the growth of this field and discusses its role in oncology and critical care medicine.

Growing Interest

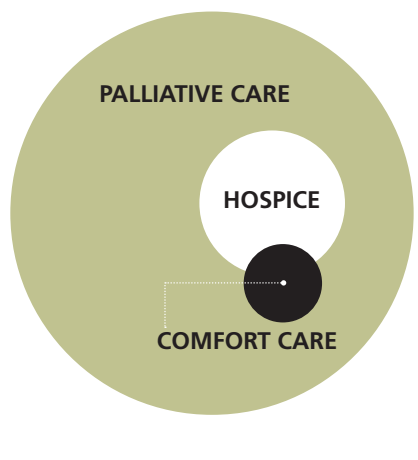
Interest in palliative care in the United States has grown in recent years, with the Center to Advance Palliative Care seeing a 148% increase in the number of palliative care teams between 2000 and 2010 (from 658 to 1,635).² It is now offered in more than 85% of hospitals with more than 300 beds in the United States.³

One factor driving interest in the field is the aging of the population. One of every five people in the United States will be older than 65 years of age by 2050. The number of people 80 years and older is expected to triple by 2040,^{4,5} which is sometimes referred to as the "Gray Tsunami." This growing demographic group and their loved ones will face increasingly complex decisions regarding their health care and treatment options as many are now living with multiple life-limiting illnesses such as heart failure and certain cancers that previously were fatal.⁶

Increasing medical complexity is often coupled with repeated hospitalizations. This is reflected in Medicare data showing that more than 98% of decedents will spend at least some time in the hospital during the year preceding their death.⁷ Furthermore, between 15% and 55% of Medicare decedents spend at least some

FIGURE 1

The Relationship between Palliative Care and Hospice Care



to offer this certification. Thus, hospice and palliative medicine attracts physicians from many specialties including oncology, critical care and hospital medicine. However, clinicians from internal medicine

time in the intensive care unit (ICU) during the last six months of life.⁷ Despite studies that show people often prefer to die in more peaceful settings such as their homes, nearly half a million deaths each year in the United States take place in ICUs.⁸⁻¹¹

Development of technologies and therapies aimed at prolonging life and improving survival drives the care that is given in the ICU. In 1968, Fuchs referred to this as the “technological imperative,” which he defined as the propensity toward “giving the best care that is technically possible; the only legitimate and explicitly recognized criteria is state of the art.”¹²

The costs associated with this ICU-based care go beyond fiscal considerations. Patients who undergo more “aggressive” interventions near the end of life have a worse quality of death and experience significantly more untreated symptoms than those who do not.¹³⁻¹⁵ Those costs are often further borne by the people who care for them. A study by Wright et al. found caregivers of those who die in the hospital or ICU have higher rates of prolonged grief and post-traumatic stress disorder than caregivers of those who die at home.¹⁶

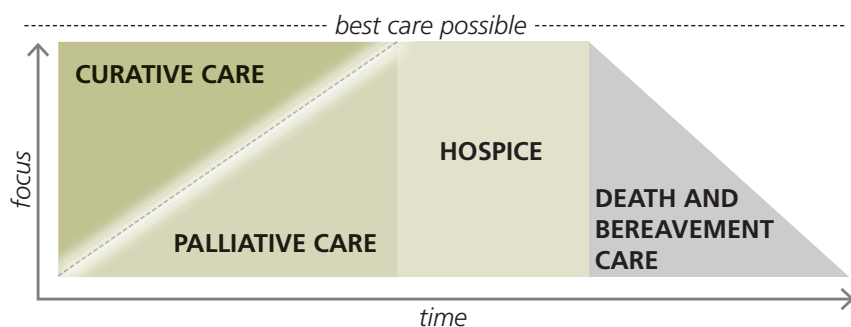
Coming into Its Own

Palliative care has come to be viewed as distinct from hospice care. Figure 1 shows how hospice, the care provided to patients with a prognosis of six months or less, should be considered a subset of palliative care. The proliferation of data supporting the benefits of palliative care for patients with many types of disease has bolstered the contention that this type of care should be provided to patients with serious illnesses in all stages of their disease and can be offered in conjunction with curative or disease-targeted therapies (Figure 2).¹⁷ This approach has been shown to improve quality of life, reduce depression and anxiety, and align medical care with the patient’s goals, values and preferences.^{14,15,18} Studies have also shown that aligning patients’ goals with their care plan can impart measurable cost savings without sacrificing quality of care.¹⁹⁻²³

All physicians who care for seriously ill patients should be offering basic pain and

FIGURE 2

The Expanding Role of Palliative Therapy



Adapted from Lynn J. Living long in fragile health: The new demographics shape end of life care. *Hastings Cent Rep* 2005. Spec No: S14-18.

nonpain symptom management and having discussions about prognosis and code status. However, palliative care specialists can be especially valuable members of the care team when patients have symptoms that are difficult to manage; when complex issues must be discussed; and when the patient has depression, anxiety and family distress (Table).^{17, 24}

Palliative Care in Oncology

Palliative care is most commonly offered as a consultative service in the inpatient setting. But increasingly, it is being offered in outpatient environments. Palliative care clinics and community-based palliative care programs can provide an essential link between inpatient and ambulatory care for patients with serious illnesses. A majority of these clinics are in cancer centers; others are in facilities with a preponderance of oncology patients.²⁵⁻²⁷ This reflects what the literature says about the use of palliative care for patients with advanced malignancies. In a study often referred to simply as “the Temel study,” Harvard researchers reported in 2010 on the benefits of integrating palliative care into the care of patients with advanced non-small cell lung cancer.¹⁸ This randomized controlled trial led to improvements in patients’ quality of life, a reduction in their depression and anxiety, and increased understanding of their prognosis.¹⁸ In addition, the median survival for the group receiving the palliative care intervention (monthly outpatient palliative care visits starting at diagnosis) was almost

three months longer than that for the group receiving standard care.¹⁸ This unexpected outcome provides evidence that the oft-prevailing notion that palliative care involvement can lead patients to “give up hope” and subsequently die earlier is a myth. Indeed, it has been shown elsewhere that patients with advanced illness do not lose hope if they have frank discussions about their prognosis and treatment. In fact, such discussions can help patients and their families deal with uncertainty.²⁸

Palliative care involvement for patients with advanced cancers also has led to such tangible benefits as reduced symptom burden and reduced readmission.²⁹ Several well-designed clinical trials have provided further evidence that in the outpatient setting, earlier integration of palliative care for patients with advanced cancer yields improved clinical outcomes—from a reduction in distressing symptoms to improved quality of life and potentially to improved survival.^{18-20, 23} Because of this growing body of evidence, the American Society of Clinical Oncology now recommends that palliative care be integrated early in the care of patients with metastatic cancer and/or high symptom burden, alongside cancer-targeted therapies.³⁰

So what accounts for palliative care’s benefits for patients with cancer? It is known that most patients with advanced cancer wish to know their prognosis and want to hear it from their physician.²⁸ It is also known these same patients often do not understand the goals of their treatments and may receive interventions that

may go against their previously expressed wishes.³¹ Patients who find themselves in that situation experience worse quality of life, have increased psychosocial distress and are more likely to die in the ICU.^{14,31} Many patients with incurable cancer report that even though they had excellent communication with their oncologist about their disease, they still had a significant lack of understanding about the aim of their treatments.³²

In L.M.'s case, a palliative care physician would likely spend much of the first visit assessing her symptom burden and targeting interventions aimed at improving her symptoms, as untreated and undertreated pain are still a reality for patients with advanced-stage cancer.³³ By meeting with L.M. early in the course of her illness, the palliative care specialist would have an opportunity to build rapport and develop a relationship with her that ideally would allow them to talk about difficult topics such as prognosis, coping with her illness as it progresses and legacy planning. During such conversations, the specialist can support the information provided by the primary oncology team and offer patients and families a safe "space," where they can express fears and discuss contingencies they may be less willing to discuss with their oncology team.³⁴

Palliative Care in the ICU

Much end-of-life care still takes place in the ICU despite a trend toward shorter hospital stays prior to death and increased hospice utilization. The number of days spent in the ICU during the last six months of life has continued to increase despite awareness of the burdens placed on patients and their families.³⁵ Approximately 20% of deaths in the United States (500,000 per year) occur during and after ICU care,¹¹ and an additional 100,000 individuals continue to live with chronic, critical illnesses following ICU stays.³⁶ For some of those patients, ICU care is not consistent with their goals, preferences and values.

Subsequently, palliative care and ICU teams are working in partnership more than ever before. The concept of such partnerships is supported by professional associations including the National Quality Forum,

TABLE

Reasons to Consider a Palliative Care Consultation

ASSISTANCE WITH COMPLEX SYMPTOM MANAGEMENT

- Managing escalating or refractory symptoms (eg, pain, dyspnea and nausea)
- Complex pharmacologic management in patients facing a life-limiting illness (eg, opioid infusions, opioid rotations, patient-controlled analgesia, methadone initiation and ketamine initiation)
- Addressing complex depression, anxiety, grief and existential, spiritual or psychosocial distress
- Respite and/or palliative sedation for intractable symptoms

CARE OF COMPLEX, SEVERELY ILL PATIENTS OVER TIME

- New diagnosis with metastatic cancer and/or malignancy with high symptom burden
- Frequent hospital admissions for the same diagnosis of a serious illness
- Intensive care unit admission with metastatic cancer
- Intensive care unit admission with poor prognosis
- Prolonged intensive care unit stay

ASSISTANCE WITH MEDICAL DECISION-MAKING AND DETERMINING GOALS OF CARE

- Discussing transitions in care
- Discussing complex and/or evolving goals of care
- Assisting with conflict resolution regarding goals or methods of treatment, whether that conflict is within the family, between the family and the medical teams, or between treatment teams
- Redefining hope in the setting of complex illness
- Discussing complex code status
- Managing patient and/or family conflict or complex social issues
- Discussing ethical dilemmas

QUESTIONS REGARDING FUTURE PLANNING NEEDS

- Determining and discussing prognosis where desired
- Care and planning in the setting of advanced illness [Consider referral when one would answer "yes" to the question: Would I be surprised if my patient died within 12 months?]
- Discussing issues pertaining to artificial feeding or hydration
- Determining present and future care needs
- Help with determining hospice eligibility and providing hospice education

the American College of Chest Physicians, the American Thoracic Society and the American College of Critical Care Medicine, which have called for greater palliative care involvement earlier in patient's ICU stays.

The type of palliative care provided in the ICU can range from consultations initiated by predefined triggers (eg, metastatic cancer, advanced dementia, prolonged multi-organ dysfunction) to integrated care. Palliative care consultations have been shown to reduce ICU stays and increase transitions to a comfort-focused care plan if that is consistent with a patient's (or a surrogate's) goals, preferences and values.³⁷ Close collaboration between the palliative care team and the ICU team is essential and may manifest as staff training (on the benefits of palliative care), co-

rounding and clinician support. A recent systematic review of palliative care-ICU partnerships looked at the design and effectiveness of more than 30 unique palliative care interventions including consultative care for ICU patients and embedded integrated palliative care in the ICU.³⁸ These interventions were shown to decrease both ICU and hospital stays, and neither negatively affected patient or family satisfaction or mortality rates.³⁸

What may be at work here? When involved in the care of ICU patients, palliative care teams have a number of missions. Sometimes managing pain or dyspnea may be the priority, while other times discussing goals of care or navigating challenging end-of-life issues may be of primary importance. Studies have suggested that

patients in the ICU often experience poorly controlled symptoms such as pain, anxiety and depression.^{39,40} Palliative care teams can focus on these issues and are well-equipped to address high levels of suffering; thus, their work has been shown to effectively reduce symptom burden.⁴⁰

In addition to aggressive symptom management, palliative care teams are trained to help ICU staff cope with and address family distress. Good communication is recognized as essential in the ICU setting.⁴¹ Integral to good communication are interdisciplinary family care conferences, generally held by the fifth day of an ICU stay. These “family meetings” are not only a place to address a change in the goals of care but they also offer an opportunity to identify a patient’s (or their surrogate’s) goals, clarify misunderstandings about the care plan and expectations, respond to patient or family concerns, and promote ongoing shared-decision making. This is important as patients in the ICU and their surrogates often do not comprehend the role of interventions such as cardiopulmonary resuscitation and how they may be in conflict with their goals of care.⁴² The palliative care team can either facilitate or assist the ICU staff during such conferences. By clarifying the goals of care and helping patients understand their prognosis, the palliative care team can help align medical care with a patient’s goals, preferences and values. This benefits not only patients but also family members, as family members who are able to engage in these interactions and are allowed to express their concerns experience less complicated grief than those who are not.¹⁶

In the case of S.W., a palliative care physician could help facilitate a discussion about goals for his care. In meetings with the ICU and nephrology teams, members of the palliative care team could share information regarding his clinical condition and prognosis. This would be followed by an interdisciplinary care conference involving the clinicians, other caregivers and the patient and his family. In conversations with her palliative care team members, S.W.’s wife could reveal information about where and how he grew up, how he per-

ceives illness and suffering, and his values, beliefs, hopes and fears. This could aid the medical team in better understanding S.W.’s goals, values and preferences and help establish trust, rapport and empathy with S.W. and his family. One way to elicit such information is to use the Ask-Tell-Ask method.⁴³ The clinician would start by discerning Mrs. S.W.’s knowledge of her husband’s medical condition, describe his or her medical assessment, then ask if she has questions or wants further clarification. Finally, the clinician could offer an opinion about prognosis or make recommendations about care options if the patient or family wanted guidance. A mutual exploration of goals and honest dialogue about S.W.’s medical situation and prognosis could help promote shared decision-making.

Conclusion

Palliative care specialists have always sought to improve quality of life for patients and their families by alleviating the pain and other symptoms of a serious and/or life-threatening illness. They now play an expanding role in the care of patients with serious illnesses.

Palliative care physicians add value to the care provided by health care teams and are increasingly assisting those in oncology and ICU settings. Evidence shows that patients requiring advanced symptom management and assistance with defining their care goals, preferences and values can benefit from palliative care at any stage of their disease. **MM**

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RESEARCH WINNER

Positional Effects on Lung Volumes and Transpulmonary Pressure during Unilateral Mechanical Asymmetry

BY GUSTAVO ANDRES CORTES-PUENTES, M.D., KENNETH GARD, JOSEPH KEENAN, ALEXANDER ADAMS, DAVID DRIES AND JOHN J. MARINI, UNIVERSITY OF MINNESOTA

Ventilated patients with asymmetry of lung or chest wall mechanics may be vulnerable to differing lung stresses or strains dependent on body position. The purpose of our study was to examine transpulmonary pressure (P_{TP})—a measurement of lung stress—and functional residual capacity (FRC) during body positioning changes in an animal model when the mechanical properties of the lung are influenced by positive end-expiratory pressure (PEEP) and experimental pleural effusion (PLEF).

Methods

Fourteen deeply anesthetized swine were studied after preparation that included tracheostomy, thoracostomy and placement of an esophageal balloon catheter. Animals were ventilated at $V_T=10$ mL/kg, frequency of 15, I:E=1:2 and $FIO_2=0.5$ (Carestation, GE, Healthcare). The animals were placed in a randomized order in supine, prone, right lateral, left lateral and semi-Fowler positions with either PEEP 1 cm H_2O (PEEP1) or PEEP 10 cm H_2O (PEEP10) applied. Experimental PLEF was generated by instilling 10 mL/kg saline into the right or left pleural space; all measurements were repeated. End-inspiratory and end-expiratory P_{TP} and FRC were determined in each condition: PEEP1-nonPLEF, PEEP10-nonPLEF, PEEP1-PLEF and PEEP10-PLEF.

Results

For each condition tested, no differences in FRC were found among the four horizontal positions. However, when compared with horizontal positioning, semi-Fowler positioning increased FRC by 35% at PEEP1 and 37% at PEEP10 without PLEF, and 142% and 95% for PEEP1 and PEEP10 in the presence of PLEF, respectively. The laterality of the effusion did not affect global magnitude of FRC or P_{TP} . Inspiratory or expiratory P_{TP} showed negligible differences across positions among the tested conditions at both levels of PEEP. Consistently negative end-expiratory P_{TP} at PEEP1 increased to positive values with PEEP10.

Conclusion

Fowler's position generated better aeration and reduced lung stress. All horizontal positions were associated with similar FRC and P_{TP} , despite asymmetry and marked underlying changes of the internal distribution of gas volume and collapse. Applying PEEP of 10 cm H_2O reversed the tendency for tidal opening and closure. **MM**

2014 American College of Physicians-Minnesota Poster Competition Winners

The Minnesota Chapter of the American College of Physicians invites medical students and internal medicine residents to take part in a scientific poster competition each year. Residents and students submitted posters for consideration at the chapter's annual meeting on November 8, 2013. One hundred seventy-two abstracts were considered. Each of the state's internal medicine training programs (University of Minnesota, Abbott Northwestern Hospital, Mayo Clinic and Hennepin County Medical Center) was well-represented with submissions in the clinical vignette, quality improvement and research categories.

Posters were judged by practicing internal medicine physicians, internists from the state's academic medical centers, chief residents and peers. "Poster Rounds" were conducted for the peer-judging process. The judges' criteria included clinical relevance, originality, and written and visual presentation. Special thanks to Charles Reznikoff, M.D., and Andrew Olson, M.D., for coordinating the competition.

The winners were invited to present their posters at the 2014 American College of Physicians' annual meeting in Orlando in April. One of the Minnesota winners, Gustavo Andres Cortes-Puentes, M.D., from the University of Minnesota, won the national competition.

Two clinical vignettes sponsored by Mayo Graduate School of Medicine were also among the national winners: "Wasting Away in Manila Bay" by Nicholas R. Crews, M.D., and "Steroid-Induced Hypoglycemia" by Lisa M. Daniels, M.D.

Congratulations to all of the participants on their excellent work.

CLINICAL VIGNETTE WINNER

Miliary Tuberculosis in a Somali Refugee

A New Normal?

BY MATTHEW GOERS, M.D., UNIVERSITY OF MINNESOTA

Tuberculosis in the native U.S. population has declined over the past several years; advanced cases are now more common among foreign-born patients. Given the remarkably variable presentations of disseminated tuberculosis, diagnosis can be difficult and treatment is often complicated by cultural misunderstandings.

Case

A 24-year-old Somali woman with no previous medical history came to the United States in 2011 from a Kenyan refugee camp. She presented with reports of mutism, “kidney” pain and inability to care for herself for the past month. Initial labs were significant for elevated inflammatory markers without leukocytosis. MRI of the head demonstrated a 4mm punctate area of enhancement in the left parietal region with hyperintensities suggesting edema. CT of the chest/abdomen revealed miliary type pattern in lungs with osteomyelitis/discitis at T8-T9 with kyphotic deformity. There was concern for disseminated spinal tuberculosis, and the patient was started on empiric pyrazinamide, isoniazid, ethambutol and rifampin in addition to prednisone for edema. Bronchoscopy was negative for AFB and MTB PCR, and CT-guided drainage of the spinal abscess re-

vealed no bacteria and a negative stain for AFB. There was no neurosurgical intervention for spinal lesions, and the patient was only given five days of prednisone during her hospitalization.

Upon discharge, the patient continued on therapy for tuberculosis with plans to follow up with public health officials. On her second presentation 12 days later, family members stated she had stopped walking and showed continued signs of self-neglect. Exam demonstrated 4/5 upper and 0/5 lower extremity strength. Repeat MRI of the brain found a 4 mm enhancing nodule within the left parasagittal posterior frontal lobe associated with mild edema. MRI of the spine demonstrated cord compression at the level of T8-T9 associated with edema. Prednisone was started for spinal edema, and by this time cultures from the prior spinal aspiration returned positive for *Mycobacterium tuberculosis* complex. The patient underwent laminectomy with incision/drainage of abscess and was continued on tuberculosis therapy with discharge to acute rehabilitation. On follow-up, the patient was able to ambulate with limitations and her family noted improvement in social interaction and back pain.

Discussion

This presentation is unfortunately typical among many foreign-born patients. From 2007 to 2012, foreign-born patients diagnosed with tuberculosis in Minnesota have more commonly presented with extrapulmonary complaints. Tragically, almost 20% of miliary tuberculosis is diagnosed post-mortem. Neurologic deficits such as mutism in the setting of back pain, especially in a young foreign-born patient, should immediately prompt health care providers to expand their differential diagnosis and investigate etiologies such as tuberculosis. Empiric coverage during initial diagnostic testing must be established in patients with high clinical suspicion for advanced disease. In addition, providers should become better versed in immigrant medicine as our world becomes ever more connected and diverse. **MM**

QUALITY IMPROVEMENT WINNER

Exposed Facial Hair as a Danger in Home Supplemental Oxygen Use

BY BRADLEY ANDERSON, M.D., LAURA GREENLUND, M.D., PH.D., AND ANDREW C. GREENLUND, M.D., PH.D., MAYO GRADUATE SCHOOL OF MEDICINE

The flammable nature of supplemental oxygen has long been recognized.

The incidence of several burn injuries sustained by patients within Mayo Clinic's primary care internal medicine practice prompted us to analyze individual cases and examine the factors contributing to these adverse events. After identifying facial hair as a common variable among the affected patients, various scenarios were simulated using life-size models in order to identify areas for quality improvement.

Case

A 53-year-old man with a history of COPD requiring supplemental home oxygen presented to the emergency department after sustaining facial burns. The patient had been using a metal grinder that afternoon at his home while using nasal cannula oxygen. The patient reported that a metal spark was thrown onto his beard close to his nares, causing a sudden fire that melted the plastic tubing of the cannula to his face while charring his nose and clothing. Upon presentation, exterior examination of the face showed first-degree burns along the melolabial folds, upper lip, nasal dorsum and

infraorbital areas bilaterally. Charring was observed in the immediate nasopharynx without involvement of the oropharynx or larynx. Steroids were initiated given the anticipated degree of swelling in the involved facial regions. After several hours of observation, the patient returned home with plans for outpatient surgical evaluation.

Methods

After identifying facial hair as a significant feature within this case and others affected by this adverse event, life-size facial models were constructed using human hair and putty-based facial coverings. In a controlled setting, supplemental oxygen tanks and nasal cannula tubing were used to simulate various scenarios and the related extent of flammability. Flammability was assessed based on the ease of ignition as well as the time before facial putty scalding was observed. These scenarios were filmed for the purpose of accurate analysis and future patient/provider education.

Results/Discussion

Supplemental home oxygen therapy is common in the management of patients with chronic lung disease. Although oxygen is not independently combustible, it acts as accelerant to drive combustion; hence, oxygen leaks within any part of the delivery or storage system can predispose one to these events. We demonstrated that

device-related components such as the plastic used in tubing devices serve as fuel in the setting of an ignition. As demonstrated through these simulations, facial hair poses a particular danger to individuals exposed to sources of flame and may act to further facilitate combustion. Counseling patients about the hazards of facial hair and the potential for combustion at both the initiation of oxygen therapy and on periodic follow-up visits is critical to reducing burn-related injury secondary to supplemental home oxygen use. **MM**

MEDICAL STUDENT WINNER

*An Internist's Dilemma***Differentiating Paraneoplastic from Primary Rheumatologic Disease**

BY BEN MEYER, ELIZABETH GOLDSMITH, M.D., AND MUMTAZ MUSTAPHA, M.D., UNIVERSITY OF MINNESOTA MEDICAL SCHOOL

Determining the cause of persistent fever is a diagnostic challenge. The causes can be divided into three main categories: infectious, noninfectious inflammatory and malignant. Because of a lack of localizing infectious symptoms and similar biochemical underpinnings, primary rheumatologic disease and paraneoplastic syndromes can be extremely difficult to differentiate.

Case

A 59-year-old woman visiting from another country presented to the ER after two weeks of high intermittent fevers, rigors and arthralgias. She had no significant past medical history other than a lumbar fusion with unknown implanted hardware in 2012. On exam, she was found to have a fever (103°F), swelling and tenderness of the left wrist and knee, 1+ tenosynovitis of MCPs bilaterally and no tenderness over the lumbar spine. Other vitals as well as cardiac, respiratory, abdominal and neurologic examinations were unremarkable. Laboratory studies showed a WBC of 17.6k/uL (predominantly neutrophils), along with CRP of 158 mg/L, ESR of 96 mm/h and ferritin of 2030 ng/mL. Blood cultures, infectious studies and ENA panel were negative. CT scan of

the chest, abdomen and pelvis showed a small lesion in the superior pole of the left kidney. The patient was initially treated with broad-spectrum antibiotics, but her fevers increased in frequency, migratory arthralgias persisted and an intermittent salmon-colored rash developed. Her ferritin levels continued to rise, peaking at over 14,000 ng/mL. The patient was started on 40 mg prednisone for a working diagnosis of adult-onset Still disease (AOSD) and saw resolution of fever and arthralgias within one day. The patient's renal mass was suspicious for malignancy with a paraneoplastic process, but MRI could not be obtained because of uncertainty about spinal hardware composition. CT with renal mass protocol revealed a lobulated, enhancing mass of the superior pole of the left kidney, compatible with renal cell carcinoma (RCC). The patient continued prednisone, remained afebrile and symptomatically improved; however, partial nephrectomy as an outpatient revealed renal cell carcinoma.

Discussion

This patient presented a difficult diagnostic challenge as there was little clinical evidence to differentiate between para-

neoplastic syndrome and AOSD. Fever is a common symptom of RCC, but it is nonspecific and one of the many protean presentations of paraneoplastic RCC. There are no definitive tests for AOSD; the diagnosis is based largely on clinical criteria. Ultimately, the decision was made to treat with steroids in an effort to achieve symptomatic relief without impairing definitive diagnosis.

Conclusion

When a patient presents with fever of unknown origin and signs and symptoms suggesting a noninfectious etiology, it can be difficult to clinically distinguish primary rheumatologic disorders and paraneoplastic entities. A CT scan of the abdomen can be a valuable tool in evaluating for underlying malignancy in cases where a rheumatologic diagnosis is unclear. In any such work-up, malignancy should remain on the differential, and diagnostic and therapeutic measures should be coordinated to allow symptomatic treatment for quality of life as the investigation proceeds. **MM**

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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.

HealthPartners Medical Group continues to receive nationally recognized clinical performance and quality awards. We offer a competitive compensation and benefit package, paid malpractice and a commitment to providing exceptional patient-centered care.

Apply online at healthpartners.com/careers or contact diane.m.collins@healthpartners.com. Call Diane at 952-883-5453; toll-free: 800-472-4695 x3. EOE



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Medical & Dental
Central Minnesota Clinics

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FAMILY MEDICINE OPPORTUNITIES in Minnesota



Sanford Health is seeking Board Eligible/Board Certified Family Medicine physicians to join its primary care groups. Opportunities can include a combination of inpatient, outpatient, obstetrics and emergency medicine throughout the following locations:

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Bagley	New York Mills	Wheaton
Bemidji	Perham	Windom
Canby	Thief River Falls	Worthington

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LEARN MORE:
practice.sanfordhealth.org

CONTACT:
Celia Beck, 218-333-5056 or
celia.beck@sanfordhealth.org

Mary Jo Burkman, 605-328-6996 or
mary.jo.burkman@sanfordhealth.org

Jill Gilleshammer, 701-417-4852 or
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CONTACT: Sandra Beulke, MD
PHONE: 952-442-4461
EMAIL: administration@lakeviewclinic.com
WEB: www.lakeviewclinic.com



St. Cloud VA Health Care System OPPORTUNITY ANNOUNCEMENT

Opportunities for full-time and part-time staff are available in the following positions:

- Dermatologist
- Geriatrician/Hospice/Palliative Care
- Internal Medicine/Family Practice
- Medical Director, Extended Care & Rehab (Geriatrics)
- Psychiatrist
- Urgent Care Physician (IM/FP/ER)

Applicants must be BE/BC.



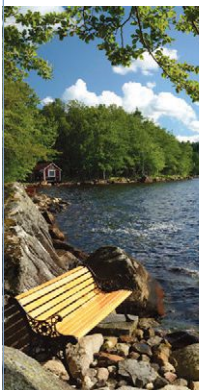
Since 1924, the St. Cloud VA Health Care System has delivered excellence in health care and compassionate service to central Minnesota Veterans in an inviting and welcoming environment close to home. We serve over 38,000 Veterans per year at the medical center in St. Cloud, and at three Community Based Outpatient Clinics located in Alexandria, Brainerd, and Montevideo.

Competitive salary and benefits with recruitment/relocation incentive and performance pay possible.

For more information:
Visit www.USAJobs.gov or contact
Nola Mattson (STC.HR@VA.GOV)
Human Resources
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St. Cloud, MN 56303
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Located sixty-five miles northwest of the twin cities of Minneapolis and St. Paul, the City of St. Cloud and adjoining communities have a population of more than 100,000 people. The area is one of the fastest growing areas in Minnesota, and serves as the regional center for education and medicine.

Enjoy a superb quality of life here—nearly 100 area parks; sparkling lakes; the Mississippi River; friendly, safe cities and neighborhoods; hundreds of restaurants and shops; a vibrant and thriving medical community; a wide variety of recreational, cultural and educational opportunities; a refreshing four-season climate; a reasonable cost of living; and a robust regional economy!

EMPLOYMENT OPPORTUNITIES

Fairview Health Services

Opportunities to fit your life

Fairview Health Services seeks physicians to improve the health of the communities we serve. We have a variety of opportunities that allow you to focus on innovative and quality care. Be part of our nationally recognized, patient-centered, evidence-based care team.

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- ENT
- Family Medicine
- Gastroenterology
- General Surgery
- Hospitalist
- Infectious Disease
- Internal Medicine
- Med/Peds Hospitalist
- OB/GYN
- Oncology
- Orthopedic Surgery
- Outpatient Internist/Geriatrian
- Pediatrics
- Psychology
- Psychiatry
- Pulmonary/Critical Care
- Rheumatology
- Urgent Care
- Urologist

For additional information, please contact:

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

FAMILY PHYSICIAN

NeoPath Health, an employer-based practice is seeking a board certified **family practice physician** for our clinic in the Twin Cities metro area. Days needed: Tuesday, Thursday, and Friday without weekends, evenings or call. Compensation is salaried and we do not accept payment from insurance companies. Candidate must demonstrate leadership qualities and have the ability to operate autonomously.

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JOE MCERLANE – CEO
952-698-9861 or jmcerlane@neopathhealth.com



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Olmsted Medical Center offers a competitive salary and comprehensive benefit package.

Opportunities available in the following specialty:

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Family Medicine
Byron Clinic
Pine Island Clinic

Hospitalist
Rochester Hospital

Send CV to:
OlmstedMedical Center
Administration/Clinician
Recruitment
102 Elton Hills Drive NW
Rochester, MN 55901
email: dcardille@olmmed.org
Phone: 507.529.6748
Fax: 507.529.6622

EOE

www.olmstedmedicalcenter.org

Urgent Care



We have part-time and on-call positions available at a variety of Twin Cities' metro area HealthPartners Clinics. We are seeking BC/BE full-range family medicine and internal medicine pediatric (Med-Peds) physicians. We offer a competitive salary and paid malpractice.

For consideration, apply online at healthpartners.com/careers and follow the Search Physician Careers link to view our Urgent Care opportunities. For more information, please contact diane.m.collins@healthpartners.com or call Diane at: 952-883-5453; toll-free: 1-800-472-4695 x3. EOE



healthpartners.com

Sioux Falls VA Health Care System
"A Hospital for Heroes"

Working with and for America's Veterans is a privilege and we pride ourselves on the quality of care we provide. In return for your commitment to quality health care for our nation's Veterans, the VA offers an incomparable benefits package.

The Sioux Falls VAHCS is currently recruiting for the following healthcare positions.

- Cardiologist (part-time)
- Endocrinologist
- Oncologist
- Primary Care (Family Practice or Internal Medicine)
- Psychiatrist
- Pulmonologist

Applicants can apply online at www.USAJOB.S.gov

They all come together at the Sioux Falls VA Health Care System. To be a part of our proud tradition, contact:

Human Resources Mgmt. Service
2501 W. 22nd Street
Sioux Falls, SD 57105
(605) 333-6852



www.siouxfalls.va.gov

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Family Medicine

- Outpatient practice with or without OB
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Hospitalist

- 25 bed critical access hospital with average census of 17.5 supports an advanced surgery department and admissions
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(866) 270-0043 / (218) 546-4322 | www.cuyunamed.org

Internal medicine

BY MARGARET NOLAN, M.D.

This white coat does not fit me right,
It's sometimes loose and sometimes tight.
And every day it seems to change,
To shift and drift and rearrange,
Upon this frame that moves within,
The same as it has always been.
Why is it that this coat can see
A human being die, and be
The only one on earth to know
He smiled before letting go?
Why is it that this coat can hear
The truest hope and darkest fear,
The vulnerable and humble core
Of someone unknown just before?

Why is it that this coat can say
That things don't have to be this way,
That fragile, failing bodies can
Regain the strength to live again?
This coat just does not fit me right,
It's sometimes loose and sometimes tight.
When will this coat begin to fit
The awkward one who's wearing it,
And when will I begin to see
It's not the coat that's wearing me.

Margaret Nolan is a family medicine resident
at Mayo Clinic in Rochester.



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