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IN DEPTH

Six Tests for Physicians and Their Leaders for the Decade Ahead

Thomas H. Lee, MD, MSc, Toby Cosgrove, MD

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In the years immediately ahead, physicians and their leaders must move to a new level of health care in which they reliably deliver the performance that society needs. To enable and ensure success, significant changes will be required. A set of six tests for physicians and their leaders focuses on these core considerations: putting patients first, creating super-teams, plunging into competition, reducing costs, embracing innovation, and the grasping the nature of leadership.

For physicians and their leaders, the recent past has been difficult, and the decade ahead will be even more challenging. Already, they are under pressure for better outcomes and lower costs, and when financial downturns occur, those pressures will intensify. Physicians and their organizations will be tested on six issues that will determine which ones are most likely to succeed.

These six tests represent responses to health care's challenges made explicit during the last quarter century. First came the Balanced Budget Act of 1997, through which the federal government began to tap the brakes on health care spending. Then came the Institute of Medicine (IOM) reports of 1999 and 2001 (To Err is Humanand Crossing the Quality Chasm, respectively), which made improvement in quality an imperative. After that came the Affordable Care Act (ACA) of 2010, which led to changes in payment while expanding coverage to at least 20 million previously uninsured Americans.

These cost, quality, and access challenges were driven in part by wondrous scientific progress, which has made medicine more powerful, but also more expensive and complex. New drugs, tests, and procedures enabled gains against many conditions (e.g., hepatitis C and some malignancies), but also heightened risks for disappointing quality. The result is that doctors sometimes feel like the waiters in the old joke about food at a mediocre resort — i.e., doctors are constantly given the message that their work isn't very good, it costs too much, and there isn't enough of it.

Nevertheless, real progress is underway in health care delivery, and today's physicians are less likely to resist change than in the past, and more likely to lead it. In 2002, for example, physicians at Cedars Sinai Medical Center in Los Angeles revolted as the hospital rolled out its computerized order entry system, forcing management to revert to paper systems.[1] But by 2015, Cedars Sinai had become a cutting-edge innovator, letting 87,000 patients add mobile data to their electronic health records; today, physicians there lead a range of information technology–linked start-ups.[2,3]

Physicians are heterogeneous in every organization, with some innovators and many others delaying as long as possible before adopting anything new. But most organizations are seeing their cultures change — hardly anyone still uses that tired joke that managing physicians is like herding cats.

Part of the explanation is demographic. Many of the physicians who were most resistant to change are passing from the stage, or soon will be. They are being replaced by physicians who are, of course, younger, more tech savvy, and, increasingly, female.[4] These newer physicians are more inclined to work in teams,[5] seek employment in an organization,[6] and master electronic health records.

But no one should assume all is well on the physician front. The pressures for performance improvement are exhausting and frustrating physicians, and burnout is a dominant issue for physicians' leaders. To plunge into the six key tests for the physicians and their leaders in the decade ahead requires understanding the nature of leadership challenges in the recent past, changes in the physician workforce, and the six tests themselves.

Leadership in the Recent Past

During the past few decades, many physicians went through something like the stages of a grieving process. They realized that something they thought had been promised to them was uncertain at best. They went into medicine believing that if they worked hard, they were certain to enjoy autonomy, respect, and a good income — but, in reality, none of those goals seems assured today.

In the mid to late 1990s, curbing anger was a constant part of the work of leaders. In this context, the goals of physician leadership were relatively modest. Phrases were used like getting them "on board" and asking physicians to "listen to their better angels." The stretch goal was true physician engagement in change, but many organizations were ready to settle for deterring active resistance.

After all, before the IOM reports of 1999 and 2001, four fundamental components of conventional wisdom were (1) that quality in health care was just fine, (2) that it was impossible to measure, (3) that physicians' only ethical obligation was to do what they thought was in the interest of their patients, and (4) that the best way to safeguard quality was to preserve physician autonomy. Many physicians and their leaders thought *value* was just a code word for *cost-cutting* by purchasers who really only cared about saving money.

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The recommendations of those IOM reports seemed radical when first published, but they were embraced by early adopters who saw opportunities to improve their care and differentiate themselves from competitors. The Cleveland Clinic began to measure outcomes (e.g., mortality rates after major heart operations), and publish them on the Internet. The data weren't perfect measures of quality, but they were consumed with great interest by patients who found something better than nothing. The Cleveland Clinic's competitors took note, and soon other organizations began publishing quality data, too. Talk that quality in health care was not measurable began to fade away.

Health care organizations saw that they had to do more than provide infrastructure for physicians to perform their work. As a first step, they began to organize *service lines*(e.g., cancer, cardiology, and orthopedics), and then some went further and organized multidisciplinary teams to improve quality and efficiency. The term Integrated Practice Unit (IPU) was introduced by Harvard Business School professor Michael Porter to describe teams, ideally colocated, that assumed accountability for patients with specific conditions across the full cycle of care.[7,8]

The evolution of IPUs over the years reveals something about the change in the nature of leadership of and among physicians. At first, IPUs were like flowers emerging from cracks in the sidewalk. For example, the Vanderbilt Asthma, Sinus and Allergy Program (VASAP) was started in 1997 by physicians at Vanderbilt who took care of patients with those conditions.[9] However, these clinicians knew from experience that patients don't walk in with diagnoses — they come in with*symptoms* like coughing, wheezing, runny noses, and headaches. These symptoms could be due to be asthma (a pulmonary disorder), or hay fever (allergies to pollen), or chronic sinus infections (often treated by ear, nose, and throat [ENT] physicians). Rather than have patients bounce around from pulmonary to allergy to ENT specialists, Vanderbilt specialists in these areas started VASAP, and started seeing patients in one building, with the radiology services to do X-rays and CT scans, and the technicians to do allergy testing and pulmonary function testing.

These physicians organized VASAP because that is what made sense for their patients. One of their founders, an allergist named S. Bobo Tanner, told us, "These are working people who often have to drive 2 hours to get to us. We didn't want them to have to make that drive over and over and pay their co-payments more than once."

The idea of creating a single place where these patients could get coordinated care won the support of Vanderbilt leadership, even though VASAP challenged the traditional flow of money and department chairs' control of their personnel. Today, however, IPUs are no longer rarities created by physicians with the temperament or influence to disrupt the organizational status quo. Health care organizations are scrambling to create them to better compete for patients in a market

increasingly influenced by bundled payments and transparency on outcomes data. Organizations that are structured to deliver care with better outcomes and efficiency are winning requests for proposal from major purchasers like Walmart, and those that cannot even describe their outcomes and costs know that their outlook is uncertain at best.

The physicians who surrendered some of their autonomy when they joined an IPU do not seem unhappy about it. Maybe they are of a different generation, better prepared for teamwork. Maybe being part of teams that can meet patients' needs better than they can alone seems worth the sacrifice. In any case, physicians seem to respond positively to being part of teams organized around patients' needs.

As a result, when one looks back on the last decade, considerable progress has occurred. There is much more measurement of costs and outcomes, and much more organization. There is a lot less resistance, and there is some transparency. In addition, we have seen a continuing reshaping of the structure of the workforce.

Change in the Physician Workforce

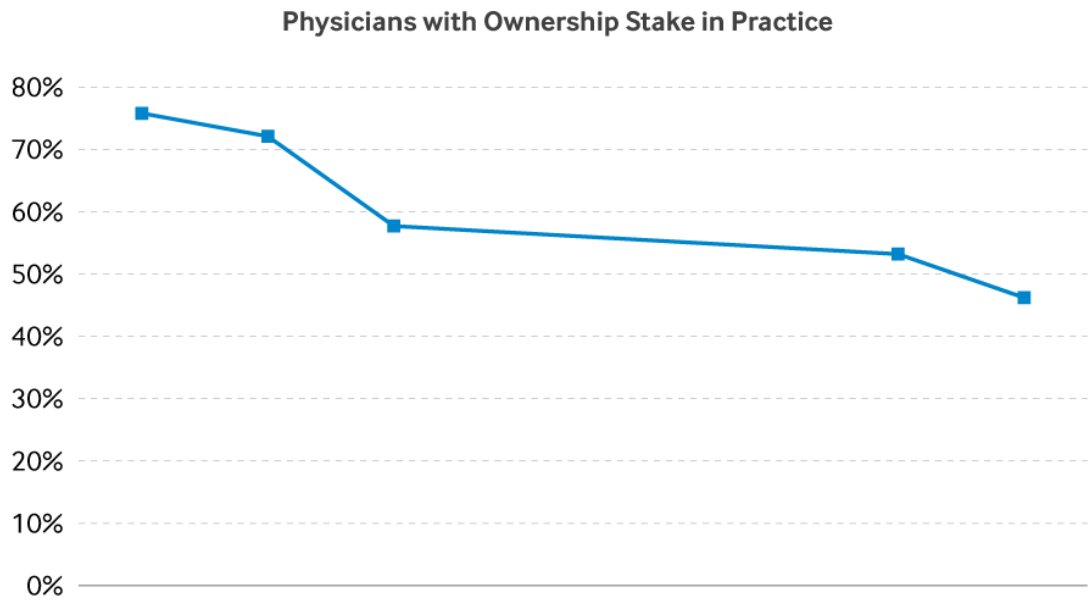
Changes in the profession were evident in a May 6, 2019, report from the American Medical Association (AMA), that revealed that employed physicians, for first time, outnumbered self-employed physicians.[10] Using data from the AMA's Physician Practice Benchmark Surveys, this Policy Research Perspective describes the practice arrangements of physicians between 2012 and 2018, and 2018 was the first year in which there were fewer physician owners (45.9%) than employees (47.4%).

Since the first Benchmark Survey in 2012, the share of physicians who are owners has fallen by more than 7 percentage points — it was 53.2% in 2012. Data from earlier AMA physician surveys indicate that this share fell almost continuously between the early 1980s and the mid-1990s (Figure 1).[11] Thus, the more recent data from the Benchmark Surveys are not indicative of a new trend, but rather the continuation of one that has been ongoing, albeit at different rates, for at least 35 years.

FIGURE 1

The Decline in Physician Practice Ownership has been Underway for Decades

Ownership stood at 76% in 1983 but has been dropping, sometimes at steep and sometimes at gradual rates, to just 46% in 2018.



Source: Kane CK. Updated Data on Physician Practice Arrangements: For the First Time, Fewer Physicians Are Owners Than Employees. AMA Policy Research Perspectives, 2019. https://www.ama-assn.org/system/files/2019-07/prp-fewer-owners-benchmark-survey-2018.pdf

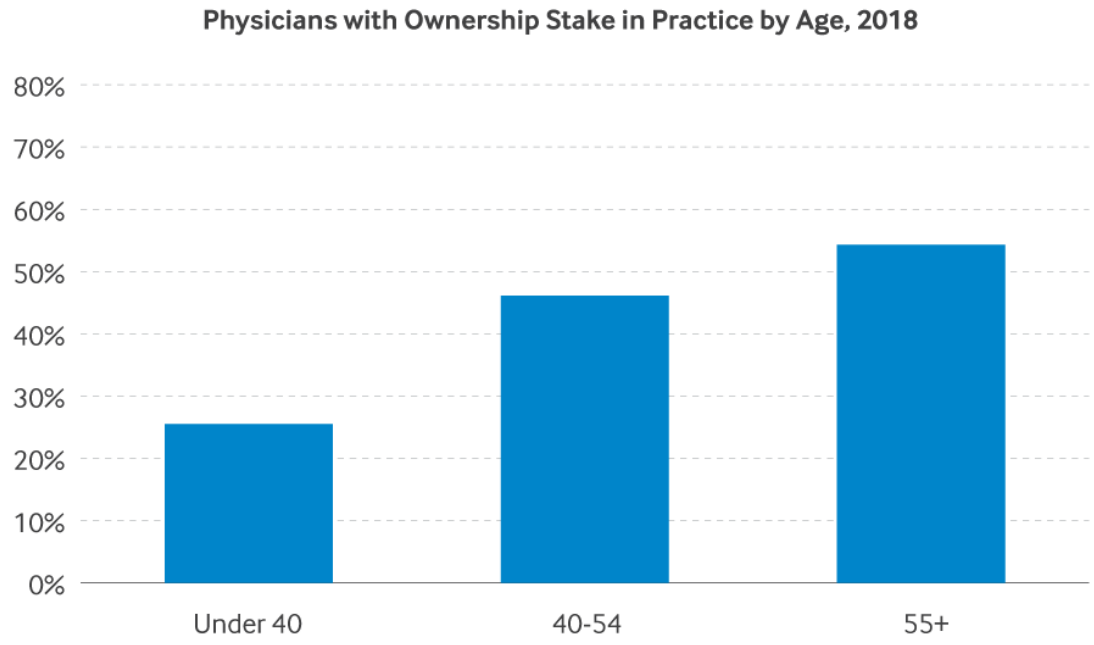
The Benchmark Surveys also indicate that the distribution of physicians continues to slowly shift from practices that are very small in size to those that are very large. Between 2012 and 2018 the percentage of physicians in practices with 10 or fewer physicians dropped from 61.4% to 56.5%, with much of that change driven by a shift away from solo practice. The share of MDs in solo practice decreased from 18.4% in 2012 to 14.8% in 2018, while the percentage of physicians in very large practices with 50 or more MDs increased from 12.2% in 2012 to 14.7% in 2018.

Ownership status varied demographically in this report, suggesting that the increase in the employment rate among physicians is going to accelerate. Only 26% of physicians under age 40 had an ownership stake in their practice in 2018 (Figure 2 . Even these numbers may mask the strength of the trend away from ownership and toward employment, because employment rates are much higher for women physicians than men (57.6% vs 41.9%), and women began to outnumber men as enrollees in medical schools for the first time in 2017.

FIGURE 2

Percent with Ownership Stake in Practice by Age

In 2018, a majority (54.3%) of older physicians (55+) continued to have an ownership stake in their physician practice. For those under age 40, most (69.8%) were employed



Source: Kane CK. Updated Data on Physician Practice Arrangements: For the First Time, Fewer Physicians Are Owners Than Employees. AMA Policy Research Perspectives, 2019. https://www.ama-assn.org/system/files/2019-07/prp-fewer-owners-benchmark-survey-2018.pdf

Leadership in the Decade Ahead

Today and during the decade ahead, leaders have to grapple with the effects of several trends that threaten to bring physicians to their knees. First and foremost is the explosion of knowledge due to research advances, which brings complexity to health care delivery and overwhelms individual physicians. Second are the pressures for improvement and the regulatory burdens that flow from the ACA. Third is the loss of autonomy for physicians who must work in groups if they hope to deliver state-of-the-science care. And fourth is the task of improving interactions between physicians and their information systems, especially their electronic medical records (EMRs).

The magnitude and impact of these trends are difficult to grasp. For example, some experts estimate that the doubling time of medical knowledge has decreased from 50 years in 1950 to 3.5 years in 2010, and that by 2020, the doubling time has been projected to be less than 3 months.[12] The increase in medical literature and scientific knowledge is just one challenge; another is the availability of information on individual patients. While the growing pool of scientific knowledge may not feel relevant to physicians on a day-to-day basis, they cannot escape the tsunami of unique

patient information that now flows in from multiple sources for virtually every patient. Data are available from genetic screening, depression profiles, and electronic medical records, and it's difficult for physicians to know what is noise and what is important without looking at all the data across time. The result is that every individual patient has become a big-data challenge.

> *"Physicians need to accept the reality that their organizations are going to get bigger because problems are emerging that can only be addressed through scale."*

These trends create complex problems for which there are no magic bullet answers. In their clinical work, physicians are used to dealing with complex issues; e.g., in caring for seriously ill patients, they are used to distinguishing between what they can and cannot change, and dealing with the tension between competing values (such as the short-term risk of major surgery versus the potential long-term benefit). Physicians need to bring that same willingness to deal with complexity to the challenges that affect health care delivery.

For example, no one wants to stop the research advances that produce the knowledge explosion, and there is no unwinding of the need for clinicians to communicate with each other and access information through electronic medical records. These irreversible trends mean physicians cannot just surrender to the need to work in teams and use EMRs — they need to plunge in. They need to think about what makes a great team great, and how to change the ways they interact with their EMRs. Yes, EMRs need to improve, but they will improve faster when the clinicians who use them are ready to modify the way they do their work, and don't just demand that EMRs change to accommodate their existing practice habits.

Physicians also need to accept the reality that their organizations are going to get bigger because problems are emerging that can only be addressed through scale. For example, small groups and hospitals are simply unable to take on emerging cybersecurity challenges. Already, many smaller organizations and businesses are ignoring regulatory requirements,[13] and paying fines when it catches up with them.[14] Getting patient data into the cloud so it can be accessed electronically in secure ways will be table stakes in just a few years.

In the past, health care organizations often consolidated to enhance their market clout. They wanted to deflect pressures to compete, and regulators have accordingly been leery about growth of provider organizations. How can health care providers address the tension between the needs that require scale and society's fears that bigger organizations will be harmful for the consumer?

Physicians and their leaders must figure out how to make bigger better. They need to produce better outcomes at lower cost. They need to create social capital — working in better teams and using information technology to coordinate care and reduce its costs. Changes in the physician workforce present new challenges, but also suggest the possibility of success.

Six Tests

It goes without saying that work must continue on measurement of outcomes and costs, and negotiation of new payment models, but much more will be needed from physicians than simply cooperating with this work. Here are six challenging tests for physicians and their leaders. For organizations to be successful in meeting their patients' needs and making care affordable, these tests must transition from rhetorical ideas to operational imperatives.

We will list them in order of ascending difficulty. Some of them may sound benign at first, but all of them create genuine discomfort if pursued in earnest. Physicians and their leaders should go as far as they can go in pursuing these goals — and then push for more. Our prediction is that a decade from now, these six tests will be what has defined effective health care leadership.

Really Putting Patients First

Let's start with one that shouldn't be controversial. Even though many hospital administrators thought until recently that their most critical customers were physicians, few would dispute that patients must be the top focus of health care organizations today. To grab and hold on to market share, health care providers must meet patients' needs reliably, safely, efficiently, and with empathy. That requires measuring performance, listening to patients' voices, and working relentlessly to improve their outcomes and experiences. This multidimensional concept of excellence is increasingly seen as the core of strategy, not an act of charity or stars randomly coming into alignment.

The idea that good care is good business seems obvious, but the notion that meeting patients' needs should be the focus for every decision remains disruptive. After all, most of health care is still reimbursed on a fee-for-service basis, and most physician practices are organized to maximize the volume of services performed.

However, the dominance of the revenue maximization perspective under fee-for-service is threatened by increasing transparency on patient outcomes and patient experience, including ratings and comments from patients. Transparency tends to have its most dramatic effects on the parties who are being measured, even more than on the patients/consumers who might seem the targets for the information. Physicians want what is said about them on the Internet to be consistent with how they see themselves. And the most reliable way to make that happen is to be their best selves consistently.

The goal for physicians of reliably being one's best self in meeting patients' needs sounds noble — and exhausting. Nevertheless, data demonstrate that patient care is not a zero-sum game in which helping patients means harming doctors. Instead, data consistently show that when quality is better, so is clinician morale and organizational business success. The bottom line is that organizing care around patients should be a guiding principle for every health care organization and for all physicians.

> *Here's a simple yes-no acid test question to assess whether this [patient first] goal is being taken seriously: Has the organization adopted OpenNotes?"*

There are many ways in which organizations can make progress toward putting patients first: for example, having patients on key operational committees, measuring and being transparent with patient experience data, and moving away from traditional units of organization based on physician expertise (e.g., the VASAP model). But here's a simple yes-no acid test question to assess whether this goal is being taken seriously: Has the organization adopted OpenNotes?

OpenNotes is a movement that began in 1973 with a *New England Journal of Medicine* editorial titled "Giving the Patient His Medical Record: A Proposal to Improve the System."[15]The article argued that giving patients copies of their record would improve quality and enhance trust between patients and clinicians. In 1996, the Health Insurance Portability and Accountability Act (HIPAA) mandated that patients have the right to review information in their electronic medical records.

But it wasn't until 2010 that OpenNotes started with 20,000 patients of 105 primary care physicians at Beth Israel Deaconess Medical Center in Boston, Geisinger Health System in Danville, PA, and Harborview Medical Center in Seattle.[16] These patients were invited to read their doctor's notes in their electronic medical records via secure online portals. Physicians at these pilot institutions were not universally thrilled with this change; they worried that patients would be offended by what they read, that someone might commit suicide, that it would slow them down if they wrote their notes in ways that patients could understand.

These fears have been pretty much allayed by data that have emerged in the years since, which, simply put, show that giving patients access to their information makes care better. A study published in 2019 reported that OpenNotes patients are more comfortable with their medications and more likely to take their medications as prescribed.[17] The concept that seemed radical just a decade ago now has momentum and, in 2019, more than 40 million patients at about 200 health systems were able to see their doctors' notes through secure portals.

There was and still is pushback from physicians about OpenNotes, but it is fading. It might have been reasonable for physicians in 2010 to opt not to be the first in their region to adopt OpenNotes. But now the question is whether they want to be the last. OpenNotes isn't the only step involved in putting patients in the center of care, but it is a useful diagnostic test for physicians and their leaders of whether they have taken on the challenge.

Building Super-Teams

Medicine started becoming a team sport when its ability to change patients' futures for the better became real. Once physicians could perform complex operations like coronary artery bypass graft surgery or give complex treatments like chemotherapy for cancer, they began to realize that they needed multidisciplinary teams around them to provide reliably excellent care. The same is true for

chronic conditions like diabetes, obesity, and hypertension, because behavior change is not easily accomplished by a physician working alone in their office.

Teamwork is not a natural act for physicians, who treasure their autonomy. That autonomy became celebrated in the era in which quality was considered unmeasurable. Once it became clear that quality *could* be measured and was far from perfect, individual physician autonomy didn't seem so precious to those who were not doctors. What became more important to the rest of the world was the teamwork it takes to deliver care that is reliably safe and otherwise excellent.

Press Ganey's analyses of millions of patient survey responses from all health care sectors (inpatient, outpatient, emergency department, etc.) consistently show that coordination is one of the assets that patients value most. Patients *really* worry when their clinicians do not seem to be talking to each other, and perhaps do not even know each other. Patients may not be able to appreciate the nuances of medical science, but they can tell when the people taking care of them are not working like a real team.

> *"Pick a problem that really matters, one that really interests you. Create a super-team to make things better for those patients. And then figure out how to achieve those improvements as efficiently as possible."*

And that means physicians need to do more than agree that teamwork is a good idea. It means they need to create *super-teams*. They need to form the kind of teams that they themselves would want if they were ill. They need to create the medical equivalent of the Navy Seals; that is, a group of committed, high-performing*individuals* who understand and value the importance of working as a*team* to accomplish the mission at hand.

What characterizes great teams in every sector, including health care, is that they function like macrocosms of a gritty individual. Their members' sense of pride is defined by belonging to the team. The teams have clear, measurable goals, and are determined to improve. Even if they really are the best, they try to get better. The team members don't worry about job descriptions; they do what it takes to help the team achieve its goal, and they know they can count on their colleagues to do the same. They are resilient individually and collectively, which enables them to deal with unexpected crises with effective aplomb.

The teams that patients really need have to reach beyond hospital walls. The conditions that have the most impact on health today are chronic diseases like diabetes, lifestyle issues like obesity, mental health issues like opioid abuse, and social determinants of health challenges like malnutrition and inadequate housing. Physicians cannot take on these problems with any effectiveness on their own, sitting in their offices, making rounds in the hospital, doing procedures well or prescribing the right drug. They need teams. And they need those teams to work together to improve quality and efficiency for the overall patient population, using approaches analogous

to those described by General Stanley McChrystal and his colleagues in their book on leadership lessons learned during the worldwide campaign against Al Qaeda, *Team of Teams*.

At the most basic level, physicians in the decade ahead must be good members of teams. But here is our recommendation for young physicians who want to do work that makes them glow with pride over years and decades. Pick a problem that really matters, one that really interests you. Create a super-team to make things better for those patients. And then figure out how to achieve those improvements as efficiently as possible.

Super-teams are colocated. Their members hang their coats on hooks next to each other and talk about their weekends and their patients as they do. They help each other out at work and beyond.

The business challenges of making your super-team viable should be surmountable. If they aren't where you currently work, look for a place where they are.

Plunging into Competition

Here is where the list of tests becomes more challenging. Most physicians don't think positively about the effects of competition in the health care marketplace. They don't think they can do much as individuals to change the outcomes or the costs of care for large numbers of patients and, thus, they are not confident that they can mitigate the risk of losing in any competition for market share of patients on the basis of price or quality. So it's no surprise that many physicians are glad when their organizations take steps that deflect competition, like merge with potential competitors. They feel that this increases the chances that they can just focus on working hard at what they are supposed to do — take care of patients.

Physicians *should* give their complete attention to taking care of their patients, and the best way to ensure that this remains possible is to encourage their organizations to plunge into competition, not deflect it. The reason is that the marketplace*must* control costs and ensure quality, and if competition cannot accomplish those goals, regulation of some kind will be invoked. And we can't think of any examples in which physicians felt that regulation has improved their professional lives.

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Health care organizations know how to deflect competition (you merge with competitors or otherwise get so big that you are indispensable to insurers, and they must give you what you demand or risk losing their own viability). But do they know how to plunge into competition? That requires being able to distinguish between *game-playing* and*value creation* — and putting their best efforts into the latter.*Game-playing* (which, despite the label, we do not think of in pejorative terms) means taking steps to get compensated better for doing what you currently do, without changing

what you do. *Value creation* means changing what you do and how you do it, so you can meet patients' needs better or more efficiently — ideally both.

Every organization has to be good at game-playing, but physicians have little to add to this work. On the other hand, physicians are indispensable for value creation. Physicians in the decade ahead should understand that working with colleagues on value creation — figuring out how to make care better and less costly — is essential to sustaining their ability to meet their patients' needs.

There are three other capabilities important for the plunge into competition that should define norms for physicians and their leaders during the decade ahead. Two of them sound like mom and apple pie, but demand something beyond what physicians do all the time (i.e., work hard). One is *learning* from other organizations, which are almost always doing something better or more efficiently. The other is using these insights to *improve*, by applying them reliably.

The last capability is *embracing transparency*. Like competition, transparency is something about which many physicians are skeptical. But, like competition, transparency is something that everyone wants for everyone else, other than themselves. Awareness of that irony should help physicians recognize that competition and transparency are probably inevitable and good things for them to embrace rather than resist. Yes, there are going to be unintended consequences in which some clinician or some institution may get treated unfairly, but the positive effects are too important to forgo.

Taking on Costs

Now comes the test that will seem most alien to many physicians. In addition to embracing competition, physicians should embrace cost reduction. This goes beyond being more efficient at the work that physicians currently do. It means physicians doing what they can do to reduce total health care spending.

Physicians and their leaders should adopt a cultural norm in which reducing costs is considered part of excellence, and being wasteful means one is not a good physician. The truth is that it is hard to be efficient without being excellent. Physicians have to know their field to be confident about when a drug or a test isn't needed, and when the test of time is a reasonable approach to reducing uncertainty.

The U.S. needs resources that it currently spends on health care to meet other social needs like housing, education, and nutrition, many of which have direct impact on health. By now, most people in health care have seen the data showing that the U.S. spends roughly the same proportion of its per capita gross domestic product on the combination of social care and health care as other countries — but the U.S. is an outlier in the proportion spent on health care. These data suggest that the country would be well served if total health care spending decreased so that other social spending can go up.

In short, physicians and their leaders should prepare to swallow hard, and try to reduce spending in their own sector. One reason this suggestion is reasonable is that the risks are high that external

parties (e.g., government) will take action to cut spending if health care itself is unable to take on this problem. Another is that steps that can be taken are fairly clear, and some leading organizations around the country are already taking them.

The first step is to end the relationship between physician compensation and the volume of services that they perform. Even though most of their revenues flows through fee-for-service contracts, the Mayo Clinic, Cleveland Clinic, Geisinger Health System, and others pay their physicians straight salary, without financial incentives directly rewarding their physicians for performing more visits, prescribing more drugs, or ordering more tests and procedures. The physicians there have market-competitive incomes, and there is pressure upon them to work hard seeing patients. But they don't have that direct linear relationship between the volume of services they deliver and their income.

> *"Physicians and their leaders should adopt a cultural norm in which reducing costs is considered part of excellence, and being wasteful means one is not a good physician."*

We are not calling for a reduction in physicians' income — we are calling for an uncoupling of compensation from volume. We think physicians should be pushing for that change, and their leaders should do the same.

The second step is to create cultural norms despising waste. In some ways, these norms require standardization, but in others, they require more autonomy and professionalism.

The standardization should come in the form of rigorous implementation of guidelines and protocols that improve quality and/or lower costs. Guidelines already exist that, if they were reliably used, could reduce or eliminate the use of interventions that provide no value, or replace low-value interventions with better approaches. Some guidelines focus upon *little ticket* items (e.g., gastroenterologists say there is no need to order both an amylase and lipase blood test for patients with suspected pancreatitis, even though both tend to rise in that setting; the lipase alone will do). Others are *big ticket*, like performing coronary angioplasty or coronary artery bypass surgery on patients who feel fine despite atherosclerosis in their heart's arteries — the intervention doesn't make them live longer or feel better, it just "fixes" a test abnormality.

A good first step in this direction was the Choosing Wisely campaign, started in 2012 by the American Board of Internal Medicine, which asked professional societies to identify 5 to 10 medical interventions that should be questioned because there is no evidence of benefit. Examples: Infectious disease experts said don't prescribe antibiotics for upper respiratory infections; orthopedic experts said don't do radiographic imaging for low back pain that has lasted less than 6 weeks.

Choosing Wisely identified lots of low-hanging fruit — but that doesn't mean anyone picked it. There might have been brief moments of embarrassment for physicians who ordered those drugs or tests, but no adverse consequences. When physician leaders are asked what they would do if they

really had to control costs, many of them say, "I'd put Choosing Wisely on steroids — no one should do any of those things without petitioning their colleagues on why an exception should be made in this case."

They also say that the recommendations of Choosing Wisely should be extended to take value into account. The current recommendations focus on interventions that evidence would suggest are not helpful, and may even be harmful. "Middle-hanging fruit" would include interventions that might have some benefit, but for which the costs are way out of proportion. Accordingly, physicians' professional societies should return to the table, concede that what they accomplished is not enough, and ask how to bring this effort to a new level of effectiveness in reducing waste.

Physicians should do more than surrender to guidelines and protocols; they should exercise their professional autonomy and speak up when resources are being wasted. Clinicians at the front lines of care are best positioned to know when interventions have a decent chance of being useful, and when they do not. The fee-for-service system has encouraged physicians to just go ahead and let things happen, as long as they didn't harm patients. The time has arrived for cultural norms in which physicians object when they think care is of no value to the patient.

Embracing Innovation

This test should be the least controversial of the six, but in fact may be the most transformational. Everyone loves the idea of innovation, but, in some ways, physician culture is hardwired to make change difficult. If physicians are to succeed on the prior four tests — putting patients first, organizing super-teams, plunging into competition, taking on cost-reduction — they need to unwind some of that hardwiring.

> *"Everyone loves the idea of innovation, but, in some ways, physician culture is hardwired to make change difficult."*

That hardwiring begins with who gets picked to go into medicine. Medical schools have many more applicants than they have positions, and the ones who survive the selection process tend to be young men and women with strong intellectual abilities who performed reliably — even perfectly — on test after test after test. To practice medicine effectively today, however, *emotional* intelligence may be more important than the types of intelligence that lead to high MCAT exam scores. And ability to recover from setbacks may be a better predictor of who can innovate than who can maintain 4.0 grade point averages.

There is good reason why physicians feel the need to be perfect; after all, the stakes are high in medicine, and errors can cause deaths. But the desire to be perfect creates a culture that has a way of smothering innovation. Physicians are afraid of failing. They and their colleagues get paralyzed by exceptions. They say something shouldn't be tried unless there is evidence that it will make things better — and, as a result, it never gets tried.

As the economist Peter Orszag said at a 2019 meeting: We're at a point in health care where we have to be willing to try things as long as there isn't evidence it is harmful.[18] And if it isn't working well at the start, that should not be a surprise. Things tend to get better as they are used. Real innovation takes*creativity*, but it also takes*courage* and*patience*. Physicians need to give greater value to all three characteristics.

Finally, physicians should recognize that information technology is not their enemy, even in their darkest moments getting their electronic medical records to work. There is no going back to the pre-EMR era. Technology got physicians into their current frustrations, and technology has to get them out. Plunging into the work of making that type of innovation better is one of the most important tests for physicians and their leaders in the decade ahead.

Grasping Leadership

And now for the last and most challenging of the six tests: Physicians must grasp and embrace the nature of leadership and their leaders must absorb lessons learned from other sectors that have gone through major change in recent decades. Leadership training must spread these lessons from the C-suites of organizations through the management structure to the front lines where clinicians practice. Because physicians write orders that other personnel must carry out, and those orders have a range of serious consequences, every doctor should understand what it means to be a good team member, but also what it means to lead.

> *"Physicians must grasp and embrace the nature of leadership and their leaders must absorb lessons learned from other sectors that have gone through major change in recent decades."*

Many of the basic themes are captured in Harvard Business Review's "10 Must Reads" books on leadership and on strategy created specifically for the health care sector. Classic leadership articles include descriptions of the five key skills of emotional intelligence (self-awareness, self-regulation, motivation, empathy, and social skills); step-by-step analyses of what executives must do to address a problem; exploration of the differences between management (which copes with complexity) and leadership (which copes with rapid change); and the nature of "Level 5 leadership," which blends humility with resolve. Classic strategy articles include explorations of the nature of competition and how to respond to it, how to use balanced scorecards as a strategic management tool, and a strategic framework for health care itself.

One cannot master leadership from reading articles and books, but learning can be accelerated by reflecting on lessons learned from thought leaders from inside and outside health care. For that reason, we think health care organizations should develop robust leadership training programs for their clinicians, and support middle and senior managers in deeper leadership training. Such training should do more than provide leaders and frontline clinicians with reflexes for how to respond to crises — it should give them a framework for what they should be trying to do with those

leadership skills. And organizations should give physicians opportunities to lead, and increasingly upgrade their responsibilities.

What they should be trying to do as their roles become more influential is reflected in the tests described in this article, beginning with organizing care around the needs of patients. That requires understanding of the nature of culture, and the nature of culture change — a challenge that, like competition and transparency, is always more appealing when it is applied to someone else.

Our take is that physician culture does not need to reject its two traditional core values — (1) putting the needs of patients above all else, and (2) calling upon professionalism to address the enormous gray zones of medicine in which the right thing to do is uncertain. The transformation needed for the decade ahead is applying those values reliably, and through teams, with the goal of delivering care that is consistently safe, effective, and empathic.

Data, experience, and common sense all point in the same direction. They suggest that the physicians who are most effective in putting patients first and organizing super-teams will be the ones who are most successful. They will be best able to innovate, compete, and control costs so that their care is affordable to their patients. We think their organizations will have the best shot at doing more than survive — they just might actually thrive, and their clinicians will have less burnout and more resilience.

If physicians and their leaders can take on these six tests during the decade ahead, they will be better prepared for whatever challenges the decade *after that* might bring.

Thomas H. Lee, MD, MSc
Editor-in-Chief, NEJM Catalyst Innovations in Care Delivery Co-Chair, NEJM Catalyst Editorial Board Chief Medical Officer, Press Ganey Associates, Inc. Member, Editorial Board, New England Journal of Medicine Professor of Medicine (part time), Harvard Medical School

Toby Cosgrove, MD
Former President and Chief Executive Officer, Cleveland Clinic Executive Advisor, Google Cloud Healthcare and Life Sciences Senior Advisor, InnovaHealth Partners

Disclosures: Thomas H. Lee, MD, is Editor-in-Chief of NEJM Catalyst Innovations in Care Delivery, on the Editorial Board for the New England Journal of Medicine, is a physician at Brigham and Women's Hospital, and the Chief Medical Officer of Press Ganey. Toby Cosgrove is Executive Advisor for Google Cloud Healthcare and Life Sciences and Senior Advisor for InnovaHealth Partners.

References

1. Ornstein C. Hospital Heeds Doctors, Suspends Use of Software. Los Angeles Times. January 23, 2003. Accessed September 25, 2019. https://www.latimes.com/archives/la-xpm-2003-jan-22-me-cedars22-story.html.

2. Pevnick JM, Herzik AJ, Li X. Effect of computerized physician order entry on imaging study indication. J Am Coll Radiol. 2015;12(6):70-4

3. Slabodkin G. Cedars-Sinai Leverages Patient Data in Epic-HealthKit Integration. HealthData Management. SourceMedia, Inc. May 26, 2015. Accessed September 25, 2019. https://www.healthdatamanagement.com/news/cedars-sinai-leverages-patient-data-in-epic-healthkit-integration.

4. Association of American Medical Colleges. 2019 Fall Applicant, Matriculant, and Enrollment Data Tables. December 2019. Accessed September 25, 2019. https://www.aamc.org/system/files/2019-12/2019%20AAMC%20Fall%20Applicant%2C%20Matriculant%2C%20and%20Enrollment%20Data%20Tables_0.pdf.

5. Lim A, Epperly T. Generation gap: effectively leading physicians of all ages. Fam Pract Manag. 2013;20(6):29-34

6. American Medical Association. Employed Physicians Outnumber Self-Employed. May 6, 2019. Accessed September 25, 2019. https://www.ama-assn.org/press-center/press-releases/employed-physicians-outnumber-self-employed.

7. Porter ME, Teisberg EO. Redefining Health Care: Creating Value-Based Competition on Results. Boston: Harvard Business School Press, 2006. https://hbr.org/product/redefining-health-care-creating-value-based-competition-on-results/7782-HBK-ENG.

8. Porter ME. What is value in health care? N Engl J Med. 2010;363(6):2477-81

9. Scanlan M. Innovative Clinic Links Asthma, Sinus, allergy Treatment. Vanderbilt University Medical Center Reporter. September 19, 1997. Accessed September 25, 2019. https://www.mc.vanderbilt.edu/reporter/index.html?ID=313.

10. Kane CK. Updated Data on Physician Practice Arrangements: For the First Time, Fewer Physicians Are Owners Than Employees. American Medical Association. 2019. Accessed September 25, 2019. https://www.ama-assn.org/system/files/2019-07/prp-fewer-owners-benchmark-survey-2018.pdf.

11. Kletke PR, Emmons DW, Gillis KD. Current trends in physicians' practice arrangements. From owners to employees. JAMA. 1996;276(6):555-60

12. Densen P. Challenges and opportunities facing medical education. Trans Am Clin Climatol Assoc. 2011;122(6):48-58

13. Lagasse J. Majority of Providers Fall Short of Compliance with HIPAA Access Requirements. Healthcare Finance. HIMSS Media. August 15, 2019. Accessed September 25, 2019. https://www.healthcarefinancenews.com/node/139068.

14. Cohen JK. 3 Major HIPAA Fines So Far in 2018. Becker's Health IT. Becker's Healthcare. July 3, 2018. Accessed September 25, 2019. https://www.beckershospitalreview.com/cybersecurity/3-major-hipaa-fines-thus-far-in-2018.html.

15. Shenkin BN, Warner DC. Sounding board. Giving the patient his medical record: a proposal to improve the system. N Engl J Med. 1973;289(6):688-92

16. Walker J, Leveille SG, Ngo L. Inviting patients to read their doctors' notes: patients and doctors look ahead: patient and physician surveys. Ann Intern Med. 2011;155(6):811-9

17. DesRoches CM, Bell SK, Dong Z. Patients managing medications and reading their visit notes: a survey of OpenNotes participants. Ann Intern Med. 2019;171(6):69-71

18. Orszag P. Vertical Integration and Bold Experimentation: Four Points on Improving Value in Health Care via Vertical Integration and Aggressive Experimentation. NEJM Catalyst.