



# National Survey Trends in Telehealth Use in 2021: Disparities in Utilization and Audio vs. Video Services

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## KEY POINTS

- Telehealth use increased dramatically during the COVID-19 pandemic, but research suggests that access to telehealth was not equitable across different population subgroups.
- This report analyzes data regarding telehealth use from the Census Bureau's Household Pulse Survey from April to October 2021.
- Overall during the study period, we found that one in four respondents (23.1%) reported use of telehealth services in the previous four weeks.
- Telehealth use rates were similar (21.1–26.8%) among most demographic subgroups but were much lower among those who were uninsured (9.4%) and young adults ages 18 to 24 (17.6%).
- The highest rates of telehealth visits were among those with Medicaid (29.3%) and Medicare (27.4%), Black individuals (26.8%), and those earning less than \$25,000 (26.7%).
- There were significant disparities among subgroups in terms of audio versus video telehealth use. Among telehealth users, the highest share of visits that utilized video services occurred among young adults ages 18 to 24 (72.5%), those earning at least \$100,000 (68.8%), those with private insurance (65.9%), and White individuals (61.9%). Video telehealth rates were lowest among those without a high school diploma (38.1%), adults ages 65 and older (43.5%), and Latino (50.7%), Asian (51.3%) and Black individuals (53.6%).
- Policy efforts to ensure equitable access to telehealth, in particular video-enabled telehealth, are needed to ensure that disparities that emerged during the pandemic do not become permanent.

## BACKGROUND

The use of telehealth services surged during the COVID-19 pandemic. A 2020 study found that telehealth use during the initial COVID-19 peak (March to April 2020) increased from less than 1 percent of visits<sup>1</sup> to as much as 80 percent in places where the pandemic prevalence was high,<sup>2</sup> and a recent ASPE report found that Medicare telehealth utilization increased 63-fold between 2019 and 2020.<sup>3</sup>

The Health Resources and Services Administration (HRSA) defines telehealth as the use of electronic information and telecommunications technologies to support and promote long-distance clinical health care, patient and professional health-related education, and public health and health administration.<sup>4</sup> Telehealth is comprised of two forms: 1) two-way, synchronous, interactive client-provider communication through audio

and video equipment (sometimes referred to as telemedicine), and 2) asynchronous client-provider interactions using various forms of technology (e.g., web-based client portals, e-mail messages, text messages, mobile applications, symptom management tracking, sensors, peripherals, client education modules, or electronic medical record data).<sup>5</sup> This Issue Brief focuses on two-way synchronous telehealth services, referred to as “telehealth” throughout the remainder of this report.

During the COVID-19 Public Health Emergency (PHE), HRSA-funded health centers expanded telehealth services,<sup>6</sup> and the Centers for Medicare & Medicaid Services (CMS) enhanced reimbursement in fee-for-service Medicare and waived geographical restrictions, so that providers in various settings could expand telehealth services and continue providing care during the pandemic.<sup>7,8</sup> State Medicaid programs also made changes to encourage greater use of telehealth delivery for health care services.<sup>9</sup>

Telehealth can improve access to health care services, especially for patients living in rural areas, by reducing travel cost and wait times.<sup>10</sup> Yet, evidence about the quality of care provided by telehealth vs. in-person care remains inconclusive.<sup>11</sup> Live video services appear to offer advantages over audio-only services in many clinical contexts, though ongoing research is underway.<sup>12</sup> There are also concerns about equitable access to telehealth services, especially for video telehealth. For instance, several barriers can prevent patients from engaging with their providers via telehealth, including disparities in technology and device ownership, lack of broadband access, digital literacy, limited English proficiency, and social isolation. These barriers likely have disproportionate impacts across different populations in the U.S.<sup>13,14,15</sup>

Many published analyses of telehealth during the pandemic have been geared toward specific payers or used claims data to understand the utilization of specific telehealth modalities (e.g., audio-only vs. video-enabled). In this Issue Brief, we report the findings from an analysis using a different data source, the Census Bureau’s Household Pulse Survey (HPS). Our objectives were to assess national trends in telehealth utilization in 2021 across all payers, identify what demographic factors were associated with higher and lower rates of telehealth use, and how use of video vs. audio-only telehealth differed across these populations.

## METHODS

We conducted a trend analysis using the HPS data from weekly cohorts of respondents from April 2021 to October 2021 for overall rates of telehealth use, and from July 2021 to October 2021 for the type of telehealth services used (audio-only vs. video-enabled). We then assessed these outcomes across different subpopulations using descriptive statistics and multivariate regression modeling.

### *Data Sources*

The HPS was fielded approximately every 1 to 2 weeks beginning April 23, 2020.<sup>16</sup> It is a 20-minute online survey conducted on a weekly or bi-weekly basis with a new cohort each round.<sup>17</sup> The goal of the survey is to provide timely evidence on the impact of COVID-19 pandemic on U.S. households. In 2021, the National Center for Health Statistics (NCHS) and the HRSA’s Maternal and Child Health Bureau (MCHB) partnered with the Census Bureau to include several questions for monitoring changes in telemedicine use.<sup>18</sup>

We used data from April 14, 2021 through October 11, 2021, which is the time period in which the HPS included questions on telehealth use among adults and in households with children. Beginning in July 21,

2021, the survey added new questions on telehealth services, distinguishing between those rendered via video-enabled telehealth vs. those with audio-only services.\*

### *Data Analysis*

All analyses used survey weights to mitigate non-response bias and Taylor Series Expansion/Linearization for variance estimation.

We first conducted descriptive analyses to assess differences in telehealth use across population subgroups. We then developed two logistic regression models to identify factors associated with: 1) rates of overall telehealth use in the previous four weeks, and 2) the share of telehealth visits conducted with video (vs. audio-only) among telehealth users. Both models accounted for respondents' age, race, education, income, health insurance type in five mutually exclusive categories,<sup>†</sup> and Census region. We adjusted for gender identity (including transgender) in the telehealth modality analysis, but not in the overall telehealth analysis due to a change in the survey instrument during the study period.<sup>‡</sup>

## FINDINGS

### *Overall Telehealth Utilization*

Between April 14, 2021 and October 11, 2021, a total of 808,368 adults across all 50 states and Washington D.C. responded to the survey. 267,106 (33.1%) were from households with at least one child under the age of 18.

Among the 670,155 adults who answered the telehealth question, 23.1% reported having utilized telehealth services (audio or video) within the previous four weeks. Among adults with a child in the household, 19.7% reported that a child in the household had used telehealth services in the prior four weeks.

Figure 1 shows trends in the percentage of adults and children that had used telehealth services in the prior four weeks.

The results show a modest decline in telehealth use over the course of the year for both adults and children, though the rates of reported telehealth services remained far above pre-pandemic visit rates as indicated in previous research.<sup>19</sup>

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**Nearly 1 in 4 adults reported having an appointment with a healthcare professional by video or phone in the previous 4 weeks.**

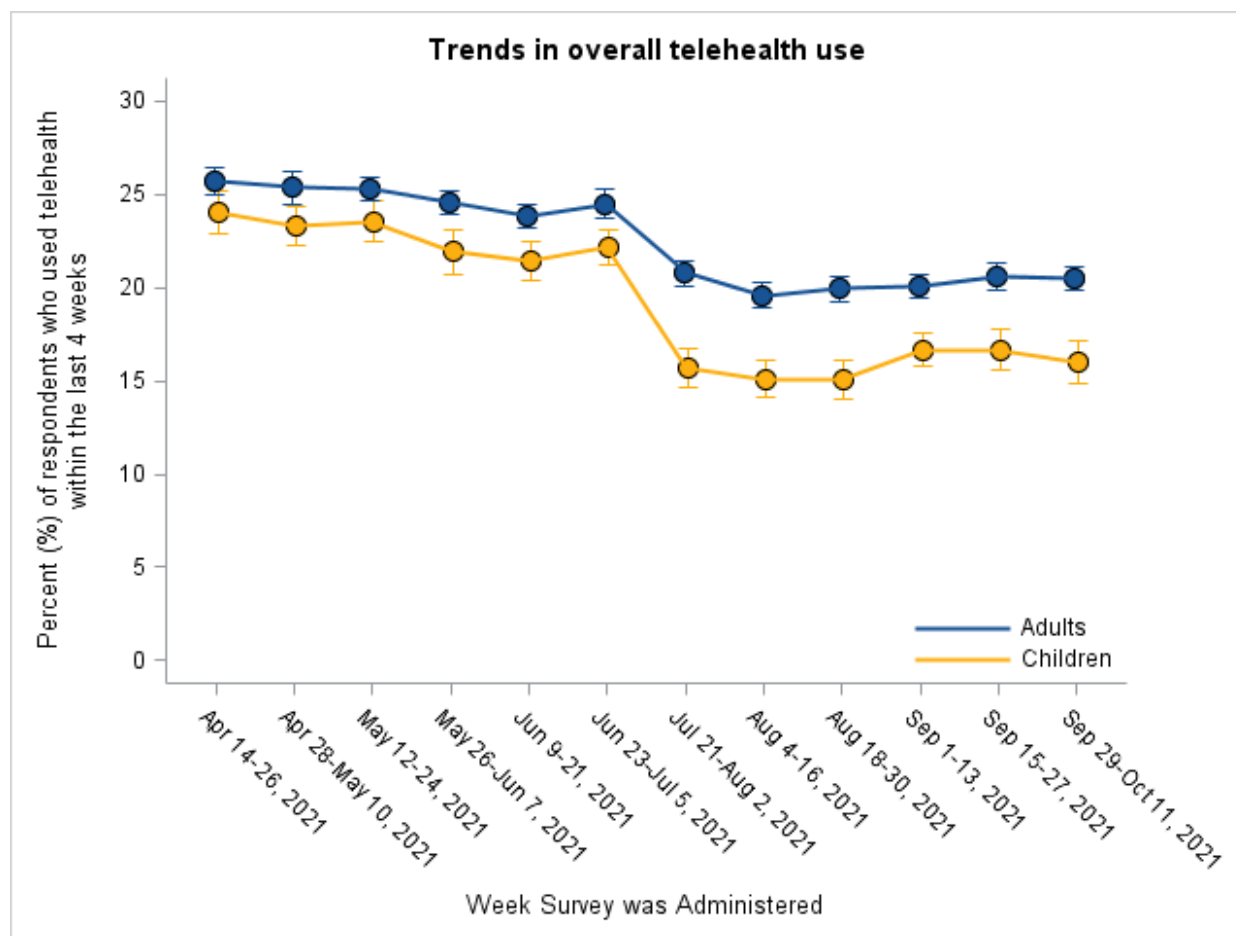
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\* The survey telehealth questions included the following: "At any time in the last 4 weeks, did you have an appointment with a doctor, nurse, or other health professional by video or by phone? Please only include appointments for yourself and not others in your household." "At any time in the last 4 weeks, did any children in the household have an appointment with a doctor, nurse, or other health professional by video or by phone?" For those who selected Yes: "Did the appointment(s) take place over the phone without video or did the appointment(s) use video?"

<sup>†</sup> We grouped respondents based on their answers to health insurance coverage into five mutually exclusive categories: 1) Medicare; 2) Medicaid; 3) Private; 4) Other Health Insurance, and 5) Uninsured.

<sup>‡</sup> Biological sex and gender identity were excluded from the overall telehealth analysis, due to a change in the definition of gender in the survey as of July 21, 2021.

**Figure 1. Percentage of Adults and Children\* Who Used Telehealth Services, April 14 - October 11, 2021**



**Note:** \*Reflects telehealth use reported by adult respondents for any child in the household over the previous 4 weeks.

The rest of the analyses in this Issue Brief focus on adult telehealth users.

### *Demographic Characteristics of Overall and Audio vs. Video Telehealth Users*

Overall telehealth usage was evaluated from April to October 2021; however, the comparison by modality (e.g., video vs. audio) was only assessed from July to October 2021, when this question was added to the survey. Table 1 presents the demographic of overall telehealth use over the entire timeframe, and for the second half of the study period, telehealth use and its breakdown by modality within each subgroup. Key findings include telehealth utilization was lowest among the uninsured (9.4%), individuals ages 18-24 (17.6%), and those residing in the Midwest (19.0%). It was highest among those with Medicaid (29.3%) and Medicare (27.4%), Black respondents (26.8%), and those earning less than \$25,000 (26.7%).

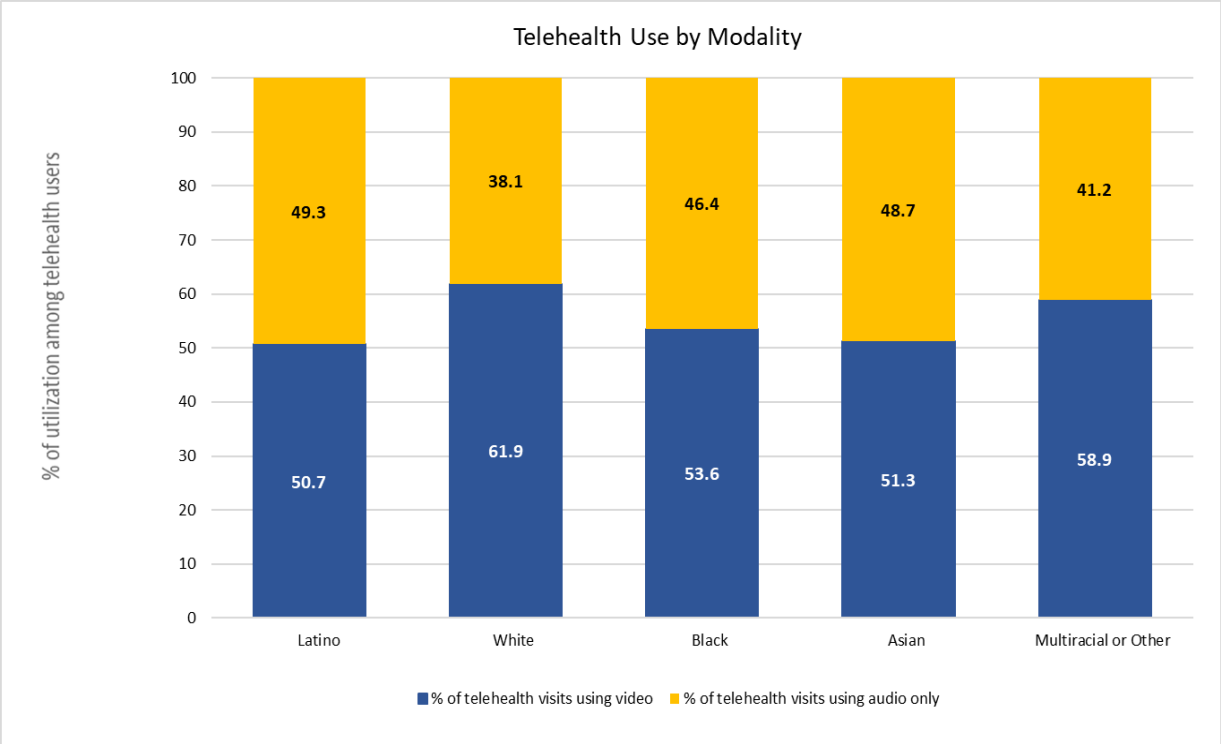
Generally, respondent subgroups with the lowest overall rates of telehealth use had a higher proportion of video than audio visits. For example, White respondents reported having an overall telehealth use of 21.1% but had a higher proportion of their telehealth visits using video (61.9%) rather than audio (38.1%). High proportions of telehealth visits by video were also noted among those between 18 and 24 (72.5%), college graduates (67.4%), and private health insurance beneficiaries (65.9%). The share of telehealth visits by video was lowest (meaning the share by audio was highest) among those without a high school diploma (38.1%) and adults ages 65 and older (43.5%).

**Table 1. Rates of Telehealth Use and Audio vs. Video Modality, by Demographic Group, 2021**

	Full study period (April 14th - October 11th, 2021)  % with a Telehealth Visit in the Previous 4 Weeks	Second Half of the Study Period (July 21st to October 11th, 2021)		
		% with a Telehealth Visit in the Previous 4 Weeks	% of Telehealth Visits by Video	% of Telehealth Visits by Audio
Race and Ethnicity				
Latino	24.4	21.8	50.7	49.3
White alone, not Latino	21.1	19.0	61.9	38.1
Black alone, not Latino	26.8	24.7	53.6	46.4
Asian alone, not Latino	22.2	20.2	51.3	48.7
Multiracial or Other	26.2	23.5	58.9	41.2
Census Region				
Northeast	23.7	21.3	59.5	40.5
Midwest	19.0	16.8	58.4	41.6
West	25.6	23.7	55.6	44.4
South	21.8	19.5	59.5	40.5
Education				
Less than high school	24.1	22.4	38.1	61.9
High school or GED	21.1	18.9	48.2	51.8
Some college/associate's degree	23.3	20.9	58.9	41.1
Bachelor's degree or higher	23.0	20.8	67.4	32.6
Household Income				
Less than \$25,000	26.7	24.3	48.7	51.3
\$25,000 - \$34,999	24.3	21.4	49.7	50.3
\$35,000 - \$49,999	22.6	20.3	54.7	45.3
\$50,000 - \$74,999	21.4	19.0	58.7	41.3
\$75,000 - \$99,999	21.0	19.2	62.9	37.1
≥ \$100,000	20.9	18.7	68.8	31.2
Age				
18-24 years	17.6	16.0	72.5	27.5
25-39 years	20.7	18.6	69.3	30.7
40-54 years	22.7	20.9	60.9	39.1
55-64 years	23.6	21.1	52.1	47.9
≥ 65 years	24.6	22.0	43.5	56.5
Insurance				
Medicare	27.4	24.7	48.1	51.9
Medicaid	29.3	26.3	54.5	45.5
Private	20.7	18.6	65.9	34.1
Other Health Insurance	25.0	22.4	51.7	48.3
Uninsured	9.4	8.5	48.8	51.2

Figure 2 displays the differences in the share of telehealth visits using video vs. audio by race and ethnicity. Video telehealth was less likely in Latino, Asian American / Pacific Islander, and Black respondents. Video telehealth was more likely for White respondents, as well as adults of two or more races plus other races.

**Figure 2. Telehealth Modality (Video vs. Audio) Among Telehealth Users, By Race/Ethnicity**



*Demographic Factors Associated with Telehealth Utilization*

Table 2 presents factors associated with recent telehealth use, after multivariate adjustment. Telehealth utilization varied by race, region, education, income, and insurance. The groups with higher odds of utilizing telehealth services were respondents who self-reported as Latino, Black, and multiracial or other. Those who were in older age groups (25 years and older), people making less than \$75,000, Medicare and Medicaid beneficiaries, and those with other insurance types were more likely to use telehealth. In contrast, the groups with lower odds of utilizing telehealth services were respondents who were uninsured and from the Northeast, Midwest, and South regions.

**Table 2: Demographic Factors Associated with Telehealth Utilization, April 14 – October 11, 2021**

Demographics	Odds Ratios (95% Confidence Interval)	P-value
<b>Race and Ethnicity</b>		
Latino	1.27 (1.22, 1.33)	<.0001
Black alone, not Latino	1.36 (1.30, 1.42)	<.0001
Asian alone, not Latino	1.02 (0.96, 1.08)	0.61
Multiracial or Other	1.27 (1.20, 1.35)	<.0001
White alone, not Latino	Ref	Ref
<b>Census Region</b>		
Northeast	0.91 (0.88, 0.95)	<.0001
Midwest	0.70 (0.67, 0.72)	<.0001
West	Ref	Ref
South	0.82 (0.79, 0.85)	<.0001
<b>Education</b>		
Less than high school	0.91 (0.78, 1.05)	0.20
High school or GED	0.77 (0.74, 0.80)	<.0001
Some college/associate's degree	0.95 (0.92, 0.97)	<.0001
Bachelor's degree or higher	Ref	Ref
<b>Household Income</b>		
Less than \$25,000	1.41 (1.34, 1.48)	<.0001
\$25,000 - \$34,999	1.27 (1.21, 1.34)	<.0001
\$35,000 - \$49,999	1.15 (1.10, 1.21)	<.0001
\$50,000 - \$74,999	1.06 (1.03, 1.10)	0.0011
\$75,000 - \$99,999	1.03 (0.99, 1.07)	0.15
≥ \$100,000	Ref	Ref
<b>Age</b>		
18-24 years	1.06 (0.96, 1.16)	0.27
25-39 years	1.19 (1.12, 1.26)	<.0001
40-54 years	1.35 (1.28, 1.43)	<.0001
55-64 years	1.39 (1.32, 1.46)	<.0001
≥ 65 years	Ref	Ref
<b>Insurance</b>		
Medicare	1.70 (1.62, 1.79)	<.0001
Medicaid	1.36 (1.30, 1.44)	<.0001
Private	Ref	Ref
Other Health Insurance	1.24 (1.13, 1.35)	<.0001
Uninsured	0.35 (0.32, 0.38)	<.0001

## Demographic Factors Associated with Video-enabled Telehealth

Table 3 presents factors associated with video telehealth use among those with a recent telehealth visit. After multivariate adjustment, the groups with higher odds of utilizing video-enabled telehealth services were respondents who self-identified as transgender or those with Medicare health insurance coverage.

Conversely, groups with lower odds of using video-enabled telehealth services were respondents who self-identified as Latino, Black, or Asian American / Pacific Islander; men; those with lower education and income, and those living in the Midwest.

**Table 3: Demographic Factors Associated with Video Telehealth Utilization Among Telehealth Users, July 21 - October 11, 2021**

Demographics	Video Only	
	Odds Ratios (95% Confidence Interval)	P-value
<b>Race and Ethnicity</b>		
Latino	0.74 (0.66, 0.83)	<.0001
Black alone, not Latino	0.85 (0.76, 0.96)	0.0077
Asian alone, not Latino	0.55 (0.47, 0.64)	<.0001
Multiracial or Other	0.98 (0.84, 1.14)	0.75
White alone, not Latino	Ref	Ref
<b>Gender Identity</b>		
Male	0.93 (0.87, 1.00)	0.0384
Transgender	3.12 (1.72, 5.68)	0.0002
Other	1.10 (0.83, 1.46)	0.50
Female	Ref	Ref
<b>Census Region</b>		
Northeast	1.07 (0.96, 1.19)	0.2474
Midwest	0.86 (0.78, 0.94)	0.0015
West	Ref	Ref
South	1.05 (0.96, 1.14)	0.26
<b>Education</b>		
Less than high school	0.50 (0.35, 0.71)	0.0001
High school or GED	0.60 (0.54, 0.66)	<.0001
Some college/associate's degree	0.81 (0.75, 0.86)	<.0001
Bachelor's degree or higher	Ref	Ref
<b>Household Income</b>		
Less than \$25,000	0.61 (0.54, 0.69)	<.0001
\$25,000 - \$34,999	0.61 (0.54, 0.70)	<.0001
\$35,000 - \$49,999	0.69 (0.61, 0.79)	<.0001
\$50,000 - \$74,999	0.76 (0.69, 0.84)	<.0001
\$75,000 - \$99,999	0.82 (0.74, 0.91)	0.0002
≥\$100,000	Ref	Ref
<b>Age</b>		
18-24 years	1.67 (1.31, 2.13)	<.0001
25-39 years	1.51 (1.38, 1.66)	<.0001



40-54 years	Ref	Ref
55-64 years	0.70 (0.64, 0.77)	<.0001
≥ 65 years	0.37 (0.33, 0.41)	<.0001
<b>Insurance</b>		
Medicare	1.23 (1.09, 1.38)	0.0005
Medicaid	0.989 (0.87, 1.13)	0.87
Private Health Insurance	Ref	Ref
Other Health Insurance	0.974 (0.78, 1.22)	0.81
Uninsured	0.727 (0.57, 0.94)	0.01

## DISCUSSION

In this analysis of national survey data from 2021, we found that telehealth use was common, with 23 percent reporting a telehealth visit in the four weeks prior to the survey. Rates of telehealth use gradually declined over the period from April to October. Overall rates of telehealth use were similar across most demographic subgroups, other than uninsured adults (who had very low telehealth visit rates). However, use of video-enabled telehealth services varied significantly, with rates lower among underserved populations including those with lower incomes; adults without a high school degree; Black, Latino, and Asian respondents; and those without health insurance.

In general, our study findings are consistent with research studies that show disparities in audio-only vs. video-enabled telehealth modalities by race/ethnicity, age, education, income, and health insurance coverage.<sup>20,21,22,23</sup> In a recent survey study, patients with a household income of \$50,000 or more were 34 percent more likely to choose a telehealth visit than those making less than \$50,000.<sup>24</sup> While a phone visit may provide needed access to care in some circumstances, a video appointment may allow a partial physical exam, nonverbal communication, and a stronger patient-provider relationship.<sup>25,26</sup> Moreover, a video visit may allow the provider to check on a patient's home environment, where conditions and family wellbeing are often intertwined with health.

Although research shows that video visits offer some additional benefits compared with telephone visits,<sup>27</sup> they require more complex setup, video-enabled devices, and broadband internet access, which may present barriers for older adults, lower income households, and those with limited English proficiency. In addition to these factors, patients with lower incomes may be more likely to use audio-only services because they are at work during appointments or lack privacy at home.<sup>28</sup> Consistent with these concerns, we also found lower use of video-enabled telehealth services among adults with low-incomes and those without a high school degree. However, the use of video-enabled telehealth among transgender individuals was significantly higher than other groups, though the sample size of transgender individuals was small; future research analyzing telehealth use in this population could provide important insights.<sup>29</sup>

There may be other differences across different population groups, such as telehealth skepticism, that are not captured in the HPS. A new poll of Americans aged 50 or older found that people of color were twice as likely as White respondents to report concerns about the quality of care via telehealth (34% vs. 17%), health information security (30% to 9%), privacy (20% to 6%), and coverage/reimbursement issues (28% to 13%).<sup>30</sup>

In terms of age, adults under 65 years old mostly used video-enabled telehealth visits, while the majority of adults 65 or older with a recent telehealth visit used audio-only. These findings are consistent with a recent study that found that 26 percent of Medicare beneficiaries lack access to a desktop, laptop, or smartphone at

home.<sup>31</sup> Some seniors may also encounter barriers related to technological literacy, cognitive decline, and physical disability.<sup>32</sup>

To help overcome these barriers, almost \$1 billion from the American Rescue Plan (ARP) of 2021 was distributed to nearly 1,300 HRSA-funded health centers in all 50 states, the District of Columbia, and the U.S. territories to support a wide range of projects,<sup>33</sup> including access to telehealth. The ARP also increased tax credits for Marketplace coverage to help millions of people find more affordable health coverage.

Our study reveals that across all demographics, the lowest telehealth use was among uninsured individuals. Patients with Medicaid, Medicare, and private insurance had the highest rates of telehealth use when compared to the uninsured, respectively. A recent ASPE report found that during the COVID-19 PHE, CMS and states significantly expanded access to telehealth to ensure that Medicaid enrollees could receive health care services outside of their regular health care delivery sites.<sup>34</sup> Another ASPE brief found that telehealth use for low-income beneficiaries dually-enrolled in Medicare and Medicaid was higher compared with beneficiaries with Medicare only (6.3% vs. 5.0%).<sup>35</sup> Furthermore, while the size of the uninsured population appears to have been largely stable during the pandemic,<sup>36</sup> cost barriers to care might increase due to income or job loss.

Evidence on the impact of COVID-19 on the use of telehealth is timely and policy-relevant.<sup>37</sup> The disparities evident in our results suggest new approaches beyond those strategies implemented during the pandemic will be needed to ensure equitable access to telehealth, particularly video-enabled services. For example, considerations for the equitable future use of telehealth as a supplement or replacement for some in-person care need to consider patient-centered outcomes including patient preferences, content of services and frequency of visits, technology access, and quality of care.

This analysis has several limitations that are important to note. The survey's response rate ranges from 1.3 percent to 10.3 percent, depending on the week.<sup>38</sup> Despite using weighted data to mitigate non-response bias, the inherent nature of Internet-based surveys can produce a bias based on the respondents' Internet accessibility and level of comfort and familiarity with technology. Individuals who are technologically savvy are more likely to respond to online surveys such as the HPS, which can limit its generalizability to other populations. Finally, our analysis was not able to control for baseline differences in health status or overall rates of health care use; in part, groups with higher than average rates of telehealth use in the previous four weeks may simply reflect groups that are more likely to use any health care.

However, despite the limitations noted, our study has several strengths. The HPS is timely. It is based on self-reported information from telehealth users, providing direct feedback from patients that is not captured in other data sources such as claims. In addition, current claims data do not readily allow for the identification of audio-only vs. video-enabled telehealth services. Finally, the HPS survey is released in a timely manner and enables assessments of recent telehealth trends, and it also allows for comparisons across different insurance types. As other surveys become available in the coming years, it will be important to replicate the analyses here to determine if the findings are similar.

## CONCLUSION

National survey data from the Census Bureau show a gradual decline in telehealth utilization among adults and children between April and October 2021. We found disparities in utilization of telehealth services including the use of video vs. audio modalities along dimensions including race and ethnicity, age, education, income, and health insurance. Investments in internet access, video-enabled devices, and culturally competent care are needed to ensure equitable use of telehealth services.

Our analysis also underscores the need for more research to better understand the value of telehealth on outcomes across different patient populations and to inform policymaking to ensure equitable access to high quality care.

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