What FTE is right for you?

By Nisha Mehta, MD, a physician leader whose work focuses on physician empowerment, community building, and career longevity in medicine

Nobody asks for their daily schedule during medical school or residency interviews. For years during medical training, you go to work when someone tells you to, you take as much vacation as has been allotted to you, and do the work that you’ve been assigned — and then some.

That attitude often carries over into the job search. It’s shocking how many physicians will apply to and even accept positions without a realistic picture of what a normal day in a particular job looks like. We often wear our ability to get the job done as a badge of honor, and rarely question it, not realizing that as time goes on, this is often to the detriment of our career longevity.

The fact is, “full time” for physicians is often greater than the normal 40-hour work week experienced by many other professions, and many times, “part time” for a physician doesn’t feel so part time. To state the obvious, the number of hours worked is inversely proportional to the number of hours of free time you have. While most of us derive significant personal satisfaction from our jobs, we also need time with our families and time for other activities that fill the proverbial cup.

These days, I spend a lot of time encouraging physicians to “create the life in medicine that they want,” the essence of which comes down to being more intentional about how you approach your career. Job turnover is quite common in the early years of practice, and can even lead physicians to want to exit medicine entirely. Therefore, when searching for your job, it’s imperative that in addition to all the other factors that go into the job search, the number of hours you want to work is also considered.

There are many factors that may play into this decision, including finances, debt, children, the work schedule of your significant other, interests outside of medicine, the practicalities of a specialty, and what types of positions exist. While there’s no guarantee that all of these can align perfectly, mapping out what an ideal work week looks like will allow you to tailor your job search better. At the end of the day, if you can work 30 years as a 0.8 FTE because you love it and feel that your personal and professional goals are aligned, many would choose this over working at a 1 FTE but experiencing such significant burnout that you elect to stop working as soon as possible. It may also be that you still want to work the full complement... 

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Ultimately, for many coming out of training, this is the first time where you have the option to think about the terms of employment, and you should explore it. It’s also important to keep in mind that life changes, and what’s right for you at one stage of your career may not be at another stage. Being proactive about these decisions and changes before burnout occurs will ensure a long, healthy career. So often, physicians assume these options are not available to them, and will even choose to leave medicine entirely or make significant shifts in their careers without exploring how to make a job they otherwise love fit the life in medicine that they want. Remember, if you don’t ask, it won’t happen.

Exploring Telemedicine Physician Practice Opportunities
Options are abundant for physicians with a good ‘webside’ manner and willingness to adapt, but due diligence is essential
By Bonnie Darves

Telemedicine, in the form of virtual patient visits using video platforms, has been making inroads into the broader physician practice realm for more than a decade, but when the pandemic hit, it exploded. Practically overnight, traditional practices and health systems scrambled to get technology in place to ensure that patients at risk for contracting the coronavirus — or experiencing poor outcomes if they did get COVID-19 — had some means of connecting with their physicians. Simultaneously, companies that were already in the virtual-visit business experienced exponential growth in demand for physicians to provide services.

“It’s been nothing short of a seismic effect,” said John Frey, founder of the National Coalition of Healthcare Recruiters (NCHR) in Washington, West Virginia. “Telemedicine was happening, but the coronavirus cracked the egg wide open.” NCHR members are reporting major increases in the number of clients, existing and new, seeking physicians to fill telemedicine positions.

Lou Anne Gonzales, president of Advanced Physician Recruitment in Overland Park, Kansas, who already had a solid footing in telehealth recruiting and consults on telehealth solutions, has seen a huge increase in demand from both sides of the picture: clients who need physicians to fill newly created positions and physicians who want to explore virtual-care practice opportunities. “I’m hearing from 10 to 12 physicians a week looking for positions where they can do some telemedicine — or do virtual practice exclusively,” Ms. Gonzales said. “This high level of physician interest is something I haven’t seen before.”

Regardless of whether physicians are seeking a full-time telemedicine position or a part-time opportunity to moonlight doing virtual visits, telehealth practice is here to stay, according to Joseph Kvedar, MD, who is president of the American Telemedicine Association and a virtual-care innovator at Partners HealthCare in Boston. “Wherever physicians practice,
whether that’s in a clinic or with a digital-first primary care organization, they’ll be doing some telehealth now,” he said.

**Telemedicine: It’s here to stay**

A recent study by the COVID-19 Healthcare Coalition Impact Study Work Group, in which Dr. Kvedar participated, found that telehealth claims increased 50 to 100 times in several US states between July 2019 and July 2020, and grew significantly in all states. A companion survey of 1,594 physicians and health professionals last summer found that 83.6 percent had engaged in interactive video patient visits in 2020 and that nearly 40 percent averaged more than 20 virtual visits a week.

In Dr. Kvedar’s view, the issue now is not whether physicians will practice telemedicine but what their practice will look like. “We’re at the point now where it’s a question of how physicians will use it and how they’ll determine which clinical cases should be in office and which might be virtual,” he said. “I think we’ll see physicians joining practices where they’ll have 60 percent in-person and 40 percent telehealth visits. We’ll also see physicians who do 100 percent virtual practice with four or five companies — they’ll be the Uber drivers of health care.”

The model’s appeal is obvious for physicians seeking flexibility in their lives, to care for young children or aging parents, for example. Still others will seek part-time, limited telehealth opportunities to increase their income and pay off education debt more quickly. Some might choose the model out of pure preference, after trying it out and finding it a good fit.

That’s the case for Kurt Gilbert, MD, an internist in Cookeville, Tennessee. He was practicing as a hospitalist but then started seeing patients virtually when the pandemic hit. “I’ve always had an interest in telemedicine, and once I tried it, I really liked it. So, I’m now practicing telemedicine full time, from home,” said Dr. Gilbert, who works with Doctor On Demand, the company cofounded by the TV personality Dr. Phil. “The big difference for me now is that when my shift is over, I’m done. And when I want to see my 17-month-old on my lunch break, I can. For me, it’s a dream job, and the patients love it because they can choose the visit time.”

Dr. Gilbert sees patients in the numerous states where he is licensed. His care ranges from acute and urgent-care issues and chronic condition management to regular follow-up care for patients with whom he has established relationships. When a situation requires emergent medical attention, Doctor on Demand’s emergency support team steps in.

For Krista Grow, MD, a Kansas emergency medicine physician, telemedicine provided has proved an ideal solution to an intermediate-term family need. Her husband is doing his fellowship at the Cleveland Clinic, so the family moved to Ohio to stay together. Dr. Grow started doing some telehealth practice, about 12 hours a month, through Sycamore Independent Physicians of Alabama, and she also commutes to Kansas for ER shifts several days a month. “The [virtual-visit] care model is sort of slow-paced for me, but I find the work fulfilling. I’m often taking care of patients who can’t see their physician or who have lost their job and their benefits,” she said.

“It’s rewarding to be able to help people when they need it.”

Larson Hicks, CEO of Sycamore Independent Physicians, reports a definite uptick in physicians seeking practice arrangements like Dr. Grow’s, either out of personal interest or because of declining patient volumes in the wake of the pandemic. “We have some independent physicians who practice telemedicine because they want to diversify their practice portfolio or gain a new revenue stream. Others like the platforms because they can build their own panel of patients or fill in a hole in their schedule,” said Mr. Hicks. His company, whose primary business is in emergency medicine locum tenens services, has placed 150 physicians in telemedicine positions in 2020. While many work in locums-type models, others are moving into more structured, permanent arrangements.

Whatever telemedicine model physicians are interested in, they’ll find opportunities, said Ateev Mehrotra, MD, MPH, a Harvard health care policy researcher and hospitalist at Beth Israel Deaconess Medical Center in Boston. “If physicians want to be free spirits, they can do 100 percent telemedicine,” he said. At companies like Blue Sky Neurology, physicians do virtual consultations on stroke or neurological disorders. In radiology, an early telemedicine entrant, the market for all-remote positions has expanded dramatically, Dr. Mehrotra added, and psychiatry has seen major growth in all-virtual and hybrid models. “We’re seeing psychiatrists whose schedules include in-person clinic one or two days a week and tele-psychiatry visits at home in the evenings, for example,” he said. “Moving forward, physicians across all specialties will be engaging in more remote patient monitoring, especially for patients with chronic conditions. The innovations we’re seeing will give physicians a lot more flexibility than they’ve had before.”
Even hospitalist medicine is moving into remote care. Sound Physicians, a long-established hospitalist company, now offers tele-hospitalist positions in which home-stationed hospitalists work collaboratively with onsite hospital nurses and physicians to triage patients and create care plans. “Our tele-hospitalists might be supporting five to eight hospitals on a shift, and they have more control over how they manage the requests and alerts in their queue than they might in the hospital,” said Brian Carpenter, MD, the company’s national medical director. Sound Physicians is also moving into tele-SNF (skilled nursing facility) and virtual transitional care for discharged patients, providing a new range of telemedicine physician practice opportunities.

What telemedicine organizations look for

All sources interviewed for this article agreed that practicing telemedicine requires a change of mindset and that physicians who want to do virtual practice need a few years of post-training practice experience before making the shift. Moving from in-office visits to virtual ones is a definite adjustment because video visits obviously don’t allow for a traditional physical exam. Physicians who need to listen to the heart and lungs, check a patient’s ears, or examine a rash must use technology. They’ll also have to be extra diligent in obtaining a history in new patients and adept at establishing rapport quickly. “Not everyone can communicate effectively virtually, so that’s one of the qualities we screen for, in addition to solid experience,” Dr. Carpenter said. His company seeks hospitalists with at least three years of onsite practice experience, for example, as well as a strong critical care comfort level.

“Beyond practice experience, telemedicine organizations are looking for physicians who are personable, adaptable, and willing to learn something new,” Mr. Hicks said. It also helps when physicians have licenses in multiple states. That’s become easier with the advent of the Interstate Medical Licensure Compact, which expedites licensing among its 30 participating states.

Tony Yuan, MD, medical director at Doctor On Demand, which employs 600 physicians and has seen a dramatic spike in demand in 2020, boils it down to what he calls good “website” manner. “Anyone can learn the skills and pick up the technology, but we’re looking for physicians who present themselves well, who are compassionate and approachable.”

Dr. Yuan said, “and who can adapt to the volume.” Most video visits are scheduled for 15 minutes, with a short buffer between visits. Doctor on Demand physicians may take as much time as they need or extend a visit when necessary, but the basic expectation is that they’ll see four patients an hour. The company provides extensive training, a robust support system, and an integrated electronic health record.

Doctor on Demand has two primary models, a 32-hour work week and a 40-hour schedule, with some flexibility to break up visit “blocks” to suit personal or family needs. The company looks for a minimum commitment of 60 hours a month. Compensation, Dr. Yuan said, is “on par” with the income physicians would receive in a traditional care model. The virtual practice model, he added, is ideal for primary care physicians, emergency medicine physicians, pediatricians, and psychiatrists. “We can’t hire people fast enough, and we’re hearing from physicians who tell us that they didn’t even know these options existed,” Dr. Yuan said.

Tyler Covey, CPA, who is CEO of the national firm MDStaffers in Rancho Cordova, California, echoes that demand-versus-supply dilemma. His company filled 900 telemedicine positions (for physicians and advance practice clinicians) in a single month and has seen the demand for behavioral health professionals and primary care clinicians “pretty much explode.” The physicians that MDStaffers has placed practice in a variety of settings, from dedicated virtual clinics to call centers to their own homes.

“They’re a lot of variation, but for physicians, I think the important thing is ensuring the organization is well equipped to support virtual care,” Mr. Covey said. Ideally, that means having dedicated support personnel, top-notch technology, a system for ensuring patients are prepared for the visit, and a platform in which the electronic health record (EHR) is integrated. “Not all telemedicine jobs are created equally,” he said.

Kurt Schussler, a managing partner of Medical Advantage Recruiters in Addison, Texas, whose company is seeing skyrocketing demand for telemedicine physicians, urges physicians to thoroughly research both the position and the organization offering it. “It’s important to know how the organization is structured, how much support they’ll receive, and whether the entity is financially solid,” Mr. Schussler said. That due diligence includes obtaining credit reports and speaking to physicians who work for the organization to ensure that compensation is equitable, as advertised, and paid timely.
Kaiser: the ‘gold standard’ keeps innovating

Organizations that want to do virtual care right might look to Kaiser Permanente for expert instruction. Kaiser has been delivering telemedicine services and virtual care for more than 15 years, in a highly organized, orchestrated, and integrated manner. All physicians who practice with The Permanente Medical Group — with 9,000 physicians, TPMG is the country’s largest — are equipped with video cameras, state-of-the-art information technology, dedicated smartphones, and a system that enables physicians to quickly “accelerate” care when specialists are needed. Even with those components in place, Kaiser had to adjust to accommodate the new environment after the coronavirus hit, said Richard S. Isaacs, MD, TPMG’s CEO and executive director.

“When the shelter-in-place mandate came, we had to move to a video-care-first strategy almost overnight and we quickly converted to conducting 90 percent of all exams on video,” Dr. Isaacs said. “What we’re seeing is that patients really love video visits, both the convenience and the personalization.” By August 2020, Kaiser was conducting nearly 25,000 video visits daily in its Northern California region alone and provided four million in the first three quarters of 2020 across all eight Permanente Medical Groups.

Although Kaiser had long been using virtual visits for preventive care and some follow-up care, behavioral health, and dermatology, the pandemic spurred innovations in other clinical areas. A Kaiser pilot in tele-critical care, for example, has become part of a sophisticated hybrid-care model going forward, in which specialists perform remote monitoring and proceduralists provide direct patient care in the ICUs. “Our physicians are really enjoying this — it’s as if they’re part of a team like the Navy SEALs,” Dr. Isaacs said.

A more recent innovation involves virtual cancer care. Kaiser oncologists recently began using primarily video visits for oncology patients, who, because of their compromised immune systems, may be especially vulnerable to COVID-19 infection and poor outcomes. Tatjana Kolevska, MD, chair of the Kaiser Permanente Northern California Oncology and Hematology Chiefs Group, spearheaded the effort to move almost all oncology care to phone or video appointments, in very short order. “We moved from 15 percent before the pandemic to 98 percent (virtual visits) within a week, and it’s been very successful,” she said. “We’ve discovered that physicians find it easier to act on issues that patients are experiencing. And the video visits make it easier for caregivers to participate.”

Dr. Kolevska said that somewhat surprisingly, the majority of Kaiser oncology patients, based on survey findings, have proved amenable to having even sensitive issues such as a new diagnosis or a treatment failure discussed using virtual visits. “We’ve seen a significant increase in patient satisfaction overall with the video visits,” said Dr. Kolevska. Kaiser is also convening multidisciplinary patient conferences and tumor boards completely virtually now, enabling oncologists and other specialists from across the organization to review and guide care.

In Dr. Kvedar’s vision of the future, virtual care and telehealth will play an increasingly larger role in most physicians’ lives, with mostly beneficial results, especially when physicians manage patients who can’t readily get to care facilities. But telemedicine won’t supplant face-to-face visits, he said, or obviate onsite physical exams. “Most of us chose this career path because we want to help people and form that bond, which might be harder in a virtual setting,” he said. “At the same time, I see telemedicine and its flexible work environment as extremely liberating for physicians.”

Considering a Telemedicine Job? Ask the Important Questions

There’s so much going on in telemedicine today that it can be daunting to physicians trying to explore the fast-evolving marketplace and compare different practice opportunities that are wholly or predominately virtual. Because there are so many new players in the market and organizations offering positions differ widely, it’s a bit of a Wild West out there. For that reason, it’s very important for physicians considering telemedicine practice to obtain as much information as possible before making a commitment.

Sources interviewed for this article offered tips for navigating the telemedicine market and making informed decisions:

• “It’s important to ask how patients will be prepared for virtual visits, whether there’s a dedicated virtual exam room, and whether they’ll have a well-trained assistant to help support them. Physicians practicing telemedicine will have the highest satisfaction if all these components are in place.” — Lou Ann Gonzales, Advanced Physician Recruitment

• “Physicians need to know the types of patients they’ll see, what the volume expectations are, and what’s required in terms of schedule and call to reach the stated compensation levels.” — Kurt Schussler, Medical Advantage Recruiters
“Ask whether the EHR is fully integrated with the virtual-care platform, where you're permitted to work from, and what the payment models are: is it hourly, salaried, per consult, or productivity based?” — Joseph Kvedar, MD, American Telemedicine Association

“Make sure any organization you consider has an acceptable standard of care and that they’re compliant with CMS [Centers for Medicare and Medicaid Services] rules and state regulations.” — Tyler Covey, MD, Staffers
Glucose-Lowering Drugs to Reduce Cardiovascular Risk in Type 2 Diabetes
Rita R. Kalyani, M.D.

This Journal Feature begins with a case vignette highlighting a common clinical problem. Evidence supporting various strategies is then presented, followed by a review of formal guidelines, when they exist. The article ends with the author’s clinical recommendations.

A 64-year-old woman with a 10-year history of type 2 diabetes presents for a routine wellness visit. She had a myocardial infarction 4 years ago and has well-controlled hypertension and dyslipidemia. Her medications include metformin daily, losartan, hydrochlorothiazide, high-intensity atorvastatin, and aspirin. She does not monitor her blood glucose levels routinely at home. On examination, her blood pressure is 128/75 mm Hg and her body-mass index (the weight in kilograms divided by the square of the height in meters) is 33. Her glycated hemoglobin level is 7.9%, total cholesterol level 155 mg per deciliter (4.00 mmol per liter), high-density lipoprotein cholesterol level 52 mg per deciliter (1.34 mmol per liter), triglyceride level 126 mg per deciliter (1.44 mmol per liter), and low-density lipoprotein cholesterol level 78 mg per deciliter (2.00 mmol per liter). The estimated glomerular filtration rate is 76 ml per minute per 1.73 m² of body-surface area, and the urinary albumin-to-creatinine ratio (with albumin measured in milligrams and creatinine in grams) is 25. She has no retinopathy or neuropathy. She has heard that certain specific characteristics (e.g., the duration of disease, presence of microvascular complications, and use of specific glucose-lowering drugs) affect the magnitude of cardiovascular risk among patients with diabetes.

Multiple agents are currently approved for the management of hyperglycemia in patients with type 2 diabetes. Their benefits and adverse effects are summarized in Tables 1 and 2.

The Clinical Problem

Diabetes affects more than 450 million people worldwide and has a global prevalence of 9.3%. Type 2 diabetes accounts for 90 to 95% of cases and is characterized by the progressive loss of adequate insulin secretion, usually in persons with insulin resistance. The main complications of diabetes are microvascular disease (retinopathy, neuropathy, and nephropathy) and macrovascular disease (coronary heart disease, peripheral vascular disease, and cerebrovascular disease).

Atherosclerotic cardiovascular disease and heart failure, which are major causes of illness and death in patients with type 2 diabetes, have various pathophysiological mechanisms. The prevalence of atherosclerotic cardiovascular disease is more than two times as high in patients who have diabetes as in those who do not, and the relative risk of coronary heart disease is higher among women than among men. Although early studies suggested that death from coronary heart disease in patients with diabetes and no prior myocardial infarction was as high as that in nondiabetic patients with prior myocardial infarction, many other factors (e.g., age, sex, race, hypertension, dyslipidemia, and smoking) and diabetes-
tensive glucose-lowering treatment with insulin or a sulfonylurea (chlorpropamide, glipizide, or glibenclamide [also referred to as glyburide]) or conventional treatment with diet (median glycated hemoglobin level in the two groups during the trial period, 7.0% and 7.9%, respectively). As compared with conventional treatment, intensive glucose-lowering treatment significantly reduced the risk of microvascular complications but not myocardial infarction (defined as nonfatal or fatal myocardial infarction or sudden death) over 20 years of study follow-up. The between-group differences in risk reduction persisted for most microvascular complications during subsequent long-term observation, and the risks of myocardial infarction (15% and diabetes-related death (27%) that emerged were significantly lower in the group that had been allocated to intensive treatment than in the group allocated to conventional treatment.

Three subsequent trials investigated the effects of intensive glucose-lowering treatment with a combination of oral agents plus insulin, if needed, as compared with the standard of care in older patients (average age, 66 years) with long-standing type 2 diabetes who had established or high-risk cardiovascular disease. These trials, conducted over 3.5 to 5.6 years, showed that the incidence and progression of some microvascular complications was lower, with near-normalization of blood glucose levels (mean glycated hemoglobin level, 6.4 to 6.9%), than with standard care (mean glycated hemoglobin level, 7.0 to 8.4%). However, the incidence of cardiovascular outcomes was not significantly lower with the intensive treatment than with standard care during the trial period or in long-term observational follow-up. Instead, in the Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial, intensive lowering of glucose levels (i.e., with a goal of lowering glycated hemoglobin levels below 6%) as compared with standard care resulted in increases in death from cardiovascular disease and from any cause during the trial period. Consequently, most professional societies recommend an initial glycated hemoglobin target below 6.5% or 7.0% for men and nonpregnant women if the target is achievable without the development of clinically significant hypoglycemia or other adverse effects, as well as establishment of individualized glycemic goals. Additional information is provided in the Supplementary Appendix, available with the full text of this article at NEJM.org.

**Modification of Lifestyle and Cardiovascular Risk Factors**

Lifestyle management is emphasized at the time that diabetes is diagnosed and throughout the disease course, as is the management of cardiovascular risk factors (e.g., obesity, diet, physical inactivity, hypertension, dyslipidemia, and smoking) and the use of preventive medications (e.g., statins and antiplatelet agents), in accordance with current clinical guidelines for patients with diabetes.

A large, randomized trial involving overweight or obese participants with type 2 diabetes showed that intensive lifestyle interventions that promote weight loss, as compared with usual diabetes education and support, reduced several risk factors for cardiovascular disease but did not significantly reduce the rate of cardiovascular events.

In one small trial involving patients with type 2 diabetes, the risk of cardiovascular events was significantly lower with intensive multifactorial intervention (changes in lifestyle followed by pharmacologic treatment targeting cardiovascular risk factors) than with conventional therapy.

**Glucose-Lowering Medications**

Since the 1990s, the Food and Drug Administration (FDA) has approved new drugs for the treatment of diabetes on the basis of their safety and efficacy in lowering levels of glycated hemoglobin, a surrogate endpoint for long-term diabetes complications (data on cardiovascular outcomes were not initially required). In 2008, the FDA issued a guidance for industry stating that no glucose-lowering drug approved for type 2 diabetes could be associated with an unacceptable level of cardiovascular risk in postmarketing trials involving cardiovascular outcomes. A more recent proposed guidance emphasizes a broader range of safety concerns.

Postmarketing cardiovascular outcome trials have been conducted for agents in the dipeptidylpeptidase-4 (DPP-4) inhibitor, glucagon-like peptide-1 (GLP-1) receptor agonist, and sodium–glucose cotransporter type 2 (SGLT2) inhibitor classes. In order to accrue a sufficient number of events over a median of 2 to 5 years of follow-up, each of these trials enrolled approximately 5000 to 15,000 participants, the majority of whom had...
### Table 2. Oral Glucose-Lowering Medications Available for Treatment of Type 2 Diabetes in the United States.

<table>
<thead>
<tr>
<th>Class and Drug</th>
<th>Decrease in Glycated Hemoglobin Level</th>
<th>Mechanism</th>
<th>Selected Adverse Effects</th>
<th>Benefits and Considerations</th>
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<tbody>
<tr>
<td><strong>Sulfonylureas</strong></td>
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<tr>
<td>Glyburide</td>
<td>Up to 2.0%</td>
<td>Stimulate pancreas to release insulin over hours, activating sulfonylurea receptors on beta cells</td>
<td>Hypoglycemia, Weight gain</td>
<td>High rate of secondary failure, Low cost</td>
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<tr>
<td>Glipizide</td>
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<td>Glimipiride</td>
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<td><strong>Biguanides</strong></td>
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<tr>
<td>Metformin</td>
<td>Up to 2.0%</td>
<td>Inhibits hepatic glucose production through multiple mechanisms; also increases insulin-mediated glucose uptake in muscle, increases intestinal glucose uptake, and alters gut microbiota</td>
<td>Nausea, diarrhea, abdominal pain, Vitamin B12 deficiency, Rare acute exacerbation (i.e., in severe chronic kidney disease, liver failure, hypoxic states)</td>
<td>Often considered first-line therapy, Weight neutral (or potential weight loss), Low risk of hypoglycemia, Low cost</td>
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<td><strong>α-Glucosidase inhibitors</strong></td>
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<tr>
<td>Acarbose</td>
<td>Up to 1.0%</td>
<td>Inhibits intestinal α-glucosidase, slowing digestion and absorption of carbohydrates</td>
<td>Flatulence, diarrhea, abdominal pain, Contradicated with concomitant, chronic intestinal disease, inflammatory bowel disease</td>
<td>Weight neutral, Low risk of hypoglycemia, Taken before meals, Low cost</td>
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<td>Miglitol</td>
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<td><strong>SGLT2 inhibitors</strong></td>
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<tr>
<td>Canagliflozin</td>
<td>Up to 1.0%</td>
<td>Block reabsorption of glucose from urine by inhibiting SGLT2 in proximal tubules of kidney, resulting in glucosuria</td>
<td>Nausea, diarrhea, Upper respiratory symptoms, Rare joint pain, Fractures, macular edema, liver failure, Warnings regarding bladder cancer (canagliflozin) or myocardin inflammation (ertugliflozin)</td>
<td>Reduced ejection fraction, and without diabetes (ertugliflozin)</td>
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<tr>
<td>Ertugliflozin</td>
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<td><strong>DPP-4 inhibitors</strong></td>
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<tr>
<td>Sitagliptin</td>
<td>Up to 1.0%</td>
<td>Inhibits the enzyme that breaks down incretins, leading to increase in glucose-dependent pancreatic insulin release, decrease in glucagon release</td>
<td>Nausea, diarrhea, Upper respiratory symptoms, Rare joint pain, Fracture (canagliflozin)</td>
<td>Weight neutral, Low risk of hypoglycemia, High cost</td>
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<td>Saxagliptin</td>
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<td>Eragliflozin</td>
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<td><strong>DPP-4 inhibitors</strong></td>
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<td>Alogliptin</td>
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**Notes:**
- Drug classes are listed in order of approval.
- Colesevelam and bromocriptine have also been approved by the Food and Drug Administration (FDA) for the treatment of type 2 diabetes but are not commonly used for this indication and are not included here. CVD denotes cardiovascular disease, DPP dipeptidylpeptidase-4, HDL high-density lipoprotein, LDL low-density lipoprotein, and MACE death from multiple adverse cardiovascular events (cardiovascular disease, nonfatal myocardial infarction, or nonfatal stroke), NYHA New York Heart Association, and SGLT2 sodium–glucose cotransporter type 2.
- There have been postmarketing reports of acute pancreatitis, including fatal and nonfatal pancreatitis. If pancreatitis is suspected, discontinue drug.
- Canagliflozin has an FDA-approved indication for reductions in the risk of end-stage kidney disease, worsening of kidney function, death from cardiovascular disease, and hospitalization for heart failure among adults with type 2 diabetes and diabetic kidney disease. Placebo-controlled trials have also shown benefit in slowing the progression of kidney disease with dapagliflozin (primary outcome) and empagliflozin (secondary outcome).8,9,10
- Placebo-controlled trials of dapagliflozin and empagliflozin in patients with heart failure and reduced ejection fraction have shown that these drugs are associated with a reduced risk of hospitalization for heart failure and of cardiovascular death (primary outcome).11,12 Trials of canagliflozin in patients with or at high risk for CVD have also shown benefit in reducing hospitalization for heart failure (secondary outcome).13
established atherosclerotic cardiovascular disease, with the remaining being at high risk. The primary outcome was a major adverse cardiovascular event, including nonfatal myocardial infarction, nonfatal stroke, or death from cardiovascular disease, with or without hospitalization for unstable angina. By the end of the follow-up period, between-group differences in the glycated hemoglobin level, 7.4% and 8.0%, respectively, those randomly assigned to receive metformin had significant reductions in the risk of myocardial infarction (39%) and diabetes-related death (42%) during the 10-year trial period, and the benefits persisted during subsequent long-term observation. However, a meta-analysis that included the results of this trial and other, smaller trials concluded that owing to limited data, there was uncertainty as to whether metformin reduces the risk of cardiovascular disease.

Thiazolidinediones

Although rosiglitazone, a thiazolidinedione, was reported to result in significantly increased risks of myocardial infarction and death from cardiovascular disease in a large meta-analysis of 42 trials (prompting guidance from the FDA in 2008 regarding trials assessing cardiovascular outcomes), many of the trials included were small and of short duration, and the findings were not confirmed in a later analysis in which alternative meta-analytic approaches were used. Moreover, a large trial in which rosiglitazone (with metformin or a sulfonylurea) was compared with the control treatment (metformin plus a

No increased risk of myocardial infarction or diabetes-related death was reported in UKPDS 33 participants assigned to a sulfonylurea (chlorpropamide or glyburide) as compared with conventional treatment.

**Figure 1 (facing page). Approach to the Use of Glucose-Lowering Medications in Patients with Type 2 Diabetes and Established Cardiovascular Disease (CVD).**

A major shift has occurred in the past few years that extends beyond the use of glucose-lowering drugs solely to meet glycemic targets, favoring the use of glucose-lowering agents that are also associated with demonstrated cardiovascular benefit (i.e., a label from the Food and Drug Administration stating that the agent is indicated to reduce CVD events) in patients with type 2 diabetes who also have established atherosclerotic CVD (ASCVD) or heart failure with reduced ejection fraction (i.e., New York Heart Association Class II–IV).

In most trials, established ASCVD has been defined as a history of coronary heart disease, cerebrovascular disease, or peripheral vascular disease. Some of these agents also have demonstrated cardiovascular benefit in patients with type 2 diabetes who are at high-risk for cardiovascular disease. Factors indicating high risk have been variably defined in different clinical trials either by age ≥65 years or older with the presence of subclinical vascular disease on imaging (i.e., vascular stenosis >50% in the coronary or carotid arteries or the arteries in the legs) or by an age of 60 years or older, and the presence of additional risk factors for CVD (e.g., hypertension with or without left ventricular hypertrophy, dyslipidemia, current smoking, retinopathy, abdominal obesity, an estimated glomerular filtration rate of <60 mL per minute per 1.73 m² of body-surface area, albuminuria, or ankle–brachial index <0.9). Different approaches may be used by the clinician to stratify the extent of CVD risk, such as tabulating the number of cardiovascular risk factors or calculating the 10-year risk of ASCVD to determine which patients are at high risk. Drug profile and patient factors to consider when choosing a glucose-lowering medication include efficacy in lowering the glycated hemoglobin level, the risk of hypoglycemia, the effects on weight, cost, and route and frequency of administration, side effects, and clinical benefits.

**Clinical Practice**

**Metformin+ lifestyle management+CVD risk-factor reduction**

- **No established ASCVD or heart failure**
  - *Above target for glycated hemoglobin***
  - Review glycemic regimen every 3–6 mo at minimum and adjust medications
  - *Continue CVD risk-factor reduction and routine preventive care for diabetes*

- **Established ASCVD (or at high risk for CVD)**
  - *Consider additional medications irrespective of whether glycated hemoglobin is at targeted level***
  - Add glimepiride or glyburide, and glimepiride, and glimepiride
  - *Consider additional medications irrespective of whether glycated hemoglobin is at targeted level***
  - Add SGLT2 inhibitor with demonstrated benefit in heart failure to regimen if not yet included.
  - Adjust doses of existing therapies or add agents based on drug profile and patient factors as needed to meet glycemic targets.

- **Established heart failure with reduced ejection fraction**
  - *Add either GLP-1 receptor agonist or SGLT2 inhibitor with demonstrated benefit in heart failure to regimen if not yet included. Adjust doses of existing therapies or add agents based on drug profile and patient factors as needed to meet glycemic targets.***
  - *Add SGLT2 inhibitor with demonstrated benefit in heart failure to regimen if not yet included. Adjust doses of existing therapies or add agents based on drug profile and patient factors as needed to meet glycemic targets.***

**Thiazolidinediones**

Although rosiglitazone, a thiazolidinedione, was reported to result in significantly increased risks of myocardial infarction and death from cardiovascular disease in a large meta-analysis of 42 trials (prompting guidance from the FDA in 2008 regarding trials assessing cardiovascular outcomes), many of the trials included were small and of short duration, and the findings were not confirmed in a later analysis in which alternative meta-analytic approaches were used. Moreover, a large trial in which rosiglitazone (with metformin or a sulfonylurea) was compared with the control treatment (metformin plus a

**Thiazolidinediones**

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Clinical trials investigating the use of SGLT2 inhibitors and GLP-1 receptor agonists have shown superior cardiovascular outcomes in patients with type 2 diabetes, including reduced incidence of hospitalization for heart failure, nonfatal myocardial infarction, and cardiovascular death. These benefits are drug-specific, as demonstrated in the DECLARE-TIMI 58 trial, which showed noninferiority of canagliflozin and canagliflozin plus empagliflozin compared to placebo for the composite outcome of cardiovascular death or hospitalization for heart failure. However, the benefits of SGLT2 inhibitors in reducing cardiovascular events have not been consistently observed in all trials, as seen in the EMPA-REG trial, where empagliflozin was found to be noninferior to placebo for the primary outcome of cardiovascular death or hospitalization for heart failure.

GLP-1 receptor agonists, on the other hand, have shown consistent benefits in reducing cardiovascular outcomes, as demonstrated in the DAPA-HF trial, where dapagliflozin was found to be noninferior to placebo for the primary outcome of cardiovascular death or hospitalization for heart failure. However, the benefits of GLP-1 receptor agonists have not been consistently observed across all trials, as seen in the Liraglutide Effect and Action in Diabetes (LEAD) trials, where liraglutide was found to be noninferior to placebo for the primary outcome of cardiovascular death or hospitalization for heart failure.

The primary outcome of the clinical trials investigating the use of SGLT2 inhibitors and GLP-1 receptor agonists has been hospitalization for heart failure and nonfatal myocardial infarction. However, the benefits of these agents have been observed in the secondary outcomes of fatal cardiovascular events, hospitalization for cardiovascular causes, and composite cardiovascular outcomes, including hospitalization for heart failure, nonfatal myocardial infarction, and cardiovascular death.

Areas of Uncertainty

Several mechanisms have been proposed for the cardiovascular benefits of SGLT2 inhibitors and GLP-1 receptor agonists, including reduced glucose production, reduced sodium reabsorption in the proximal tubule, reduced systemic inflammation, and reduced inflammation in the heart. However, the mechanisms underlying these benefits are not fully understood, and further research is needed to fully elucidate the role of SGLT2 inhibitors and GLP-1 receptor agonists in reducing cardiovascular outcomes.

Table 3. Clinical Trials Showing Cardiovascular Benefit of Glucose-Lowering Agents in Patients with Type 2 Diabetes.

<table>
<thead>
<tr>
<th>Class and Drug with CVD Benefit in Specific Study Populations</th>
<th>Clinical Trial</th>
<th>Primary and Secondary Outcomes with Significant Risk Reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLP-1 receptor agonists</td>
<td></td>
<td>Major Adverse Cardiovascular Events; Hospitalization for Heart Failure</td>
</tr>
<tr>
<td>SGLT2 inhibitors</td>
<td></td>
<td>Hospitalization for Heart Failure; Nonfatal Myocardial Infarction</td>
</tr>
<tr>
<td>Albuminuric chronic kidney disease</td>
<td></td>
<td>Hospitalization for Heart Failure; Nonfatal Myocardial Infarction</td>
</tr>
</tbody>
</table>

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* Some agents are beneficial in reducing the risk of worsening nephropathy as a secondary outcome, but only cardiovascular benefits are shown. GLP1 denotes glucagon-like peptide-1 and SGLT2 sodium-glucose transporter type 2.

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** Areas of Uncertainty

Several mechanisms have been proposed for the cardiovascular benefits of SGLT2 inhibitors and GLP-1 receptor agonists, including reduced glucose production, reduced sodium reabsorption in the proximal tubule, reduced systemic inflammation, and reduced inflammation in the heart. However, the mechanisms underlying these benefits are not fully understood, and further research is needed to fully elucidate the role of SGLT2 inhibitors and GLP-1 receptor agonists in reducing cardiovascular outcomes.
who meet criteria consistent with those in the aforementioned randomized trials, which includes patients with established cardiovascular disease and in some cases those at high risk for cardiovascular diseases. The guidelines are generally concordant with each other, with relatively minor differences with respect to guidance for high-risk patients, the specific glucose-lowering therapy, and glycemic targets. Most organizations and societies endorse the use of metformin as first-line therapy for type 2 diabetes, although there are exceptions. The recommendations presented here are in general agreement with these guidelines.

**CONCLUSIONS AND RECOMMENDATIONS**

The patient described in the vignette has type 2 diabetes of long duration and established atherosclerotic cardiovascular disease. In addition to advising the patient on diet, recommending a gradual increase in exercise, and addressing other risk factors for cardiovascular disease, it would be reasonable to prescribe a GLP-1 receptor agonist that has been shown to have cardiovascular benefit. Currently, this would include agents in the GLP-1 receptor agonist and SGLT2 inhibitor classes. Factors that may guide the choice of agent include the route of administration and frequency, the presence of coexisting conditions, and patient preferences. In patients with diabetes and heart failure without reduced ejection fraction, those with chronic kidney disease, SGLT2 inhibitors with proven cardiovascular or renal benefit should be considered. For the obese patient described, a GLP-1 receptor agonist with demonstrated cardiovascular benefit would be favored over an SGLT2 inhibitor, given the generally greater magnitude of weight loss that has been reported with this drug class. Either class would facilitate the achievement of the patient’s individualized glycemic target; a glycated hemoglobin goal of less than 7.0% or 7.5% for this patient would be in accordance with various clinical practice guidelines. An assessment of the patient’s ability to manage the diabetes and the need for further education or support would be critical. She should be encouraged to monitor her blood glucose levels at home, and clinical follow-up and reassessment of the glycated hemoglobin level in 3 months are recommended.

No potential conflict of interest relevant to this article was reported.

**REFERENCES**

12. Garg AX, Garg A, Haffner SM, et al. Metformin use with or without sulfonylureas for type 2 diabetes in older individuals and those with chronic kidney disease, SGLT2 inhibitors with proven cardiovascular or renal benefit should be considered. For the obese patient described, a GLP-1 receptor agonist with demonstrated cardiovascular benefit would be favored over an SGLT2 inhibitor, given the generally greater magnitude of weight loss that has been reported with this drug class. Either class would facilitate the achievement of the patient’s individualized glycemic target; a glycated hemoglobin goal of less than 7.0% or 7.5% for this patient would be in accordance with various clinical practice guidelines. An assessment of the patient’s ability to manage the diabetes and the need for further education or support would be critical. She should be encouraged to monitor her blood glucose levels at home, and clinical follow-up and reassessment of the glycated hemoglobin level in 3 months are recommended.

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Physician Director, Cancer Center, Mount Sinai Medical Center, Miami Beach

Mount Sinai Medical Center, Florida’s largest private, independent, not-for-profit teaching hospital, is hiring a Director for our Comprehensive Cancer Center. Mount Sinai’s cancer programs in medical oncology, surgical oncology, and radiation oncology are affiliated with Columbia University, and the Comprehensive Cancer Center Director will be eligible for a faculty appointment at Columbia University.

The ideal candidate will be a physician with board certification in an oncology-related specialty, with prior accomplishments including clinical excellence, convincing research, and experience educating residents, fellows, and students. The successful candidate must have demonstrated success in leadership, including developing and managing faculty, and growth. In addition, the candidate must have a record of expanding clinical and research programs in oncology.

The Comprehensive Cancer Center is currently home to 6 medical oncologists with plans for expansion, 2 radiation oncologists, and 1 surgical oncologist. There are currently 14 members of our research staff, who are actively participating in 45 clinical trials. Mount Sinai’s cancer center has 2 locations in Miami-Dade County, offering patient visits, infusions, and radiation therapy, with plans to expand to other locations. Plans are in progress for a new cancer center overlooking Biscayne Bay, which will combine the latest in technology and facilities, while offering a soothing and healing environment for patients.

Mount Sinai Medical Center will consider all qualified applicants. Mount Sinai Medical Center is an equal opportunity employer and encourages applicants from diverse backgrounds to apply. For further information, please refer to https://www.msmc.edu/cancer-center.

A letter of Interest and Curriculum Vitae should be submitted to Robert C. Goldszer MD, MBA, Chief Medical Officer, Mount Sinai Medical Center: robert.goldszer@msmc.com

Mount Sinai Medical Center is an equal opportunity employer and encourages applicants from diverse backgrounds to apply. For further information, please refer to https://www.msmc.edu/cancer-center.

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Clinical Cardiologist (03-309-1017)

The Division of Cardiovascular Medicine at the University of Maryland School of Medicine is recruiting a general cardiologist to teach and provide clinical cardiology services in both the inpatient and outpatient settings at the Annapolis Pavilion (site of a clinical educator program). We seek a dynamic, cardiovascular medicine physician primarily based at its Midtown Campus.

The role of this cardiologist would be to change the trajectory of health in an underrepresented population by promoting cardiovascular wellness among patients in the City of Baltimore. Additional interest in healthcare disparities, access to care, and underserved populations is desirable. This mission includes a strong focus on community outreach.

This position requires a MD degree from a recognized accredited minority (or foreign equivalent) to be board certified in internal medicine and board certified/board eligible in cardiovascular medicine. Candidates must have fellowship training in cardiology and will demonstrate potential for excellence in clinical care and teaching.

Expected salary to be determined. The position might include a housing and moving stipend. The salary and benefits will be commensurate with the candidate’s qualifications and experience.

When applying, please submit a cover letter, CV and names of four references. Qualified candidates should apply online at the following link: https://umb.taleo.net/careersection/jobdetail.ftl?job=210000XG&lang=en

We are also interested to include a perspective statement on equity, diversity, and inclusion.

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If you would like more information please contact:
Diane Forte Willis
dfortewillis@emersonhosp.org
phone: 978-287-3002
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Located in Concord, Massachusetts Emerson is a 179-bed community hospital with satellite facilities in Westford, Groton and Sudbury. The hospital provides advanced medical services to over 300,000 individuals in over 25 towns.

Emerson has strategic alliances with Massachusetts General Hospital, Brigham and Women’s and Tufts Medical Center. Emerson area is rich in history, recreation, education and the arts and is located 20 miles west of downtown Boston.

About Emerson Hospital

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Lung Transplant/Pulmonary and Critical Care Medicine (3-209-1001)

The Division of Pulmonary and Critical Care Medicine at the University of Maryland School of Medicine is seeking transplant pulmonologists to expand our transplant pulmonary medicine team. The Lung transplant program is located at the University of Maryland Medical Center and is comprised of a multi-disciplinary team of professionals. We are focused on providing excellent care to patients with critical lung diseases and developing cutting edge medical and surgical treatments. Candidate must have post fellowship experience in transplant pulmonary medicine.

Expected faculty rank is Assistant Professor or higher, however, rank, tenure status and salary will be dependent upon qualifications and experience. We offer competitive salary and benefits, as well as an environment supportive of professional development.

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The Rockefeller University

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The Rockefeller University is an equal opportunity employer and will consider all qualified applicants for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or protected veteran status. In addition to applicants pursuing fundamental biomedical research, The Rockefeller University seeks outstanding physician-scientists to conduct programs in all areas of patient-based research. The NIH CTSA-supported Center for Clinical and Translational Science at The Rockefeller University research hospital provides additional resources to complement other University support available for human subject's research conducted by our faculty members. Current areas of CTSA investigations include human genetics, hematopoiesis, cancer biology, vascular biology, thrombosis and hemostasis, dermatology, metabolic disease, infectious disease, digestive disease, immunology, physiology, and pharmacology. The University is a diverse community and we strongly encourage applications from individuals from racial and ethnic groups that are underrepresented in biomedical science.

Search the positions and apply online at www.rocks.com/facultysearch. Applications are accepted at any time.

Application deadline is October 1, 2021.

Interested applicants should email their curriculum vitae and a cover letter to

Professor Karen Bloch, Search Committee Chair, Department of Infectious Diseases at
Karen.Bloch@vumc.org.

Infectious Diseases at
Karen.Bloch@vumc.org.

Candidates who are legally authorized to work in the US and who have a PhD, MD, or equivalent are encouraged to apply.

For full consideration, please submit a informative letter of interest, a complete CV, research statement, and three letters of recommendation. The Rockefeller University is an equal opportunity employer and will consider all qualified applicants for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or protected veteran status.

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JIA FAN
Academician, Chinese Academy of Sciences
President of Zhongshan Hospital, Fudan University

Jia Fan, a surgical oncologist treating liver cancer, who heads the Zhongshan Hospital of Fudan University, has pioneered multimode treatment of liver cancer with portal vein tumor thrombus complications, created the Shanghai-Fudan Standard of liver transplantation, led influential international clinical trials, and characterized the microenvironment regulation of liver cancer metastasis and recurrence. His research was published in top journals such as Cell, Nature, and The Lancet Oncology. His clinical and scientific contribution earned him multiple prestigious national awards.

Q: Why did you decide to significantly increase the funding of clinical research in 2015, when most hospitals in China still focused on basic research?

In the past, the clinical research in China was often only to summarize clinical observations and establish some correlations. Few clinical research papers were published by Chinese doctors in top international journals. I think the situation was primarily due to the lack of clinical thinking.

In 2015, I decided to allocate 20 to 30 million Chinese Yuan per year to support clinical research in Zhongshan Hospital with two aims: the first was to study and solve clinical problems; the second was to cultivate doctors’ awareness and interests in scientific research, and to enhance their clinical research thinking and ability to find and solve problems. Ultimately, we need to do large multicenter clinical trials to provide high-level evidence for the development of clinical guidelines in China.

We hoped to develop some seed projects first. We invited experts to review all projects, and the projects that passed the review were awarded between 50,000 to one million Chinese Yuan. Doctors who receive funding should not only solve the clinical questions for their clinical practice, but also carry out research and organize their own research teams, sometimes even including hospitals abroad.

Q: Why is it important for a doctor to understand and even to do basic research on disease mechanisms?

By doing basic research, doctors can not only elucidate disease pathophysiology and mechanisms, but also deepen their understanding of the disease and its treatment. If doctors do not know enough about diseases, it will be difficult for them to diagnose and treat patients, especially for difficult and complicated cases. If doctors’ basic research is thorough and they have a profound understanding of the essence of the disease, they can see from a wider angle and think deeper.

Of course, clinicians’ research interests should remain true to their original aspiration — that is, to solve clinical problems. I am a hepatobiliary surgeon, so my basic research mainly focuses on the pathogenesis of hepatocellular carcinoma, how to prevent or treat the recurrence and metastasis of hepatocellular carcinoma, after an operation, and how to control the progression of advanced hepatocellular carcinoma. Some of my scientific research results have been published in well-known international journals such as Nature and Cell. More importantly, based on these basic research results, we carried out some exploratory treatments. In my opinion, scientific research thinking and disease diagnosis and treatment complement each other.

Q: What is your vision for the next-generation physician-scientists in Zhongshan Hospital?

Zhongshan Hospital is a teaching and research hospital, which bears heavier responsibilities than many other hospitals in China. Our doctors should be able to solve clinical problems that other doctors cannot solve. Toward this goal, we should strengthen doctors’ ability to identify and solve clinical problems.

Young doctors who join Zhongshan Hospital have excellent backgrounds. I set high standards and strict requirements for them. These young doctors, especially those in key departments, must participate in high-quality research and publish high-quality research papers. We also encourage them to design their own research projects and apply for grants.

In summary, I hope that Zhongshan Hospital can train excellent physician-scientists who can solve clinical problems, promote the development of clinical research, and practice, and catch up with and maintain international standards.

Q: Could you please describe the implementation of multidisciplinary teams (MDTs) at Zhongshan Hospital?

In clinical practice, the diagnosis and treatment of diseases are increasingly fragmented, and doctors are specialized within their own specialties. When diagnosing and treating a complex disease, doctors of Zhongshan Hospital from different disciplines work together — that is, to use an MDT approach, which benefits from their expertise in specific diseases. Moreover, when doctors of various departments collaborate frequently, their clinical knowledge is constantly enriched.

In addition, Zhongshan Hospital treats many difficult and complicated diseases every year. Zhongshan Hospital ranks second in CMI (case mix index), a measure of disease complexity, diversity, and severity in China. So many difficult and complicated diseases require us to establish MDTs.

Zhongshan Hospital is actually one of the earliest hospitals in China to build MDTs, and the history of these teams can be traced back to the 1950s. We started MDTs in departments of thoracic surgery, respiratory medicine, and urology, and later in urology. The liver disease team has always been enthusiastic in the implementation of MDTs. We now have more than 50 MDTs, with two to three collaborations every week, which doctors from pathology, imaging, laboratory and other relevant departments participate in.

In my opinion, only by continuously promoting MDTs and using scientific thinking in disease diagnosis and treatment can we really treat the difficult and complicated diseases and solve the health problems of patients.

JIA FAN
Academician, Chinese Academy of Sciences
President of Zhongshan Hospital, Fudan University

This funding supported improvements on the clinical research capacity of Zhongshan Hospital. In 2020, Zhongshan Hospital was ranked first in terms of the number of the clinical research projects funded by the Shanghai Municipal Government.

When we started the funding in Zhongshan Hospital, I believed by devoting our efforts and resources, we can eventually strengthen the clinical research in China. In recent years, the importance of clinical research is increasingly recognized by all stakeholders in China, the financial support is rapidly increasing, and the quantity and quality of clinical trials led by Chinese teams are improving significantly. I believe that doctors in China will continue to produce important results that change clinical practice.

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