



State of Telemedicine Report

Second Edition



February 2022



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Introduction

The onset of the COVID-19 pandemic had a swift, dramatic impact on the U.S. healthcare system and the way care is delivered across the country. Now, two years since the start of the pandemic, telemedicine remains a critical component of most care delivery models.

In our first telemedicine report, published September, 2020, we studied the rise of telemedicine in the early days of the pandemic. We found that patients and clinicians had widely positive perceptions of telemedicine.

In this new report, we found that the number of clinicians who use telemedicine as part of their practice is high. Our research suggests that telemedicine will continue to be widely used; as over 73% of patients report that they plan to receive care through telemedicine after the pandemic. Clinicians and health systems have had more time to optimize their telemedicine practices, which has likely contributed to the increase in telemedicine's overall favorability among patients.

In order to better understand the evolving role of telemedicine, Doximity researchers examined physician adoption of telemedicine tools and patient attitudes towards telemedicine. We found that telemedicine is used widely across both physician and patient demographics.

We anticipate that demand for telemedicine service options will remain strong, and healthcare systems may even find themselves competing to provide the best telemedicine experience.



COVID-19 has been a driving force of disruptive innovation... we're leveraging this experience to create a sustainable and resilient hybrid model of care.

Lee Schwamm, MD
Vice President, Virtual Care
Mass General Brigham



Physician Adoption of Telemedicine

Doximity Physician Telemedicine Insights

Medicare telemedicine insights on the Doximity physician membership

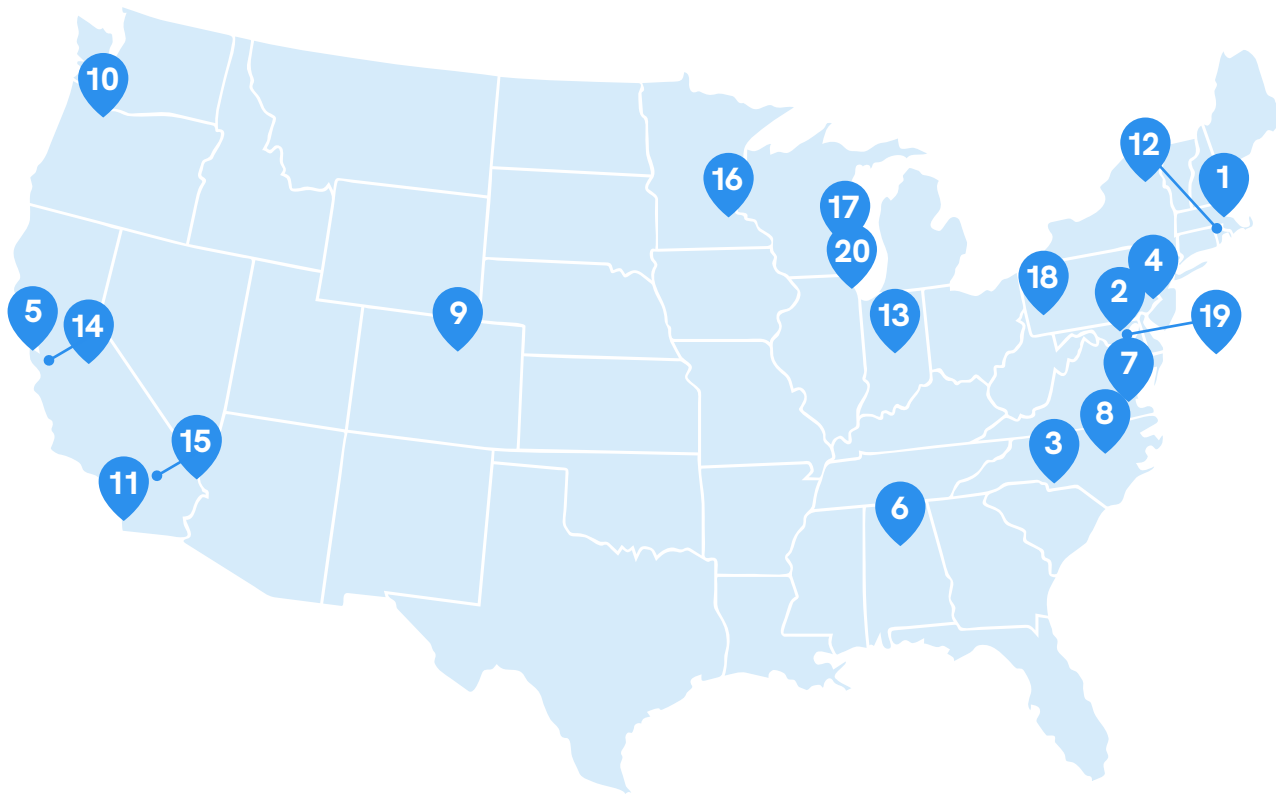
In a population of over 185,000 physicians who billed Medicare telemedicine claims from January 2020 through June 2021, over 45% were users of Doximity's telemedicine platform. The following analyses examine Doximity's physician membership using its telemedicine tools.



Telemedicine Adoption by Metro Area

The top metro areas are distributed widely across the U.S.

The metro areas with the highest physician adoption of Doximity's telemedicine platform ranged across all regions of the U.S. Boston had the highest overall adoption of telemedicine among physicians, followed closely by Baltimore and Charlotte.



Metro Areas with Highest Telemedicine Adoption Rates

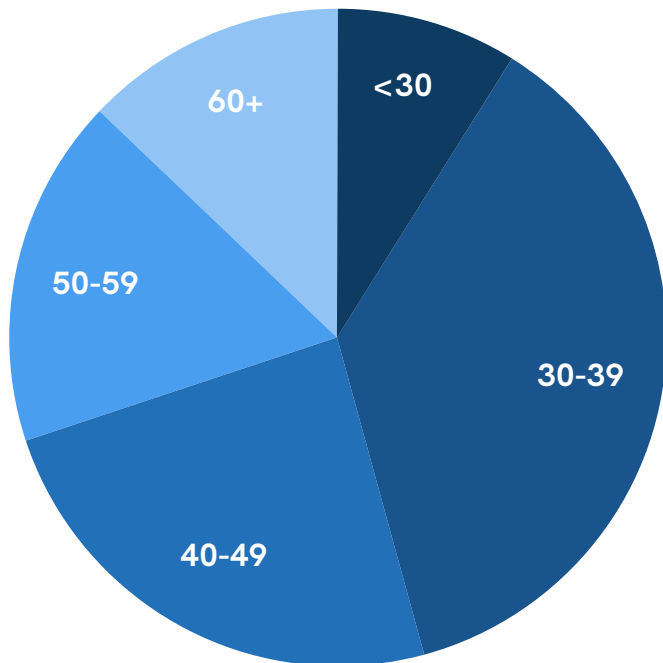
1. Boston, MA
2. Baltimore, MD
3. Charlotte, NC
4. Philadelphia, PA
5. San Francisco, CA
6. Birmingham, AL
7. Richmond, VA
8. Raleigh, NC
9. Denver, CO
10. Portland, OR
11. San Deigo, CA
12. Providence, RI
13. Indianapolis, IN
14. San Jose, CA
15. Riverside, CA
16. Minneapolis, MN
17. Milwaukee, WI
18. Pittsburgh, PA
19. Washington, DC
20. Chicago, IL

Telemedicine Adoption by Physician Age

Physicians of all ages use telemedicine

Telemedicine adoption was strong across all physician age groups, beginning with training and extending to retirement. This contrasts with other categories of mobile video technologies that often see early adoption over-weighted in younger demographics. One explanation could be that the onset of the pandemic drove adoption of telemedicine among physicians of all ages as they adapted their practice workflows.

Telemedicine Physician Users by Age

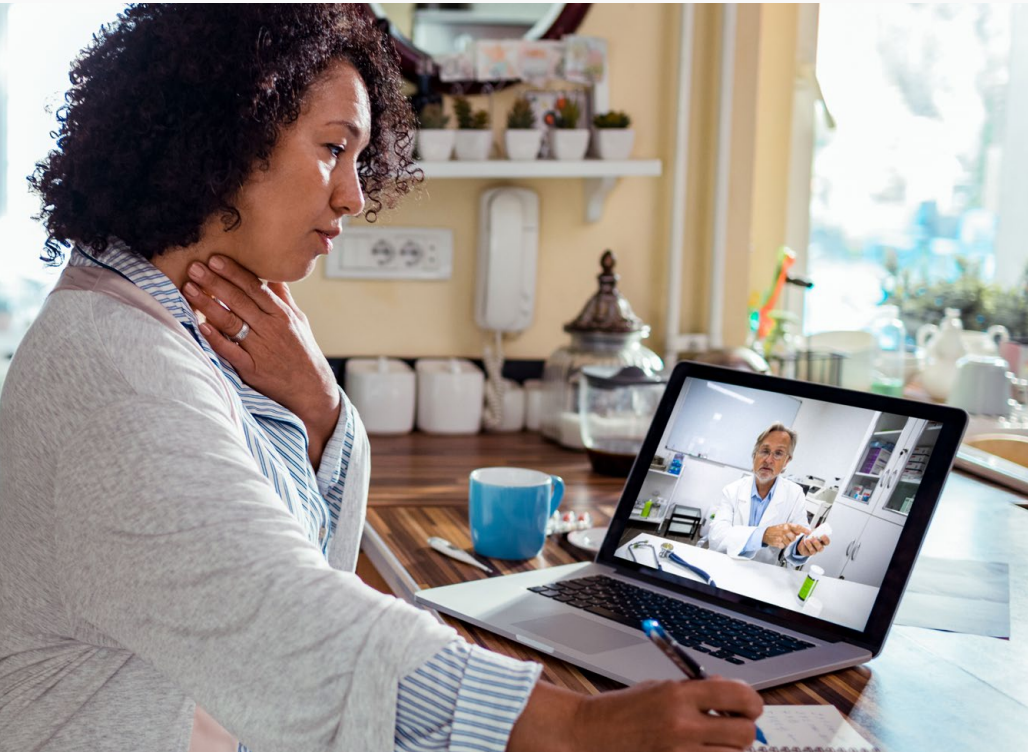


Telemedicine Adoption by Specialty

Adoption of telemedicine is highest in specialties that manage chronic illness

Specialties that have a high proportion of patients with chronic illness tended to have a higher adoption of telemedicine among physicians. This may be because telemedicine can help facilitate continuity of care, allowing a patient to have followup visits with the same specialist that knows them well. Additionally, treating long-term chronic conditions, such as diabetes or cancer, often requires frequent patient visits that may be adequately and more conveniently addressed via telemedicine.

This correlates with findings from our patient survey that show many patients with chronic illness plan to continue seeing their doctors for some or all of their visits via telemedicine, even after the pandemic ([see slide 13](#)).



Top 15 Adult Specialties

1. Endocrinology
2. Gastroenterology
3. Rheumatology
4. Urology
5. Nephrology
6. Cardiology
7. Otolaryngology (ENT)
8. Neurology
9. Allergy & Immunology
10. Hematology/Oncology
11. Family Medicine
12. Dermatology
13. Geriatrics
14. Pulmonology
15. Psychiatry

Telemedicine & Patient Trust

Over 67% of physicians report telemedicine made it easier to build trust or was the same as in person visits

Among physicians surveyed, over 67% felt that access to telemedicine helped build or maintain trust with patients from historically marginalized communities. One possible explanation is that telemedicine increased patient feelings of safety, providing access to care without the potential infectious exposure risk (and inconvenience) of in-person visits to busy clinical settings. Another factor influencing patient trust may be the ease of including family and other caregivers in a virtual setting, regardless of their physical location.



Telemedicine has absolutely increased my patients' trust. Patients are so much more relaxed and receptive when they don't have to worry about traveling, parking, checking in, waiting in a busy waiting room to see me. We can review all of their meds in greater detail as well. They take notes during the appointment, have family members with them, etc.

*Reed Berger, MD
Internal Medicine*



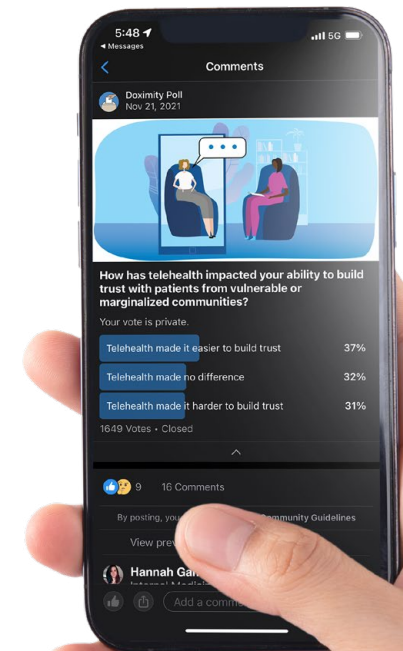
Building trust requires a human connection and genuine empathy/compassion. If we can demonstrate that with our words and time, trust can be built even via video.

*Maulik A. Patel, MD
Geriatrics*



I have not seen a huge shift in patient trust with the use of telehealth. I do think that telehealth has broadened the scope of patients willing to seek evaluation by a specialist in vulnerable populations and those who prefer to not enter a clinic/hospital due to concerns with COVID.

*Brian Sullivan, MD
Orthopaedic Surgery*



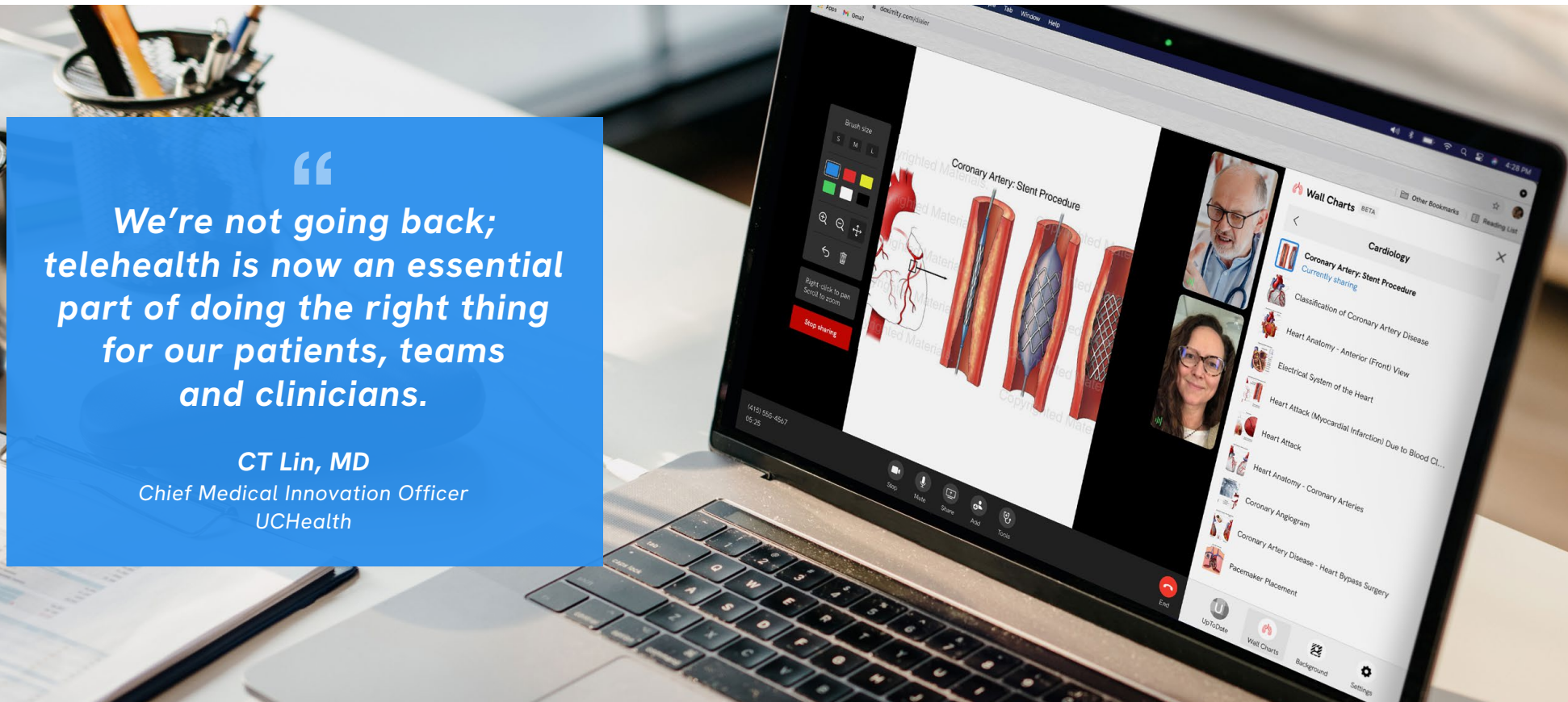


Patient Adoption of Telemedicine

Patient Insights

Tracking patient perception and acceptance of telemedicine

In this report, we repeated our survey of U.S. adult patients and compared our results with the 2020 survey. Each survey had 2,000 respondents with 1,000 patients who identified as having chronic illness and 1,000 patients who did not. The following analyses examine these patients' self-reported experiences with telemedicine.



We're not going back; telehealth is now an essential part of doing the right thing for our patients, teams and clinicians.

CT Lin, MD
Chief Medical Innovation Officer
UCHealth

Telemedicine Use Among Patients

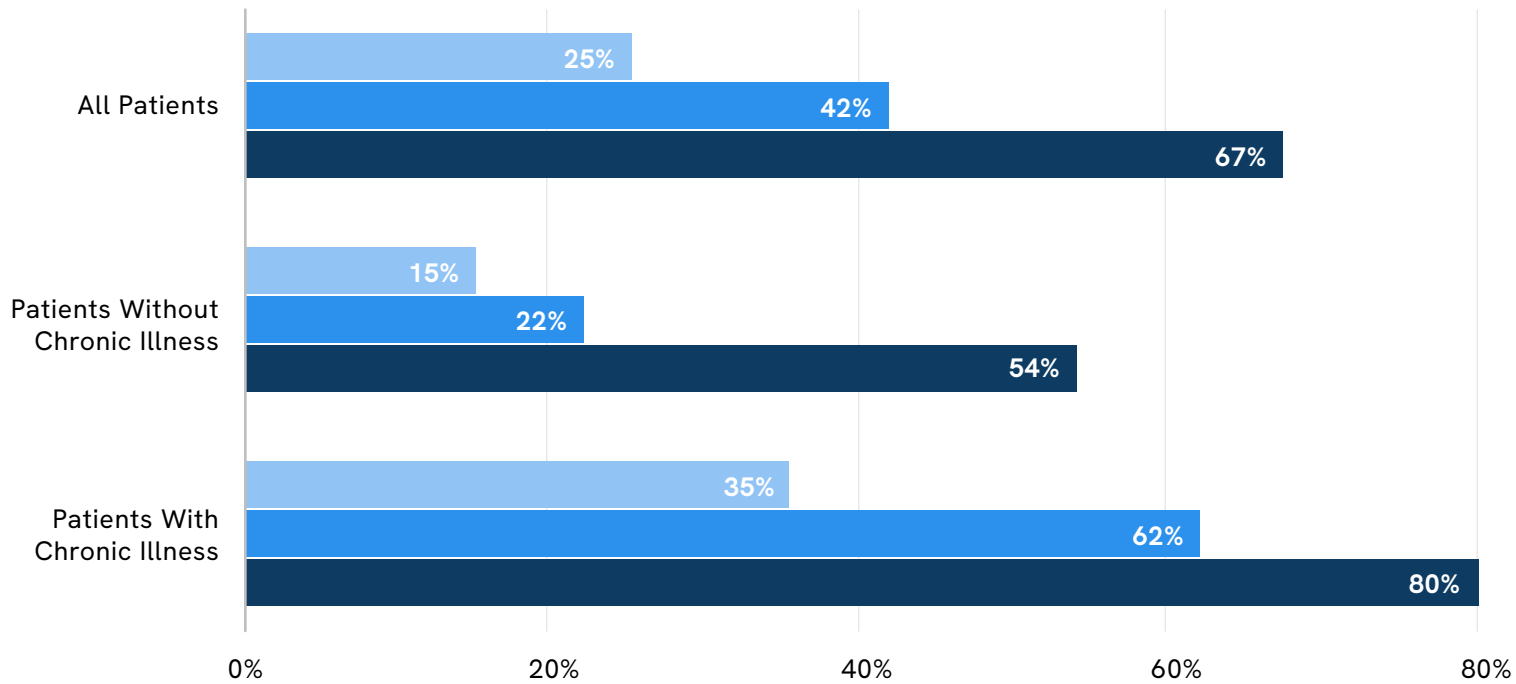
Year-over-year trend shows more patients with telemedicine visits

The percentage of patients who participated in a telemedicine visit in the past year jumped from 42% in 2020 to 67% in 2021. We found that patients with chronic illness adopted telemedicine earlier in the pandemic.

Patients without chronic illness — who may have planned to delay medical care until after the pandemic — adopted telemedicine in the second year of the pandemic. For the majority of patients, telemedicine is now a part of the new normal in healthcare.

Percentage of Patients that Participated in a Telemedicine Visit at Least Once Annually

● Annually, Pre-Pandemic ● 2020 ● 2021



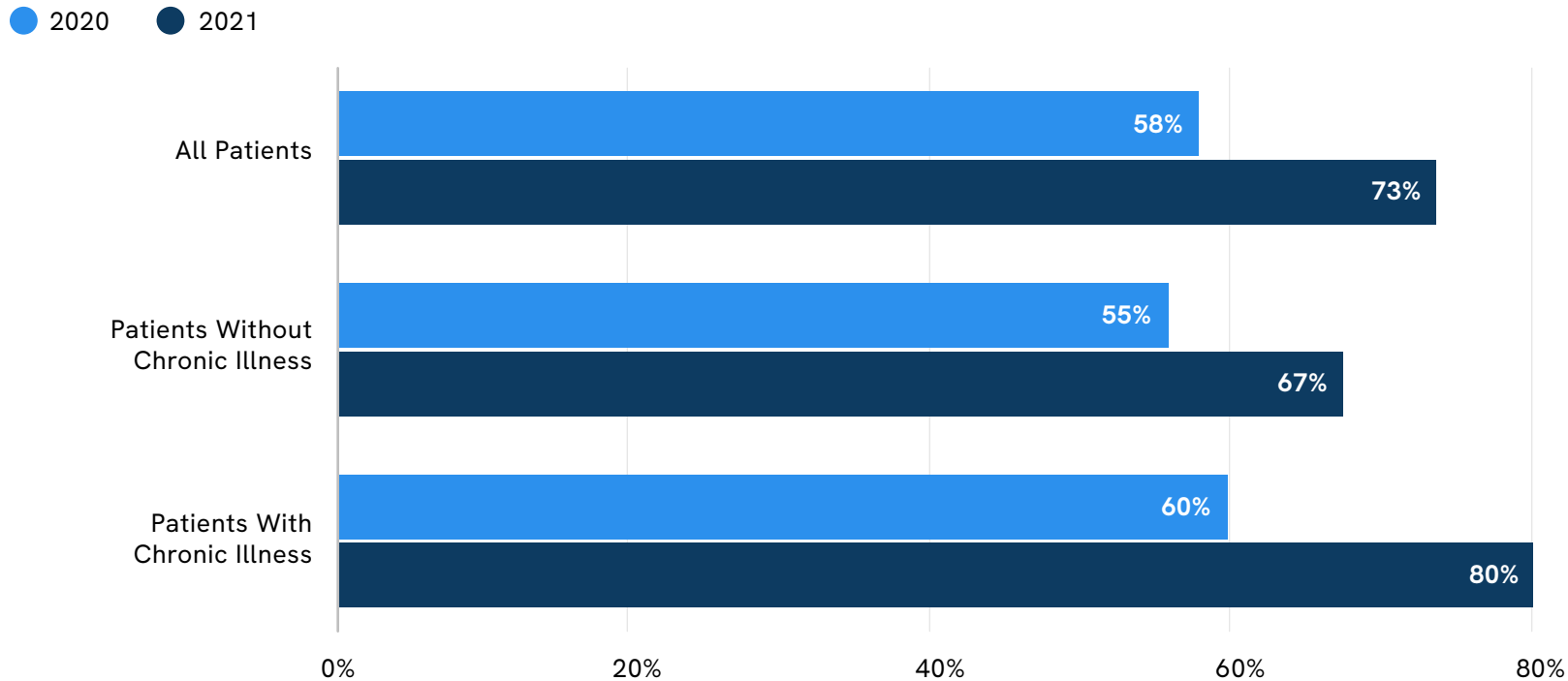
The Future of Telemedicine

Nearly three quarters of patients plan to use telemedicine post-pandemic

The COVID-19 pandemic drove increased innovation and adoption of telemedicine, and it appears that it's here to stay. In 2020, 58% of patients reported an intention to use telemedicine "more" frequently or at "the same" frequency after the end of the pandemic.

In 2021, over 73% of patients surveyed reported they planned to receive "some" or "all" of their care through telemedicine after the pandemic. It's clear that telemedicine is now an expected part of their health-care experience, even as they think about life beyond the pandemic. Notably, this was consistent across race/ethnicity (see slide 19).

Percentage of Patients Who Plan to Receive Care Through Telemedicine After the Pandemic



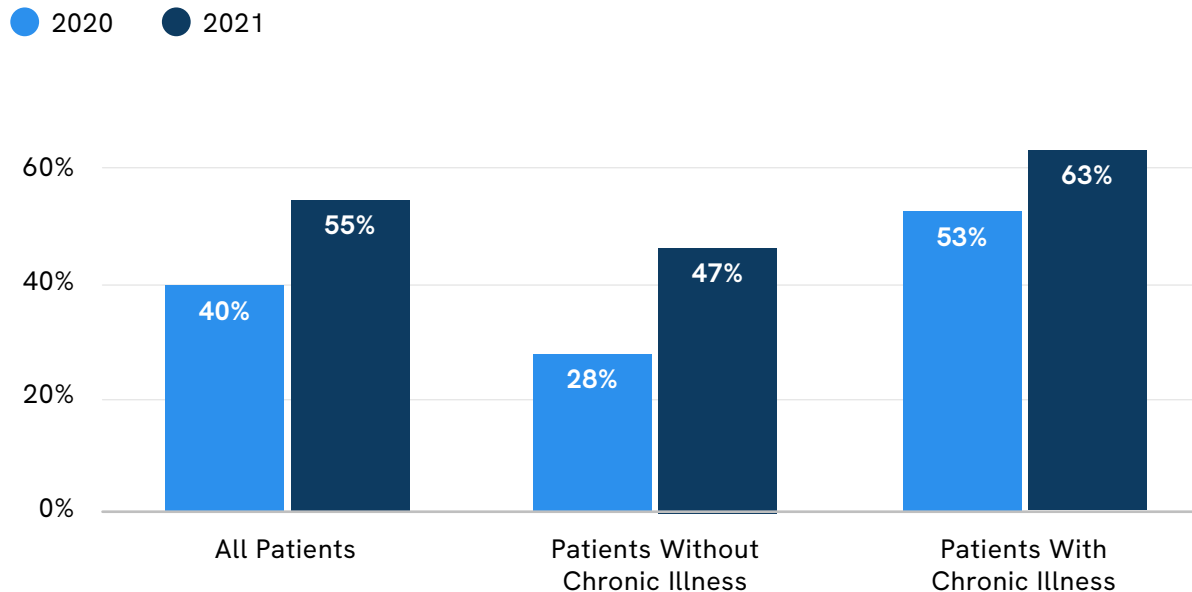
Quality of Care

Majority of patients perceive telemedicine provides equivalent or superior quality of care compared with in-person visits

The proportion of patients who reported that telemedicine provides the same or better quality of care as compared with in-person visits increased from 40% in 2020 to 55% in 2021.

This may reflect improvements in the technology and delivery of telemedicine. As demand for telemedicine continues, it's likely that health systems and clinicians will prefer telemedicine platforms that are easy to use for both patients and doctors.

Percentage of Patients Who Feel Virtual Care Provides Equivalent or Superior Quality of Care Compared With In-Person Visits



Telehealth offers doctors more time with their patients. As a result, I feel less frantic tackling numerous problems and spend more time connecting with patients.

Technology also allows me to share my computer screen, and I often pull up a web browser and show images or videos to enhance their experience. This helps build confidence in the clinician.

Kenneth Tack-Ken Leong, DO, MPH
HIV/AIDs Medicine

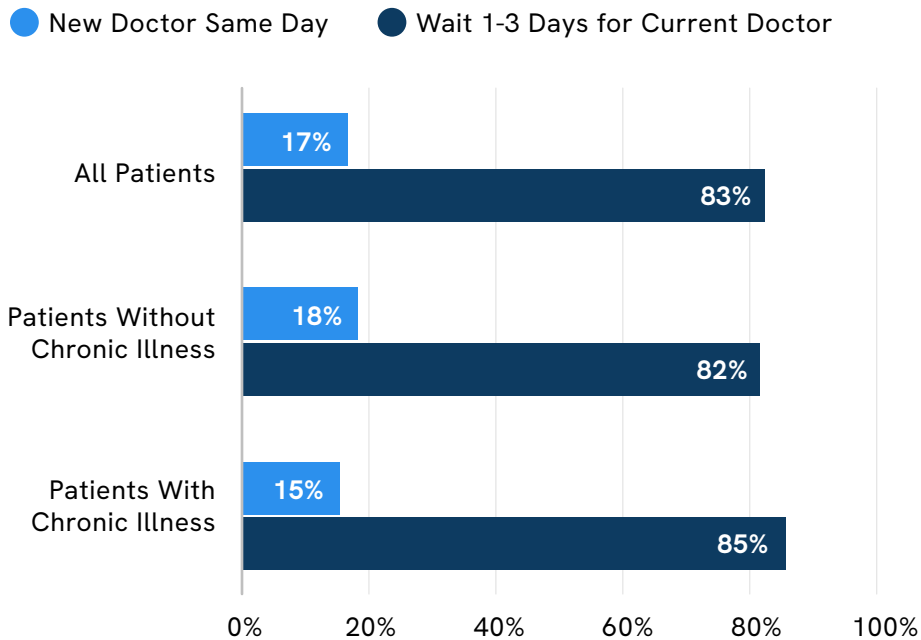
Patient Preferences for Physician Access

Patients prefer to wait and see their current doctor (but not in a waiting room)

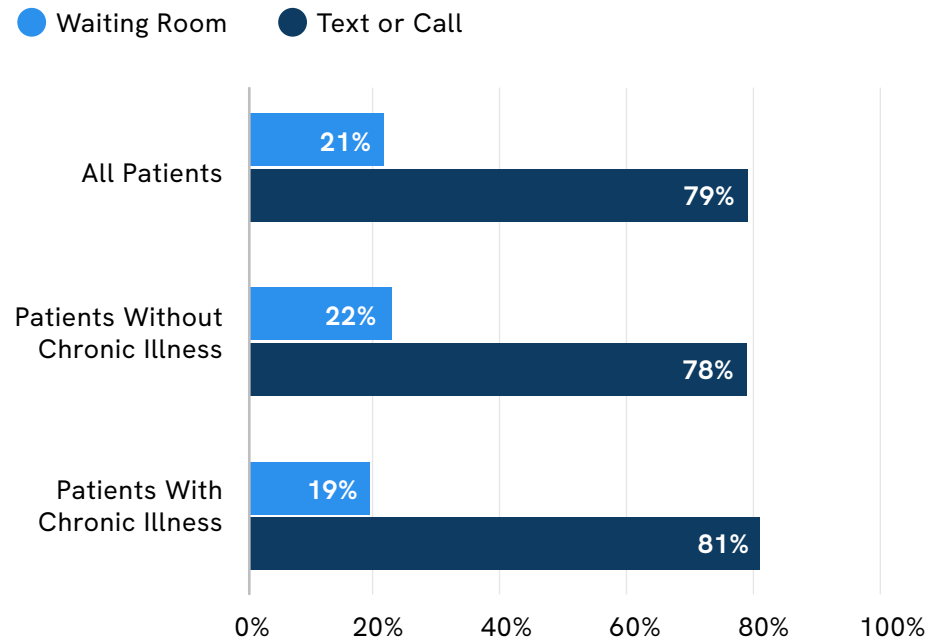
While the use of on-demand virtual urgent care has increased dramatically during the pandemic, patients still prefer to see a doctor they know. Overall, 83% of patients surveyed said they would wait one to three days to see their current doctor rather than seeing a new physician immediately.

While in-person appointments typically require patients to spend time in a waiting room, the nature of virtual care offers alternatives to the waiting room experience. Approximately 79% of patients would prefer to receive a call or text when their doctor is ready to see them, versus standing by in a virtual waiting space.

Percentage of Patients Who Prefer to Wait 1-3 Days to See Their Current Doctor Rather than a New Doctor Immediately



Percentage of Patients Who Prefer to be Notified by Text or Call Instead of Waiting in a Virtual Waiting Room

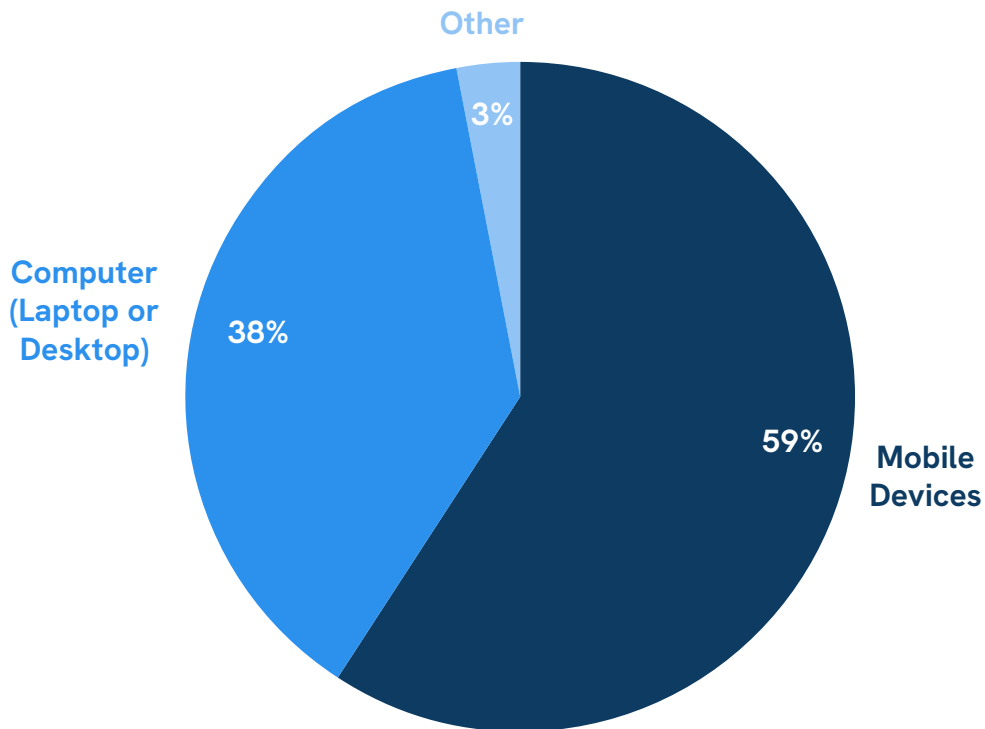


Preferred Device for Telemedicine

Mobile devices are the patient platform of choice

When asked their preferred device for conducting telemedicine visits, over 59% of patients chose mobile devices, while only 38% preferred computers. This suggests that patients may want to communicate with their doctor in the same way they communicate with family, friends, and employers — using their mobile devices. Telemedicine technology that only requires patients have access to a mobile device may enable a more seamless telehealth experience for patients who have inflexible work or caregiving responsibilities (or other obstacles to access care). Since 85% of Americans already own a smartphone, telemedicine can help bridge the digital divide in medicine.[1]

Patient Device Preference for Telemedicine Visits



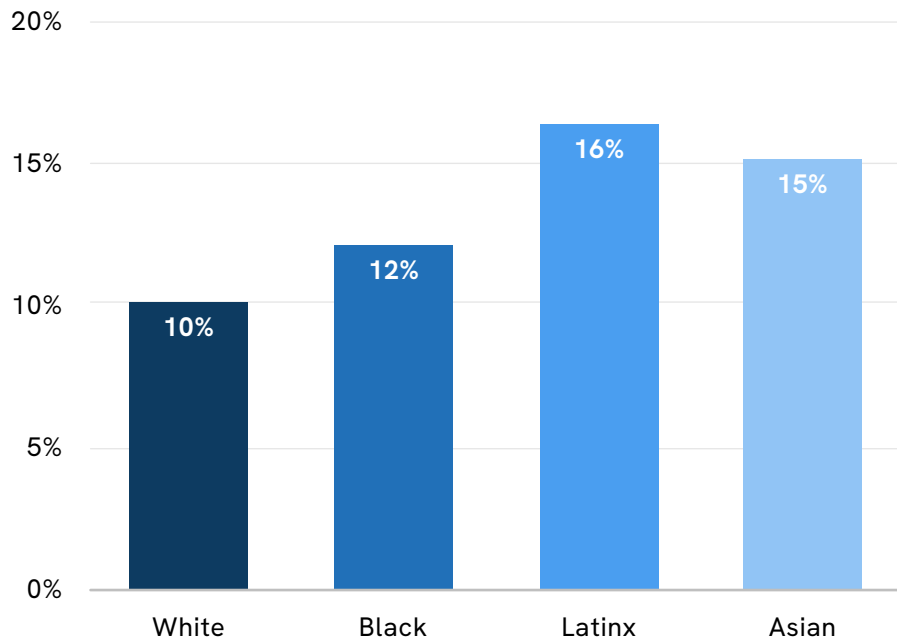
Broadband Access and Health Equity

A significant minority of patients rely on their smartphones for internet access at home

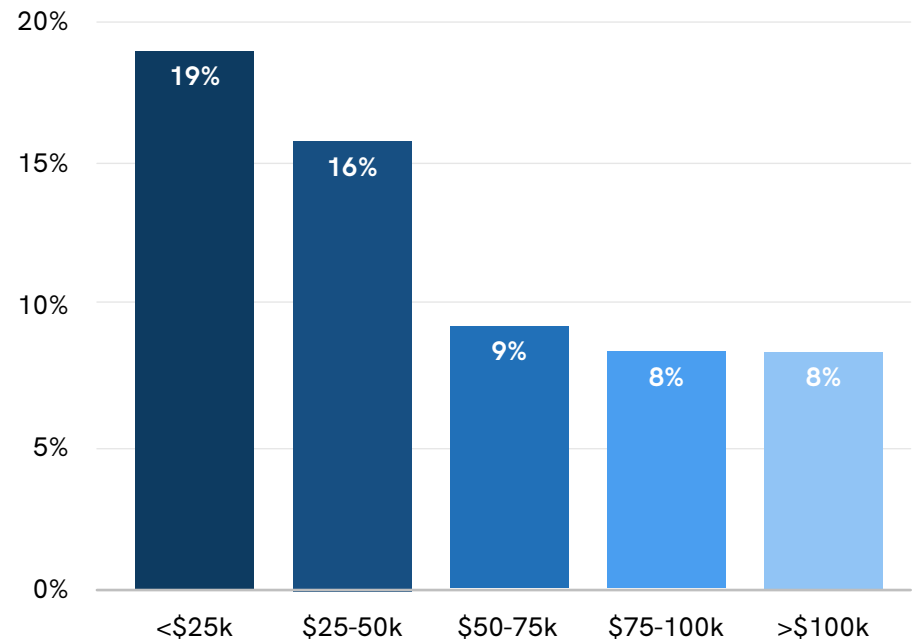
While telemedicine users have significantly increased due to the pandemic, not all patient populations have the same access.[2] In our survey of patients, we found that 19% of patients with household income below \$25,000 depended on their smartphones for internet access at home. This finding is consistent with other research groups' findings.[3]

Given that patients from lower income backgrounds and patients from historically marginalized groups are more reliant on smartphones for telemedicine access at home, healthcare systems can promote health equity by investing in mobile-first solutions that optimize for potentially slower, variable internet speeds.

Patients Who Don't Have Broadband Internet at Home by Race/Ethnicity



Patients Who Don't Have Broadband Internet at Home by Income



Device Access

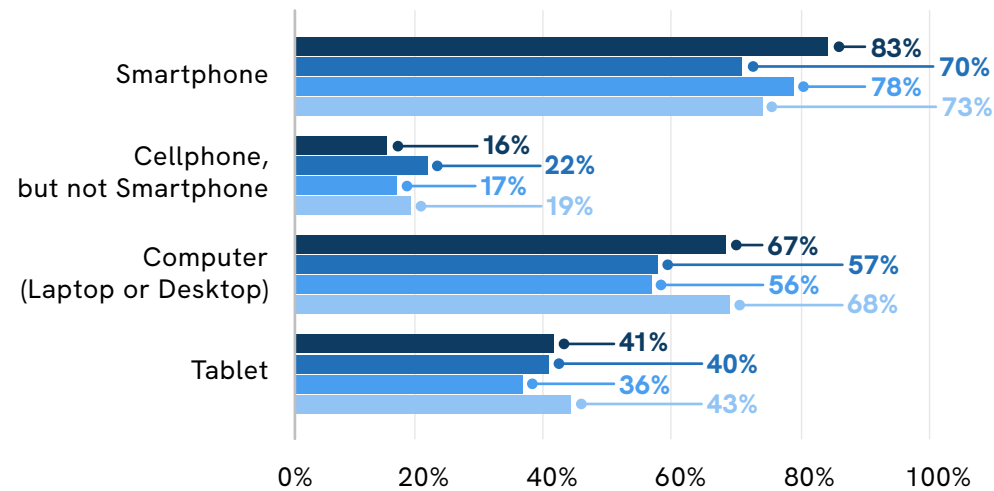
Mobile phones, the most accessible device across race/ethnicity

Our patient survey found that mobile phones are the most accessible device for telemedicine, a consistent finding across race/ethnicity. Increasing access to care for all patients may then depend on culturally appropriate product design and solution implementation.

For instance, telemedicine platforms that optimize for audio-only patient access allow for more equitable provision of virtual care services. This can be understood in the context that lower-income, older, Black, and Latinx patients are more likely than white patients to have audio-only telemedicine visits.[4]

Patient Access to Devices by Race/Ethnicity

● White ● Black ● Latinx ● Asian



The Future of Telemedicine Health Equity

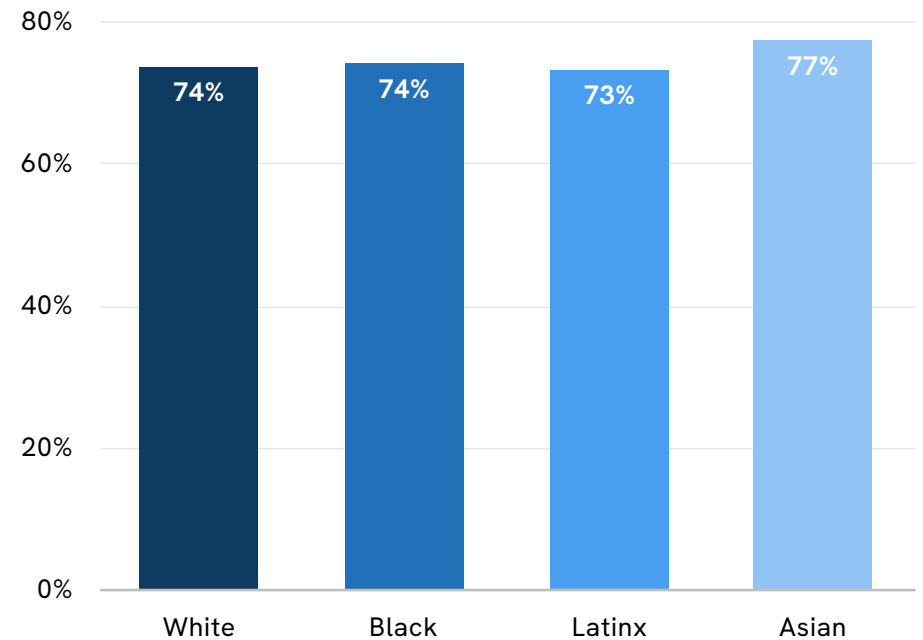
Patients across demographic groups plan to access telemedicine at similar rates after the pandemic

We found that a large majority of patients plan to receive telemedicine after the pandemic, with very little difference across race/ethnicity. This is consistent with other research findings that patients across race/ethnicity want access to telemedicine.[5] Similarly, women, non-binary, and transgender patients have shown an increase in telemedicine usage.[5]

Taken together, these findings reinforce that historically marginalized groups will use telemedicine when it is accessible. Optimizing solutions that allow rather than impede access will be an important part of equitable telemedicine delivery.



Patients Who Plan to Receive Telemedicine Care After the Pandemic



Methodology

Physician Insights

Page 5

Doximity partnered with CareJourney, a health analytics organization, to measure the number of physicians billing a set of Medicare telemedicine codes. A baseline population was established of approximately 185,000 U.S. physicians who billed for more than ten Medicare Part B services from January 2020 through June 2021. The corresponding national provider identifier (NPI) numbers were compared to Doximity user data to assess the rate at which this cohort used Doximity's telemedicine platform.

Pages 6-7

Responses were drawn from physicians who were users of Doximity's telemedicine platform from January 2020 through June 2021. Data was mapped across metropolitan statistical areas. To control for differences in specialty, geography, and other provider-specific factors, we estimated a multivariate regression with controls for provider specialty, metro area, and gender.

Page 8

The specialty rank list was drawn from physicians who were users of our telemedicine platform from January 2020 through June 2021. Adult specialties were ranked based on users within the specialty. Some small sub specialties were folded into their general specialty. For example, colorectal surgery was included in general surgery.

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Results were drawn from a poll run that ran in the Doximity Newsfeed from November 21, 2021 through December 5, 2021. The poll asked the following question:

"How has telehealth impacted your ability to build trust with patients from vulnerable or marginalized communities?"

The following three answers were offered as options:

- "Telehealth made it easier to build trust."
- "Telehealth made no difference."
- "Telehealth made it harder to build trust."

Patient Insights

Pages 10-19

We powered this section from a patient survey Doximity conducted via Pollfish. This survey included 2,000 U.S. adults. The survey was distributed to two separated groups: 1,000 respondents who identified as currently having a chronic illness and 1,000 respondents who identified as not having a chronic illness. We conducted the survey in November 2021.

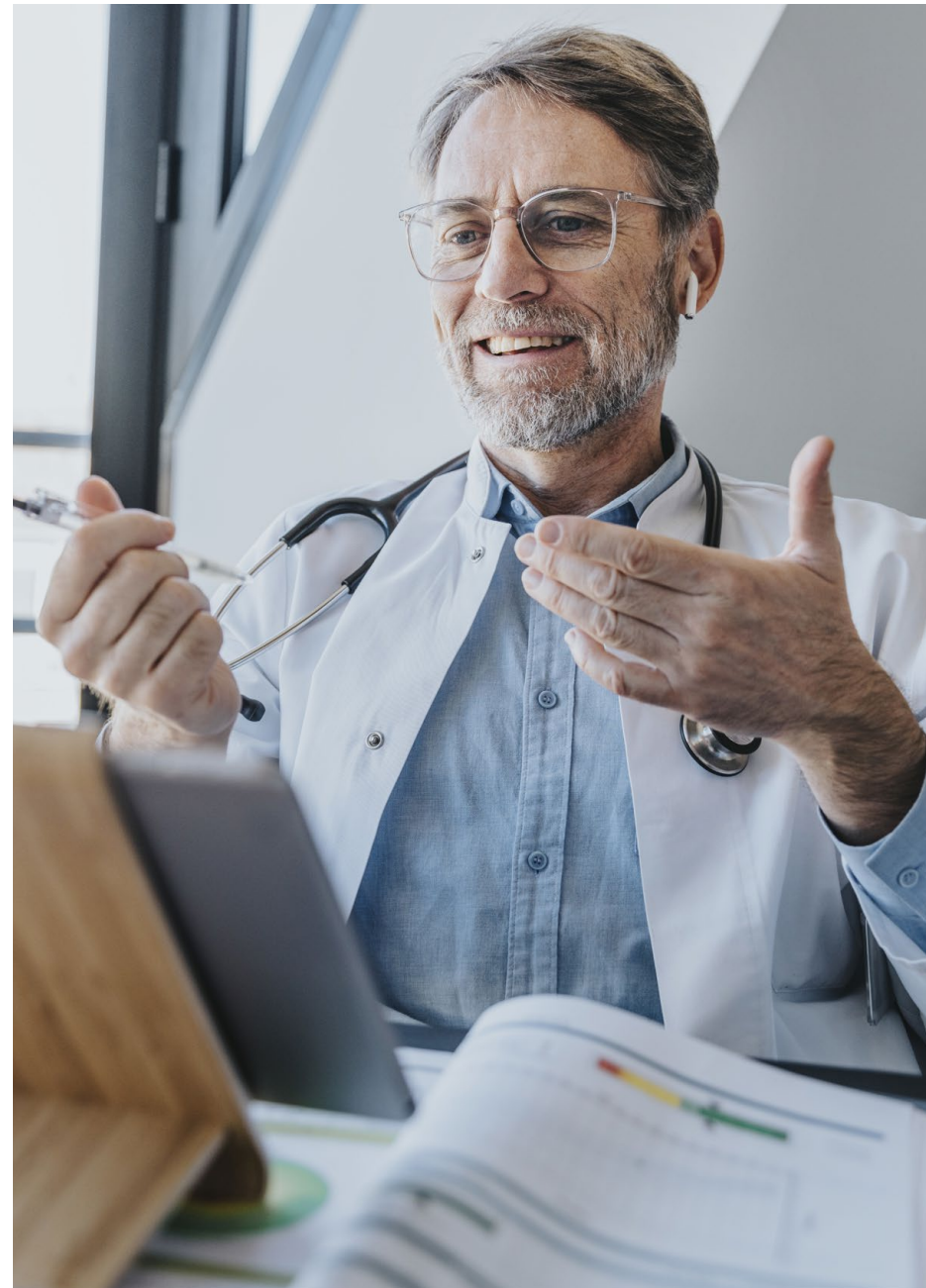
We conducted a similar survey in July 2020 and compared the year-over-year response differences. Survey participant demographics are not population-based and findings therefore may not be able to be extrapolated to the general population.

Page 13

While most survey questions were written the same in both years, one of the questions discussed on slide thirteen was written differently. In 2020, the question was phrased, "Once the pandemic ends, do you expect to use telehealth tools more or less than before (for non life-threatening issues)?" In 2021, we wanted to be more specific and asked, "After the pandemic, do you plan on receiving care through virtual healthcare visits?"

Pages 17-19

In an effort to be intentional with our language by centering racial and gender equity, we use the term "Latinx" instead of "Hispanic," which was used in the original survey.



Sources

[1] "Mobile Technology and Home Broadband 2021." Pew Research Center, Washington, D.C. (June 3, 2021)

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[2] "Is Telehealth Transforming Care for Everyone?" Telehealth Equity Coalition, Washington, D.C. (February 2, 2021)

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[3] "Public Health Tech Initiative: Using Health Technology to Respond to Public Health Emergencies." Consumer Technology Association, Arlington, VA. (November 2021)

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[4] "Patient Characteristics Associated With Telemedicine Access for Primary and Specialty Ambulatory Care During the COVID-19 Pandemic." JAMA Network Open. (December 29, 2020)

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[5] "Consumer adoption of telemedicine in 2021." Rock Health, San Francisco, California. (December 13, 2021)

<https://rockhealth.com/insights/consumer-adoption-of-telemedicine-in-2021>

About Doximity

Founded in 2010, Doximity is the leading digital platform for medical professionals and ranked the #1 telehealth video conferencing platform in the 2022 Best in KLAS report. The company's network members include over 80% of U.S. physicians across all specialties and practice areas. Doximity provides its verified clinical membership with digital tools built for medicine, enabling them to collaborate with colleagues, stay up to date with the latest medical news and research, manage their careers and conduct virtual patient visits. Doximity's mission is to help doctors be more productive so they can provide better care for their patients.

To learn more, visit www.doximity.com.

