Virtual health accelerated

How can health care organizations take advantage of the
current momentum?

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Executive summary

THE COVID-19 PANDEMIC triggered a dramatic adoption of virtual health. During the early weeks of the pandemic, virtual visits (i.e., video- or phone-based visits) increased by more than 11,000% over prepandemic levels, according to the Centers for Medicare and Medicaid Services (CMS).[1] But will adoption of virtual health continue to accelerate once the threat of the pandemic subsides?

In late 2020, the Deloitte Center for Health Solutions surveyed clinical leaders from 50 health systems—and held a virtual roundtable with physician leaders—to explore the possible implications of continued virtual health adoption, and examine the potential opportunities that could unfold during the next one to three years. We examined how the last several months have changed the practice of medicine, how consumers and clinicians are likely to use virtual health in the future, and how care delivery models might be transformed.

Findings from our survey showed:

- One in two clinical leaders said the pandemic had led to **significant shifts in their health system's virtual health strategy**. Continued investments into virtual health, along with an enterprisewide strategy, were the top strategic initiatives cited. Automating decision-making around virtual health was mentioned as another important consideration.

- Across care settings, clinical leaders anticipate that the **optimal level and mix of virtual visits will be very close to the peak they witnessed during the pandemic**. For primary care and chronic care management, that means one-third of all visits would be virtual, up from only 5% prepandemic.

- Two in three clinical leaders said they currently provide staff with technology and privacy training. However, **clinical and "web-side manner"[2] training is less common**.

- Most clinical leaders said they were tracking patient experience and utilization metrics related to virtual health. **Quality of care and team experience measurements are lagging**.

- Clinical leaders said they have been able to overcome consumers' and physicians' reluctance to adopt virtual health. However, **interoperability, integration of platforms, and data vulnerabilities continue to be a challenge**.

Virtual health gains could be a silver lining of the pandemic. During the early response phase of the COVID-19 crisis, many health systems and physician practices rapidly implemented processes around virtual health. As a result, the health care sector is probably about five years closer to the Future of Health™ that Deloitte anticipates will take place between now and 2040. As health systems continue to recover from the pandemic,

and ultimately thrive[3] in the coming months and years, they should work to thoughtfully scale up new learnings and transition to a longer-term, enterprisewide approach. To realize the full benefits of virtual health, this should include:

- Evolving team-based care to advance the integration of behavioral health, primary care, and specialty care, and help family caregivers become more involved in care

- Thinking beyond process measures to develop more meaningful measures of care quality and care-team experience

- Training clinicians and support staff to ensure patients get the same quality care experience as patients who have face-to-face visits

Health care stakeholders probably won't realize the full value of virtual health if it becomes just another component of the traditional health care delivery process. The pandemic has created a new sense of urgency to advance value-based care, adopt radical interoperability, launch new care delivery models that consider the provider experience, and apply a consumer-centric lens to the health care system.

METHODOLOGY

In fall 2020, the Deloitte Center for Health Solutions held a virtual roundtable with physician executives and surveyed clinical leaders from 50 large health systems (76% with annual revenue above US$1 billion).

Our survey sample consisted of chief medical officers (52%), vice presidents, department chiefs, and other clinical services leaders. Their organizations spanned academic medical centers, university-based and community-based hospitals, multistate health systems, children's hospitals, and physician-owned hospitals.

In our research, we defined virtual health as continuous, connected care via digital and telecommunication technologies. It includes virtual visits (telephone or video), remote monitoring, asynchronous communication, and clinician or provider-facing solutions such as virtual consults and virtual second opinions.

"There were some myths of what telemedicine could do … and providers and patients were surprised by how effective the clinical visit could be [in a virtual setting]. We are hopeful that there is real opportunity for a telehealth component to health care that is sustainable and reliable."

— *Kenric Maynor, MD, chair of Medicine Institute, Geisinger Health System (Deloitte Virtual Health Accelerated Roundtable participant)*

Findings

One in two clinical leaders said the pandemic led to significant shifts in their health system's virtual health strategy
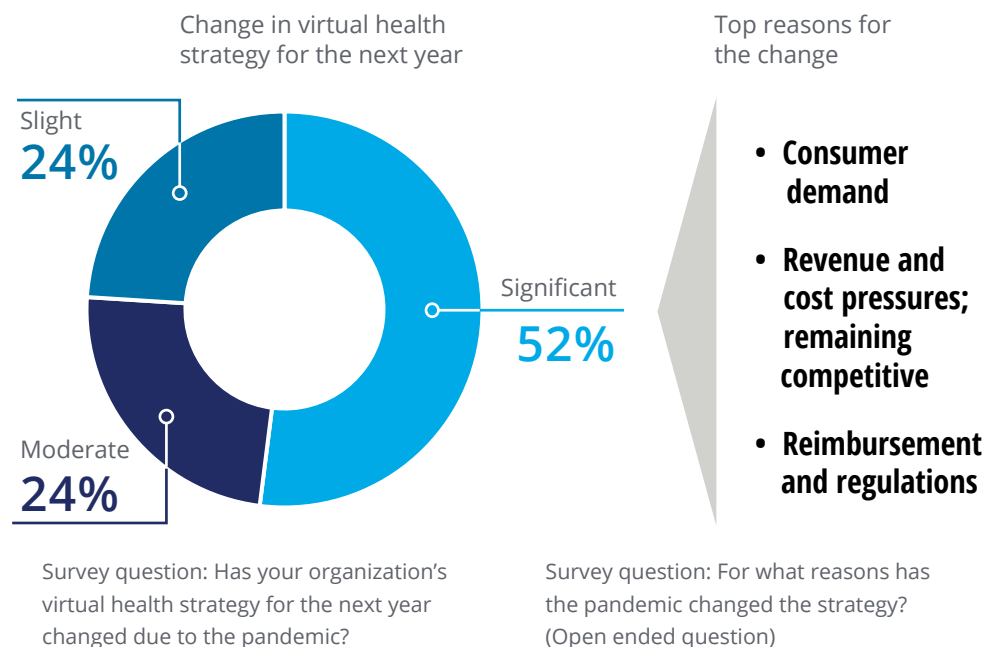
The COVID-19 pandemic accelerated and catalyzed several aspects of the Future of Health—particularly virtual health, which otherwise might have taken years to reach the level of adoption that took place during the pandemic. Deloitte was interested in learning how leading health systems are adapting, and how the rapid and forced shift to virtual visits and remote monitoring has impacted

health system strategies and priorities around virtual health in the near and long term.

Deloitte research conducted in early 2020, before the pandemic, revealed modest growth of virtual visits and remote monitoring among physicians. From 2018 to 2020, adoption increased from 14% to 19%.[4] Barriers around payment, concerns about fraud and abuse, and patient and clinician acceptance of the status quo were some of the reasons for the limited adoption. COVID-19 changed everything. By the middle of March 2020, many health systems were halting their nonurgent procedures and patients were staying away from

FIGURE 1

The pandemic has led to significant shifts in virtual health strategy, driven by consumer demand, cost pressures, and easing of regulatory barriers

Change in virtual health strategy for the next year

Top reasons for the change

Slight
24%

Significant
52%

Moderate
24%

- **Consumer demand**

- **Revenue and cost pressures; remaining competitive**

- **Reimbursement and regulations**

Survey question: Has your organization's virtual health strategy for the next year changed due to the pandemic?

Survey question: For what reasons has the pandemic changed the strategy? (Open ended question)

Note: N=50
Source: Deloitte Physician Leaders Virtual Health Survey, 2020.

clinical facilities to avoid potential exposure to the virus.[5] Health systems, clinicians, and patients were forced to turn to virtual visits and remote monitoring. Both the clinical leaders we surveyed and the physician executives interviewed largely agreed that the experiences around virtual health during the first several months of the pandemic led to shifts in their health system's virtual health strategy. Half of surveyed clinical leaders (52%) reported significant shifts, and 24% saw moderate shifts (figure 1).

Consumer demand, revenue and cost pressures due to the pandemic, pressure to keep up with competitors, and a relaxed regulatory and reimbursement environment were among the top reasons clinical leaders cited for the increased adoption of virtual health.
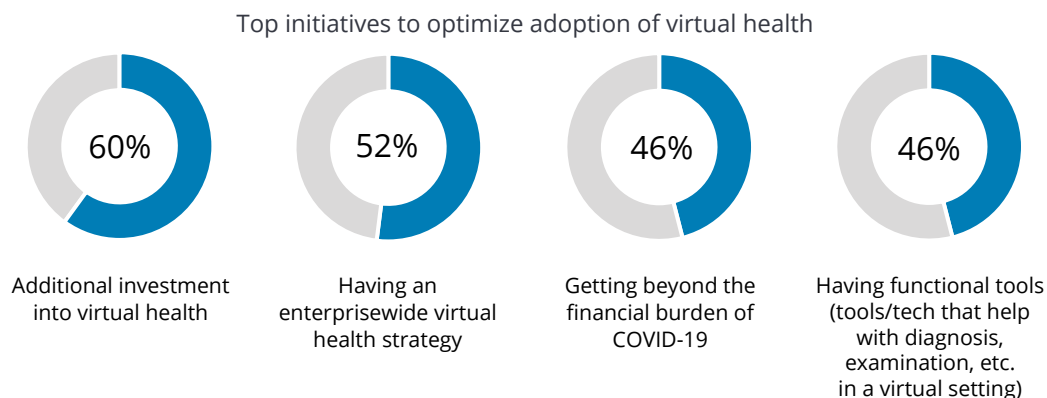
Looking ahead, 60% of respondents said their health systems need to make additional investments in virtual health, and 52% reported it was essential to have an enterprisewide strategy (figure 2).

"As devastating as COVID-19 has been, it has also been the best thing to come along in a long time in terms of stimulating health care innovation. It has forced us to accelerate our thinking in a lot of different ways, that we should have been doing, but we didn't have the necessary pressure to do."

— *Robert J. Keenan MD, MMM, chief medical officer/vice president quality, Moffitt Cancer Center (Deloitte Virtual Health Accelerated Roundtable participant)*

FIGURE 2

Most clinical leaders said their organizations need additional investments and an enterprisewide virtual health strategy to optimize adoption of virtual health going forward

Top initiatives to optimize adoption of virtual health

60%	52%	46%	46%
Additional investment into virtual health	Having an enterprisewide virtual health strategy	Getting beyond the financial burden of COVID-19	Having functional tools (tools/tech that help with diagnosis, examination, etc. in a virtual setting)

Survey question: Has your organization's virtual health strategy for the next year changed due to the pandemic?

Note: N=50
Source: Deloitte Physician Leaders Virtual Health Survey, 2020.

Many hospitals are trying to determine which visits should be face-to-face and which ones should be virtual. While only 36% of clinical leaders said care pathways were used to guide those decisions, 54% are planning to develop such a strategy over the next one to three years. While just 16% of respondents said their health system has a "virtual first" system for scheduling certain visits, 52% said such a system was being planned. During our roundtable discussion, one physician executive said, "We are looking at ways to leverage data and develop algorithms to help predict the right length of visits, the type of visit, and whether it can be a video, phone, or face-to-face [visit] so that this process actually becomes more automated rather than leaving it up to the provider."

Our research participants agreed that, as health systems refine strategies and adopt new models, they should be mindful to avoid some of the mistakes that were made during the early years of the electronic medical record. Long before the pandemic, physicians were experiencing frustration and burnout from screen time and administrative fatigue.[6] A recent study shows physicians were satisfied with virtual visits when they had input into how they were used, had administrative help, adequate payment, and access to reliable and easy-to-use technology.[7]

We expect to see increased investments in remote monitoring and patient wearables in the coming years. This will likely be driven by growing investments in digital health,[8] and demand from clinical leaders.

Half of the clinical leaders we surveyed said they wanted more functional tools and technology to optimize virtual health (figure 2). Health system leaders should think through how to seamlessly integrate those tools and platforms so that they enhance clinical care rather than add work for clinicians.

Across care settings, clinical leaders describe the optimal level of virtual visits as being close to the peak they witnessed during the pandemic
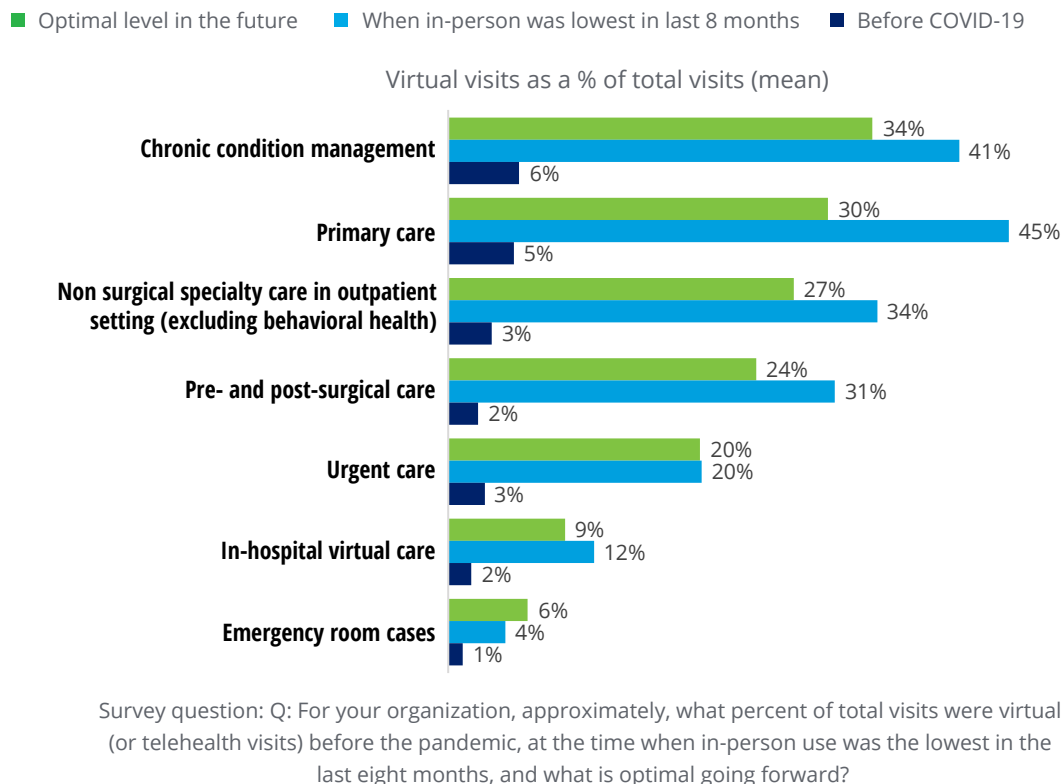
During our roundtable discussion, physician executives said they were interested in determining the optimal level of virtual visits for the future. Clinical leaders we surveyed indicated that the optimal level of visits over the next one to three years could be similar to the peak volume they saw during the pandemic.

"Once we are through the pandemic … we will be able to truly evaluate the operational efficiency and opportunity from virtual health. Patient access and patient convenience are key goals, and we have a whole new world of competitors. I think if we don't (invest in virtual health), then we will fall behind."

— *Brian Hasselfeld, MD, medical director, digital health & telemedicine, Johns Hopkins Medicine (Deloitte Virtual Health Accelerated roundtable participant)*

FIGURE 3

Clinical leaders thought virtual visits should constitute about a third of all primary care and chronic care management visits in the future vs. only 5% pre-pandemic

■ Optimal level in the future   ■ When in-person was lowest in last 8 months   ■ Before COVID-19

Virtual visits as a % of total visits (mean)

Chronic condition management
- 34%
- 41%
- 6%

Primary care
- 30%
- 45%
- 5%

Non surgical specialty care in outpatient setting (excluding behavioral health)
- 27%
- 34%
- 3%

Pre- and post-surgical care
- 24%
- 31%
- 2%

Urgent care
- 20%
- 20%
- 3%

In-hospital virtual care
- 9%
- 12%
- 2%

Emergency room cases
- 6%
- 4%
- 1%

Survey question: Q: For your organization, approximately, what percent of total visits were virtual (or telehealth visits) before the pandemic, at the time when in-person use was the lowest in the last eight months, and what is optimal going forward?

Notes: N = 50
Source: Deloitte physician leaders virtual health survey, 2020.

When face-to-face visits reached their lowest point during the pandemic, virtual visits for primary care and for chronic condition management peaked at 45% and 41%, respectively (figure 3). Virtual visits for nonsurgical specialty care in outpatient settings (excluding behavioral health) peaked at 34%. Clinical leaders agreed that the optimal level of virtual chronic-condition management and primary care will be about one-third of overall visits. Prepandemic levels of virtual visits for those areas of care were around 5%. This willingness to continue virtual visits at levels that are close to the

peak seen during lockdowns could be good news for the continued growth of virtual health.

We asked clinical leaders which areas of hospital stay they expect would be most impacted by the acceleration of virtual health. A majority of them said that there could be a significant increase in virtual technology for prestay scheduling and reminders, postdischarge chronic-care check-ins, patient monitoring, and follow-ups in the coming months and years.

We also asked which specialties would likely see the largest uptake in virtual visits over the next one to three years. Primary care topped the list, followed by behavioral health, dermatology, and internal medicine.

Clinical leaders reported offering technology and privacy training to their staff, while clinical and web-side manner training is less common

The Deloitte 2020 survey of US physicians, conducted before the pandemic, found that approximately 85% of physicians thought that training on how to communicate effectively with patients—using virtual means—was currently lacking, but would be essential for success in the future.[9] In prior research, we have emphasized the importance of training clinicians to be able to convey empathy, build rapport, make eye contact, and other critical bedside manner techniques in a virtual setting.[10] In our latest survey, 74% of clinical leaders said they are currently offering training related to the Health Insurance Portability and Accountability Act (HIPAA), and ensuring that
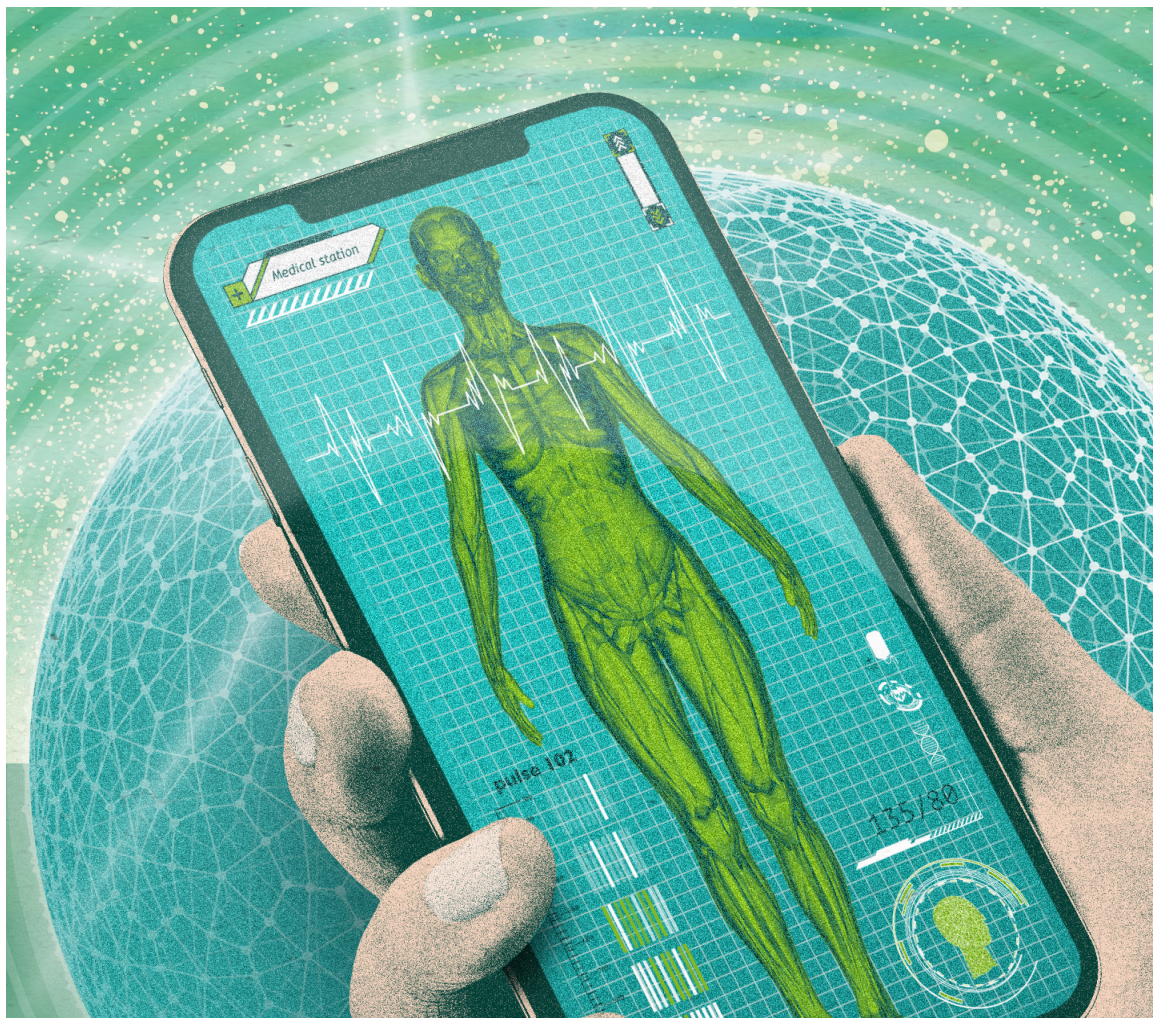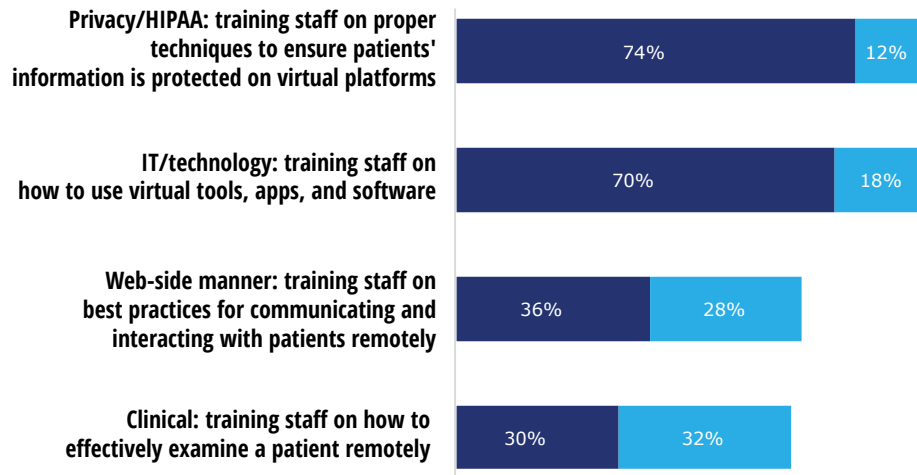
FIGURE 4

Clinical and web-side training is lacking

■ Currently offered   ■ In development

Training offered to the staff

Privacy/HIPAA: training staff on proper techniques to ensure patients' information is protected on virtual platforms	74%	12%
IT/technology: training staff on how to use virtual tools, apps, and software	70%	18%
Web-side manner: training staff on best practices for communicating and interacting with patients remotely	36%	28%
Clinical: training staff on how to effectively examine a patient remotely	30%	32%

Survey question: Which of the following trainings are offered, in development, or not currently offered to your staff?

Note: N = 50
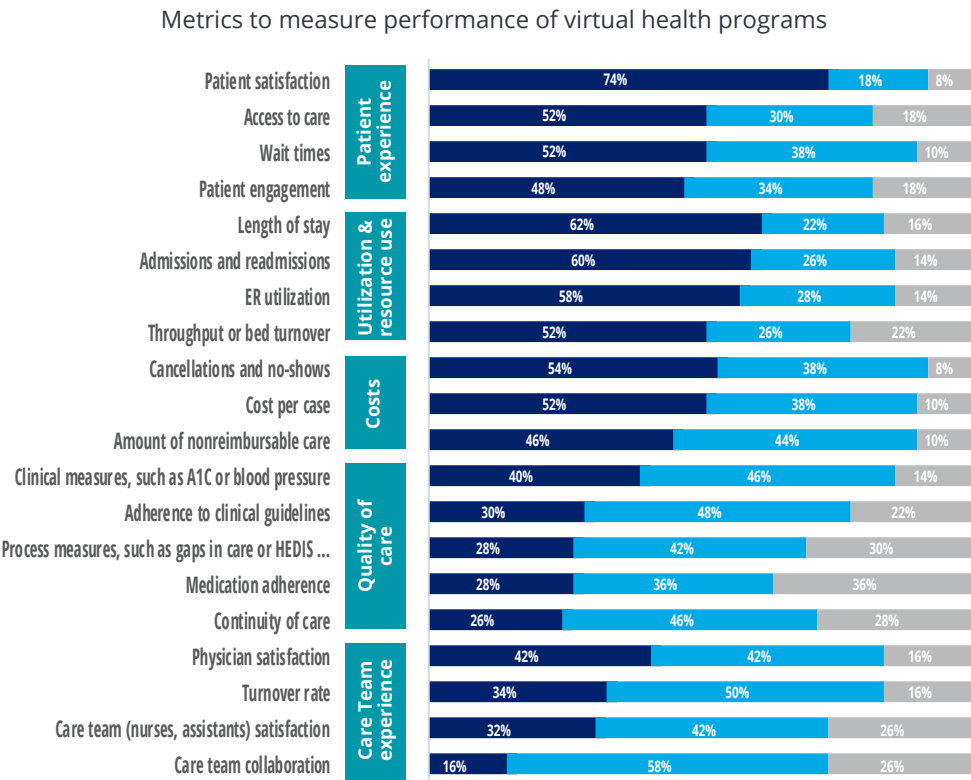Source: Deloitte physician leaders virtual health survey, 2020.

patient information is protected on virtual platforms. Training staff on software, apps, and other platforms is also common (70% of clinical leaders are currently doing this). However, only 36% of clinical leaders said they currently have "web-side manner" training on best practices for communicating and interacting with patients remotely, and 28% expect to develop this content in the next one to three years. That still leaves about 30% with no well-defined plans to offer such training (figure 4). We continue to call for health systems to consider training clinicians and support staff on how to ensure a high-quality virtual visit. If patients do not feel virtual visits match the quality of face-to-face visits, we will lose momentum

around virtual health. Further, as wearable and remote monitoring technology become more sophisticated, we should be able to take vital signs and gather other important biometric data remotely, which could put virtual visits more on par with face-to-face visits. Clinical leaders should consider strategies to implement those technologies. To create a sustainable program, health systems should also think about the experience for all users (clinicians, patients, front- and back-office support staff). Clinical leaders should consider applying the principles of human-centered design, training users on the technology, and ensuring continuity of care through follow-up virtual visits.

FIGURE 5

Quality of care and care team experience measures lag behind process and utilization measures

■ Yes, track comprehensively   ■ Yes, track partially   ■ No, do not track

Metrics to measure performance of virtual health programs

		Yes, track comprehensively	Yes, track partially	No, do not track
Patient satisfaction	Patient experience	74%	18%	8%
Access to care		52%	30%	18%
Wait times		52%	38%	10%
Patient engagement		48%	34%	18%
Length of stay	Utilization & resource use	62%	22%	16%
Admissions and readmissions		60%	26%	14%
ER utilization		58%	28%	14%
Throughput or bed turnover		52%	26%	22%
Cancellations and no-shows	Costs	54%	38%	8%
Cost per case		52%	38%	10%
Amount of nonreimbursable care		46%	44%	10%
Clinical measures, such as A1C or blood pressure	Quality of care	40%	46%	14%
Adherence to clinical guidelines		30%	48%	22%
Process measures, such as gaps in care or HEDIS ...		28%	42%	30%
Medication adherence		28%	36%	36%
Continuity of care		26%	46%	28%
Physician satisfaction	Care Team experience	42%	42%	16%
Turnover rate		34%	50%	16%
Care team (nurses, assistants) satisfaction		32%	42%	26%
Care team collaboration		16%	58%	26%

Survey question: Which of the following do you use to measure performance of your virtual health program?

Note: N=50

Source: Deloitte Physician Leaders Virtual Health Survey, 2020.

Measuring the performance of virtual health programs: Process and utilization metrics are tracked comprehensively; quality of care and team-experience measurements are lagging

During the public health emergency, several regulatory flexibilities made it easier for clinicians and health systems to adopt virtual health. As we look to the future, regulators should determine whether temporary rules should be made more permanent. They will likely evaluate the payment models and benefit designs that support virtual health and their ability to improve patient health, while reducing the use of low-value services and unnecessary care.

Rather than sequential visits with separate specialists, virtual health makes it possible for patients to connect to a suite of caregivers who can work collaboratively to offer more comprehensive and coordinated care.[11] If health systems take existing care models and simply convert them into

virtual formats, we could lose momentum and fail to realize the full potential of virtual health. As health care stakeholders work to redesign care models, clinical leaders should measure clinical and patient-centered outcomes. This could help ensure that the use of virtual health will continue to grow.[12]

One area that will be important to capture is the extent to which remote monitoring can evaluate how well patients are managing their conditions. We can learn a lot from applying advanced analytics to large populations of patients who are monitoring their conditions at home. For example, data from glucose monitors that track diabetes, peak-flow meters that monitor asthma control, and weight and oxygen-saturation metrics for those with heart failure, can help clinicians learn how well patients are managing their conditions. Data from these devices can also highlight barriers they face and identify nudges that might be effective at changing behavior. Health systems can begin to leverage this collective data to learn how to support patients more effectively.

To measure the performance of their virtual health programs, most clinical leaders said their organizations comprehensively track patient-experience measures such as patient satisfaction (74%) and access to care and wait times (52%) (figure 5). Almost two in three health systems also comprehensively measure utilization and resource measures, such as length of stay, admissions and readmissions, and emergency room utilization.

However, about 75% of clinical leaders reported either partial tracking or no tracking of quality measures, such as medication adherence and continuity of care. These measures will likely be critical in building data on health improvement and outcomes. Going forward, these measures could be essential—not only from a regulatory perspective, but also to stay competitive. The ability to successfully track such measures could also lead to more successful collaboration with health plans. Health systems that collect this data could use it to make the case for virtual health to patients, clinicians, employers, and health plans. Another area with minimal tracking is the care-team experience—including physician and care-team satisfaction, and the level and quality of collaboration. These measures could help shape workforce and operational strategies to tackle issues such as physician and care-team burnout, and how to build on and improve team-based care or re-design care altogether.

Consumers and physicians are on board with virtual health. However, interoperability, integration of platforms, and data-security vulnerabilities continue to be a challenge

Despite an uncertain regulatory and reimbursement environment, clinical leaders we surveyed—and the physician executives who

"**The COVID-19 remote patient-monitoring program we developed really activated and engaged our practice ... and now several specialties want to extend remote monitoring to their patients as well.**"
—*Tufia Haddad, MD, medical director of the Center for Connected Care Remote Patient Monitoring program and chair of digital health for the Department of Oncology, Mayo Clinic (Deloitte Virtual Health Accelerated Roundtable participant)*

participated in our roundtable—agree that virtual health is here to stay. Prior to the pandemic, only 25% of primary care physicians, 17% of nonsurgical specialists, and 9% of surgical specialists reported that there was consumer demand for virtual health in their practices.[13] When our latest survey respondents were asked about the top challenges their health systems overcame during the past few months, consumer and physician reluctance to virtual health were no longer seen as concerns.

Other Deloitte research shows that after the pandemic began, some health system chief financial officers expanded their virtual health strategies and created executive command center strategies that allow for more rapid decision-making.[14] As a result, several health systems were able to quickly transition to virtual care. However, some challenges remain. As health systems attempt to mainstream virtual health into the existing clinical and revenue-cycle workflows, 66% of the clinical leaders we surveyed said data security is a long-term concern, 62% said interoperability remains a challenge, and 52% cited a lack of integration with other platforms.

The clinical leaders shared their investment priorities today and in coming years. Most respondents (78%) said high-speed internet is a top investment priority. Looking ahead one to three years, clinical leaders said artificial intelligence (AI) and machine learning were top investment priorities (68%). Physician executives in our roundtable discussed the use of AI for clinical-decision support and the management of staffing. As health systems continue to scale up virtual health, they will likely want to capture data from remote monitoring tools and wearables, integrate the data with electronic health systems and clinical-decision support, and build real-time dashboards.

However, though cited in the survey results as challenges that need to be overcome, data interoperability and cyber security did not appear to be top priorities for future investments. This could turn out to be a blind spot for health systems going forward. Health systems should consider prioritizing investments in those areas, not only to satisfy regulatory requirements, but also to gain a significant long-term competitive advantage.

THE PANDEMIC HAS HIGHLIGHTED THE DIGITAL DIVIDE

Many have been spending much more time at home since the pandemic began. We are ordering groceries, doing our work, and even having our children attend school online. But not everyone has equal access to high-speed internet. There are disparities by race, income, geography, age, and other factors.[15] As of February 2019, 79% of white households had access to home broadband, compared to 66% of Black households, and 61% of Hispanic households. Ninety-two percent of those with a household income of US$75K or more have access to home broadband. By contrast, 56% of people who have household income below US$30K have access to broadband. More than one in three households headed by a person age 65 or older do not have a desktop or a laptop computer, and more than half do not have a smart device.[16] Older Americans, and people who live in rural areas, are also much less likely to have access to home broadband.[17]

Lack of broadband internet is associated with fewer telehealth visits and reduced use of patient portals. Stakeholders, including policymakers, public health officials, and health care organizations, should work together to ensure that as we shift more health care into the home, we do not increase disparities.

Implications for health systems

VIRTUAL HEALTH GAINS could be a silver lining of the pandemic. We could be as many as five years ahead of where we expected to be on our future-of-health journey. To keep this momentum going, health care stakeholders should:

- **Adapt team-based care and operations to realize the full benefits of virtual visits.** Clinical leaders told us that the optimal level of virtual health (for primary care and chronic care) would be about one-third of all visits. Before that can happen, many health systems will need to build new workflows or re-design existing workflows, create scheduling capabilities to enable specialist consultations and easy referrals, integrate digital health devices, collect patient-reported outcomes, and develop new approaches for data analytics and interpretation. While barriers remain, clinical leaders can work to advance the integration of behavioral health, primary care, and specialty care, and help family caregivers become more involved in care. This can ultimately lead to better adherence and better health outcomes.

- **Train clinicians and support staff to improve the quality of visits.** Training clinicians and staff to conduct high-quality virtual visits is essential but lacking. Health plans and health systems should ensure virtual visits are on par with traditional visits in terms of quality and patient satisfaction. The human-experience component should be considered in every element of virtual health, including virtual check-ins and follow-ups, accessing the patient portal, and virtual visits and remote monitoring.

- **Move beyond process measures in their virtual health programs to more meaningful measurements, including quality-of-care and care-team experience.** Health systems should plan to increase tracking of these measures and set targets to improve them. Health plans will likely make these table stakes in coming years. There are opportunities for health systems and health plans to collaborate and experiment with strategies to improve measurement and performance of their virtual health initiatives.

- **Recognize that we won't realize the full value of virtual health if it becomes another layer of the traditional health care system.** In theory, increased use of virtual health should enable integration of care from multiple team members more seamlessly. However, our findings show that clinical leaders have concerns around the digital divide, the ability to address disparities, lack of interoperability and platform integration, and physician burnout. Research also shows that patients and families look for certain characteristics in their health care interactions.[18] They want to feel like the care is personal and they want to connect with clinical staff on some level. They also want a simplified experience that is convenient, as well as

transparent, so that they can clearly understand what is happening to them and why. Finally, patients require security around their personal health information.

Maintaining momentum in virtual health will not be easy. It will have to happen while we are still fighting the pandemic, implementing the largest-ever vaccination campaign, recovering from financial losses, and restoring morale from the exhaustion, burnout, and forced layoffs. But health systems should keep pushing forward to stay competitive and to move closer to the future of health.

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