



## Updated National Survey Trends in Telehealth Utilization and Modality (2021-2022)

Telehealth utilization rapidly expanded during the onset of the COVID-19 pandemic and continues to provide critical access to health care services. Updated trends show a steady use of telehealth with a slightly higher proportion of video-based versus audio-only services by March 2022; however, disparities persist in populations and across insurance types.

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### KEY POINTS

- Telehealth utilization has changed since the steep increase from the early stages of the COVID-19 pandemic. This report updates prior findings on national trends of telehealth use through an analysis using the Census Bureau's Household Pulse Survey data from April 2021 through August 2022. Understanding patterns and factors associated with telehealth use are important to inform policy decisions.<sup>1-4</sup>
- Compared to earlier periods in the pandemic, telehealth utilization was lower during the study period (April 14, 2021 through August 8, 2022), but continued to remain above pre-pandemic levels.<sup>5</sup>
- Telehealth use rates varied throughout the study period between 20.5% and 24.2%, with an average of 22.0% of adults reporting use of telehealth in the last four weeks.
- Telehealth use rates were lowest among people who are uninsured (9.4%), young adults ages 18 to 24 (17.6%), and residents of the Midwest (18.7%).
- The highest rates of telehealth visits were among those covered by Medicaid (28.3%) and Medicare (26.8%), individuals who are Black (26.1%), and those earning less than \$25,000 (26.4%).
- Individuals who are Hispanic or Latino, Black, and Asian were more likely to use telehealth, specifically audio-only telehealth, than individuals who are White; however, they were less likely to use video telehealth services than individuals who are White. There were significant disparities among subgroups in terms of audio-only versus video-based telehealth use.
- Persistent disparities in accessing video telehealth services requires further study on patient preferences and how broadband programs, technology resources, and technology literacy training programs can improve patient access to video telehealth services.

## BACKGROUND

Telehealth use in the United States grew significantly within the first three months of the COVID-19 pandemic (January – March 2020), providing access to critical health services, enabling communication between health care providers and patients, and remote monitoring of conditions through the use of synchronous, real-time modalities via audio-only or internet-based video on mobile phones and digital devices as well as asynchronous methods (e.g., store and forward and patient portals).<sup>5,6</sup>

Telehealth use in the last half of 2020 remained high, accounting for 30.2% of all health center visits during June – November 2020, according to one study.<sup>7</sup> By April 2021, the national telehealth utilization rate among adults ages 18 years and older was at 27%, which is lower than early pandemic telehealth use, but then declined to 22% by mid-late 2021 based on an earlier ASPE study.<sup>1</sup> Analyses of commercial claims have shown that telehealth services were mostly rendered by social workers and primary care and psychiatry/psychology clinicians, with more than a quarter (26%) of claims for psychotherapy delivered through telehealth.<sup>8</sup> However, while evidence on patient preferences regarding modality and the impact of telehealth on quality of care and patient outcomes is still being explored, equitable access to telehealth services – particularly synchronous, real-time video telehealth – remains a significant concern and potential barrier to health care during the pandemic.<sup>9</sup>

The expected end of the public health emergency on May 11, 2023 may impact telehealth flexibilities introduced during the pandemic for various state Medicaid programs and private payers.<sup>4</sup> In addition, recent legislation extended telehealth flexibilities for Medicare until December 31, 2024 to further understand ongoing patterns of telehealth utilization and disparities which are critical to informed policy-making.<sup>10</sup>

This report provides an update to an earlier ASPE Issue Brief that analyzed telehealth utilization using the Census Bureau’s Household Pulse Survey (HPS) from April 14, 2021 to October 11, 2021.<sup>1</sup> Specifically, in this study, national trends in telehealth utilization were analyzed from April 14, 2021 through August 8, 2022 with results that are similar to the previous analysis. In addition, descriptive and multivariable regression analyses were performed to better understand telehealth use and more specifically video-enabled telehealth among different populations.

## METHODS

### *Data Sources*

We used the Household Pulse Survey (HPS) data. This is an online survey, administered by the Census Bureau to measure U.S. households’ experiences and impact of emerging issues during the COVID-19 pandemic. The HPS response rate ranges from 1.3% to 10.3% and varies across survey cycles.<sup>11</sup>

Respondents must be adults ages 18 and older and they are asked to answer questions on use of telehealth for both themselves and children in their household. \*

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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?”

† 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.

‡ 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.

Data on overall telehealth use was available for the weeks between April 14, 2021 through August 8, 2022, our study period. Information on telehealth service by modality (audio-only vs. video telehealth) was available only for the weeks from July 21, 2021 to August 8, 2022.<sup>12</sup>

### *Data Analysis*

Overall telehealth use was evaluated from April 14, 2021, to August 8, 2022, for adult telehealth users (N=265,367). Analysis by telehealth modality (video vs. audio-only) was performed on a secondary cohort\* (N=143,462 respondents from July 21, 2021 through August 8,2022)) representing a subset of the first cohort of overall telehealth users.

The data were weighted using person-level weights and replicate weights to account for sampling and response bias.<sup>11</sup> Descriptive statistics followed by bivariate analysis (stratification and crosstabulations) and multivariable logistic regression modeling were conducted for both cohorts to identify predictors of telehealth use. Independent variables in the multivariable model included race and ethnicity, age, gender, education, income, insurance, and region. We repeated our multivariable analysis with the sample stratified by insurance type. A p-value below .05 was considered statistically significant. All analyses used survey weights to mitigate non-response bias and Taylor Series Expansion/Linearization for variance estimation.

## **RESULTS**

### *Characteristics of Telehealth Users*

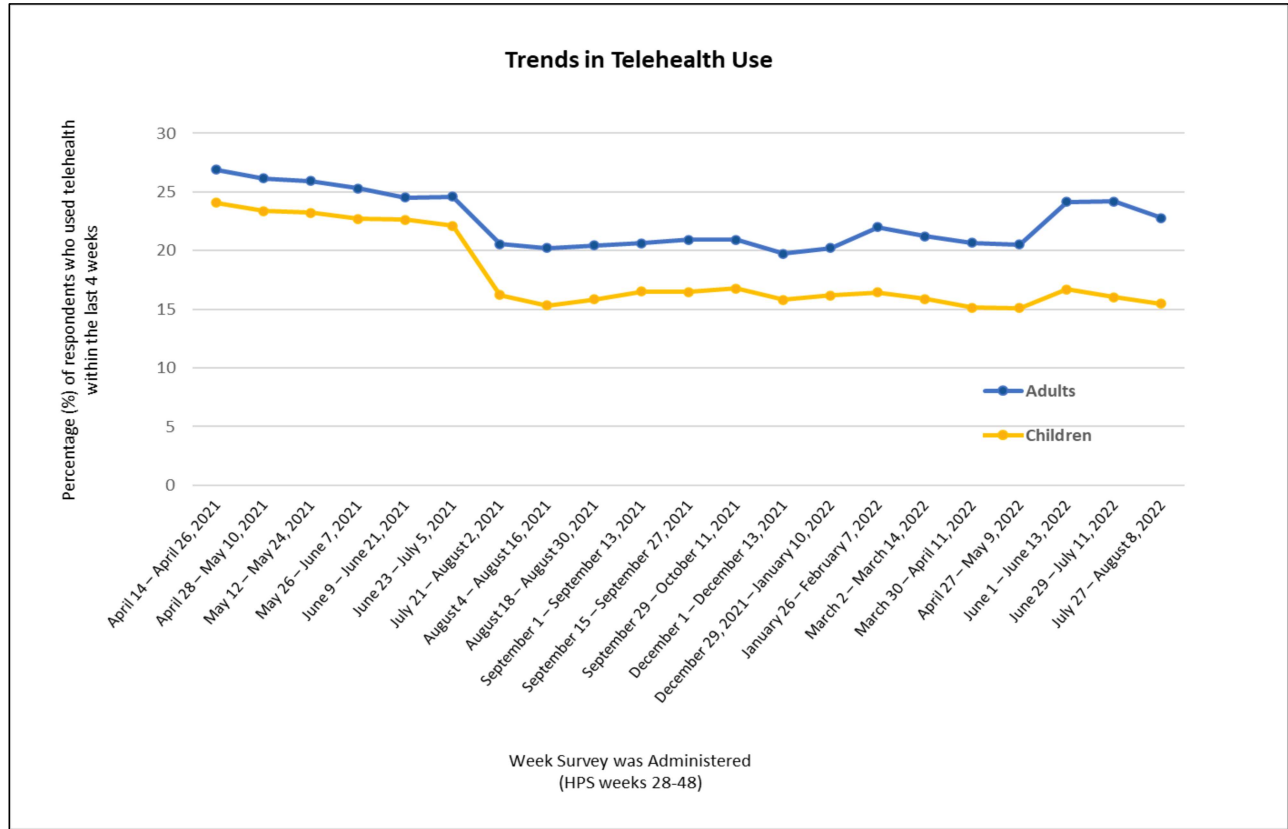
Among the 1,180,248 adults who answered the telehealth question, 22.5% reported having utilized telehealth services (audio-only or video) within the last four weeks. Among 367,887 adults with a child in the household, 18.1% reported that a child in the household had used telehealth services in the prior four weeks.

Figure 1 shows trends in the percentage of adults and children that had used telehealth services in the prior four weeks. There was a slight decline in overall telehealth use in July 2021 that persisted until June of 2022 before climbing again slightly; however, telehealth use among adults remained above 20% throughout the study period. Rates for children were slightly lower, and the gap compared to adults has gradually widened over time. While other studies have found that overall rates of telehealth use have remained fairly stable for adults, rates for children have gradually declined in 2022.<sup>13</sup> In one study, telehealth use among pediatric patients varied by subspecialty ranging from 6% to 73% of total visits with a preference for in-person visits among those having non-English language preference.<sup>14, 15</sup>

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**Telehealth use consistently remained above 20% from 2021-2022 and for all population groups. Disparities persisted in video utilization from July 2021 to August 2022.**

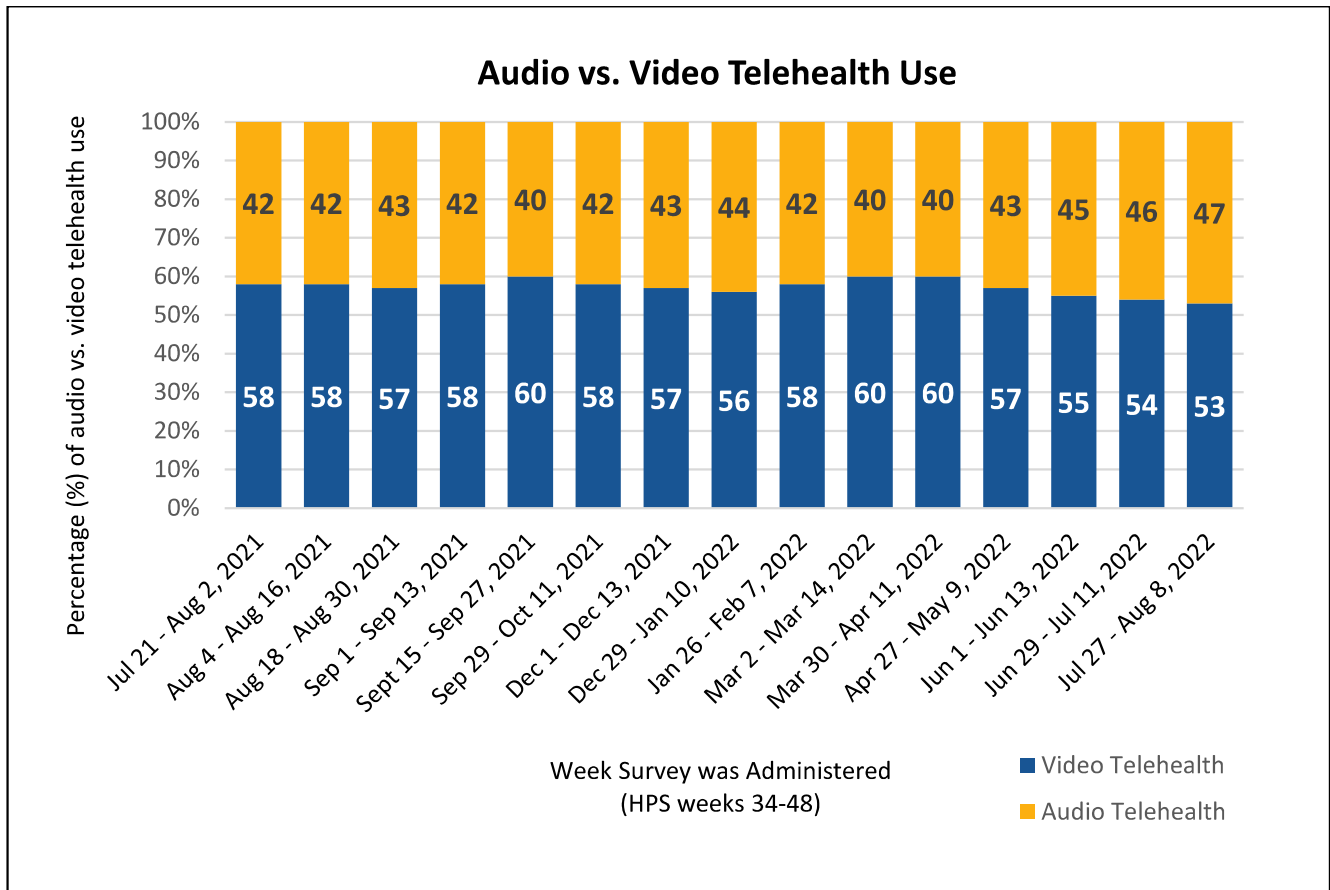
**Figure 1. Percentage of Adults and Children\* Who Used Telehealth Services, April 14, 2021 – August 8, 2022**



**Note:** \*Reflects telehealth use reported by adult respondents for any child in the household over the previous 4 weeks. Note that the survey is typically on a bi-weekly basis, although some weeks were not surveyed, such as weeks in November of 2021.

Figure 2 illustrates the share of adults with telehealth visits who utilized audio-only versus video telehealth. More than half of telehealth users reported use of video telehealth during each wave of the survey from July 2021 to August, 2022, but decreased during June 1, 2022 through August 8, 2022, for reasons that are not yet well understood.

**Figure 2. Percentage of Adults Who Used Audio-only vs. Video Telehealth Services, July 21, 2021 – August 8, 2022**



*Demographic Characteristics of Overall and Audio-only vs. Video Adult Telehealth Use*

Table 1 presents the findings by demographic categories for each of the two cohorts analyzed: overall telehealth users (first cohort) and the proportion of survey respondents who reported the modality of telehealth visit in the prior four weeks from July 2021-August 2022 (second cohort).

Among survey respondents (first cohort), telehealth utilization was lowest among people who were uninsured (9.4%), individuals ages 18-24 (17.6%), and those residing in the Midwest (18.7%). Telehealth use was highest among those with Medicaid (28.3%) and Medicare (26.8%), Black respondents (26.1%), and those earning less than \$25,000 (26.4%).

Subgroup analysis comparing audio-only vs. video telehealth among telehealth users was conducted for the second cohort\* surveyed between July and August 2021. Although we acknowledge differences in the two cohorts that make them not comparable, we noted that the characteristics of those reporting higher proportion of video services (second cohort) were similar with those having a lower overall telehealth use (first cohort). Among these respondents (second cohort), higher proportion of video visits compared to audio-only visits were observed in those having lower overall rates of telehealth use. For example, White respondents reported having an overall telehealth use of 19.6% but had a higher proportion of their telehealth visits using video (61.3%) compared to audio-only (38.7%). This pattern remained consistent among telehealth users who were between 18 and 24 years of age (72.5%), and private health insurance enrollees (65.3%). Audio-only telehealth use was highest among those with less than a high school education (64.2%) and adults ages 65 and

older (56.5%). These results are similar to the findings from our previous analysis of Census HPS data through October 11, 2021.<sup>1</sup>

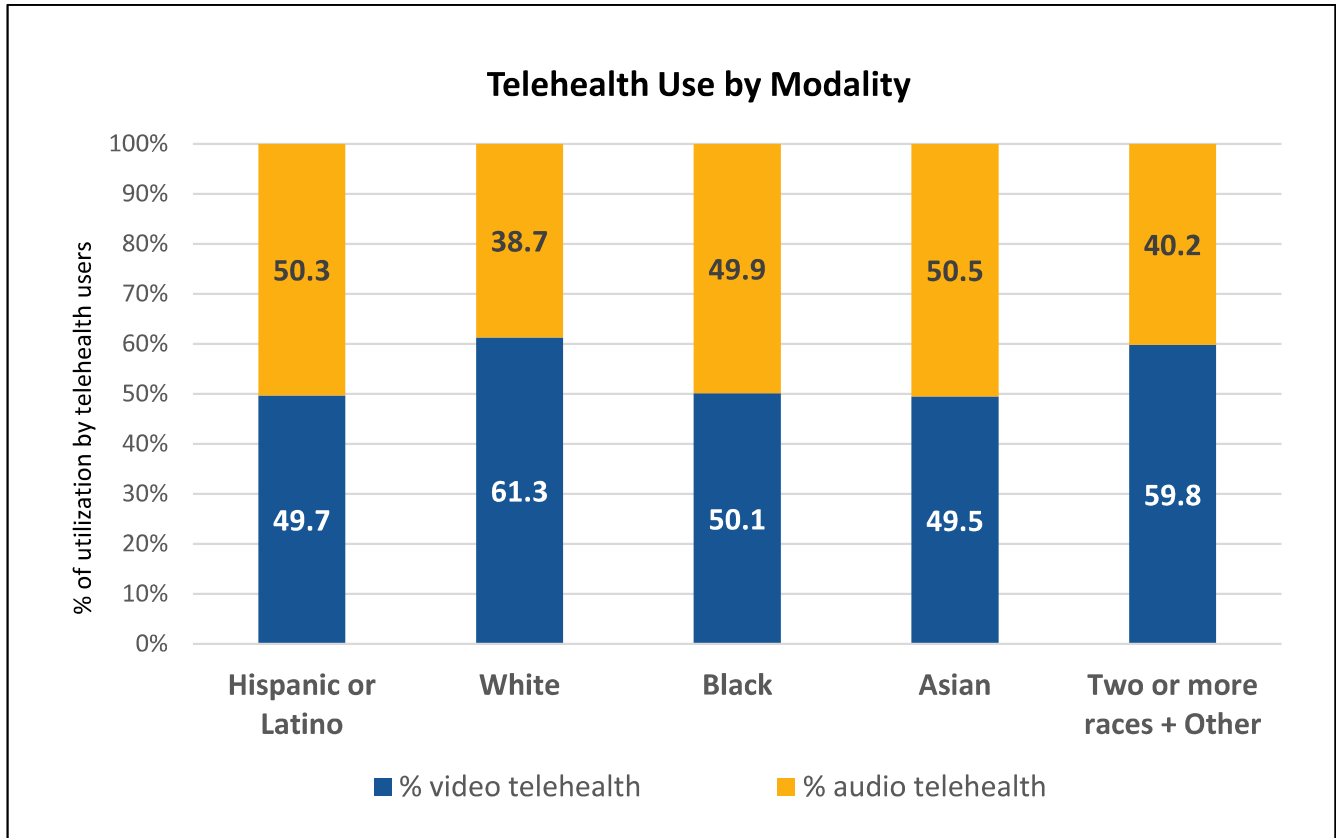
\* Note: The telehealth modality question was included in the Household Pulse Survey (HPS) starting July 21, 2021.

**Table 1. Rates of Telehealth Use and Audio-only vs. Video Modality, by Demographic Categories, April 14, 2021 – August 8, 2022**

	% with a Telehealth Visit in Previous Four Weeks April 14, 2021 to August 8, 2022	Second Cohort* (July 21, 2021 to August 8, 2022)		
		% with a Telehealth Visit in Previous Four Weeks	% of Telehealth Visits by Video in Previous Four Weeks	% of Telehealth Visits by Audio-only in Previous Four Weeks
<b>Race and Ethnicity</b>				
Hispanic or Latino	23.9	22.7	49.7	50.3
White alone, not Latino	20.7	19.6	61.3	38.7
Black alone, not Latino	26.1	25.0	50.1	49.9
Asian alone, not Latino	21.7	20.8	49.5	50.5
Two or more races + Other	25.5	24.2	59.8	40.2
<b>Age</b>				
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
<b>Education</b>				
Less than high school	24.5	24.0	35.8	64.2
High school or GED	20.7	19.7	46.5	53.5
Some college/Associate's degree	22.8	21.6	58.3	41.7
Bachelor's degree or higher	22.4	21.3	66.7	33.3
<b>Household Income</b>				
Less than \$25,000	26.4	25.3	47.6	52.4
\$25,000 - \$34,999	23.3	21.9	48.9	51.1
\$35,000 - \$49,999	21.8	20.6	53.3	46.7
\$50,000 - \$74,999	21.0	19.9	56.9	43.1
\$75,000 - \$99,999	20.2	19.2	62.0	38.0
> \$100,000	20.4	19.4	67.9	32.1
<b>Insurance</b>				
Medicare	26.8	25.5	46.1	53.9
Medicaid	28.3	26.8	53.4	46.6
Private	20.2	19.2	65.3	34.7
Other Health Insurance	24.4	23.1	53.8	46.2
Uninsured	9.4	9.0	46.9	53.1
<b>Census Region</b>				
Northeast	23.3	22.3	59.6	40.4
South	21.3	20.1	58.0	42.0
Midwest	18.7	17.7	57.7	42.3
West	24.9	23.9	54.1	45.9

Figure 3 illustrates disparities in video telehealth use by race and ethnicity; video telehealth as a share of all telehealth use was lower among Hispanic or Latino (49.7%), Asian (49.5%), and Black (50.1%) survey respondents.

**Figure 3. Telehealth Modality (Video vs. Audio-only) Among Telehealth Users, By Race/Ethnicity, July 21, 2021 – August 8, 2022**



*Demographic Predictors Associated with Telehealth Use (Multivariable Model: First Cohort)*

Table 2 shows the demographic factors that were predictors of recent telehealth use after multivariable adjustment (first cohort). Those who were Hispanic or Latino, Black, or reported two or more races or other race had higher odds of using telehealth in the last 4 weeks than White non-Latino respondents. In addition, telehealth use was highest among those with lower incomes and declined as income rises. Individuals with Medicare, Medicaid, or Other insurance<sup>†</sup> were more likely to use telehealth than those with Private Insurance, while people without any health insurance were the least likely to use telehealth.

<sup>†</sup> Other insurance includes: TRICARE or other military health care, Veteran’s Administration (VA) Health Care, Indian Health Service (IHS), and Other health insurance.

**Table 2: Adjusted Odds of Telehealth Utilization by Respondent Demographics, April 14, 2021 – August 8, 2022**

Demographics	Odds Ratios (95% Confidence Interval)	P-value
<b>Race and Ethnicity</b>		
Hispanic or 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)	0.6085
Two or more races + Other Races, not Latino	1.27 (1.20, 1.35)	<.0001
White alone, not Latino	Ref*	Ref*
<b>Age</b>		
18-24 years	1.06 (0.96, 1.16)	0.2701
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>Education</b>		
Less than high school	0.91 (0.78, 1.05)	0.1988
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)	0.1532
≥ \$100,000	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
<b>Census Region</b>		
Northeast	0.91 (0.88, 0.95)	<.0001
South	0.82 (0.79, 0.85)	<.0001
Midwest	0.70 (0.67, 0.72)	<.0001
West	Ref*	Ref*

†Telehealth modalities were unavailable until HPS week 34 conducted on July 21, 2021.

‡ Insurance categories were coded to be mutually exclusive.

\* Reference value/control group for calculation of odds ratios intervals.

Table 3 shows the demographic predictors of video telehealth among telehealth users after multivariable adjustment (second cohort). Age was the strongest predictor of video telehealth use, with young adults having an odds ratio of 4.55 compared to adults 65 and older and a declining rate of video telehealth use for each older age group. Compared to females, males were less likely to use video telehealth, whereas transgender individuals were 3.12 times more likely to use video telehealth.



Video telehealth use was less likely among lower income households and those with lower educational attainment compared to those who had a household income of  $\geq$  \$100,000 and a bachelor’s degree or higher. The rates of video telehealth use rose steadily as household income or educational attainment increased. Black, Hispanic or Latino, and Asian individuals were less likely to use video telehealth than White respondents, with Asians having the lowest odds ratio of 0.55. Respondents who were insured by Medicare were 1.23 times more likely to use video telehealth compared to those who were insured by a private payer. Lastly, those residing in the Midwest region were less likely to use video telehealth compared to those residing in the West.

**Table 3: Predictors of Video Telehealth Utilization Among Telehealth Users, July 21, 2021 – August 8, 2022**

Demographics	Odds Ratios (95% Confidence Interval)	P-value
<b>Race and Ethnicity</b>		
Hispanic or 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
Two or more races + Other, not Latino	0.98 (0.84, 1.14)	0.7527
White alone, not Latino	Ref*	Ref*
<b>Gender Identity</b>		
Male	0.929 (0.87, 1.00)	0.038
Female	Ref*	Ref*
Transgender	3.12 (1.72, 5.68)	0.0002
Other	1.10 (0.83,1.46)	0.4998
<b>Age</b>		
18-24 years	4.55 (3.51, 5.91)	<.0001
25-39 years	4.12 (3.60, 4.71)	<.0001
40-54 years	2.73 (2.42, 3.08)	<.0001
55-64 years	1.92 (1.70, 2.16)	<.0001
$\geq$ 65 years	Ref*	Ref*
<b>Education</b>		
Less than high school	0.50 (0.347, 0.709)	0.0001
High school or GED	0.60 (0.541, 0.657)	<.0001
Some college/associate’s degree	0.81 (0.753, 0.864)	<.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, 0.78)	<.0001
\$50,000 - \$74,999	0.76 (0.69, 0.84)	<.0001
\$75,000 - \$99,999	0.82 (0.74, 0.91)	0.0002
$\geq$ \$100,000	Ref*	Ref*
<b>Insurance</b>		
Medicare	1.23 (1.09, 1.38)	0.0005
Medicaid	0.99 (0.87, 1.13)	0.8709
Private	Ref*	Ref*
Other Health Insurance	0.97 (0.78, 1.22)	0.8145
Uninsured	0.73 (0.57, 0.94)	0.0137
<b>Census Region</b>		
Northeast	1.07 (0.96, 1.19)	0.2474
South	1.05 (0.96, 1.14)	0.2648
Midwest	0.86 (0.78, 0.94)	0.0015
West	Ref*	Ref*

†Telehealth modalities were unavailable until HPS week 34 conducted on July 21, 2021.

‡ Insurance categories were coded to be mutually exclusive.

\*Reference value/control group for calculation of odds ratios intervals.

Table 4 shows demographic predictors of video telehealth use by individuals, stratified by different insurance types. Disparities in access to video telehealth were observed in most insurance types similar to the overall telehealth users. Generally, younger adults, those with higher incomes, and those with more education were more likely to use video telehealth across insurance types. One notable exception is the absence of disparities among Black and Latino respondents compared to White respondents covered by Medicare; however, disparities in video telehealth access were greater among Asian respondents. These findings suggest Medicare may provide more equitable access to video telehealth services compared to other payers but can improve its access for Asians.

Table 4: Predictors of Video Telehealth Utilization Among Telehealth Users, Stratified by Insurance Type, July 21, 2021 – August 8, 2022

Demographics	Medicare OR (95% CI) P-value	Medicaid OR (95% CI) P-value	Private OR (95% CI) P-value	Other Health Insurance OR (95% CI) P-value	Uninsured OR (95% CI) P-value
<b>Race and Ethnicity</b>					
Hispanic or Latino	0.88 (0.71, 1.11) 0.286	0.57 (0.43, 0.77) 0.0002*	0.76 (0.66, 0.88) 0.0003*	1.08 (0.61, 1.91) 0.787	0.50 (0.28, 0.89) 0.017*
Black alone, not Latino	1.08 (0.89, 1.31) 0.453	0.62 (0.46, 0.83) 0.001*	0.83 (0.70, 0.99) 0.037*	0.57 (0.31, 1.03) 0.060	0.99 (0.49, 1.99) 0.969
Asian alone, not Latino	0.49 (0.34, 0.70) 0.0001*	0.42 (0.23, 0.76) 0.004*	0.59 (0.49, 0.71) <0.0001*	1.51 (0.52, 4.32) 0.447	0.24 (0.09, 0.66) 0.006*
Two+ races / Other, not Latino	0.98 (0.73, 1.33) 0.915	0.76 (0.52, 1.10) 0.142	1.01 (0.82, 1.23) 0.952	1.62 (0.75, 3.48) 0.221	0.78 (0.25, 2.41) 0.659
White alone, not Latino	Ref**	Ref**	Ref**	Ref**	Ref**
<b>Gender Identity</b>					
Male	0.92 (0.82, 1.04) 0.171	0.97 (0.76, 1.25) 0.833	0.96 (0.88, 1.05) 0.387	0.97 (0.65, 1.45) 0.863	0.50 (0.31, 0.79) 0.003*
Female	Ref**	Ref**	Ref**	Ref**	Ref**
Transgender	4.37 (0.92, 20.75) 0.063	3.18 (1.26, 8.04) 0.015*	2.21 (1.02, 4.76) 0.044*	755.88, (19.52, >999.99) 0.0004*	2.26 (0.2, 25.34) 0.510
Other	1.01 (0.59, 1.73) 0.987	1.2 (0.63, 2.3) 0.575	1.15 (0.77, 1.71) 0.495	0.75 (0.21, 2.66) 0.652	0.83 (0.18, 3.94) 0.814
<b>Age</b>					
18-24 years	9.92 (3.57, 27.6) <0.0001*	3.14 (1.30, 7.56) 0.011*	5.04 (3.63, 7.00) <0.0001*	3.49 (1.03, 11.75) 0.044*	2.26 (0.48, 10.77) 0.305
25-39 years	4.02 (2.67, 6.05) <0.0001*	3.85 (1.92, 7.73) 0.0001*	4.34 (3.60, 5.24) <0.0001*	2.37 (1.17, 4.83) 0.017*	2.2 (0.67, 7.26) 0.197
40-54 years	2.31 (1.88, 2.83) <0.0001*	2.26 (1.13, 4.51) 0.021*	3.13 (2.61, 3.76) <0.0001*	1.44 (0.73, 2.85) 0.290	1.41 (0.43, 4.69) 0.571
55-64 years	2.25 (1.90, 2.67) <0.0001*	1.69 (0.83, 3.46) 0.151	1.97 (1.63, 2.37) <0.0001*	0.99 (0.53, 1.84) 0.967	1.07 (0.32, 3.62) 0.914
> 65 years	Ref**	Ref**	Ref**	Ref**	Ref**
<b>Education</b>					
Less than high school	0.51 (0.28, 0.94) 0.030*	0.50 (0.24, 1.04) 0.062*	0.34 (0.17, 0.67) 0.002*	0.03 (0.00, 0.32) 0.004*	1.51 (0.50, 4.59) 0.466
High school or GED	0.67 (0.58, 0.79) <0.0001*	0.57 (0.43, 0.75) <0.0001*	0.59 (0.51, 0.68) <0.0001*	0.53 (0.29, 0.95) 0.033*	0.70 (0.41, 1.19) 0.187
Some college/associate's degree	0.84 (0.75, 0.94) 0.002*	0.87 (0.69, 1.10) 0.240	0.76 (0.69, 0.84) <0.0001*	1.14 (0.76, 1.70) 0.537	1.04 (0.64, 1.68) 0.882
Bachelor's degree or higher	Ref**	Ref**	Ref**	Ref**	Ref**
<b>Household Income</b>					
Less than \$25,000	0.50 (0.41, 0.61) <0.0001*	0.66 (0.42, 1.04) 0.073	0.61 (0.49, 0.78) <0.0001**	1.04 (0.52, 2.09) 0.906	0.97 (0.43, 2.18) 0.938
\$25,000 - \$34,999	0.57 (0.46, 0.7) <0.0001*	0.62 (0.38, 1.00) 0.050*	0.65 (0.53, 0.79) <0.0001*	0.69 (0.35, 1.34) 0.268	0.7 (0.29, 1.71) 0.429
\$35,000 - \$49,999	0.72 (0.59, 0.88) 0.001*	0.62 (0.37, 1.03) 0.065	0.69 (0.57, 0.82) <0.0001*	0.77 (0.4, 1.47) 0.423	0.94 (0.37, 2.37) 0.895
\$50,000 - \$74,999	0.71 (0.59, 0.85) 0.0002*	0.79 (0.46, 1.35) 0.386	0.79 (0.70, 0.90) 0.0002*	0.71 (0.36, 1.42) 0.336	1.13 (0.48, 2.64) 0.777
\$75,000 - \$99,999	0.86 (0.71, 1.04) 0.125	0.91 (0.44, 1.91) 0.810	0.81 (0.72, 0.92) 0.001*	0.78 (0.38, 1.6) 0.498	0.9 (0.32, 2.58) 0.850
≥ \$100,000	Ref**	Ref**	Ref**	Ref**	Ref**
<b>Census Region</b>					
Northeast	0.85 (0.7, 1.02) 0.086	1.03 (0.76, 1.39) 0.866	1.24 (1.07, 1.42) 0.003*	1.42 (0.64, 3.17) 0.387	0.91 (0.39, 2.14) 0.825
South	0.66 (0.56, 0.77) <0.0001*	0.87 (0.66, 1.15) 0.325	0.98 (0.86, 1.11) 0.712	1.2 (0.65, 2.19) 0.563	0.85 (0.42, 1.71) 0.643
Midwest	0.80 (0.7, 0.93) 0.003*	1.12 (0.86, 1.45) 0.421	1.18 (1.06, 1.33) 0.003*	1.56 (0.96, 2.52) 0.073	0.79 (0.46, 1.37) 0.401
West	Ref	Ref	Ref	Ref	Ref

\* Significant – p-value below 0.05

\*\*Reference value/control group for calculation of odds ratios intervals.

## DISCUSSION

Overall, 22.0% of adults reported using telehealth in the last four weeks of the study period (from April 2021 to August 2022), which is comparable to ASPE's previous analysis.<sup>1</sup> It should be noted that the Census Pulse data on telehealth use reported in this paper is markedly lower, most likely due to the shorter reference period of telehealth use (four weeks only), compared to higher rates of telehealth use by adults (37.0%) in twelve months that was reported using the 2021 National Health Interview Survey (NHIS) administered by CDC.<sup>16-18</sup> The methodology is different as well. The NHIS is a long running nationally-representative health survey that tracks a number of health care metrics. The HPS, launched in 2020, was designed as an experimental data collection initiative to provide near real-time national estimates based on weighting procedures and administered as a 20-minute online survey to adults 18 years and older. Another difference to note is that the HPS included questions on modality, (video, and audio-only), while this information cannot be obtained using the NHIS because no questions related to telehealth modality were included in the survey.

During the COVID-19 pandemic, telehealth has emerged as an important modality for many, especially those in underserved communities where it has resulted in a reduction of no-show rates.<sup>19,20</sup> Despite the enhanced access to health care, disparities in video telehealth access continue to persist among older patients, people of color, and those with low technology literacy.<sup>21, 22</sup> In addition, factors such as inadequate infrastructure (e.g., internet connection, technology access, workflows) may impact a provider's ability to offer video telehealth.<sup>23</sup> One study found that providers in small practices from communities with high social vulnerability<sup>†</sup> were almost twice as likely as providers in communities with low social vulnerability to use telephones as their primary telehealth modality.<sup>24, 25</sup>

Emerging evidence suggests patient satisfaction is higher with video telehealth visits compared to audio-only telehealth.<sup>26, 27</sup> Studies have also shown that consults via video telehealth are preferred by patients,<sup>28</sup> with evidence of improved patient outcomes<sup>29</sup> and being less likely to have emergency department (ED) visits, in-person, and hospital visits compared to those who did not use video telehealth.<sup>30</sup> However, there is conflicting evidence on whether there are disparities in patient satisfaction with telehealth services among Asian patients.<sup>31</sup> More evidence is needed on patient preferences of telehealth modalities (e.g., video vs. audio telehealth) compared to each other and to usual care (in-person visits).<sup>32</sup> In addition, it is important to expand on smaller studies<sup>33</sup> and studies outside of the U.S.<sup>34</sup> to assess whether there are any differences in these preferences and patient perceptions of their care across populations in the U.S.

Our subgroup analysis found disparities in video telehealth use across payers. For example, Black, Hispanic or Latino, and Asian individuals covered by Medicaid and private insurance were less likely to use video telehealth; however, our model showed that only Asians were less likely to use video telehealth among those covered by Medicare while both Hispanic or Latinos and Asians were less likely to use video telehealth among individuals who are uninsured.

Those covered by Medicaid had the highest rate of telehealth utilization compared to individuals with other sources of coverage, comparable to findings from a previous ASPE analysis.<sup>1</sup> However, based on an ASPE report from January 2022, the status of state Medicaid telehealth flexibilities varied widely and continued to change frequently throughout the pandemic.<sup>4</sup> Some states expanded the use of telehealth permanently, others rescinded all or some of their telehealth flexibilities making some permanent through state legislation, while others were maintained pending the expiration of their state or federal PHE declaration. Variations in state

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<sup>†</sup> The CDC defines **social vulnerability** as "the potential negative effects on communities caused by external stresses on human health. Such stresses include natural or human-caused disasters, or disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss."<sup>23</sup>

Medicaid telehealth policies may impact patients' and providers' understanding of what types of visits will be covered and how services should be billed. There are also numerous equity implications in a telehealth landscape that is constantly shifting. When both federal and state PHEs expire and Medicaid redeterminations resume starting on April 1, 2023, millions of those insured by Medicaid will be impacted through changes in health insurance coverage and may experience changes in their access to health care services, including those provided by telehealth.<sup>10</sup>

The findings of our study suggest those insured by Medicare as being more likely to use telehealth and video telehealth. These findings are consistent with our previous HPS analysis<sup>1</sup> and Medicare FFS claims analyses conducted by ASPE which showed significant increases in use of telehealth by those insured by Medicare during the pandemic.<sup>2</sup> However, those responding to the HPS survey may have higher digital literacy or internet access given its administration as an online survey. Another study found individuals covered by Medicare are less likely to use video telehealth. This study also noted that a potential reason for an overall decrease in telehealth use among older patients may be related to their demographic and geographic distribution, such as a higher share of older adults living in rural areas and lower rates of internet access.<sup>35</sup>

Our study also found respondents reporting as Hispanic or Latino, Black, two or more races and other races had higher overall telehealth use than White or Asian respondents. Despite higher odds of overall telehealth use, Hispanic or Latino, Black, and Asian respondents were significantly less likely to use video telehealth—particularly among those with Medicaid or private coverage—compared to their White counterparts. Video telehealth use rates increased with higher income and education levels and younger age. These results are somewhat counter to a study based on an analysis of the American Life Panel survey, which showed that video telehealth use was highest in early 2021 among Black adults, and among those who were younger, had less than high school education, and had lower income. In addition, the study reported respondents' desire to use video telehealth had increased from pre-pandemic estimates.<sup>36</sup>

Our results are, however, similar to other studies finding disparities in video access to telehealth. For instance, in a study of neurology patients, demographic predictors of those less likely to use video telehealth compared to audio-only telehealth use included patients who were low-income, Black, and those insured by Medicare or Medicaid.<sup>30</sup>

Other studies have also shown lower success in initiating video telehealth visits among Hispanic or Latino patients, those who had low socioeconomic status (SES), and individuals insured by Medicare or Medicaid.<sup>21, 37, 38</sup> Potential reasons for unsuccessful initiation of video telehealth visits may be potential technology barriers, as evidenced in one study including those who did not activate their patient portal prior to the visit.<sup>39</sup> Another study compared video telehealth utilization pre and post COVID-19 PHE and found lower video telehealth rates among males, Asian, Black, American Indian / Alaska Native patients, patients who had limited English proficiency, and those who were insured by Medicaid or Medicare.<sup>40</sup> Younger patients had a preference for video telehealth compared to older adults.<sup>41</sup>

In general, these patterns of disparities likely reflect structural barriers to video telehealth, such as access to technology, devices, broadband internet, technology literacy, and structural racism.<sup>40</sup> Additional research is needed on which health conditions and health services are clinically appropriate to be delivered via telehealth as well as whether video or audio may be a clinically preferred telehealth modality. For example, video telehealth visits may be more appropriate than audio visits for certain clinical conditions and health services requiring visual clues and examination (e.g., dermatology and surgical wound care).<sup>42</sup> However, if health services cannot be accessed in the modality (in-person, video or audio telehealth) associated with the strongest evidence, patient populations may be limited in accessing higher quality care which may affect health outcomes.<sup>43</sup> Further assessment of telehealth's impact on health outcomes will also require

standardized measures such as the Health Care Effectiveness Data and Information Set (HEDIS) quality performance measures.<sup>44</sup>

### *Limitations*

This analysis has several limitations including the survey's response rate that ranges from 1.3 percent to 10.3 percent, depending on the week. Despite applying weights 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. Those who have access to technology and higher levels of health literacy in general, as well as digital literacy, are more likely to respond to online surveys such as the HPS, which can limit its generalizability to other populations. Our analysis was not able to control for baseline differences in overall rates of health care use. Groups reporting higher telehealth use in the last four weeks may simply reflect groups that are more likely to use health care services. Finally, the HPS did not include data to distinguish rural and urban geographic areas; therefore, a comparison could not be made.

### *Policy Implications*

Recent studies showed that video telehealth utilization is associated with a clinical provider's perception of its quality and comparability to in-person visits,<sup>45</sup> as well as whether available technologies are functional and user-friendly in supporting video telehealth.<sup>46</sup> Furthermore, limited technology and health literacy continue to pose challenges for accessing telehealth services among patients with limited English proficiency (LEP). New evidence suggests prior video visit experience may help overcome barriers to video telehealth use.<sup>47</sup> However, the current state of technology and user-friendliness of remote monitoring devices that link to telehealth visits vary, as well as its acceptance among patients, especially those requiring assistance from others initiating telehealth visits and interventions.<sup>48</sup>

A resource that has been studied to enhance accessibility of telehealth has been the use of patient navigators and community health workers to support patients in a telehealth visit. In addition to improving access to video visits, one study demonstrated a return on investment (ROI) through increased adherence to clinic visits that offset implementation costs.<sup>49</sup> This suggests additional policies may be considered for patient navigators and community health workers to assist patients with telehealth visits.

While video telehealth may be more comparable to in-person visits, audio-only telehealth continues to be important as it provides critical health care access for marginalized populations who lack access to technology, broadband or ability to navigate a video telehealth visit. More work needs to be done to enable equitable access to video telehealth by addressing disparities that are further exacerbated by lack of broadband access or limitations in high-speed access impacting those residing in rural areas the most.<sup>50</sup> The challenge with adequate broadband access are being addressed through programs and grants offered by the Federal Communications Commission (FCC) and the U.S. Department of Commerce National Telecommunications and Information Administration (NTIA) with appropriations from the Infrastructure Investment and Jobs Act (IIJA).<sup>51,52,53</sup> In the future, new alternative models for telehealth expansion may need to consider potential access issues<sup>54</sup> especially among individuals who are uninsured.<sup>19</sup>

## **CONCLUSION**

Our study describes recent trends in the use of telehealth during the pandemic that may have implications for policymakers as they consider whether to continue policies and flexibilities that enable access to telehealth services. In addition, our study suggests the importance of reducing disparities in accessing telehealth services, especially video, and highlights the need to improve access by providing more focused outreach to communities who have lower levels of video telehealth utilization.

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## APPENDIX

**Appendix exhibit 1. Table of telehealth utilization percentage (%) from each HPS survey period weeks 28-48 (April 2021 – August 2022)**

<b>DATES</b>	<b>Adults</b>	<b>Children</b>
Apr 14 – Apr 26, 2021	26.9	24.1
Apr 28 – May 10, 2021	26.1	23.4
May 12 – May 24, 2021	25.9	23.2
May 26 – Jun 7, 2021	25.3	22.7
Jun 9 – Jun 21, 2021	24.5	22.6
Jun 23 – Jul 5, 2021	24.6	22.1
Jul 21 – Aug 2, 2021	20.6	16.2
Aug 4 – Aug 16, 2021	20.2	15.3
Aug 18 – Aug 30, 2021	20.5	15.8
Sep 1 – Sep 13, 2021	20.6	16.5
Sept 15 – Sep 27, 2021	20.9	16.5
Sep 29 – Oct 11, 2021	20.9	16.8
Dec 1 – Dec 13, 2021	19.7	15.8
Dec 29 – Jan 10, 2022	20.2	16.2
Jan 26 – Feb 7, 2022	22.0	16.4
Mar 2 – Mar 14, 2022	21.2	15.9
Mar 30 – Apr 11, 2022	20.7	15.2
Apr 27 - May 9, 2022	20.5	15.1
Jun 1 - Jun 13, 2022	24.1	16.7
Jun 29 - Jul 11, 2022	24.2	16.0
Jul 27 - Aug 8, 2022	22.8	15.5

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