

Special Edition
Telehealth

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CLINIC 20XX

DESIGNING FOR AN EVER-CHANGING PRESENT



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2020: A YEAR OF TELEHEALTH ACCELERATION AND WHAT THIS COULD MEAN FOR OUTPATIENT FACILITIES

In an era of unprecedented change, we are all thinking about futureproofing. Why? Advances in the field of medicine and medical technology, changes to both patient expectations and caregiver profiles, evolving reimbursement structures, and new players in the health arena were just a few of the changes in healthcare that prompted many health systems to think long and hard about what the future of clinics would look like. Everyone was looking into a crystal ball- trying to foretell a future. Yet, no one predicted the circumstances we find ourselves in today.

Crystal balls are tricky. Trying to predict a future is tricky. And trying to design facilities, based on a predicted future, is perhaps the trickiest of all.

Back in 2015, along with our colleagues at JE Dunn, CADRE conducted a study on how do we design outpatient clinics, not for a faceless future, but for an ever-changing present. We called this report [Clinic 20XX \[see original report here\]](#). It was a prompt that would prove prescient in 2020.

Our research involved a wide review of the literature and a nationwide poll of boomers and millennials, as well as 100

family/internal medicine physicians. A key trend identified in our research was telehealth, which physicians also identified as the most sustainable trend in the future as compared to retail health, mobile health, coordinated health and population health. Even so, physicians reported that although they were open to the idea of telehealth, they did not believe it could replace face-to-face consults. According to physicians, the challenge was trusting the accuracy of the technology, trusting patients are able to use the technology, and having the connectivity needed. Technology used to enable telehealth, meanwhile, was also seen on the rise with 51% of physicians reporting using more than one device (laptop/phone/desktop/tablet) for patient engagement. This rate is no doubt higher today.

Five years later, just as we were getting ready for a refresh of our research, COVID-19 struck. Telehealth received a boost where a majority of non-critical care moved to an online platform. In May 2020, we repeated our survey with 100 physicians from internal and family medicine (similar to our original survey). In this report we share a section of those findings as they relate to telehealth, the rapid adoption of it during COVID-19, and predictions for how sustained this change may be. We further investigate how telehealth will impact the physical design of clinic facilities, and the fundamental duality that will drive design as a digital/physical hybrid.



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Telehealth: A Brief History

Telehealth has been poised to revolutionize the healthcare industry for over a decade. Proponents have advocated that telehealth has the potential to [increase access to care](#), [provide greater convenience to consumers and providers](#), [reduce overall costs of care, and improve health outcomes](#).

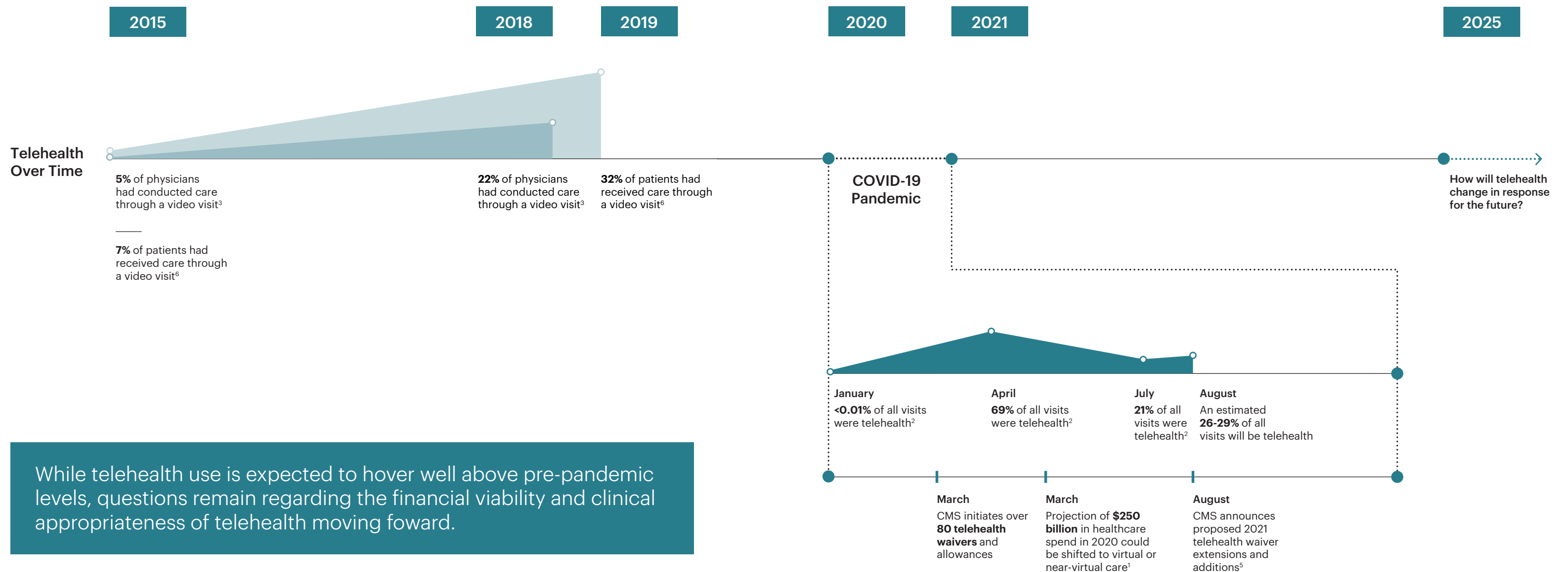
^[1] Yet, providers, consumers, payers, and policy makers have resisted widespread adoption, limiting its application and effectiveness until now.

A [2018 America Well survey](#) of 800 physicians found that physician use of telehealth was on the rise, up from 5 percent of physicians who had previously used video visits to 22 percent in 2018.^[2] Similarly, according to a [2019 survey of 1000 patients](#) conducted by Stanford Medicine's Center for Digital Health and Rock Health, patient use of telehealth had increased from 7 percent of patients who had received care through a video visit in 2015 to 32 percent in 2019.^[3]

While these reports suggested that telehealth had reached an inflection point and was set for rapid expansion over the next several years, as of January 2020 according to EPIC health research, still [less than 0.01 percent of all outpatient visits were conducted using telehealth](#).^[4]

With the emergence of COVID-19, telehealth saw an unprecedented uptake in use. At its height, telehealth was projected to transform what was an estimated [\\$3 billion in total annual revenue to a projected \\$250 billion in US healthcare spending post COVID-19](#).^[4] [According to national](#)

[data from Epic](#), telehealth use peaked in mid-April 2020 at 69 percent of total outpatient encounters.^[4] However, by mid-July 2020, telehealth use had sharply declined to 21 percent of total visits, creating uncertainty within the healthcare industry as to whether the strides made in telehealth adoption during COVID-19 could be sustained long-term.^[4] [Recent projections](#), suggest that telehealth use will level out in the short-term to around 26-29 percent of all outpatient visits.^[5] While these levels are well above those seen pre-pandemic, questions remain regarding the financial viability and clinical appropriateness of telehealth moving forward.



Emerging Challenges: Payment and Policy are Still Catching Up to Technology

TELEHEALTH POLICY CHANGES DUE TO COVID-19

	Added	Removed
WHO	+ Payment extended to all medical professionals eligible to bill Medicare for their services	+ Audits confirming existing relationships between patient and provider put on hold
WHERE	+ Providers allowed to utilize personal devices such as smartphones for visits	+ Pause HIPPA violations for non-HIPPA compliant communication technology
HOW	+ Temporary reimbursement approval for over 80 types of services; fully parity of payment	+ Removal of penalties eliminating co-pays or deductibles for telehealth services

At the forefront of this rapid change and ensuing uncertainty, are policy changes that were initiated on March 6, 2020 by the [Centers for Medicare and Medicaid Services \(CMS\)](#) to broaden patient access to Medicare telehealth services, promote individual and public safety, and maintain business continuity during the pandemic. [6] Temporary waivers were put in place to allow all patients, especially vulnerable individuals at high-risk of complications due to the virus, to receive routine care, while limiting exposure to other patients and staff and helping to mitigate community spread.

These temporary waivers lifted restrictions regarding how virtual services could be delivered, allowing health care providers to utilize personal devices such as smart phones and non-HIPPA compliant communication technology platforms such as Skype, FaceTime or Zoom for telehealth visits without being penalized for HIPPA violations. Allowances were also made for providers to receive payment for telehealth services that are received in a patient's home, as well as in any healthcare facility. Additionally, payment for telehealth services was extended to all medical professionals eligible to bill Medicare for their professional services, and audits to confirm existing relationships between patients and providers were placed on hold for the duration of the pandemic. Furthermore, CMS temporarily approved over 80 types of services for reimbursement at the same rate as an in-person visit during COVID-19, allowing for full parity of payment for those services.

Penalties for limiting or eliminating co-pays or deductibles for telehealth services were also removed.

In August, CMS released its proposal for the [2021 Medicare fee schedule](#). [7] The proposal includes a list of additional services to be considered for reimbursement at the same rate as an in-person visits, as well as a recommendation for the continuation of all existing COVID-19 waivers for the duration of the pandemic. While it is expected that many of these waivers will be in place for the next 12-18 months, it is unclear to what extent the allowances will be rescinded post COVID-19. Recommendations to resume audits confirming existing relationships between patients and providers following the pandemic and restrictions on reimbursement for some virtual visits post pandemic are already being considered, making full parity of payment in the long-term unlikely.

Due to this uncertainty, physicians' estimates on the viability of telehealth use long term continue to [diminish](#), while [patient satisfaction with virtual care and desire for virtual services continues to increase](#). [8] Further, the rapid uptake in telehealth services and then subsequent decline has challenged health systems and providers to recalibrate their service offerings and strike a new balance between physical and virtual care. A balance that can rapidly respond to shifting market demands and meet evolving patient preferences and needs.

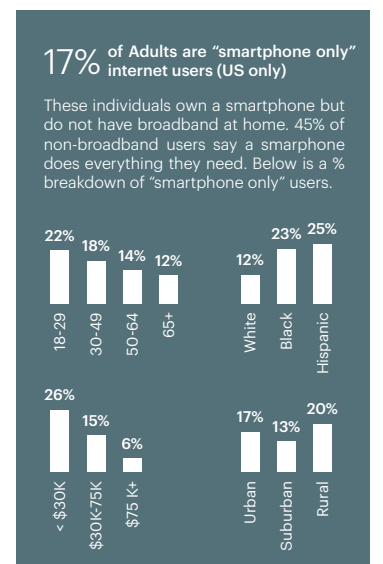
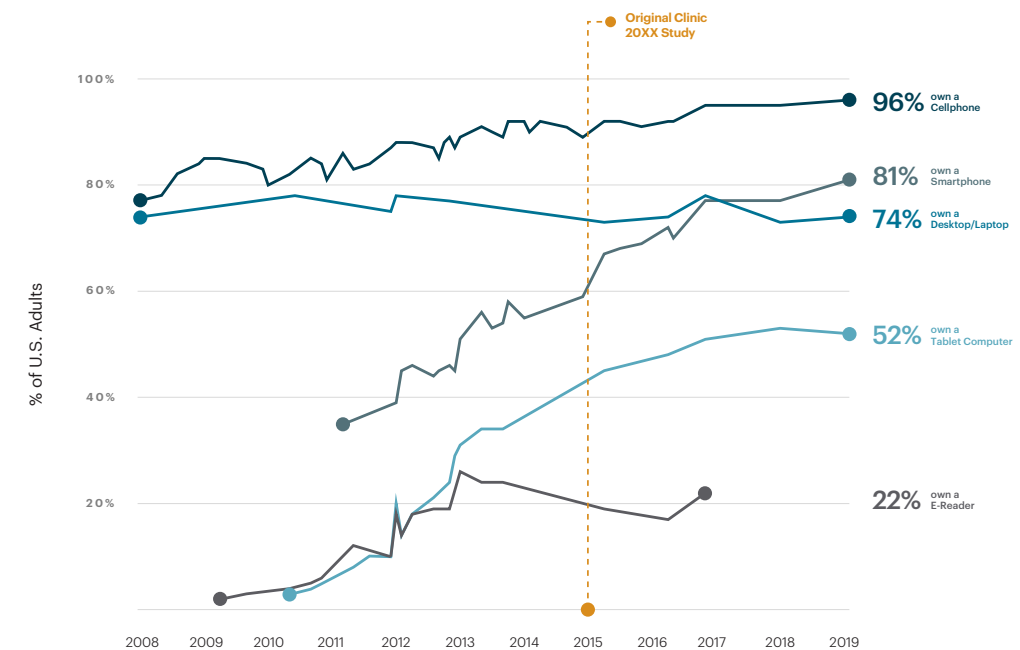
Emerging Challenges: Digital Equity is Not a Given

The pandemic has also highlighted a less obvious challenge to widespread adoption and use of telehealth – its potential to [exacerbate health disparities](#). [9] It has become evident during COVID-19 that a digital divide exists within the United States, creating barriers to accessing telehealth. These barriers include: the absence of technology, reliable internet coverage, and digital literacy, which disproportionately affect [older people of color](#), [individuals who live in rural areas](#), and those with [low socioeconomic status](#). [10][11][12] In the shift to telehealth, it is essential to ensure that access to virtual care is not compromised for those who need it the most. [While reforms aimed at improving digital equity are being discussed by lawmakers](#), it will take time for those efforts to be actualized. [13] In the meantime, healthcare organizations are being challenged to find sustainable avenues for addressing these disparities.

Given the speed and magnitude of change that has occurred in care delivery since the onset of COVID-19, and the global impact the pandemic has had on individuals, industries and economies, health systems, care providers, and the design

community at large have been compelled to reimagine how telehealth will impact the products, platforms, processes, and environments that support care delivery moving forward.

As healthcare organizations explore how they will integrate telehealth into their current service offerings moving forward, it is critical to understand care providers' perspectives on how they want to experience, deliver, and utilize virtual care in the future. To give new insight into physician preferences and perceptions of virtual care and the greatest challenges and opportunities for telehealth moving forward, an online survey was conducted with a nationwide panel of 103 physicians who utilized telehealth to deliver virtual care during the height of the pandemic. For purposes of this study, telehealth was defined as the use of electronic information and telecommunication technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health, and health administration. The survey focused on obtaining provider perspectives, as well as the implications for clinic design moving forward.



Adapted from Pew Research Center [14]

PHYSICIAN SURVEY

To give new insight into physician preferences and perceptions on telehealth moving forward – an online survey was conducted with a nationwide panel.

Methodology

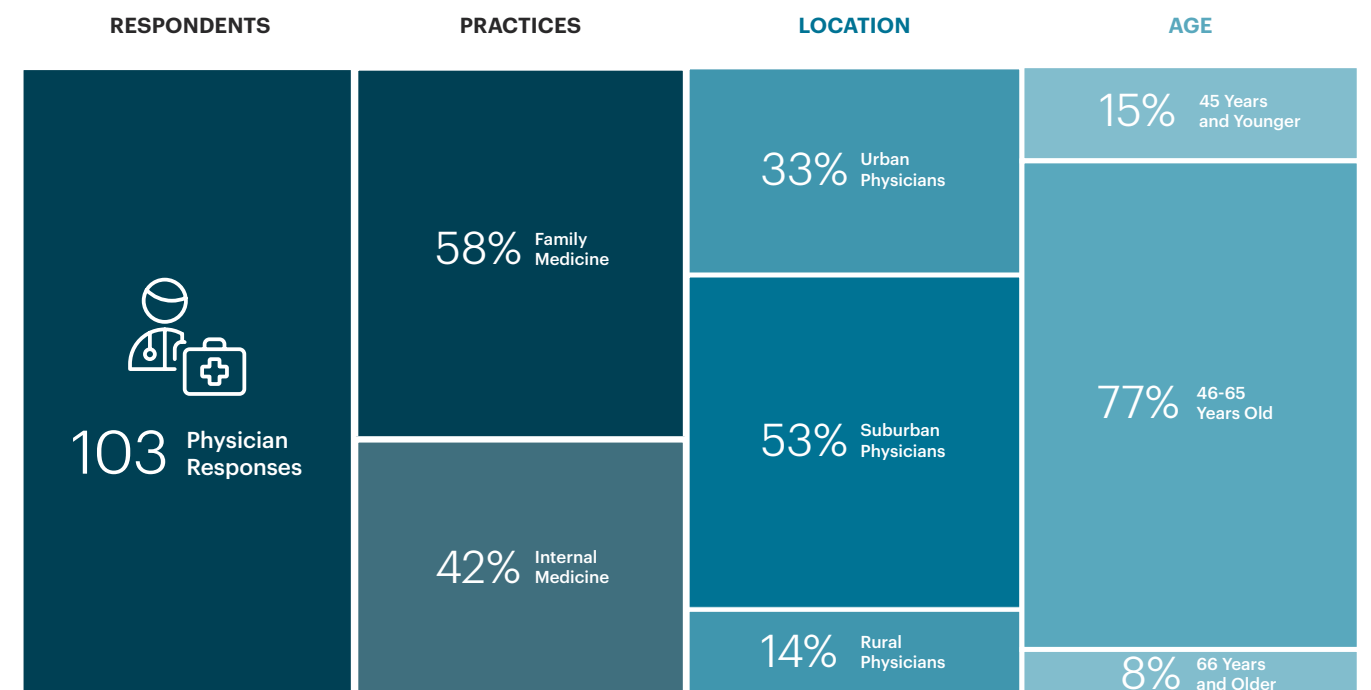
An unbiased, third-party independent survey vendor conducted this panel survey. The survey was sent to physicians in the United States with responses split between those in family practice and internal medicine. All respondents were directly compensated by the survey vendor upon the return of complete survey responses. This ensured that the 103 responses were complete in both qualitative and quantitative information.

The sample included 58 percent family medicine and 42 percent internal medicine physicians. The majority of physicians, 60 percent, were employed and 40 percent were independent. Of those who participated in the survey, the majority, 76 percent, were male and 23 percent were female. The majority of participants, 77 percent, were between the ages of 46 and 65, with 15 percent 45 or younger and 8 percent 66 and older. Also, the majority, 71 percent, were involved in primary care practice, while only 7 percent were

with an accountable care organization and 6 percent were part of patient-centered medical home.

Participants were also asked about their practice location and size. The findings showed that the majority of provider practices, 53 percent, were located in a suburban setting, with 33 percent located in urban and 14 percent located in rural settings. The findings also showed 19 percent of physicians were in solo practices, 46 percent in small (2-10 physicians), 22 percent in medium (11-50 physicians), and 13 percent in large (more than 50 physicians) sized practices. Additionally, the majority of physicians surveyed, 93 percent, had been using electronic medical records (EMRs) for a year or more, while only 7 percent had not implemented an EMR system into their practice.

Quantitative analysis was conducted using Excel and SPSS software. Qualitative data was exported to Excel and analyzed via a thematic content analysis.

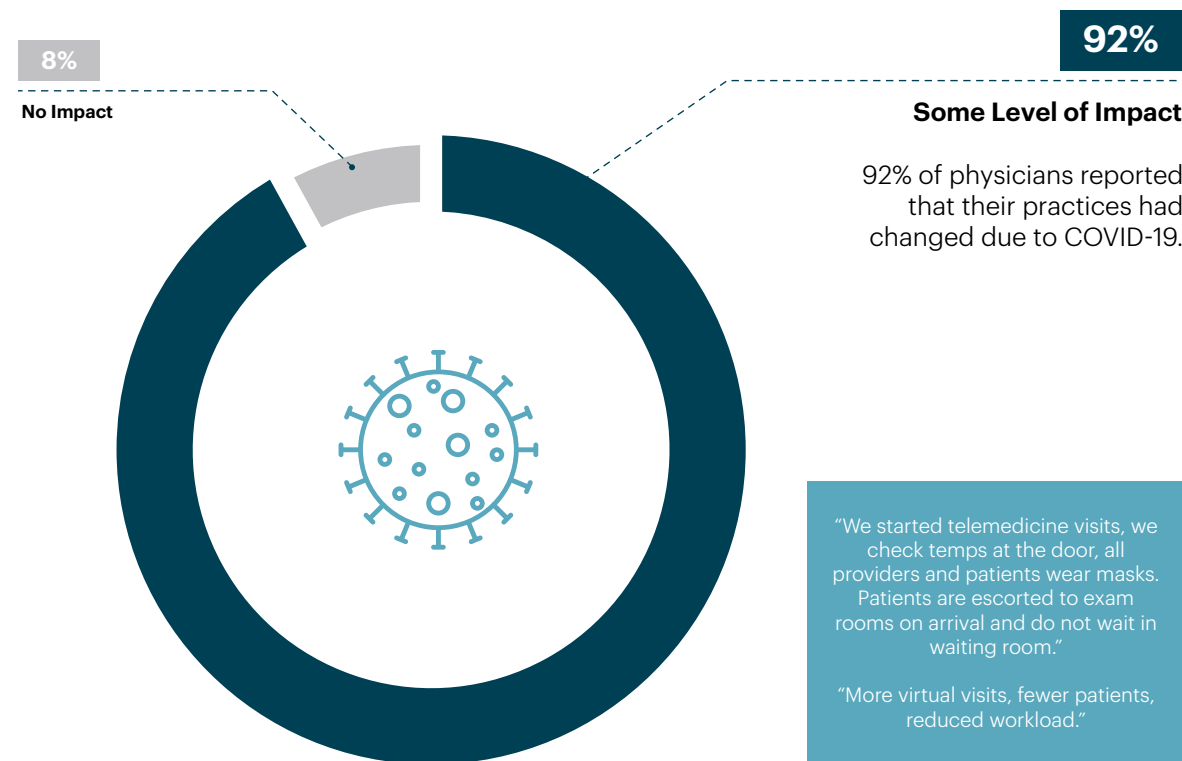


How have physician practices changed due to the COVID-19 crisis?

To understand the impact of the current pandemic on physician practices, physicians were asked if COVID-19 had impacted their practice. The majority of physicians (92 percent) reported that their practices had changed due to the pandemic. Physicians were also provided an opportunity to express how their practice had changed in their own words.

They expressed that an increase in telehealth use was the predominate change to practice due to the COVID-19 crisis. Other changes such as a decrease in patient volumes and fewer in-person visits were also noted as contributing to both layoffs and practice closures.

PRACTICES THAT HAVE CHANGED DUE TO THE COVID-19 CRISIS



Panel survey polling family and internal medicine physicians (n=103).

During COVID-19, the most predominate change to outpatient practices has been the increase in telehealth use.

How satisfied or dissatisfied are patients with their physicians current telehealth services?

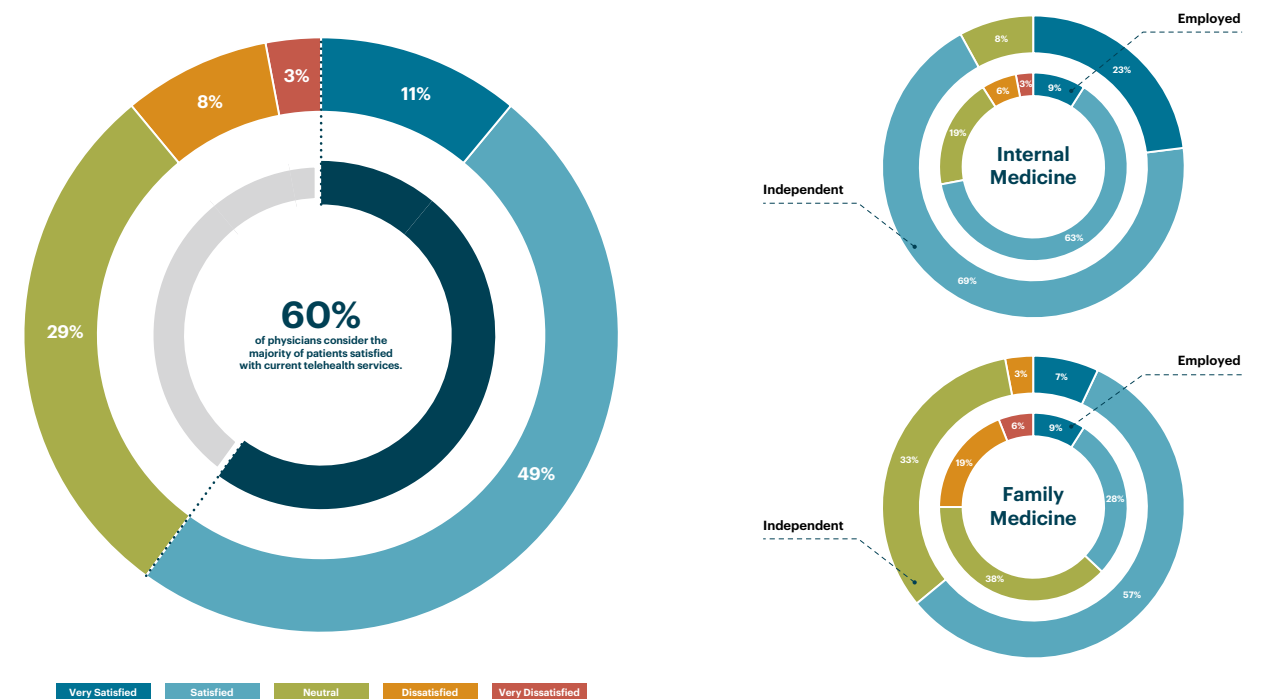
Providers were also asked to rate from their perspective how satisfied or dissatisfied patients were with their current telehealth services. The majority of physicians (60 percent) considered their patients to be either satisfied or very satisfied with their current telehealth services.

A preliminary analysis using step-wise regression showed that perceived satisfaction of patients was positively correlated

with working as an independent physician in internal medicine ($R^2 = 0.13, p < 0.01$). However, the location of practice (urban vs suburban) did not show any effects.

Further research is needed with family and internal medicine physicians to explore the effect of practice type and physician employment on perceived patient satisfaction.

PERCEIVED PATIENT SATISFACTION WITH CURRENT TELEHEALTH SERVICES



Panel survey polling family and internal medicine physicians (n=103).

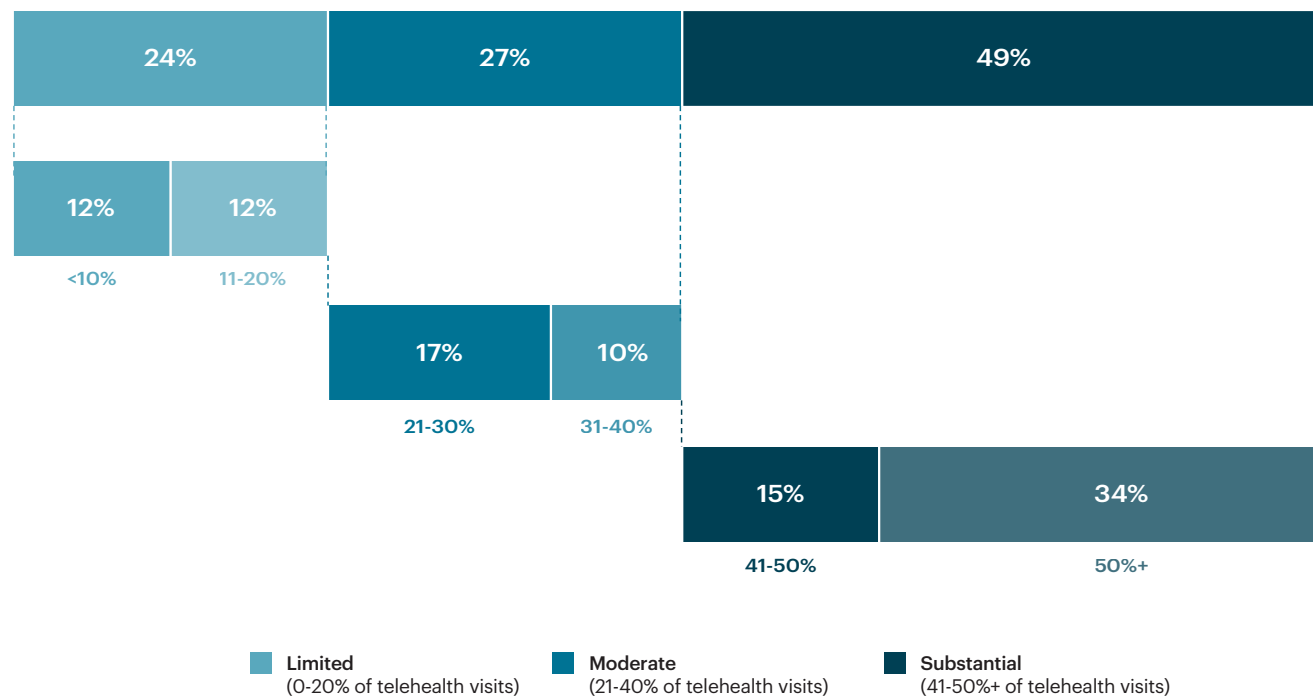
Independent internal medicine physicians reported the highest degree of perceived patient satisfaction with telehealth services.

What percent of visits moved to a telehealth platform during COVID-19?

Physicians were asked what percent of their visits moved to a telehealth platform during COVID-19. Of physicians surveyed, a substantial shift to telehealth services was seen by 49 percent of physicians, with 34 percent of physicians reporting a shift greater than 50 percent reporting a 41-50 percent shift. A moderate shift was seen by 27 percent of physicians,

with 10 percent reporting a shift of 31-40 percent and 17 percent reporting a 21-30 percent shift. Some physicians saw a limited amount of services shift to a telehealth platform (24 percent) with 12 percent reporting a 11-20 percent shift and 12 percent reporting a shift of 10 percent or less.

SHIFT TO TELEHEALTH DURING COVID-19

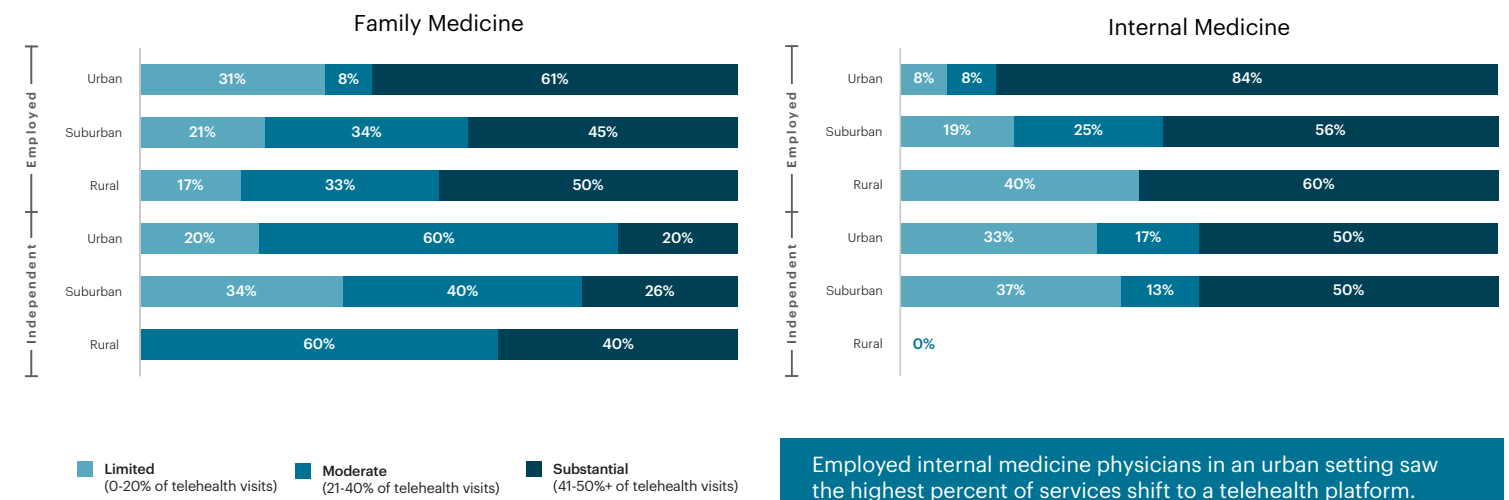


Panel survey polling family and internal medicine physicians (n=103).

The majority of internal and family medicine physicians surveyed saw a moderate to substantial shift to telehealth services during COVID-19.

What factors predicted the shift to telehealth for physicians?

PRACTICES THAT HAVE CHANGED DUE TO THE COVID-19 CRISIS



Employed internal medicine physicians in an urban setting saw the highest percent of services shift to a telehealth platform.

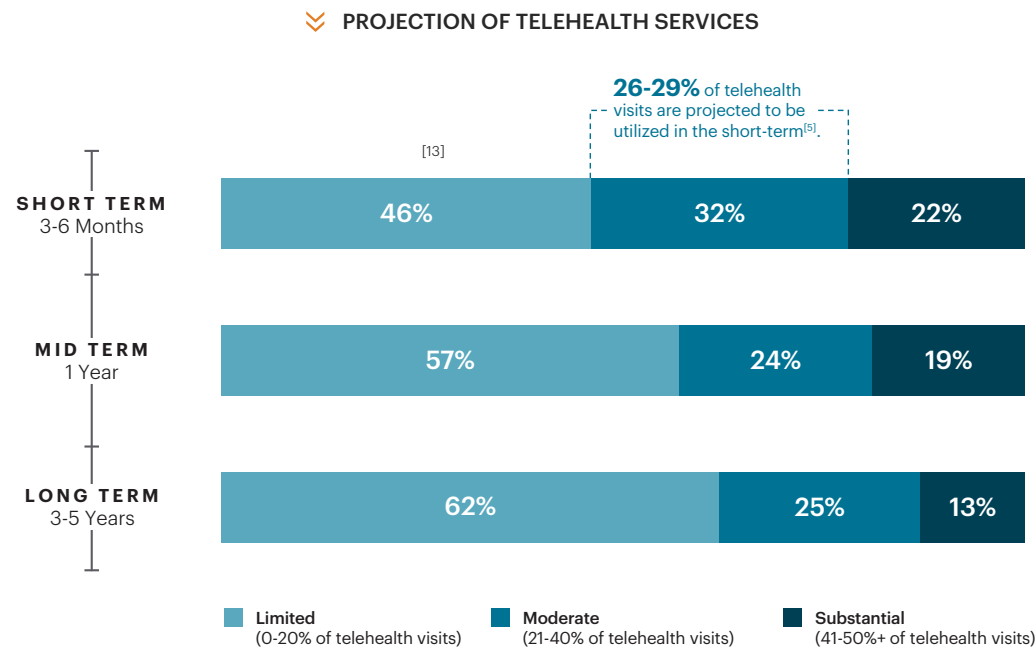
Panel survey polling family and internal medicine physicians (n=103).

Further analysis was conducted to understand in greater detail how practice type, physician employment, and location impacted the shift to telehealth for physicians. Of the physicians surveyed, employed internal medicine physicians in an urban setting reported the highest percent of services that moved to telehealth, with 77 percent physicians reporting 50 percent or more of visits moving to a telehealth platform during COVID-19. Employed family medicine physicians in rural settings saw the second largest shift in services, with 50 percent of physicians reporting 50 percent or more of visits moving to a telehealth platform during COVID-19. Independent family medicine physicians reported the lowest percentage of services that moved to a telehealth platform across all settings.

A step-wise regression analysis showed physician employment as the most important factor predicting the amount of services that moved to telehealth during COVID-19, with employed physicians ($R^2 = 0.07$, $p < 0.05$) reporting significantly more services moving to a telehealth platform during this time than independent physicians. The type of practice was also found to be a significant predictor, with internal medicine providers ($R^2 = 0.06$, $p < 0.05$) having significantly more services move to a telehealth platform during COVID-19 than family medicine providers. Practice location was not found to show any significance.

Physician employment and type of practice predict the amount of services that moved to telehealth during COVID-19.

What percent of telehealth services do providers predict staying as telehealth services in the short-term (3-6 months), mid-term (1 year) and long-term (3-5 years)?



Panel survey polling family and internal medicine physicians (n=103). Call-out telehealth utilization projections are from [Advisory Board](#).^[5]

Physicians were asked to predict the percent of services that would remain as telehealth services at three distinct time periods following the COVID-19 crisis. In the short-term (3-6 months), 46 percent of physicians projected only a limited amount (20 percent or less) of services that had moved to telehealth during COVID-19 would remain as telehealth services. Conversely, 22 percent of physicians predicted a substantial amount (40 percent or more) of services would remain as telehealth services and 32 percent predicted a moderate amount (21-39 percent) would remain. This same trend continued across time, with an increasing majority of physicians predicting that a limited amount of

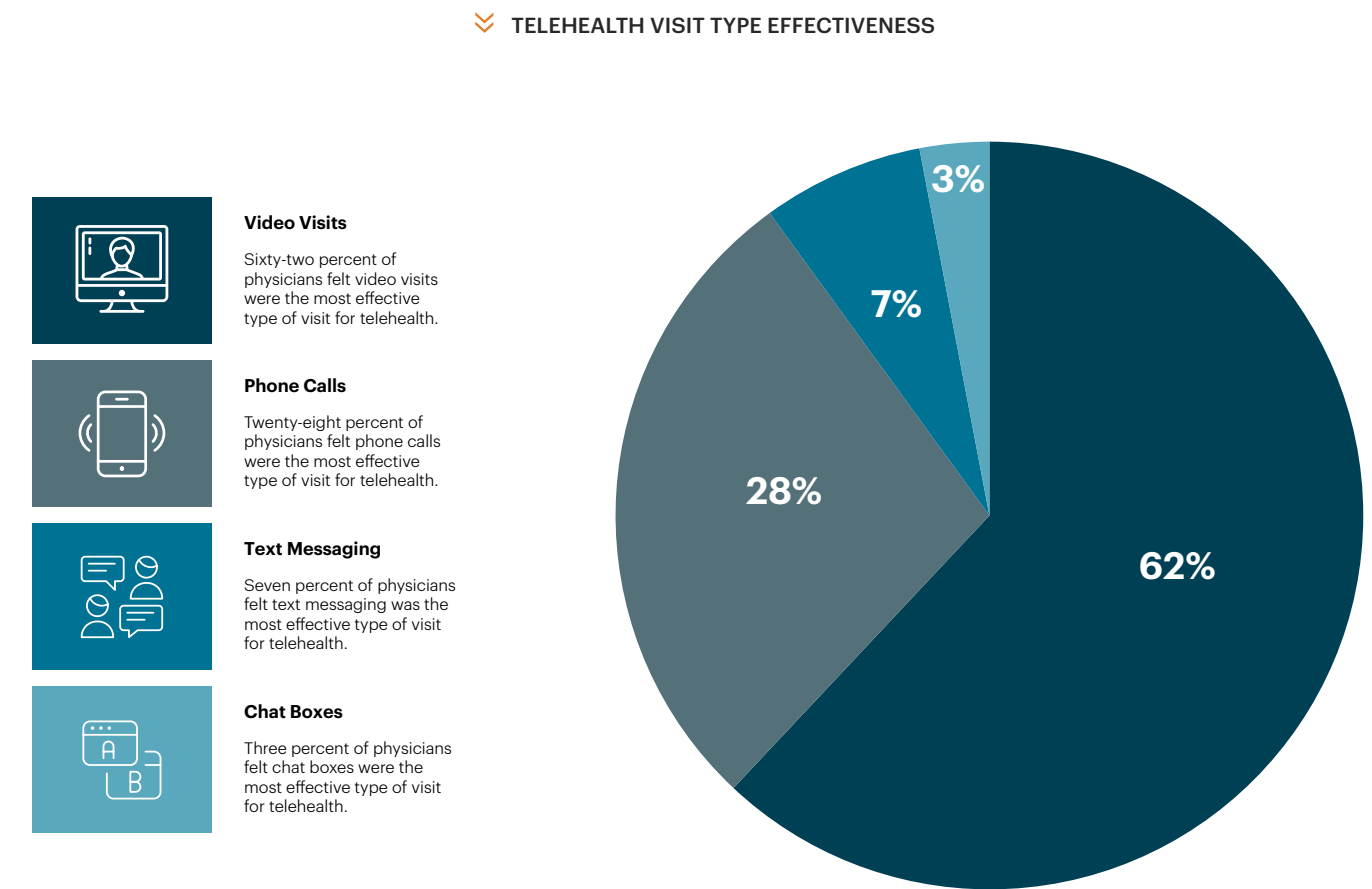
services would remain as telehealth services in the mid-term (57 percent) and over the long-term (62 percent).

Recent projections from [Advisory Board](#) suggest a moderate amount of telehealth services (26-29 percent) will continue in the short-term.^[5] While time will tell if these projections hold true, it is important to note that the physicians surveyed made projections at the height of telehealth use, when full parity of payment was temporarily instated due to COVID-19. These findings highlight the importance health policy will have in determining the impact telehealth will have on care delivery now and in the future.

Majority of physicians predict that only a limited percentage of telehealth services being conducted today will remain as telehealth in the mid to long-term.

What types of telehealth visits do physicians consider most effective for conducting virtual care?

Physicians were asked what types of telehealth visits they considered to be most effective when providing virtual care. The majority of physicians (62 percent) considered video visits as the most effective type of visit for conducting virtual care, followed by phone calls (28 percent). Chat boxes and text messages were considered the least effective by physicians.

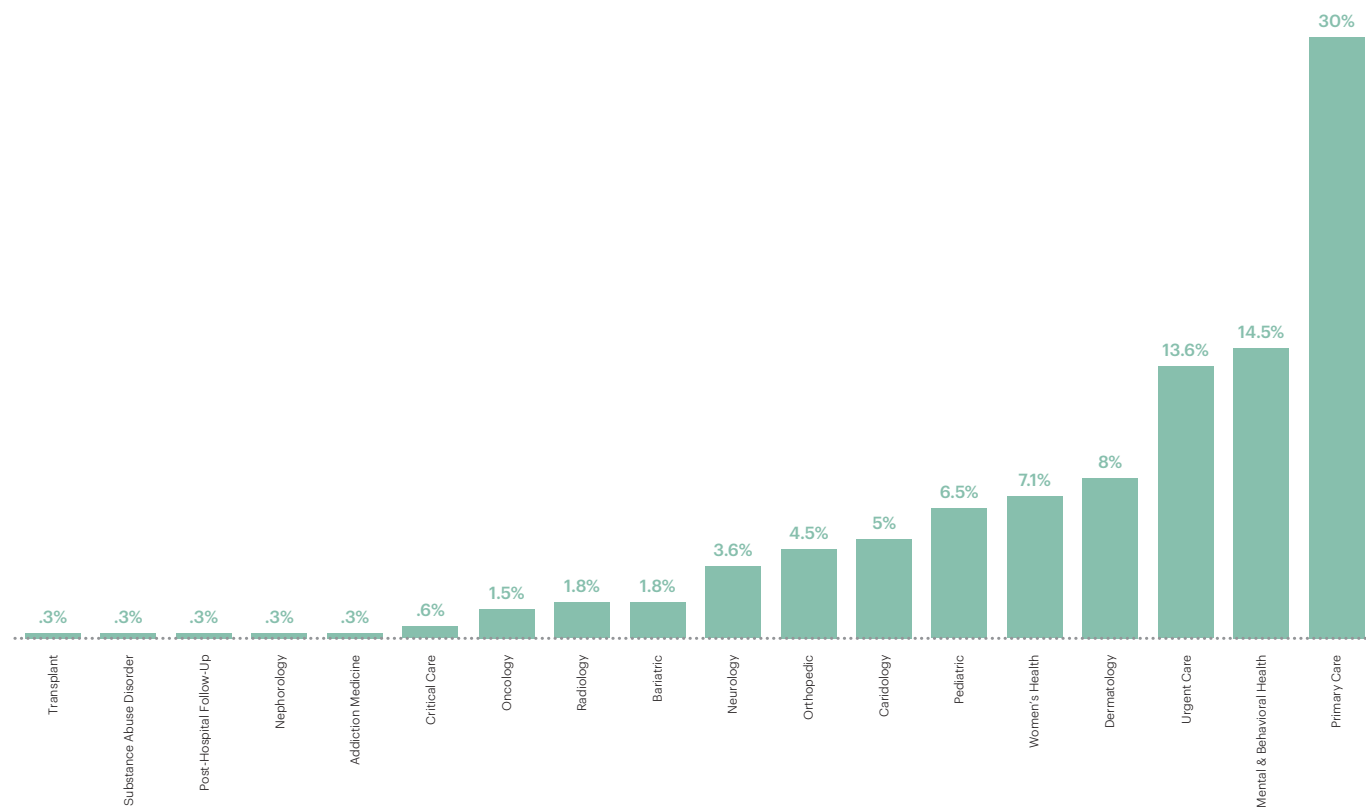


Panel survey polling family and internal medicine physicians (n=103).

Physicians consider video visits the most effective way to deliver virtual care.

What types of telehealth services do providers currently offer?

TELEHEALTH SERVICES CURRENTLY OFFERED



Panel survey polling family and internal medicine physicians (n=103).

Physicians were also asked what types of telehealth services they were currently providing, and which services were best suited to being conducted as a telehealth visit. During COVID-19, 30 percent of physicians surveyed were conducting primary care visits, 15 percent mental and behavioral health,

and 14 percent urgent care services via telehealth. Physicians conducted fewer virtual visits for specialty services such as bariatric (1.8 percent), radiology (1.8 percent), and oncology (1.5 percent).

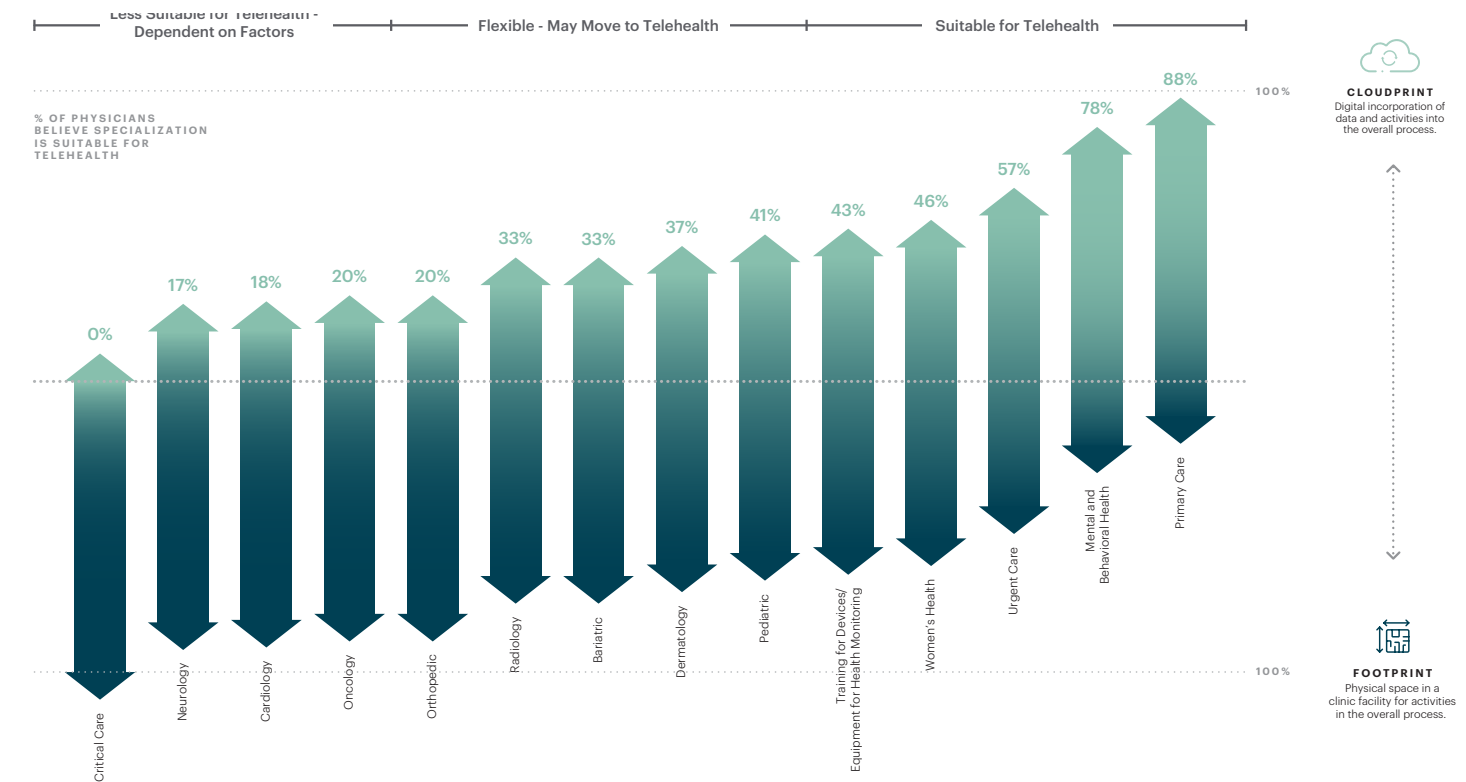
During COVID-19, physicians most frequently conducted primary care, mental and behavioral health, and urgent care virtual visits.

What services do physicians believe are most suitable for telehealth?

When considering which types of services were best suited to being conducted as a telehealth visit, 88 percent of primary care physicians polled considered telehealth to be a viable option for conducting primary care visits. For mental and behavioral health visits, 78 percent of mental and behavioral physicians considered telehealth a suitable form of conducting visits, while 57 percent of urgent care

physicians and 46 percent of women's health physicians felt telehealth visits were suitable. Specialty services such as neurology, cardiology, oncology, orthopedic and radiology that are technology dependent were rated by physicians who conduct those services as the lowest in terms of applicability for telehealth use.

SERVICES BEST SUITED FOR TELEHEALTH



Panel survey polling family and internal medicine physicians (n=103).

Physicians believe that primary care, mental & behavioral health, and urgent care are the most conducive to telehealth services.



How will telehealth affect physician work-life balance, quality of interactions with coworkers and external peers?

Additionally, physicians were asked to rate the impact of telehealth on their work-life balance and the quality of interactions with internal coworkers and external peers. They were also asked to state why in their own words.

The majority of physicians felt telehealth would impact their work-life balance (72 percent), while 28 percent thought there would be no impact. Physicians who thought telehealth would positively impact their work-life balance (47 percent) noted the ability to work in the comfort of their own home and the reduced time spent commuting as key drivers. Additionally, physicians found telehealth to support more flexible, efficient care, making care delivery more convenient for both physicians and patients. Many physicians (38 percent) also expressed that although working in the comfort of their own home provided some benefits to their work-life balance they were still working the same hours and at times working more hours, making the impact neutral. Physicians who felt telehealth would have a negative impact on their work-life balance (15 percent) noted difficulty in differentiating between work and home and increased workload as key challenges.

Forty-two percent of physicians thought telehealth would have no impact on the quality of interactions with coworkers. Of the remaining 58 percent of physicians who thought there would be some type of impact, 42 percent felt the impact would be neutral, stating that their primary mode of interaction with coworkers was already through technology. Those who felt telehealth would have a negative impact (35

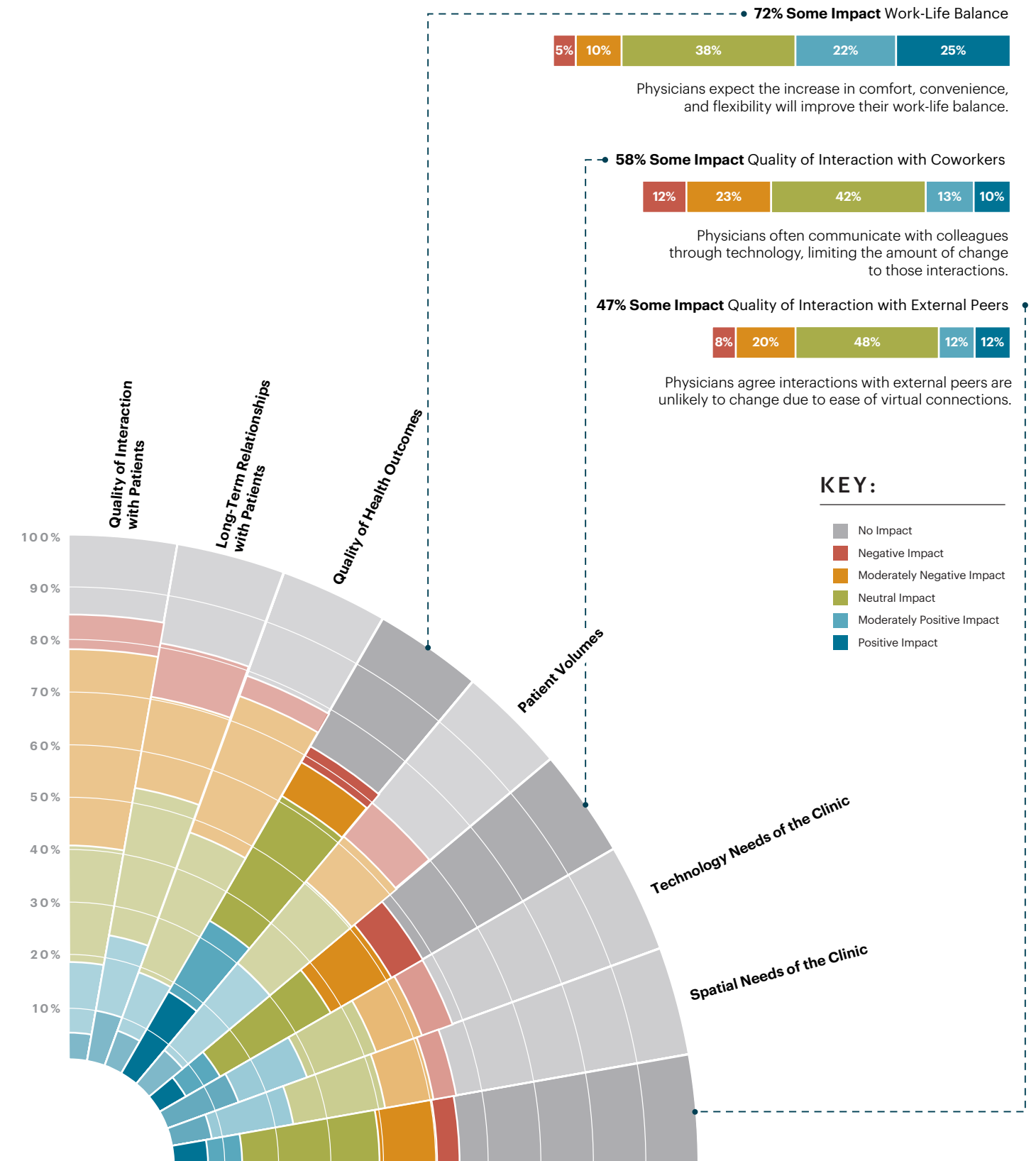
percent) noted interactions with coworkers via telehealth were impersonal, less detailed, and more expedient than when in person. Physicians who felt telehealth could have a positive impact (23 percent) expressed the potential for telehealth to strengthen the quality of interactions with coworkers by increasing the frequency of interactions.

“Quality of coworker interaction has not changed much since we usually communicate and interact with each other with technology anyways.”

The majority of physicians (53 percent) thought telehealth would have no impact on the quality of interactions with external peers. Of the remaining 47 percent of physicians who thought there would be some type of impact, 48 percent felt the impact would be neutral due to the ease of keeping in contact with colleagues virtually. Those who felt telehealth would have a negative impact (28 percent) noted maintaining these crucial relationships had become more difficult due to the lack of in person social and professional interactions. Physicians who felt telehealth could have a positive impact (24 percent) expressed that the more targeted interactions with external peers through chat or text could potentially be more effective and efficient.

Majority of the physicians think that there will be a neutral or negative impact on patient interactions, but a neutral or positive effect on work/life balance.

TELEHEALTH LEVEL OF IMPACT



TELEHEALTH LEVEL OF IMPACT

How will telehealth affect patient volumes, spatial needs, and technology needs of clinics moving forward?

Physicians were also asked to rate the type of impact telehealth will have on patient volumes in addition to clinic space and technology needs and were provided an opportunity to state why through an open-ended question.

The majority of physicians felt telehealth would impact patient volumes (70 percent), while 30 percent felt there would be no impact. Physicians who suggested the impact would be positive (43 percent) noted increased service options for visits and the added convenience for patients as key considerations. Physicians also noted telehealth visits can be more efficient, allowing for an increased number of patients to be seen throughout the day. For physicians who thought telehealth would negatively impact patient volumes (28 percent), the potential for a reduction of in office visits was noted as a key concern. Additionally, some physicians (29 percent) expressed telehealth would have a neutral impact on patient volumes, suggesting that regardless of whether physicians conducted the visit in person or virtually their schedules would still be full.

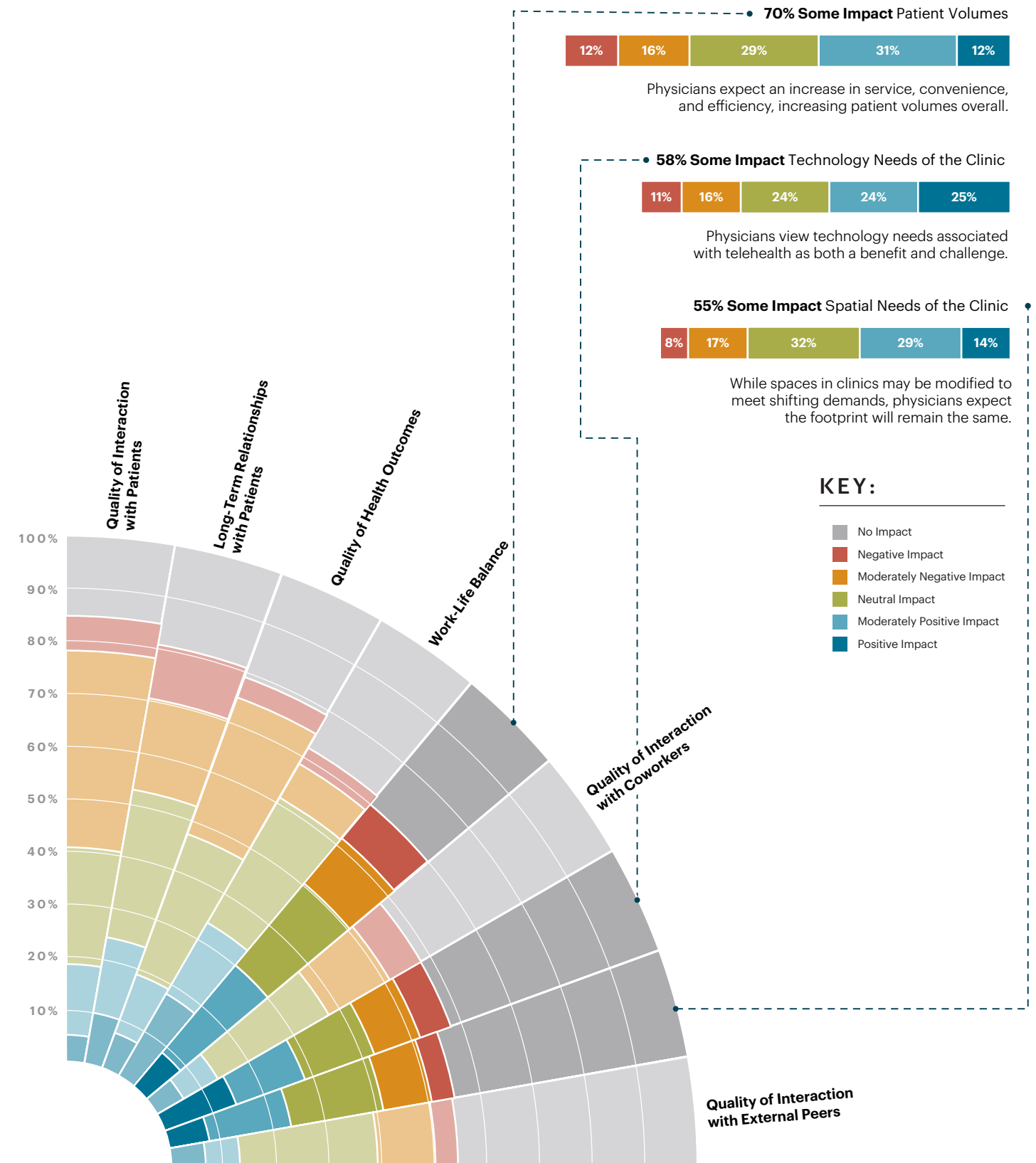
“It [telehealth] is much more efficient. I can see more patients in less time.”

The majority of physicians also felt telehealth would impact the spatial needs of clinics (55 percent), while 45 percent of providers suggested there would be no impact. Physicians who thought the impact would be positive (43 percent) noted

that having some staff work from home in combination with providing virtual care could potentially help reduce crowding in spatially constrained clinics, while also improving patient and staff safety. Many physicians (32 percent) also expressed that although spaces may be modified within clinics to meet changing demands, ultimately the footprint of clinics will remain the same. Physicians who felt telehealth would have a negative impact (25 percent) noted the potential for a reduction in exam room utilization as key consideration for understanding spatial needs of clinics moving forward.

Additionally, the majority of physicians felt telehealth would impact the technology needs of clinics moving forward (58 percent), while 42 percent of physicians thought there would be no impact. Physicians who thought telehealth would have a positive impact (49 percent) noted better internet connectivity and the ability to increase remote monitoring capabilities moving forward, as well as helping physicians become more tech savvy overall as potential benefits. Conversely, 27 percent of physicians felt the impact would be negative and expressed the need for more integrated and upgraded technologies within the clinic, including hardware, video capabilities, cyber security, as well as better telehealth platforms and more reliable internet service. Physicians who suggested telehealth would have a neutral impact (24 percent) noted their clinic was already set up with the necessary technologies for delivering telehealth services.

Physicians believe telehealth will ultimately increase patient volumes, requiring clinics to maintain their existing footprint while expanding their cloudprint.



How will telehealth affect long-term relationships with patients, quality of interactions with patients, and quality of health outcomes?

Physicians were asked to rate what type of impact telehealth would have on their long-term relationships with patients, the quality of interactions with patients, and the quality of health outcomes for patients. They were also provided an opportunity in their own words to express why.

The majority of physicians surveyed (81 percent) felt telehealth would impact long-term relationships with patients, while 29 percent of physicians felt there would be no impact. Those who felt it would have a negative (34 percent), neutral (34 percent), or positive (30 percent) impact were evenly distributed. Physicians noted the loss of human connection that in-person encounters provide as an impetus for having a negative impact on long-term relationships with patients. Physicians stated telehealth interactions felt less personal and that developing meaningful relationships with their patients was more difficult with telehealth. Conversely, some physicians noted having a glimpse into a patient's home was beneficial in providing a deeper understanding of their patient's unique needs.

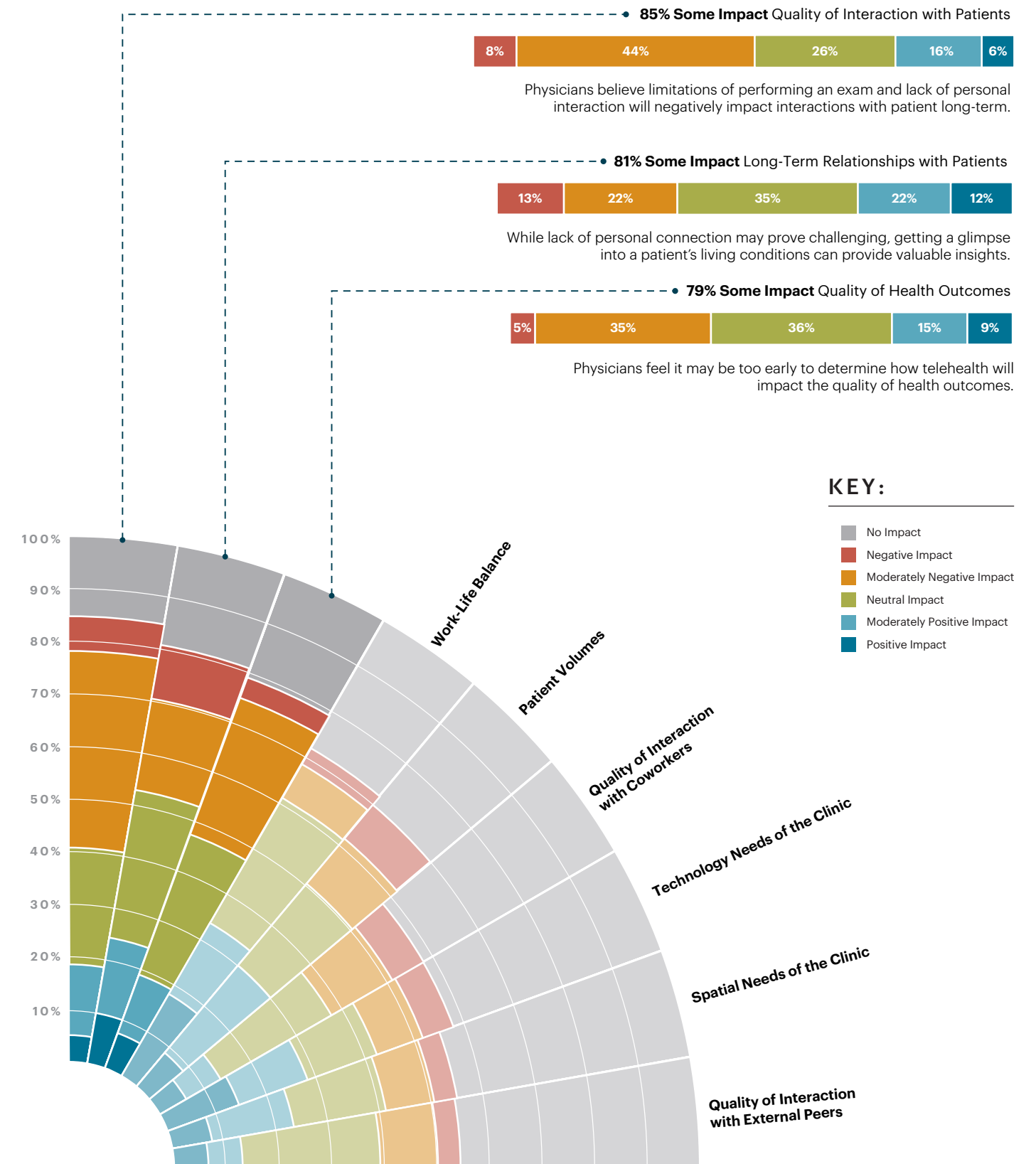
“We do lose the physical contact, but we get to see them, to a small degree, in their home, like a mini-house call.”

Additionally, the majority of physicians (85 percent) felt telehealth would also have an impact on the quality of interactions with patients, while only 15 percent felt there would be no impact. Of those who felt there would be an impact, the majority of physicians (51 percent) felt telehealth would have a negative impact on the quality of interactions with patients in the long-term due to the limitation of not being able to perform a physical exam and the lack of personal interactions. Conversely, physicians who felt telehealth would improve the quality of interactions with patients (21 percent) noted convenience and improved access as key drivers.

The majority of physicians (81 percent) also felt telehealth would impact the quality of health outcomes, while 29 percent of physicians felt there would be no impact. Physicians who felt the impact would be negative (40 percent) noted the inability to conduct a physical examination could lead to negative health outcomes due to the increased potential for misdiagnosis and the associated use of ineffective treatment regimens. However, some physicians (25 percent) felt it was too early to know what the impact might be and expressed concern regarding a lack of clarity on what outcomes should be considered. Physicians who felt telehealth could have a positive impact on health outcomes (23 percent) noted that although providing care via telehealth was not ideal, it was better than not providing care at all.

While physicians expect long-term relationships with patients to be greatly impacted, they are uncertain what the health outcomes will be.

TELEHEALTH LEVEL OF IMPACT

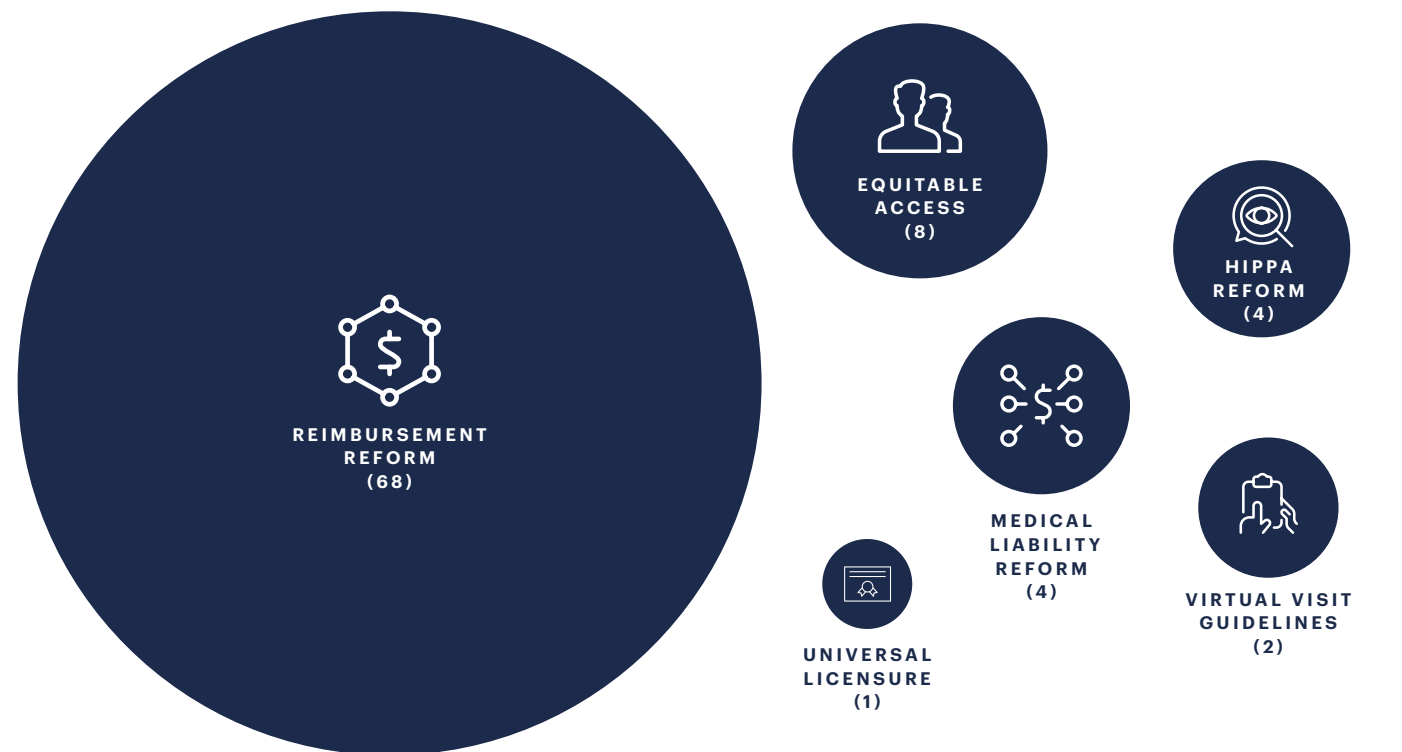


How does policy need to change to support and sustain the integration of telehealth services moving forward?

Physicians noted that reimbursement reforms such as equal reimbursement for office and virtual visits, equal copayments to office visits or no copayments for virtual visits as necessary policy changes for sustaining telehealth use moving forward. Providing equitable internet and technology access to all patients was also considered a necessary policy change. Providers additionally noted the need to address medical

liability issues and regulatory changes for HIPPA compliance to allow providers to use any available platform to connect with patients. This is in addition to the need to develop guidelines for conducting virtual visits and changes in licensure regulations that allow for more universal licensure across states as necessary policy changes to support the integration of telehealth services long term.

✎ POLICY CHANGES NEEDED FOR TELEHEALTH



Values indicate number of physicians comments in each topic area. Panel survey polling family and internal medicine physicians (n=103).

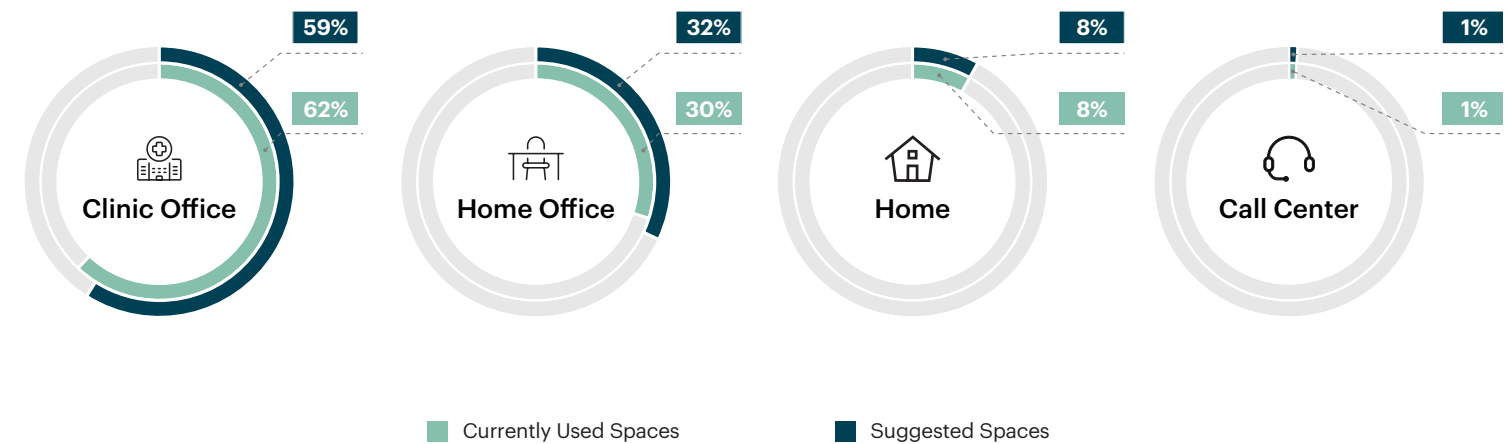
Physicians need reimbursement reform that offers parity of payment for telehealth to remain a viable care delivery option over the long-term.

What type of spaces are physicians currently using to deliver telehealth services? What types of spaces best support an ideal telehealth visit?

Physicians were asked to select the types of spaces they were currently using and what types of spaces would best support an ideal telehealth visit. The majority of physicians (62 percent) were currently conducting telehealth services from their clinic offices. Home offices are also being used by physicians to conduct virtual visits (30 percent), with other areas in their homes (8 percent) being rated the least in terms of use. The same spaces were selected by physicians as supporting an

ideal telehealth service, with the majority of providers (59 percent) selecting their clinic office as the best space for providing an ideal telehealth service followed by home office (32 percent) and other spaces in their home (8 percent). Call centers were nominally utilized by physicians (one percent) in the outpatient environment at the time of this survey and similarly were not considered to be ideal for the delivery of outpatient telehealth services moving forward.

✎ TELEHEALTH SERVICES CURRENTLY OFFERED



Panel survey polling family and internal medicine physicians (n=103).

According to physicians, private clinic offices are an essential component to virtual care delivery.

What do physicians need in terms of technology and space to deliver the ideal telehealth experience?

Physical

In an open-ended question, physicians were asked to describe what was needed in terms of technology and space to deliver the ideal telehealth experience. Physicians noted a quiet space that affords a high degree of privacy as the most necessary physical features for an optimal telehealth experience. Flexible space that can be modified easily across time to meet changing practice needs was also identified as a key consideration. Dual monitors, a professional background and surface for writing, an ergonomically responsive environment, easy access to clinical and support staff, as well as good acoustics and lighting were also considered as necessary features to be integrated into the physical environment for an optimal experience.

“Quiet, private room without distractions.”

Digital

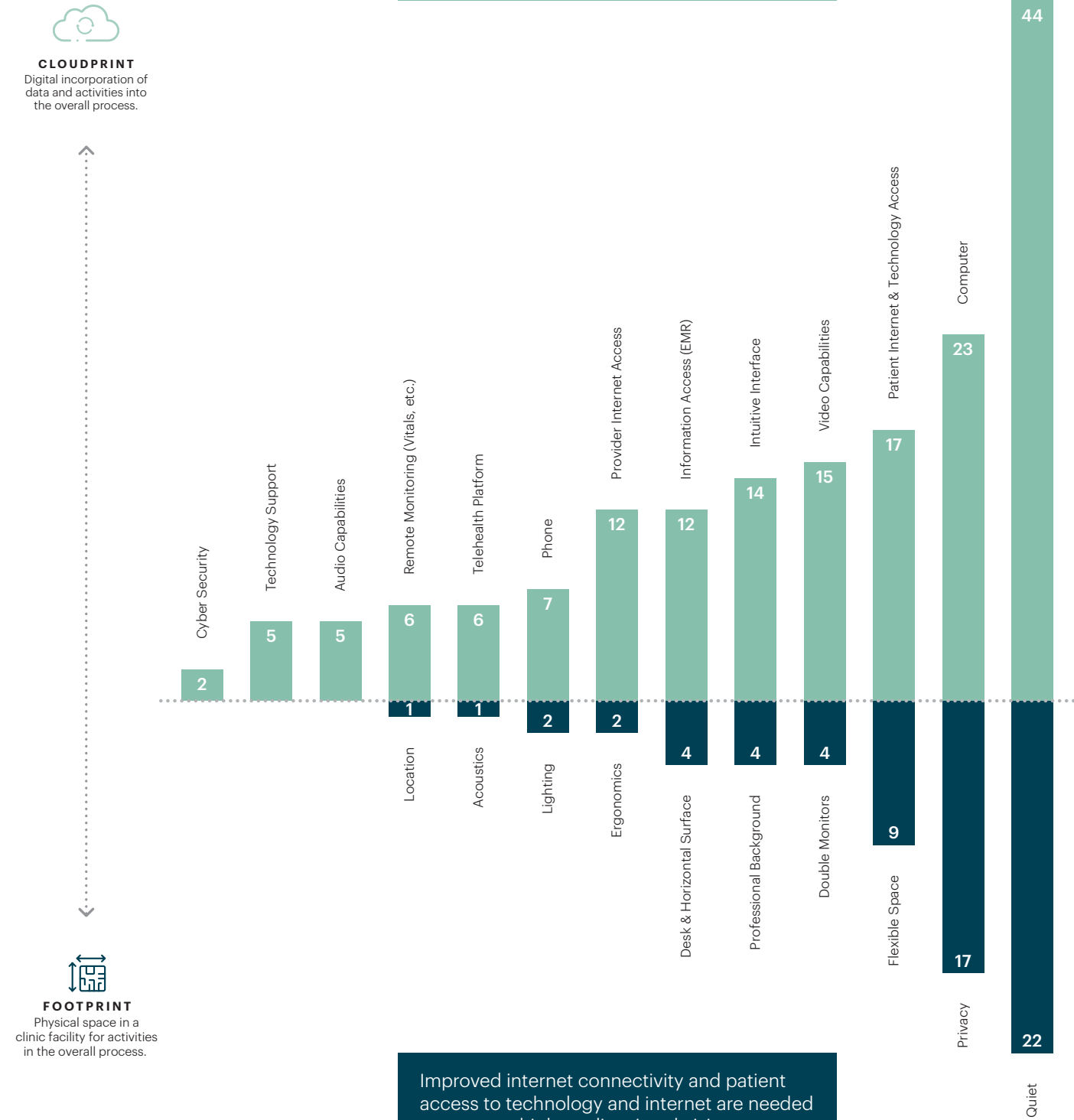
Physicians noted reliable internet connectivity with high-speed capabilities as the primary digital feature needed to support an ideal telehealth experience. Physicians also expressed a need for computers with enhanced video and audio capabilities, telehealth platforms that are intuitive for patients and providers to use, and improved remote monitoring devices as key features needed for delivering an ideal telehealth experience.

Interestingly, our analysis of qualitative comments indicated that patient internet and technology access is the third most important factor in delivering a high-quality telehealth experience, with physicians working in rural areas noting it as their primary concern as compared to physicians in urban or suburban settings. Physicians expressed concern that many patients do not have adequate access to computers or smart phones with video capabilities and that the lack of technological resources for patients greatly reduces the quality of telehealth visits.

“For the patients to have access to smartphones. The people who need the most access generally have the least.”

Improved internet connectivity and patient access to technology and internet are needed to ensure a high-quality virtual visit.

TECHNOLOGY AND SPACE REQUIREMENTS



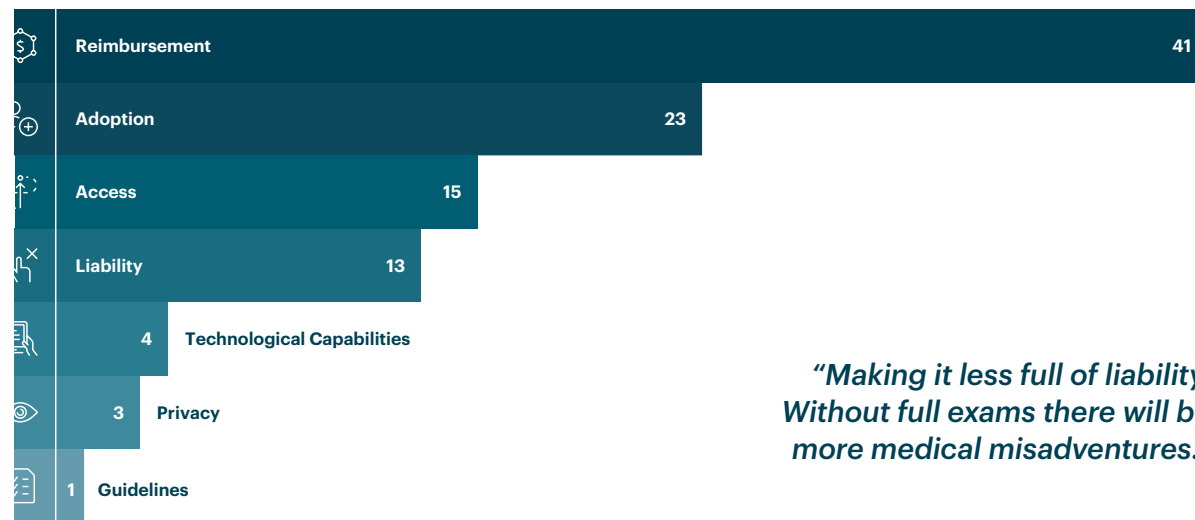
For physicians, the ideal telehealth experience requires a quiet private space that is flexible.

Improved internet connectivity and patient access to technology and internet are needed to ensure a high-quality virtual visit.

Values indicate number of physicians comments in each topic area. Panel survey polling family and internal medicine physicians (n=103).

What do physicians anticipate as the biggest challenge for telehealth moving forward?

CHALLENGES FOR TELEHEALTH



“Making it less full of liability. Without full exams there will be more medical misadventures.”

Values indicate number of physicians comments in each topic area. Panel survey polling family and internal medicine physicians (n=103).

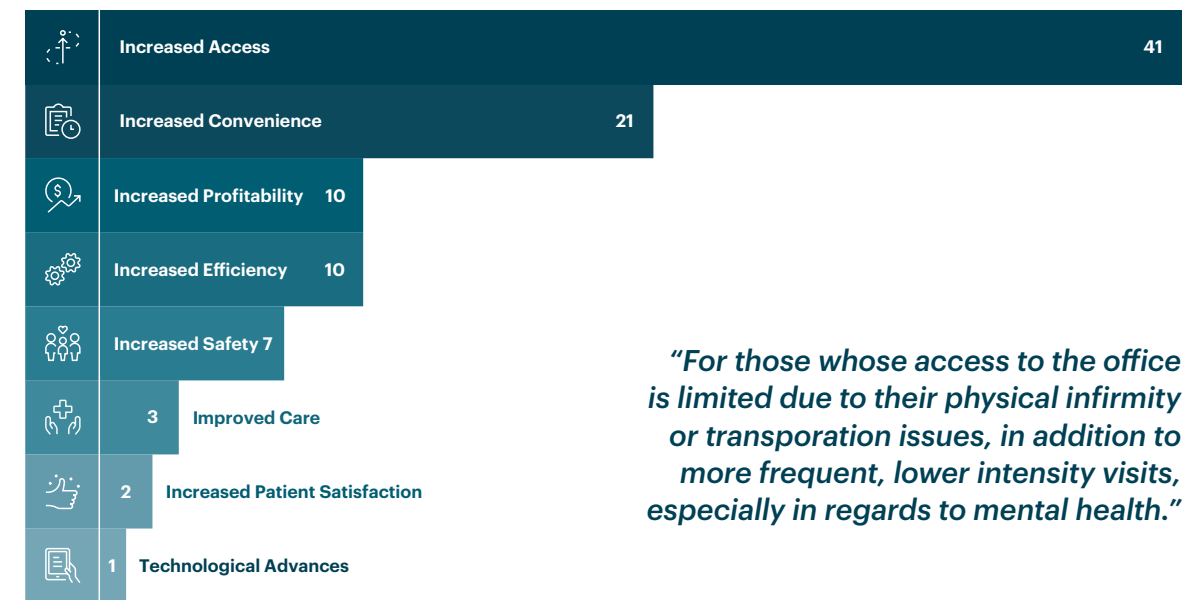
Physicians noted reimbursement and patient adoption, especially for older adults, as the primary challenges moving forward. The need for equitable internet access for patients and potential for increased medical liability were also considered as key challenges. Without a clear delineation of what specific types of visits are best suited for telehealth and

universal guidelines for frequency of in person visits required for specific diagnosis, physicians voiced concern regarding increased risk for malpractice to do a reduction in physical exams. Physicians also expressed challenges with current technological capabilities for remote monitoring and reduced patient privacy.

Physicians consider reimbursement and patient adoption as primary challenges for telehealth moving forward.

What do physicians anticipate as the biggest opportunities for telehealth moving forward?

OPPORTUNITIES FOR TELEHEALTH



“For those whose access to the office is limited due to their physical infirmity or transportation issues, in addition to more frequent, lower intensity visits, especially in regards to mental health.”

Values indicate number of physicians comments in each topic area. Panel survey polling family and internal medicine physicians (n=103).

Physicians noted access and convenience as the greatest opportunities for telehealth moving forward. Physicians felt that telehealth had great potential to increase access to high-quality services for patients in remote or rural areas that lack specialty services and those with physical challenges or transportation issues, as well as the opportunity to reach more tech savvy patients such as millennials. In terms of convenience, physicians felt telehealth would save both

patients and providers valuable time and effort due to reduced travel time to the office, the potential for extended hours, increased opportunities for follow-up for non-exam related issues, and the opportunity to engage quickly and more frequently with patients. Increased profitability, efficiency and safety were also noted as key opportunities for telehealth moving forward, as well as improved care and increased patient satisfaction.

Physicians foresee increased access and convenience as the greatest opportunities for telehealth moving forward.

IMPLICATIONS SUMMARY

To leverage telehealth to provide the greatest benefit to patients and physicians, we must explore an integrated physical/digital hybrid model.

Recap: Are We There Yet?

What We Learned from the 2020 Telehealth Experiment

In summary, we believe that telehealth will be an additive component to primary care, especially for family medicine and internal medicine, allowing health providers to have more business continuity, extended access, and higher convenience. At the same time, how telehealth can improve

provider-patient interaction, and overall health outcomes, still warrant investigation. To truly leverage the incredible potential that telehealth has, we have to step back from this year, understand what we learnt, and use it to catapult into a future we want to shape.



The 2020 telehealth experiment is still waiting on results.

Our findings suggest that family and internal medicine physicians have substantial concern regarding the potential impact of telehealth on health outcomes. With telehealth catapulting from less than 0.01 percent to almost 70 percent, and now starting to recalibrate again, the jury is still out. It will take time to fully understand the impacts, and careful investigation will be required to provide clarity on what outcomes should be considered as a measurement for success and how to best measure those outcomes.



Telehealth's greatest opportunity is also one of its greatest challenges.

Our survey suggests that access and convenience are the greatest opportunities for telehealth going forward. Unfortunately, our findings also highlight that telehealth has increased access for some, but not all. Inequity in digital access has become evident. For telehealth to truly, foundationally, improve our healthcare across the board, access to technology, and to the internet, has to be distributed, seamless and equitable.



We have seen a glimpse of what can be, but also the gaps in getting us there.

Physicians consider reimbursement and patient adoption as primary challenges for telehealth moving forward, along with the potential for their increased liability. For virtual care to remain viable and continue to push the boundaries of care delivery post-pandemic, reforms to reimbursement and medical liability must be made permanent to reflect a new era of distributed care across physical and digital realms. This will make digital literacy and reimbursement reform an urgent priority.



Not every health interaction is tele-ready.

Some health interactions are better suited to telehealth, some are better suited to an in-person visit, and some are agnostic- and can be either in-person or virtual. Understanding the nuances of each interaction is important to assess whether telehealth, in-person visit, or a hybrid approach are best suited for primary care and family medicine. We have to program not just space, or technology, but rather the interactions that create a seamless experience across both.



The power of personal touch is more important than ever.

Despite the relatively high patient satisfaction that physicians report and the perceived benefits to work-life balance, physicians still see virtual care as a "proxy" to the in-person visit. If telehealth is to reach its full potential, we have to make digital interactions during a virtual visit a worthy substitute of the in-person visit, creating more experiential and more personal interactions that enhance the relationship between patients and physicians.



Space needs have not reduced, they have shifted.

A key takeaway for us was that physicians did not see the footprint of the clinics shrinking. Rather they saw a shift in what spaces would be used for, including spaces tailored to providing telehealth services that would allow larger geographic reach and catering to higher patient volumes.



Tele-integrated clinics help maintain business continuity by leveraging footprints & cloudprints in agile ways.

Stepping into 2021 we need systems where our physical interactions can be mirrored in digital space, and vice-versa so the experience (and resulting outcome) is enhanced, creating beneficial redundancies for care delivery. This can also provide clinics with long-term resilience- be it in response to unforeseen events like the pandemics, or rapid advancements in technology, to ensure business continuity.

The Next Chapter: Agile, Equitable and Experiential Approach Towards a Tele-integrated Future for Clinics

In a few short months, telehealth went from almost non-existent, to boom, and has begun to decline towards a yet undetermined state of normalcy. Yet, the pandemic has highlighted the need for fully integrated telehealth to provide access to care and ensure business continuity now and in the future. Healthcare organizations have a tremendous opportunity to build upon the lessons learned during COVID-19 to transform care delivery moving forward.

By determining which services will stay in the footprint, which services are best suited for virtual care, and which services can be agile, moving between in-person and virtual visits, healthcare organizations and independent provider practices can more effectively and efficiently respond to shifting market demands and meet evolving patient and provider preferences and needs.

As technologies advance and care delivery models morph, the boundaries between the physical and digital environments will continue to blur. It is essential to ensure that our clinic facilities can seamlessly and effectively support the integration of virtual care into their physical spaces.

Agility between digital (cloudprint) and physical (footprint) assets, **equity** in terms of digital access and in-person and virtual interactions, and enhanced **human experience** will all be key components of telehealth, as we continue the quest for better health outcomes. In the table below we discuss implementable strategies gathered from this study and industry guidelines that can help us achieve these goals.

KEY GOALS FOR TELEHEALTH



	CONNECTIVITY	ACCESSIBILITY	FLEXIBILITY	LITERACY	PRIVACY	USABILITY
<p>Cloudprint Digital incorporation of data and activities into the overall process.</p>	<ul style="list-style-type: none"> + Provide reliable, high-speed internet capabilities to ensure seamless connectivity throughout the virtual visit. + Leverage remote monitoring devices to support care continuity across the continuum. + Provide virtual technology support services to assist ease of device set-up and maintenance for patients and providers. 	<ul style="list-style-type: none"> + Utilize telehealth platforms that are intuitive and easy for patients and providers to use to support ease of adoption. + Leverage virtual visits to increase service options and convenience for patients + Consider creative opportunities to provide necessary resources for those with limited access to technology or internet services in their home. + Provide virtual device and equipment training sessions to support ease of adoption and use for patients. 	<ul style="list-style-type: none"> + Determine which services can effectively move to a virtual platform in the mid-term and long-term. + Establish clear guidelines as to what types of services can be delivered virtually. + Have in-built flexibility in digital platforms so that multiple instruments can be used- tablets, computers, mobile phones etc 	<ul style="list-style-type: none"> + Provide virtual educational sessions to support patients in expanding their digital literacy. 	<ul style="list-style-type: none"> + Invest in HIPPA compliant telehealth platforms to ensure patient privacy and security of health information. 	<ul style="list-style-type: none"> + Create apps and interfaces that are intuitive and easy to use. + Ensure simplicity of the digital format. + Reduce redundancy- so information is only requested once. + Consider single port of entry into telehealth platform that allows for text, video, email etc. + Leverage user interface as an opportunity to enhance the patient and provider experience. + Provide training for patients and providers on how to optimally conduct a virtual visit.
<p>Footprint Physical space in a clinic facility for activities in the overall process.</p>	<ul style="list-style-type: none"> + Provide enhanced video and audio capabilities to support high-quality synchronous communication between patient and providers. + Provide phone access, address challenges and increase the ease of connectivity during the virtual visit. + Provide in-person technology support services such as a tech bar within the clinic to support ease of device set-up and maintenance for patients. 	<ul style="list-style-type: none"> + Provide telehealth capabilities in exam rooms to access virtual visits with external providers. + Provide space within the clinic program to support conducting a virtual visit with multiple care team members in the same location. + Provide opportunities within the clinic for patients to electronically access their health information. + Provide in-person device and equipment training sessions to support ease of adoption and use for patients. 	<ul style="list-style-type: none"> + Determine which services will continue to require an in-person visit for the mid-term and long-term. + Embed spaces for virtual care delivery in multiple areas and at multiple scales within the clinic to support increased flexibility for accommodating present and future spatial needs. + Provide a flexible layout for spaces that support telehealth to ensure they can be easily modified to support changing practice needs over time. + Establish clear guidelines as to what types of services need to be delivered in-person. 	<ul style="list-style-type: none"> + Provide in-person educational sessions to support patients in expanding their digital literacy. 	<ul style="list-style-type: none"> + Ensure that spaces that are utilized for virtual care delivery offer support acoustical privacy through sound attenuation and material selection. 	<ul style="list-style-type: none"> + Provide adjustable lighting to reduces glare, illuminate the provider and support enhanced video capabilities. + Provide professional and distraction-free backgrounds that have a light color and glare reducing finish to enhance communication. + Provide ergonomic furniture with adequate horizontal worksurface to support staff comfort. + Ensure camera placement allows for the provider to establish visual connection with the patient. + Provide dual monitor capabilities that support synchronous viewing of EMR information and patient during a virtual visit. + Ensure there is a clear line of sight between patient, provider, and technology interface.



Limitations and Next Steps: Seeking the Patient and System Perspective

It is important to note that this survey was taken in May 2020, at the height of the pandemic. As such, findings from the survey provide a unique look into family and internal medicine providers' perspectives during a pivotal time in the trajectory of telehealth, as well as our nation's history. These insights reflect the overwhelmed nature of the rapid onset on health systems and providers, and the subsequent uncertainty that ensued due to the tumultuous political landscape and economic uncertainty associated with the pandemic. To fully understand the recent and future impact of telehealth on care delivery, it is equally important to gain insight into patients' perspectives. CADRE is currently conducting a nationwide survey with patients to understand their virtual care experiences during COVID-19 and how their experience with care delivery during the pandemic will influence their preferences, expectations, and needs moving forward.

Projections for the degree to which telehealth will be integrated into care delivery in the short-term, mid-term, and over the long-term remain uncertain due to the transitory nature of the policies that supported telehealth's rapid uptake. However, it is clear that virtual care will be a critical component of care delivery moving forward. As healthcare organizations and independent physician practices consider how to leverage telehealth to provide the greatest benefit

to patients and providers, it will be essential to think beyond current care delivery models and explore how an integrated physical/digital hybrid model will impact the future of clinic design.

Furthermore, while the findings from this survey provide a snapshot in time of providers' perspectives regarding telehealth's current limitations and future aspirations, these findings also serve as an impetus for further exploration and innovation to address questions such as:

- + How can advances and improvements in technologies such as AI, the Internet of Things, and remote patient monitoring be leveraged to solve some of the emerging challenges with equity, engagement, and experience across the continuum of care?
- + How can telehealth be leveraged to address the imminent healthcare worker shortages within the United States and across the world?
- + As more care shifts to the virtual environment, what is the future of home health, mobile health, retail health or healthcare distributed from other third places?

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