CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES
OFFICE OF MINORITY HEALTH

Examining Rural Telehealth During the Public Health Emergency

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KEY FINDINGS

This study's findings provide an overview of the use of telehealth visits for rural and urban fee-for-service Medicare enrollees during January 2018 – June 2021. We compared pre-COVID telehealth utilization (2018-2019) with COVID telehealth utilization (January 2020-June 2021).

Consistent with other studies, we found significant increases in Medicare enrollees' utilization of telehealth services from pre-COVID (2018-2019) to COVID (2020-June 2021). Emergency waiver authorities and flexibilities enacted by Congress allowed for the expansion of provider types that could provide telehealth services and allowed Medicare enrollees to receive telehealth services from their homes and in any geographic area. Our findings indicate that uptake of telehealth visits differed across the country and by location of Medicare enrollees' residences.

Key findings include:

- Medicare enrollees who had the highest percentage of telehealth visits during COVID (January 2020 – June 2021) were more likely to be younger, female, and dually eligible for Medicaid. There were differences by race/ethnicity with Black Medicare enrollees having the fewest telehealth visits.
- Medicare enrollees were most likely to use telehealth for behavioral health visits during the early part of 2020 and this utilization pattern continued through June 2021 compared to other services. Rural Medicare enrollees were more likely to use telehealth for nursing facility and emergency department visits than urban Medicare enrollees.
- States that were high telehealth users pre-COVID became low telehealth users during COVID while low telehealth use states pre-COVID became high telehealth users during COVID.
- States with the highest telehealth use during COVID had slightly higher percentages of household internet subscriptions than states with the lowest telehealth use during COVID (3% to 5% difference based on rural/urban status).
- States with the highest telehealth use during COVID had 50-100% more telehealth visits across diagnoses than states with the lowest telehealth use during COVID.
- Overall, the average total payment per telehealth visit decreased. This decrease was due to how telehealth visits were paid pre-COVID with two payment components including the distant provider (a specialist) and the originating site at a designated rural provider, such as at a critical access hospital or a rural health clinic. During COVID, there were few originating site payments.
- Distance to telehealth providers was greatest for Medicare enrollees who resided in small rural areas.

- Some RHC and CAH leaders interviewed reported they did not use telehealth due to negative financial implications. RHC leaders reported uncertainty about payments continuing as a distant site after the PHE, which limited RHCs' investments in telehealth infrastructure and technology.[i]

[i] Beginning January 1, 2022, RHCs and FQHCs can furnish mental health visits via telecommunications on a permanent basis.

INTRODUCTION

In response to the COVID-19 pandemic, the Centers for Medicare & Medicaid Services (CMS) allowed for flexibilities to facilitate telehealth adoption as a way for patients to safely access care. CMS defines telehealth as health care that is provided using interactive audio and visual communication (including audio-only communication if video capability is not possible) between a patient and provider.[1] Waivers included a number of expansions, including the types of health care professionals that can furnish distant site telehealth services, sites where enrollees can receive telehealth services, and services that could be provided via telehealth. Under a blanket emergency waiver, all health care professionals eligible to bill Medicare for their professional services, such as physical and occupational therapists, can be paid for services provided by telehealth. CMS also allowed the use of some audio-only telehealth services, such as telephone evaluation and management services and educational services.[2] Another key CMS waiver removed limitations on Medicare enrollees' locations when receiving telehealth services, allowing payment for services provided to enrollees outside of rural areas and in their homes. CMS also expanded the list of telehealth services during the public health emergency (PHE), including emergency department visits, initial nursing facility and discharge visits, home visits, and therapy services. During the PHE, CMS exercised enforcement discretion to allow for virtual check-ins and e-visits to be provided to both new and established patients. CMS also finalized creation of a longer virtual check-in code in the CY 2021 Physician Fee Schedule (PFS) final rule..[3]

CMS actions and federal legislation further enhanced access to telehealth services. Through interim final rulemaking, CMS, allowed telehealth to be delivered at the same payment level as in-person visits for the duration of the COVID-19 PHE. In addition, the Coronavirus Aid, Relief, and Economic Security (CARES) Act temporarily allowed for Rural Health Clinics (RHCs) or Federally Qualified Health Centers (FQHCs) to provide distant site telehealth services.[4]

Prior to the COVID-19 PHE, Medicare payment for telehealth services was limited by provider type, enrollee location, service delivered, and telehealth modality.[5] Providers in eight categories were eligible for Medicare telehealth payment—physicians, nurse practitioners (NPs), physician assistants (PAs), certified nurse-midwives, clinical nurse specialists, certified registered nurse anesthetists, clinical psychologists, clinical social workers, and registered dieticians or nutrition professionals.[6] Notably, FQHCs and RHCs were not eligible distant site providers for Medicare payment.[5] Medicare limited originating sites to locations outside of a Metropolitan Statistical Area (MSA) or in a designated Health Professional Shortage Area (HPSA) in a rural census tract. Further, Medicare paid for telehealth services provided to patients located in certain types of facilities, including physician and practitioner offices, hospitals, critical access hospitals (CAHs), RHCs, FQHCs, skilled nursing facilities, and mobile stroke units (originating sites). Medicare did not pay for most telehealth services provided in an enrollee's home. Medicare also maintained a list of telehealth services payable under the Medicare Physician Fee Schedule.[7] Lastly, Medicare solely paid for real-time, interactive audio and visual communication between enrollees and providers. Store-and-forward telehealth was only paid in Alaska and Hawaii.[6] There were opportunities

to offer other virtual services that CMS recognizes as communications technology-based services, which do not have originating site restrictions.[8]

Previous research suggests rural telehealth availability and use prior to the COVID-19 PHE could vary depending on setting or other factors. For example, one national study determined that rural hospitals were less likely to adopt telehealth due to the costs of telehealth technology and access to robust broadband.[9] Another nationally representative study found that rural primary care providers were more likely to report providing telehealth than their urban counterparts, however, rural providers were also more likely to report barriers to using telehealth.[10] Rural providers reported various barriers to implementing telehealth, such as a lack of participating specialists, time constraints, state regulations, and administrative or organizational decisions.[10]

After the emergence of COVID-19, research shows that national telehealth use increased significantly, particularly among Medicare enrollees. A study of Medicare fee-for-service enrollees found that telehealth visits increased 63-fold in 2020, from approximately 840,000 visits in 2019 to nearly 52.7 million visits in 2020. The majority of Medicare enrollees (92%) received telehealth visits, including both audio-only and video technologies, from their homes. The largest increase in telehealth visits was for behavioral health services, with up to 70% of these visits delivered via audio-only. The study also found that telehealth use varied by state, with higher use in the Northeast and West, and lower in the Midwest and South.[4] These variations in telehealth use may have been influenced by variations in state responses to the COVID-19 pandemic, such as differing approaches to social restrictions and lockdowns. Despite national increases in telehealth use, disparities remain between rural and urban residents. Recent studies suggest that rural residents, including Medicare enrollees, used telehealth less often than their urban counterparts during the COVID-19 PHE.[4,11,12]

Rural Medicare enrollees may face unique challenges related to accessing and using telehealth. Rural communities are more likely to face gaps in adequate broadband coverage compared to urban communities, which can limit rural residents' video capabilities and hinder their ability to use telehealth platforms. A 2020 report by the Federal Communications Commission (FCC) estimated that 22.3% of people in rural areas do not have access to 25/3 Mbps broadband, which is the minimum threshold for telecommunications set by the FCC, compared to only 1.5% of people in urban areas.[13] Similarly, rural households were less likely to report having broadband internet subscriptions than urban households in 2018, with the South experiencing the greatest rural-urban difference.[14] Older adults and households with at least one member who had a disability were also less likely to report having a broadband internet subscription.[14] Evidence suggests that greater telehealth use is associated with greater access to broadband in rural areas.[15–17] Several studies indicate that older patients were less likely to have telehealth equipment available[18,19] and less likely to use telehealth.[12,16,20,21] Additional characteristics may also influence telehealth use. Previous studies suggest that telehealth use is less common among males,[20,22] people with lower incomes,[19,21,22] and people who are dually eligible for Medicaid.[12,19] Despite these challenges, telehealth can be a useful tool for expanding access to health care to rural communities and Medicare enrollees.

Purpose of the Study

The purpose of this study is to understand the impact of telehealth versus in-person services on utilization, cost, and access to care for rural Medicare enrollees compared to urban Medicare enrollees. This study examines three research questions:

1. What demographic, geographical, and technological characteristics of telehealth services are associated with increased telehealth use?
2. To what extent did the increased implementation and utilization of telehealth during the PHE impact the cost of patient care, provider utilization, and provider type?
3. To what extent did the COVID-19 pandemic impact the utilization of telehealth in the rural Medicare population according to diagnoses, distance from provider, and internet use?

This study's findings provide an overview of the use of telehealth visits for rural and urban fee-for-service Medicare enrollees during January 2018 – June 2021. We compared pre-COVID telehealth utilization (2018-1019) with COVID telehealth utilization (January 2020-June 2021). The COVID timeframe includes January 2020 when the CDC confirmed the first case of COVID-19 from samples taken in Washington state. We conducted an in-depth analysis comparing different factors among Medicare enrollees and providers from states with the lowest and highest telehealth use. This comparison provides information about how telehealth utilization shifted from pre-COVID to COVID and may inform future telehealth policy decisions.

Data Sources and Methods

We conducted a mixed methods study using quantitative and qualitative methods. The quantitative analyses were completed prior to qualitative data collection to inform selection of states to identify rural healthcare provider interviewees.

Quantitative Data and Analysis

The data used for this analysis were administrative claims data from the Medicare Chronic Condition Warehouse (CCW). The time span was divided into two categories, pre-COVID (January 1, 2018 – December 31, 2019) and COVID (January 1, 2020 – June 30, 2021). The analysis was limited to Medicare fee-for-service enrollees who were enrolled in Medicare Part B during the full calendar year for 2018-2020 and during January – June of 2021, and only paid claims were used.

First, for each state and for each year, we identified the total number of Medicare enrollees, the total number of Medicare enrollees who used telehealth, and the total number of Medicare enrollees who used telehealth more than once during the year from the physician Evaluation and Management services billed in Part B claims and Part A outpatient claims for professional services provided by Federally Qualified Health Centers (FQHC), Rural Health Clinics (RHC) and Critical Access Hospitals (CAH). We also identified the total number of claims in each year and the total number of telehealth claims in each year. We used physician service claims to identify telehealth visits. The telehealth visits are those with Part B claims for place of service code (02),

Healthcare Common Procedure Coding System (HCPCS) code modifiers (95, GT, GQ, G0), and telehealth only HCPCS codes. (Appendix Figure A16,).

Composite scores for telehealth use were created based on principal component analyses. Claims for years 2018 – 2019 were combined and labeled as pre-COVID and claims from 2020 – June 2021 were combined and labeled as COVID. The states were ranked according to their scores. The 10 most extreme states (highest or lowest) were assigned numbers 1 to 10 with 10 being the most extreme. Pre-COVID and COVID extreme state values were totaled, and the highest numbers were considered as having either the highest or the lowest telehealth use in the nation. States were chosen for the analysis based on their composite score, location in the U.S. representing different U.S. Census regions, and greater than 10% of the state's population resided in a rural area. States selected as cases (low telehealth use during COVID) were North Dakota, South Dakota, Wyoming, Tennessee, and Kansas. Controls (high telehealth use during COVID) were Massachusetts, California, Utah, Vermont, and Maryland. See **Appendix A** for details on the selection process.

Within the 10 states, each enrollees' age (<65, 65-<70, 70-<75, 75-<80, 80-<85, ≥85), sex (male or female), race (White, Black, Other), and ZIP level poverty (percentage of people living below the federal poverty level), was gathered using the Master Beneficiary Summary File and American Community Survey (2018-2020) data files. Propensity analysis was conducted matching one case to each control with exact matches on age group, sex, race, and poverty to create a balanced data set. Output from propensity analysis can be found in **Appendix A**. One case Medicare enrollee was matched to each control Medicare enrollee yielding 2,930,064 cases and 2,930,064 controls for the analyses. There were 3,028,926 cases and controls pre-COVID, and 2,831,202 during COVID (See **Figure 1**).

Figure 1: Cases and Controls Pre-COVID, COVID and Total

	Pre-COVID (2018-2019)	COVID (2020-June 2021)	Total
Cases (Medicare enrollees from low telehealth use states based on utilization during COVID)	1,514,463	1,415,601	2,930,064
Controls (Medicare enrollees from high telehealth use states based on utilization during COVID)	1,514,463	1,415,601	2,930,064
Total	3,028,926	2,831,202	

Other variables of interest for case and control enrollees based on the visits they had were obtained from the Medicare enrollees' outpatient services by using Part B carrier claims and Part A outpatient claims for services provided in FQHCs, Rural Health Clinics (RHCs) and Critical Access Hospitals (CAHs). We limited our analysis to physician Evaluation and Management services, which includes but is not limited to behavioral health services, care management/coordination, emergency services, hospital inpatient services, nursing facility services, home services or hospice (see **Appendix A** for full list of inclusion and exclusion criteria).[23] Using these criteria, 99% of all claims pre-COVID (86% all telehealth claims) and 98% during COVID (85% all

telehealth claims) were included. For each claim or visit we recorded the service types using Restructured BETOS Classification System (Office or other outpatient visit for the evaluation and management, behavioral health, emergency, and other), distance between enrollee residence and provider service location (using ZIP code centroids[ii]), primary and secondary diagnoses that were associated with the claim (specific to diabetes, chronic kidney disease, end stage renal disease, behavioral health, respiratory COPD, respiratory asthma, circulatory hypertension, and circulatory congestive heart failure), cost, and payment for the visit. Visits were identified as telehealth or in-person using HCPCS coding. With these characteristics, we obtained two-year totals for each enrollee.

Rural status was defined using the Health Resources and Services Administration's (HRSA) Federal Office of Rural Health Policy (FORHP) rural definition and Rural Urban Commuting Area (RUCA) codes to stratify urban (RUCA code <4), large rural (RUCA code 4<7) and small rural (RUCA 7-10). We also used American Community Survey (2018 and 2020) data to obtain the percent of household internet subscriptions for each ZIP code where a Medicare enrollee resided. These variables as well as all claims totals were merged to the cases and controls.

All analyses were conducted separately on an enrollee level using pre and post data. Medicare enrollees in states with low telehealth use (cases) were compared with Medicare enrollees in states having high telehealth use (controls) to understand what factors may influence the differences in telehealth use. We examined the following variables: percent of visits by specific types (RHC, CAH, and FQHC), diagnoses of the Medicare enrollee, payments made by the Medicare enrollee and Medicare, and distance from Medicare enrollee to provider. All comparisons were conducted for Medicare enrollees residing in urban, large rural, and small rural locations.

The quantitative analysis investigated the following questions:

What demographic, geographical, and technological characteristics of telehealth services were associated with increased telehealth use across all states?

1. Percentage of Medicare enrollees by age, sex, race/ethnicity, and dual enrollment status who used telehealth services stratified by enrollees residing in urban, large rural and small rural
2. Use of telehealth services during COVID-19 tracked monthly by type/location of service provided – office visit, behavioral health, nursing home and emergency department
3. Percentage of telehealth use correlated with county percentage of household internet subscriptions for each state and stratified by U.S. Census region of the country

[ii] A centroid is a point (usually on a map) that defines the center (in this case, of the ZIP code). The centroid (point) is represented by longitude and latitude coordinates. In this study, the ZIP code centroid is used to approximate the Euclidean (or straight line) distance between two ZIP codes.

To better understand differences in how telehealth services were used during COVID-19 among Medicare enrollees, we identified the top five high and bottom five low telehealth use states during COVID-19 and compared these states' utilization of telehealth services pre-COVID-19. The following questions were examined:

1. How did telehealth use differ pre-COVID and during COVID-19 for low and high use states while controlling for the differences between Medicare enrollees from small rural, large rural, and urban locations?
2. To what extent did the increased implementation and utilization of telehealth during the PHE affect the overall cost of patient care by provider type and provider location stratified by location of enrollees (small rural, large rural, and urban)?
    a. Payments made by enrollees and Medicare
    b. Provider type includes primary care, behavioral health and emergency department
    c. Provider location – RHCs, FQHCs and nursing homes
3. Did average payments (Medicare enrollees and Medicare payments) differ between Medicare enrollees of different rural status for high and low telehealth use states, pre-COVID and during COVID?
4. Did average household internet subscriptions differ pre-COVID and during COVID for low and high use states while controlling for the differences between Medicare enrollees from small rural, large rural, and urban locations?
5. How did telehealth use differ between low and high use states for Medicare enrollees of different rural status pre-COVID and during COVID for Medicare enrollees with specific diagnoses?
6. Did average total, minimum, and maximum distances to providers differ between Medicare enrollees by residence (small rural, large rural, and urban) for high and low telehealth use states, pre-COVID and during COVID?
    a. Did distances to providers differ between Medicare enrollees who received telehealth visits versus in-person visits?
7. Did facility type (RHC, CAH, FQHC) affect how telehealth use differed between low and high use states for Medicare enrollees of different rural status pre-COVID and duringCOVID-19?

Qualitative Data Collection and Analysis

Results of the quantitative analysis were used to inform the collection of qualitative data from rural health care providers in high and low telehealth use states. We conducted 30-minute, virtual interviews with eight representatives of health care organizations—four from low telehealth use states and four from high telehealth use states. Interviews were completed during June – August July 2022. Interviews covered topics related to use of telehealth prior to the PHE, adoption of telehealth during the PHE, and current use of telehealth.

QUANTITATIVE FINDINGS

Trends in Overall Telehealth Use: Pre-COVID and COVID

Overall, 34.4 million Medicare enrollees were furnished over 860 million evaluation and management (E/M) services during pre-COVID-19 (2018-2019) across all 50 states and the District of Columbia, and a total 31.6 million Medicare FFS enrollees used over 570 million E/M services during COVID (2020- June 2021). The Medicare Part B E/M visits conducted via telehealth increased in rural areas from 0.4% during pre-COVID-19 to 9.4% during COVID of total E/M visits, and from 0.06% during pre-COVID to 12% during COVID in urban areas. **Figure 2** shows the percent change in telehealth visits as a proportion of total E/M visits from pre-COVID to COVID.

Figure 2: Percentage of Telehealth Visits among Medicare FFS Enrollees from Pre-COVID (2018 to 2019) to COVID (2020 to June 2021), by Rural/Urban Status and Enrollees' Characteristics

	Urban: Pre-COVID	Urban: COVID	Large Rural: Pre-COVID	Large Rural: COVID	Small Rural: Pre-COVID	Small Rural: COVID
Age Category						
<65	0.19%	19.05%	0.75%	15.70%	0.93%	15.17%
65-70	0.05%	13.08%	0.21%	9.91%	0.31%	9.30%
70-74	0.04%	11.92%	0.18%	8.96%	0.26%	8.45%
75-79	0.04%	10.55%	0.18%	7.97%	0.25%	7.58%
80-85	0.04%	9.44%	0.21%	7.36%	0.31%	6.98%
85+	0.04%	8.54%	0.29%	7.49%	0.42%	7.30%
Sex						
Male	0.06%	10.64%	0.29%	8.59%	0.39%	8.18%
Female	0.06%	13.00%	0.32%	10.48%	0.43%	9.92%
Dual-Enrollment						
Non Dual	0.04%	11.11%	0.14%	8.46%	0.22%	7.98%
Dual*	0.15%	14.96%	0.82%	13.45%	1.01%	12.85%
RTI Race/ Ethnicity						
Non-Hispanic White	0.06%	11.67%	0.29%	9.52%	0.40%	9.05%
Black	0.09%	11.38%	0.36%	8.44%	0.52%	7.95%
Asian / Pacific Islander	0.06%	15.36%	0.27%	10.99%	0.46%	10.67%
Hispanic	0.08%	14.41%	0.57%	13.33%	0.65%	11.59%
American Indian / Alaska Native	0.17%	14.07%	0.41%	12.54%	0.54%	11.72%
Other/ Unknown	0.06%	14.12%	0.24%	10.88%	0.34%	10.71%

*Includes both full-benefit and partial-benefit dually eligible enrollees. Eligibility for dual status is based on the Medicare enrollee's income (based on the federal poverty level) and assets.

Figures 3 to 6 show monthly trends in telehealth use as a proportion of total E/M visits by Restructured BETOS Classification System (RBCS) E/M subcategories:

office/outpatient services, behavior health (BH) services, nursing facility (NF) services, and emergency department (ED) services. The RBCS is a taxonomy that allows researchers to group healthcare service codes for Medicare Part B services into clinically meaningful categories and subcategories. Over 370 million office/outpatient visits were provided to Medicare FFS enrollees during COVID, which consisted of 63% of total E/M visits. Urban Medicare enrollees had higher rates of telehealth visits in office/outpatient and BH services than rural Medicare enrollees, while rural Medicare enrollees had consistently higher rates of telehealth visits in NFs and EDs. Although telehealth visits comprised less than 1% of ED visits, telehealth use in EDs and for BH services did not change significantly after June 2020 while the percentage of telehealth visits in offices and NFs continued to decrease in 2021.

Figure 3: Telehealth as % of Medicare FFS Part B Office/Outpatient Visits by Rural/Urban Enrollees' Residence: 2020 - June 2021

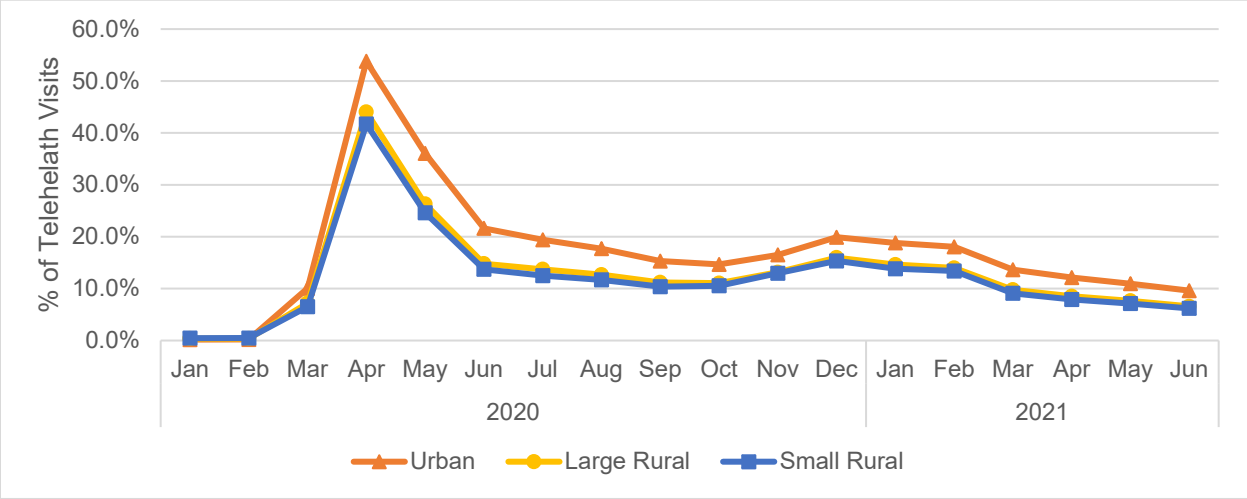


Figure 4: Telehealth as % of Medicare FFS Part B Visits for Behavioral Health by Rural/Urban Enrollees' Residence: 2020 - June 2021

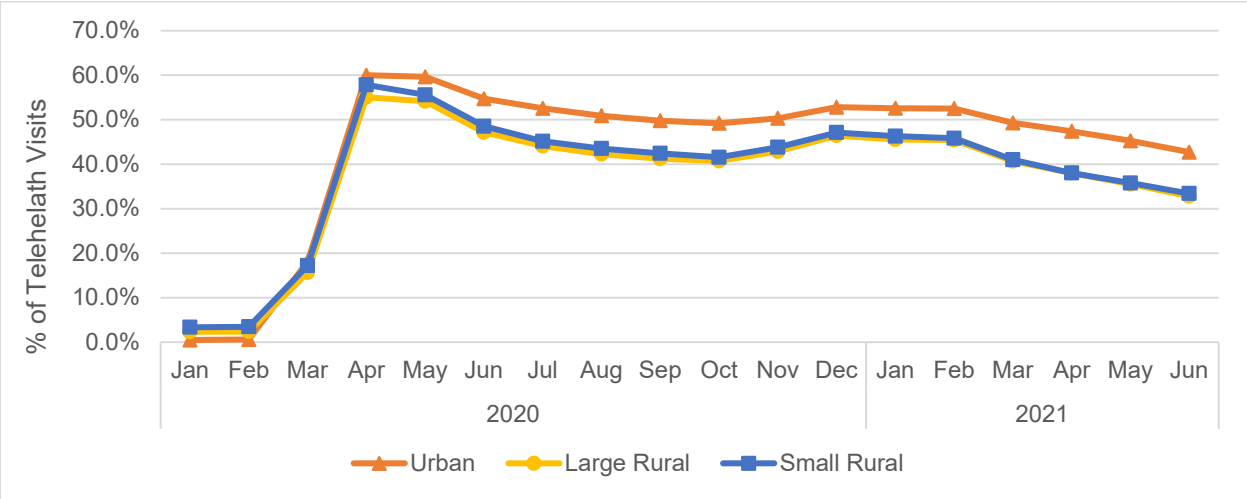


Figure 5: Telehealth as % of Medicare FFS Part B Visits at Nursing Facilities by Rural/Urban Enrollees' Residence: 2020 - June 2021

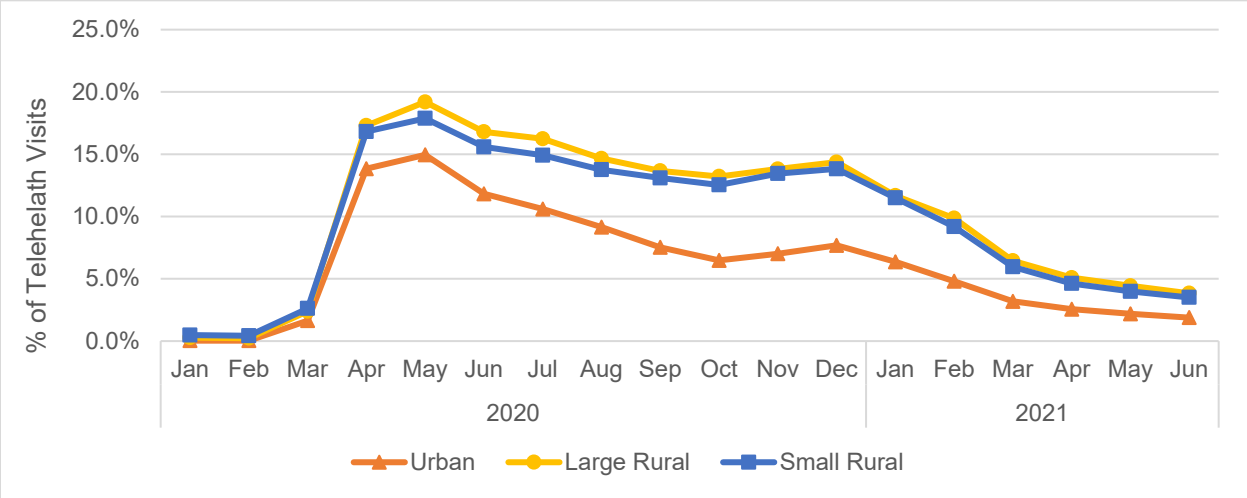
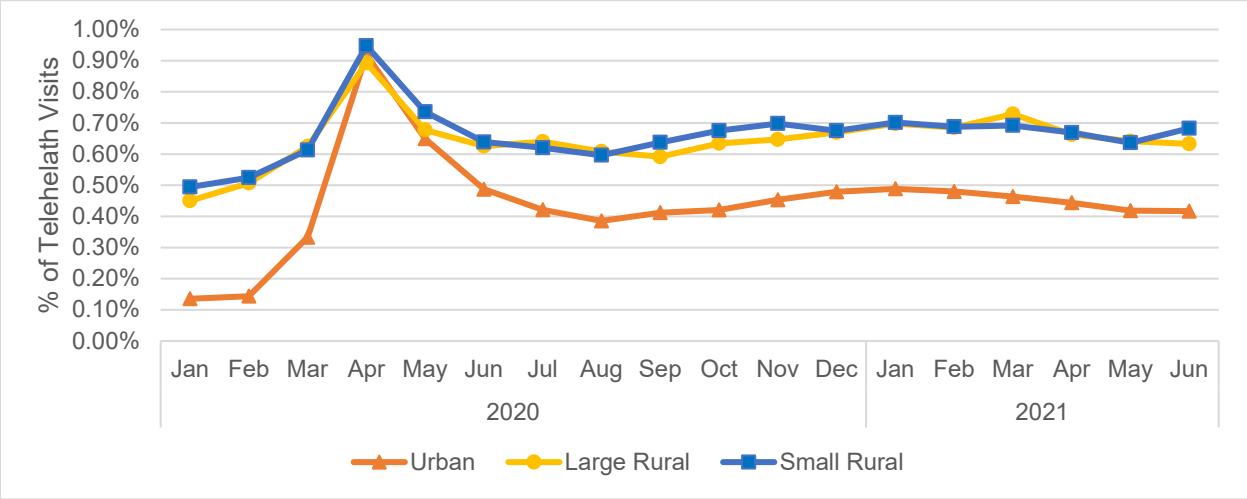


Figure 6: Telehealth as % of Medicare FFS Emergency Department Visits by Rural/Urban Enrollees' Residence: 2020 - June 2021



Household Internet Subscriptions

Households in states with high percentages of broadband household internet subscriptions showed a strong positive association with Medicare FFS enrollees who used telehealth E/M services during COVID-19 (2020 – June 2021) in the South (p value <0.001) and North (p value=0.0273) U.S. Census regions but not in Midwest and West U.S. Census regions (p value>0.1 for both regions). While Massachusetts and Vermont have high percentages of household internet subscriptions and high telehealth use, North Dakota and Nebraska have high percentages of household internet subscriptions, but relatively low telehealth use as shown in **Figure 7**.

Figure 7: 2020 State Percentages of Household Internet Subscriptions and Percentage of Medicare Enrollees' Telehealth E/M Visits During 2020 – June 2021 (COVID) by U.S Census Region: Midwest and Rural/Urban Status

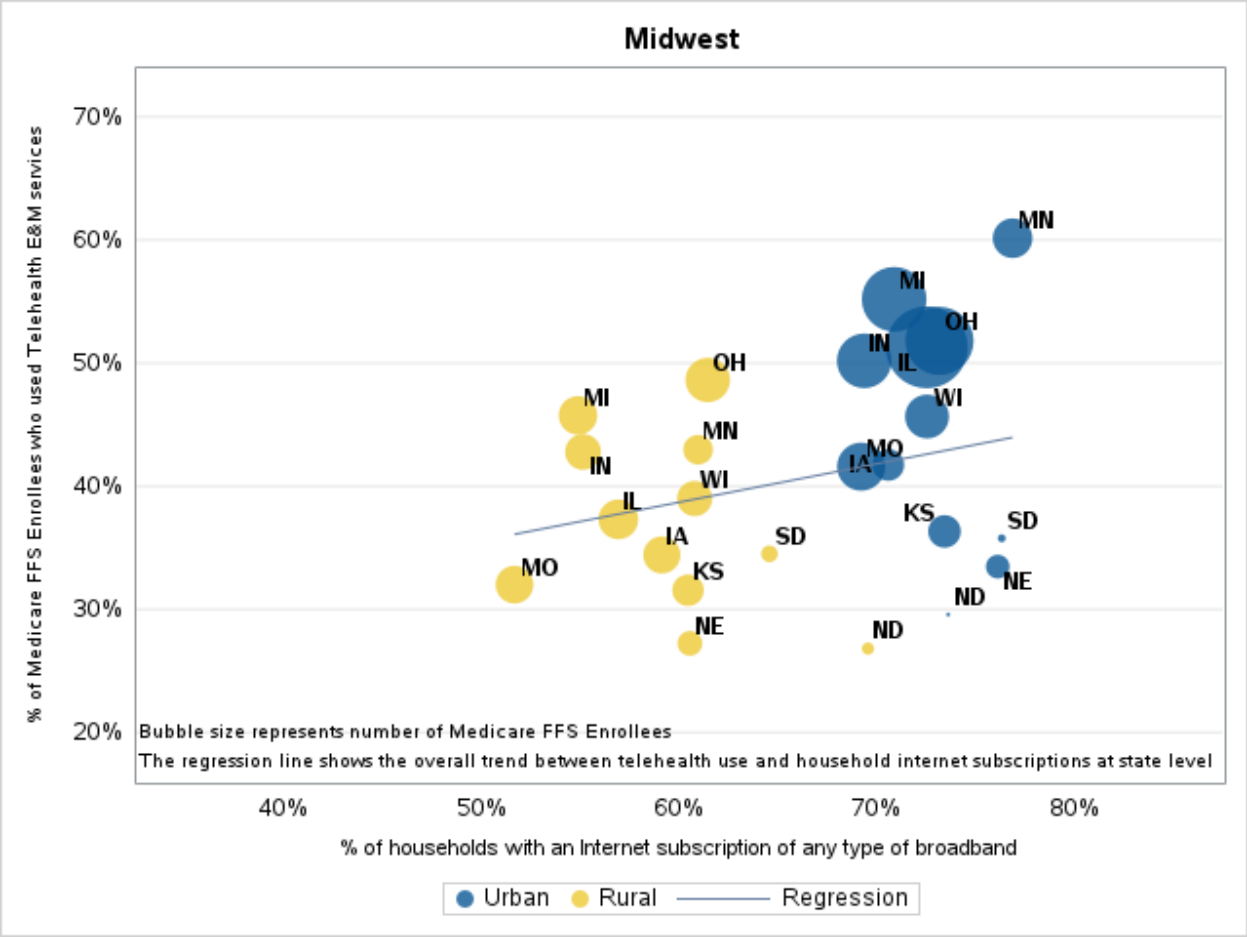


Figure 8: 2020 State Percentages of Household Internet Subscriptions and Percentage of Medicare Enrollees' Telehealth E/M Visits During 2020 – June 2021 (COVID) by U.S Census Region: Northeast and Rural/Urban Status

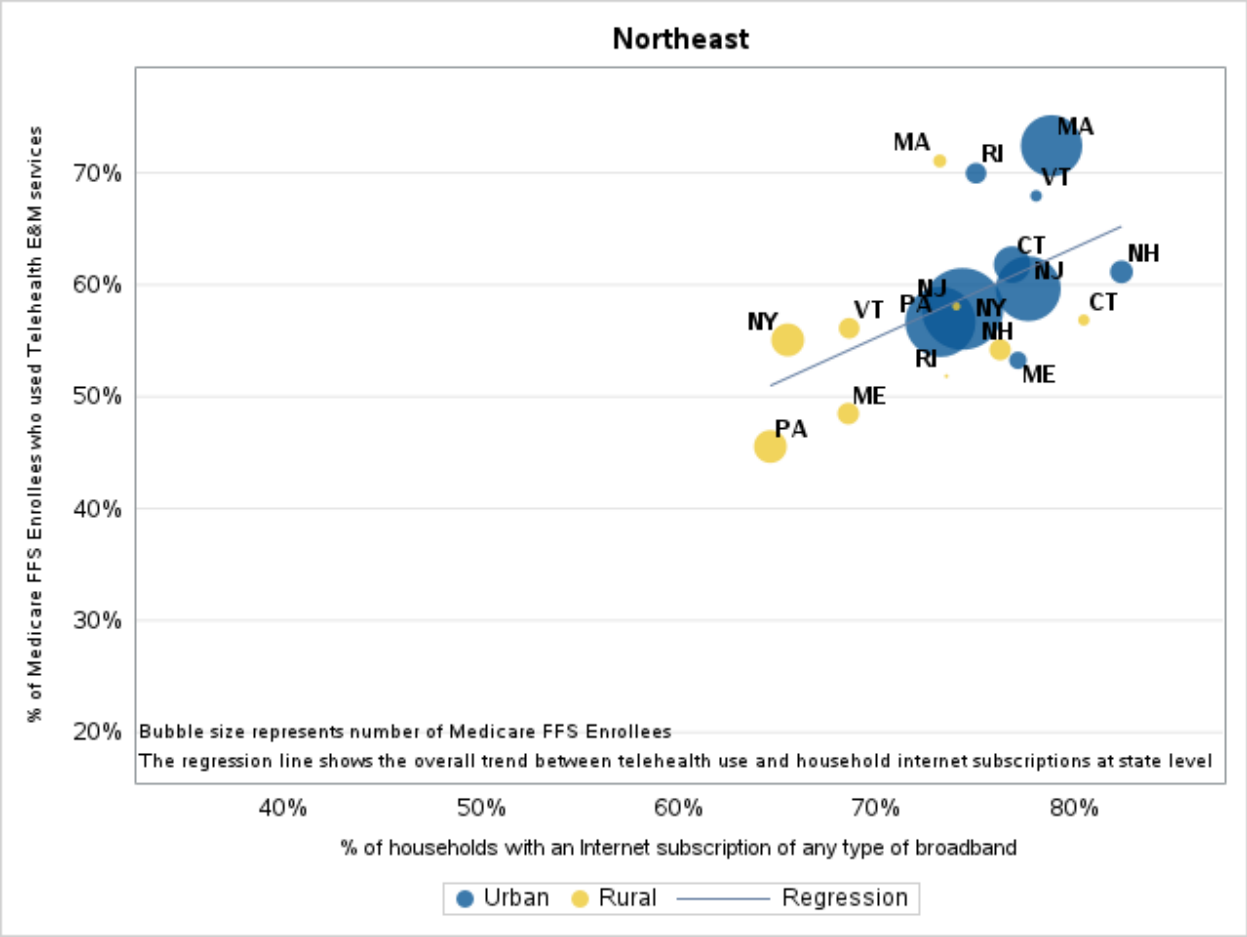


Figure 9: 2020 State Percentages of Household Internet Subscriptions and Percentage of Medicare Enrollees' Telehealth E/M Visits During 2020 – June 2021 (COVID) by U.S Census Region: South and Rural/Urban Status

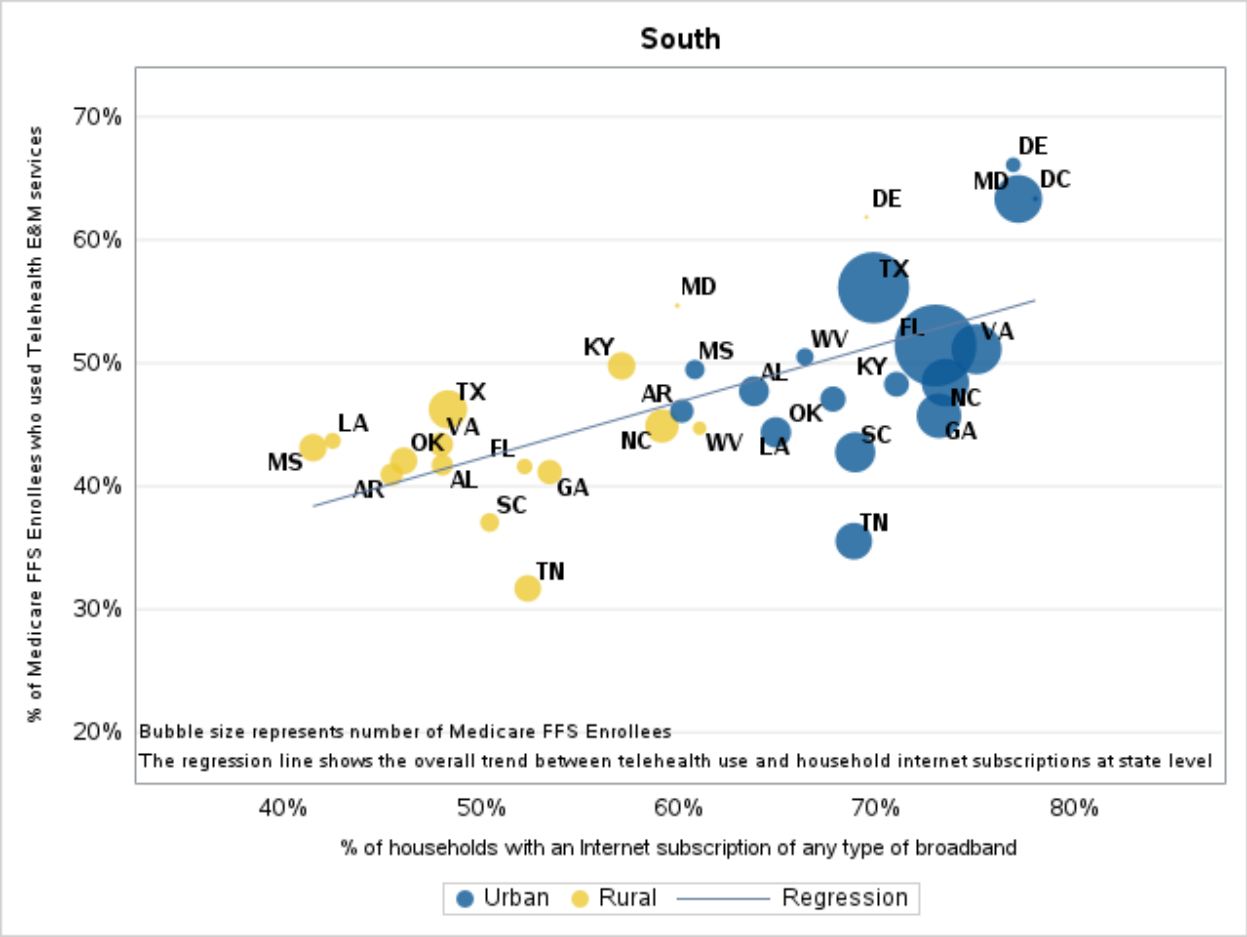
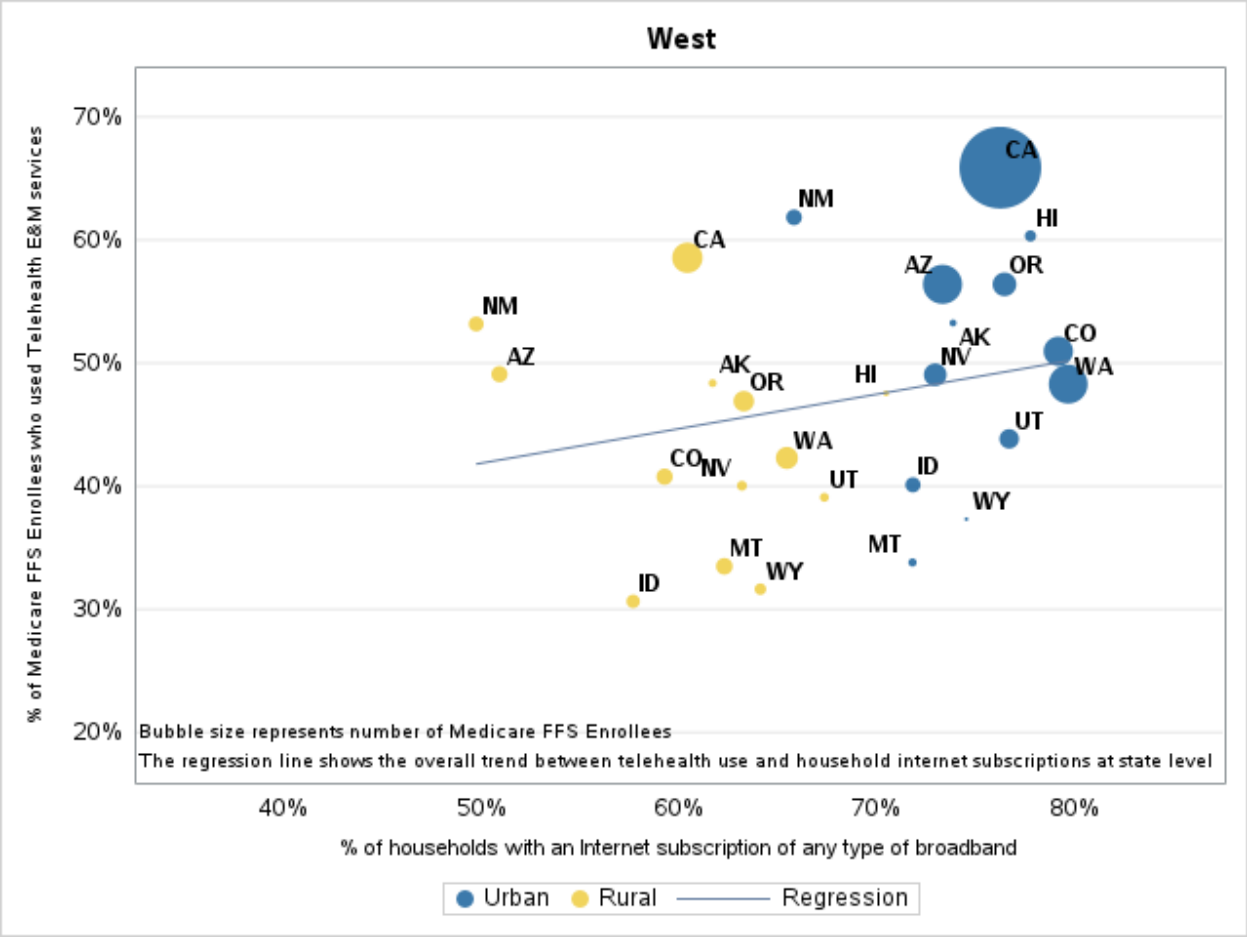


Figure 10: 2020 State Percentages of Household Internet Subscriptions and Percentage of Medicare Enrollees' Telehealth E/M Visits During 2020 – June 2021 (COVID) by U.S Census Region: West and Rural/Urban Status



Medicare Enrollees' Telehealth Use Differed by State of Residence: Pre- and Post- COVID

The total number and percentage of Medicare enrollees who used telehealth pre-COVID and during COVID varied by state. During pre-COVID (2018-2019), the percentage of Medicare enrollees who used telehealth ranged from 0.02% in Rhode Island to 1.68% in North Dakota. During COVID-19 (2020-June 2021), the percentage of enrollees who used telehealth increased, ranging from the lowest use in North Dakota (11.41%) to the highest use in Massachusetts (38.47%). North Dakota Medicare enrollees also had the smallest increase in telehealth use (9.73%) between pre-COVID-19 (2018-2019) and COVID-19 (2020 – June 2021), while Massachusetts Medicare enrollees had the greatest increase in telehealth use (38.41%).

Among Medicare enrollees living in rural areas, the smallest increase in telehealth use was in North Dakota with 2.24% of Medicare enrollees using telehealth pre-COVID-19 and 10.97% using telehealth COVID-19. Similar to overall state trends, Massachusetts had the largest increase in rural Medicare enrollees using telehealth—from 0.55% pre-

COVID-19 to 38.80% COVID-19. Medicare enrollees living in urban areas experienced the greatest increases in telehealth use. Complete state tables are included in **Appendix A**.

Comparison of High and Low Telehealth Use States During COVID

To better understand how telehealth use differed during pre-COVID and COVID, we used a case control study design to select five high and five low telehealth use states. We controlled for differences between Medicare enrollees from small rural, large rural, and urban areas by matching enrollees using sex, age, race/ethnicity, and county poverty level.

Selection of States to Compare High and Low Users of Telehealth Services During COVID-19

We identified the prevalence of Medicare enrollees who used telehealth, those Medicare enrollees who used telehealth multiple times (more than once), the total number of telehealth claims in each state, and the total number or rural Medicare enrollees in each state. We then used the total number of Medicare enrollees, the number of Medicare enrollees who used telehealth once or multiple times, and the percentage of claims for telehealth visits to estimate a composite score for each state.

In addition to having high or low telehealth use relative to other states, the states selected also had over 10% of the population residing in rural areas and represented different regions of the U.S. Five states with low telehealth use during COVID were selected (North Dakota, South Dakota, Wyoming, Tennessee, and Kansas) and five states with high telehealth use during COVID were selected (Massachusetts, California, Utah, Vermont, and Maryland).

There were 1,513,768 pairs of matched Medicare enrollees selected from the pre-COVID (2018 and 2019) time period, and 1,414,812 pairs of matched Medicare enrollees selected from the COVID (2020-2021) time period for the analysis (**Figure 11**). A total of 856,977 (14.6%) Medicare enrollees were from small rural areas, 988,063 (16.9%) from large rural areas, and 4,012,120 (68.5%) from urban areas.

Figure 11: Total of Matched Medicare Enrollees in Low and High Telehealth Use States by Rural/Urban Residence During the Pre-COVID and COVID Time Periods

Medicare Enrollees	Low or High Telehealth Use State During COVID	Small Rural	Large Rural	Urban	Total
Pre-COVID	Low	340,660	360,632	812,476	1,513,768
Pre-COVID	High	100,412	150,329	1,263,027	1,513,768
Pre-COVID Total		**441,072**	**510,961**	**2,075,503**	**3,027,536**
COVID	Low	318,519	335,371	760,922	1,414,812
COVID	High	97,386	141,731	1,175,695	1,414,812
COVID Total		**415,905**	**477,102**	**1,936,617**	**2,829,624**
Total Matched Medicare Enrollees		**856,977**	**988,063**	**4,012,120**	**5,857,160**

How did telehealth use differ before and during COVID-19 for low and high use states while controlling for the differences between Medicare enrollees from small rural, large rural, and urban locations?

Figure 12 shows the percentage of telehealth use pre-COVID for Medicare enrollees from low and high telehealth use states by rural/urban status. Medicare enrollees residing in small rural areas from low telehealth use states had the greatest percentage of telehealth visits (3%) pre-COVID while all urban Medicare enrollees had the lowest use of telehealth visits (less than 1%). Note that audio-only telehealth visits were not paid pre-COVID.

Figure 12: Percentage of Medicare Enrollees from Low and High Telehealth Use States Who Had Telehealth Visits Pre-COVID by Rural/Urban Residence

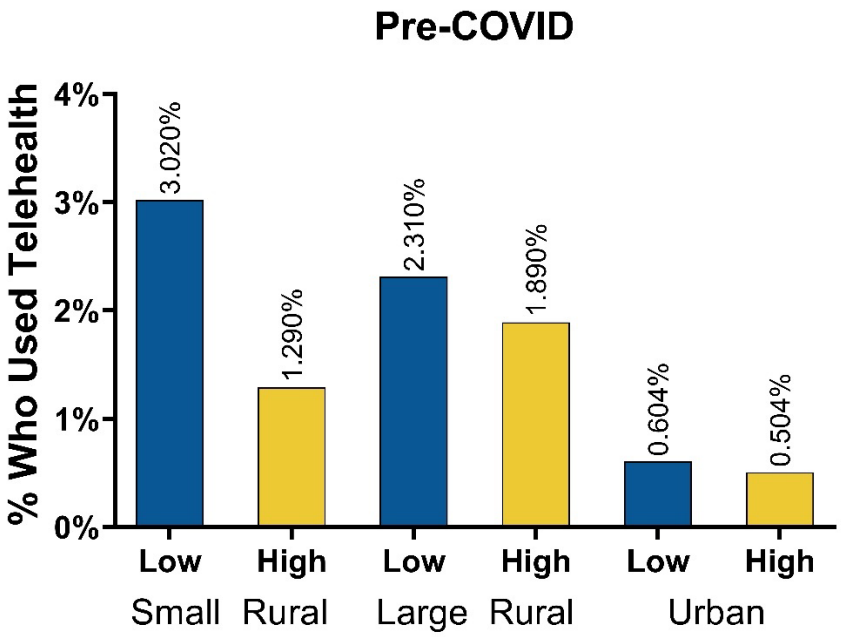
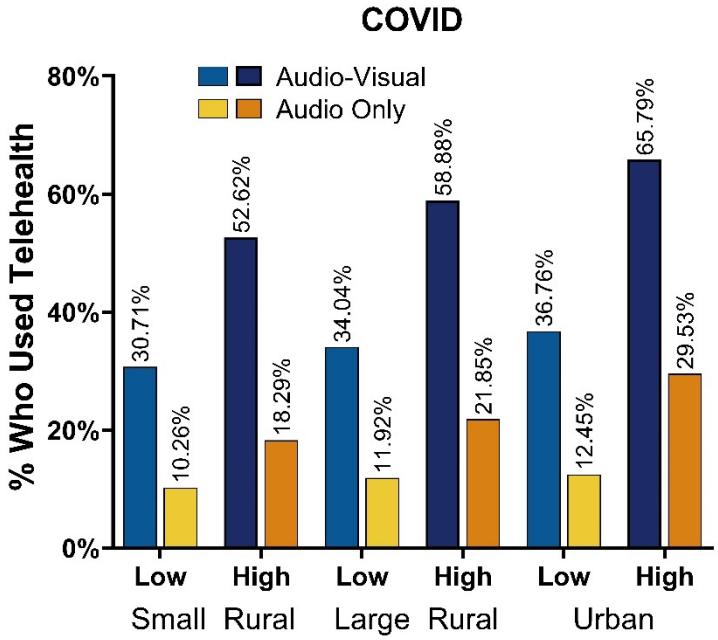


Figure 13 shows the significant increase in telehealth visits for all Medicare enrollees (from both low and high telehealth use states) across rural and urban areas. Telehealth use increased from 3% to 37% during COVID in low telehealth use states -- approximately a 10-fold increase, while high telehealth use states had over a 100-fold increase from 0.6% to 66% for telehealth visits. Audio-only telehealth visits (available only for COVID data) were used most frequently by Medicare enrollees living in urban areas located in high telehealth use states.

Figure 13: Percentage of Medicare Enrollees from Low and High Telehealth Use States Who Had Telehealth Visits Pre-COVID by Rural/Urban Residence



Did average household internet subscriptions differ pre-COVID and during COVID for low and high use states while controlling for the differences between Medicare enrollees from small rural, large rural, and urban locations?

Home internet subscriptions were consistent during 2018-2020 as shown in **Figure 14**. The increase in household internet subscriptions from pre-COVID to COVID was less than one percent for all Medicare enrollees who resided in low telehealth states. Internet subscriptions for Medicare enrollees residing in high telehealth use states decreased slightly (less than 1%) for small and large rural areas and increased slightly (less than 0.1%) for urban areas. Overall, Medicare enrollees from high telehealth use states had three to five percent more household internet subscriptions compared to Medicare enrollees who resided in low telehealth use states.

Figure 14: Average Percentage Home Internet Subscriptions in Counties Where Medicare Enrollees Resided Pre-COVID and COVID by Rural/Urban Residence

Medicare Enrollee Residence	Low Telehealth Use States: N	Low Telehealth Use States: Average %	Low Telehealth Use States: Standard Deviation (SD)	High Telehealth Use States: N	High Telehealth Use States: Average %	High Telehealth Use States: Standard Deviation (SD)
Small Rural						
Pre-COVID	339,862	54.747	12.641	99,025	58.204	16.062
COVID	**317,960**	54.927	12.616	**96,222**	57.857	16.191
Large Rural						
Pre-COVID	353,092	58.778	12.312	145,678	62.772	12.552
COVID	**328,739**	59.070	12.286	**137,697**	62.221	12.685
Urban						
Pre-COVID	799,293	68.581	13.548	1,233,930	74.306	11.112
COVID	**749,328**	69.241	13.35	**1,149,869**	74.442	11.118

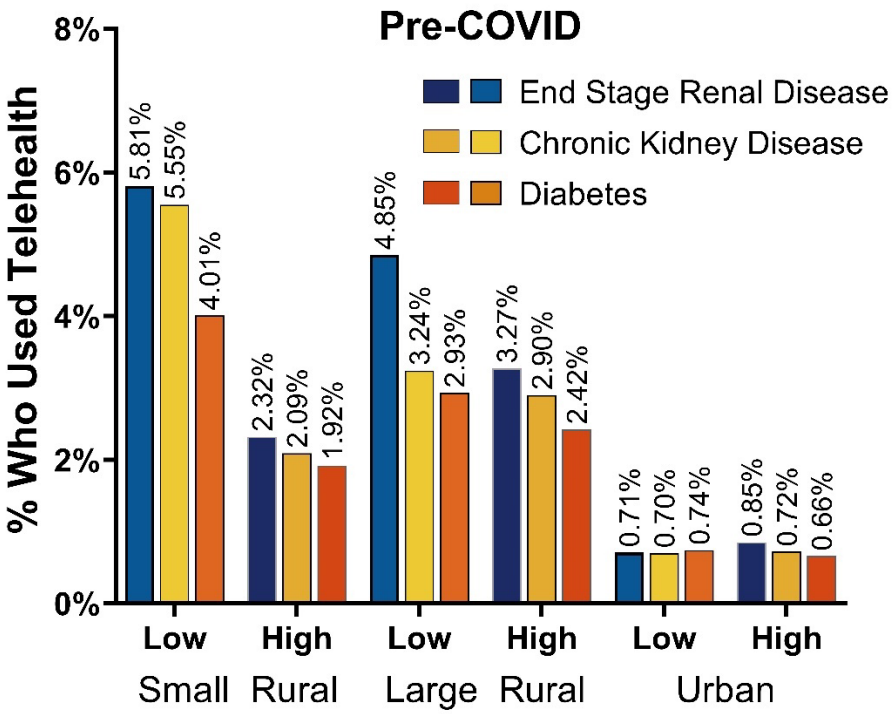
How did telehealth use differ between low and high use states for Medicare enrollees during pre-COVID and during COVID for specific diagnoses by rural/urban residence?

Telehealth use was examined for Medicare enrollees with specific diagnoses as shown in the following tables. Medicare enrollees from small rural areas who lived in low telehealth use states during 2020-June 2021 had twice the telehealth utilization as their counterparts in high telehealth use states pre-COVID. This utilization is linked to the high proportion of rural Medicare enrollees who resided in the low telehealth use states -- the pre-COVID telehealth policy solely paid for telehealth services furnished in rural areas. However, during COVID, the Medicare enrollees in high telehealth use states used about twice as much telehealth than Medicare enrollees in low telehealth use states in urban and small rural areas, whereas Medicare enrollees in large rural areas showed a 70% increase in telehealth visits. Pre-COVID telehealth use was similar for all diseases, with similar levels of use by enrollees living in urban and large rural areas; enrollees living in small rural had somewhat higher use among the low telehealth use states. The COVID Medicare enrollees from high use states had much higher use of telehealth visits across all rural/urban designations.

End Stage Renal Disease, Chronic Kidney Disease and Diabetes

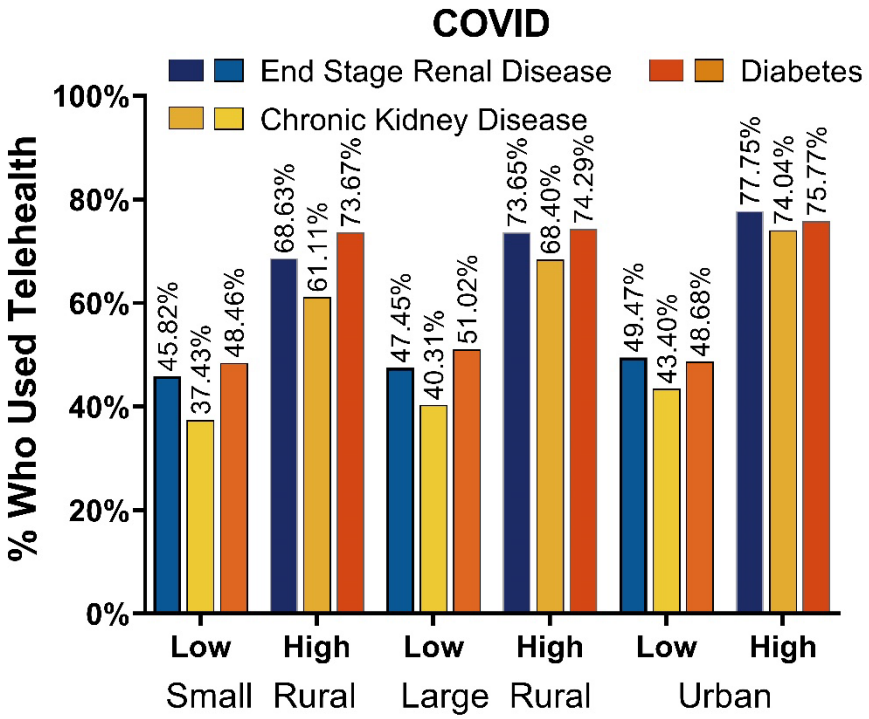
Pre-COVID, the highest percentage of Medicare enrollees who used telehealth for end stage renal disease (6%), chronic kidney disease (6%) and diabetes (4%) were from low telehealth use states and resided in small rural areas (see **Figure 15**). Less than 1% of urban Medicare enrollees from low and high telehealth use states had telehealth visits for any of the three conditions during pre-COVID. Overall, Medicare enrollees from high telehealth use states used fewer telehealth visits for these conditions during the pre-COVID time period than enrollees from low telehealth use states.

Figure 15: A Comparison of Telehealth Use for Medicare Enrollees from Low and High Telehealth Use States During Pre-COVID by Rural/Urban Residence: End Stage Renal Disease (ESRD), Chronic Kidney Disease and Diabetes



During COVID, over three-fourths of the urban Medicare enrollees from high telehealth use states who had end stage renal disease, chronic kidney disease or diabetes used telehealth visits for their specific conditions (see **Figure 16**). In comparison, slightly less than half of Medicare enrollees from low telehealth use states used telehealth visits for their specific conditions.

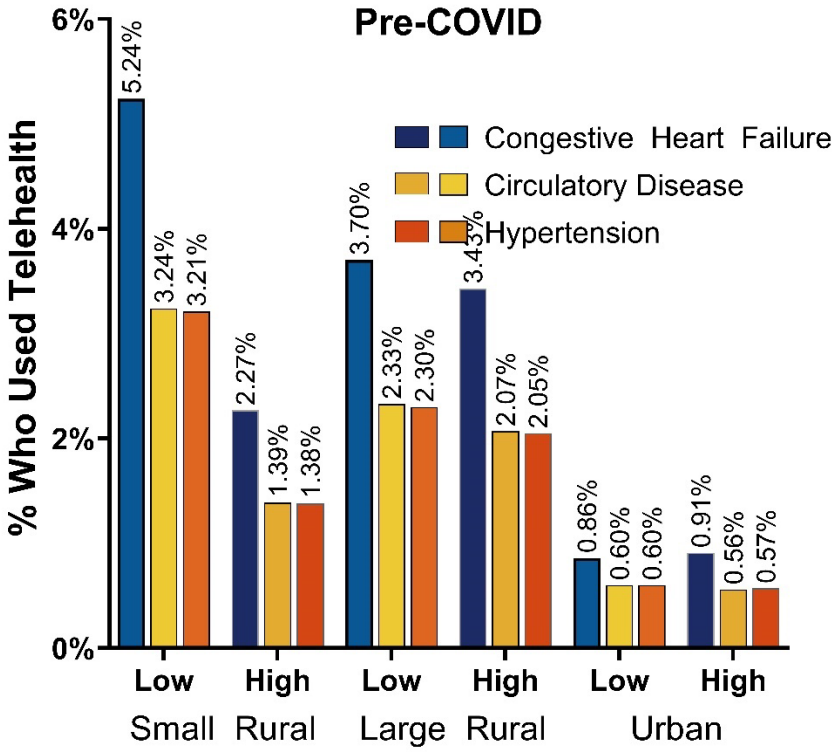
Figure 16: A Comparison of Telehealth Use for Medicare Enrollees from Low and High Telehealth Use States During COVID by Rural/Urban Residence: End Stage Renal Disease (ESRD), Chronic Kidney Disease and Diabetes



Congestive Heart Failure, Circulatory Disease, and Hypertension

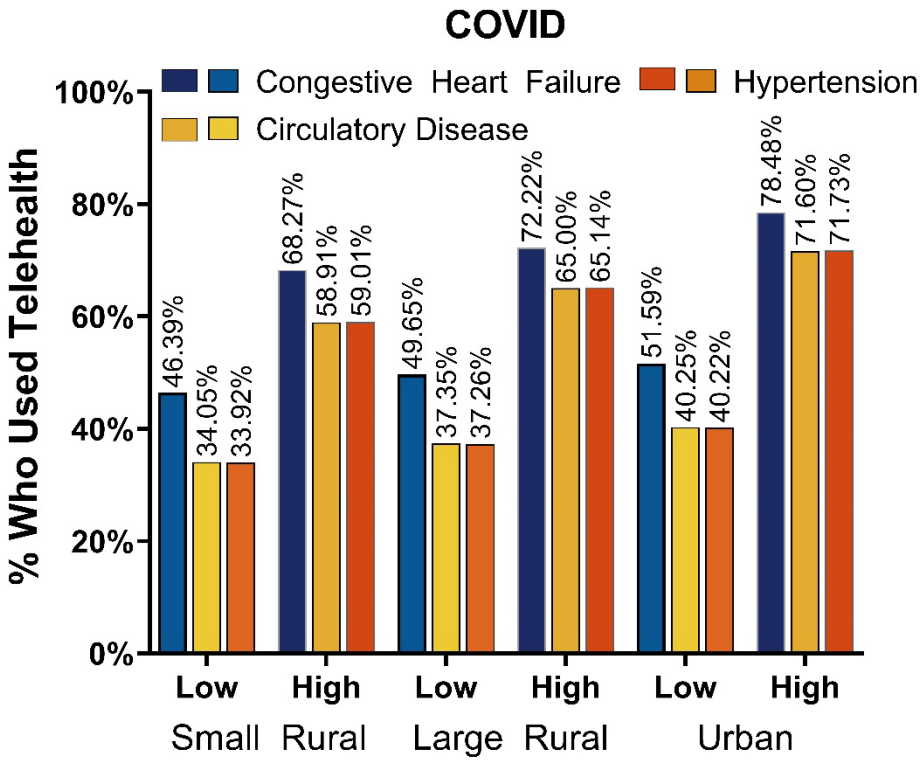
Pre-COVID, Medicare enrollees from low telehealth use states with congestive heart failure (CHF) were the most likely to use telehealth visits (5% in small rural areas and 4% in large rural areas). See **Figure 17**. The use of telehealth visits for circulatory disease and hypertension was slightly lower for these enrollees (3% and 2%, respectively). Across all three conditions, Medicare enrollees from high telehealth use states had fewer telehealth visits pre-COVID than those from low telehealth use states.

Figure 17: A Comparison of Telehealth Use for Medicare Enrollees from Low and High Telehealth Use States During Pre-COVID by Rural/Urban Residence: Congestive Health Failure (CHF), Circulatory Disease and Hypertension



Similar to ESRD, kidney disease and diabetes, urban Medicare enrollees from high telehealth use states were most likely to use telehealth visits for CHF, circulatory disease and hypertension (78%, 72%, and 72%, respectively). See **Figure 18**. About half of Medicare enrollees with CHF from low telehealth use states had at least one telehealth visit. Urban Medicare enrollees from high telehealth use states were twice as likely to use telehealth visits for circulatory disease and hyperention as Medicare enrollees from small areas residing in low telehealth use states (71% and 34%, respectively).

Figure 18: A Comparison of Telehealth Use for Medicare Enrollees from Low and High Telehealth Use States During COVID by Rural/Urban Residence: Congestive Health Failure (CHF), Circulatory Disease and Hypertension



Depression and Anxiety

Of the conditions that we examined pre-COVID, the highest percentage of Medicare enrollees across all rural/urban locations used telehealth visits for depression and anxiety. Almost 9% of Medicare enrollees with depression from low telehealth states who resided in small rural areas had at least one telehealth visit during 2018-2019, while 7% of Medicare enrollees with anxiety from the same area had at least one telehealth visit (See **Figure 19**). In contrast, half of the Medicare enrollees with depression from high telehealth states who resided in small rural areas had at least one telehealth visit (4%). Between 1% and 2% of urban Medicare enrollees had a telehealth visit to treat their depression and/or anxiety; the percentages were similar for urban Medicare enrollees from low and high telehealth states.

Figure 19: A Comparison of Telehealth Use for Medicare Enrollees from Low and High Telehealth Use States During Pre-COVID by Rural/Urban Residence: Depression and Anxiety

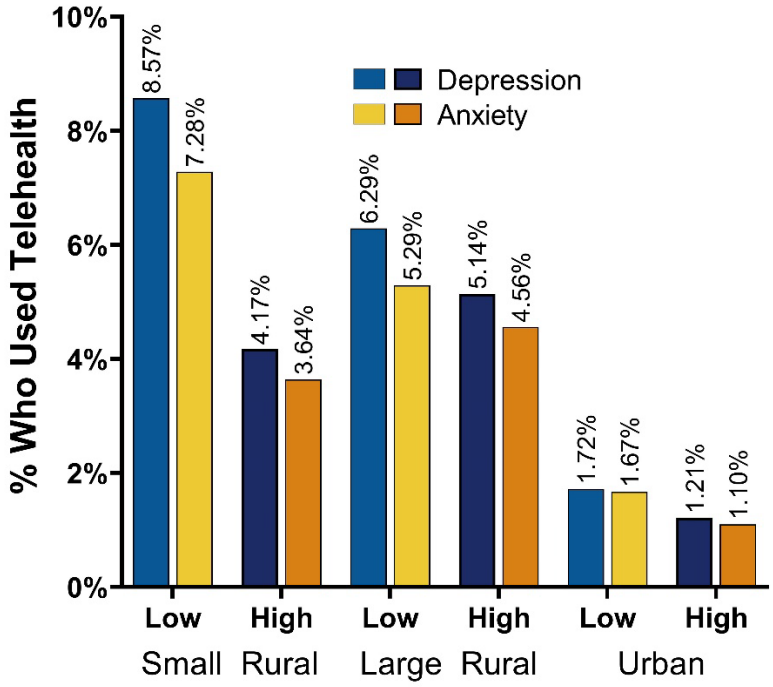
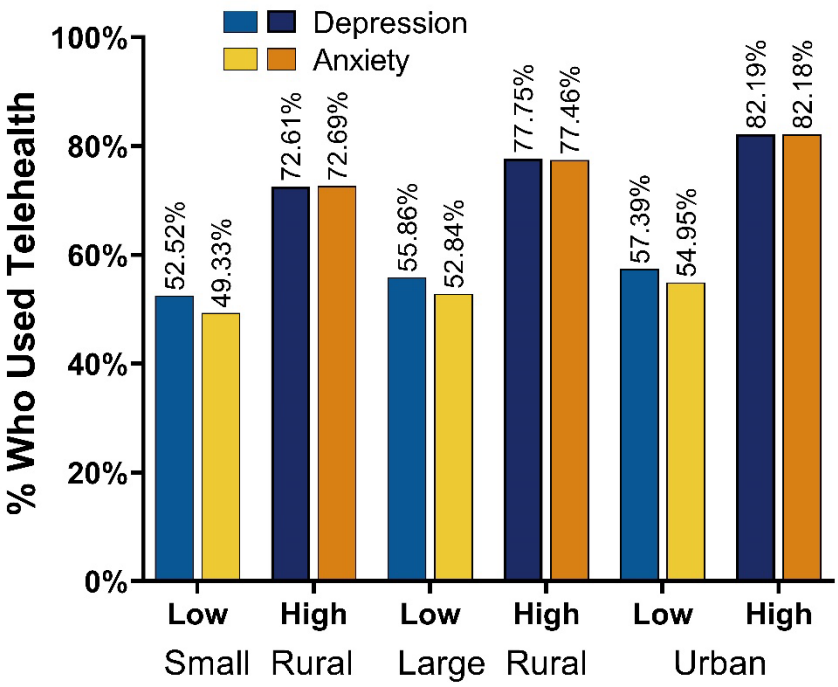


Figure 20 shows the highest percentage of Medicare enrollees who used telehealth visits to treat their depression and anxiety resided in urban areas located in high telehealth use states (82%) followed by Medicare enrollees in large rural areas (78%) in high telehealth use states. In contrast, slightly over half of Medicare enrollees from low telehealth use states had telehealth visits for depression (52% small rural, 56% large rural, and 57% urban) and somewhat lower percentages for anxiety related telehealth visits.

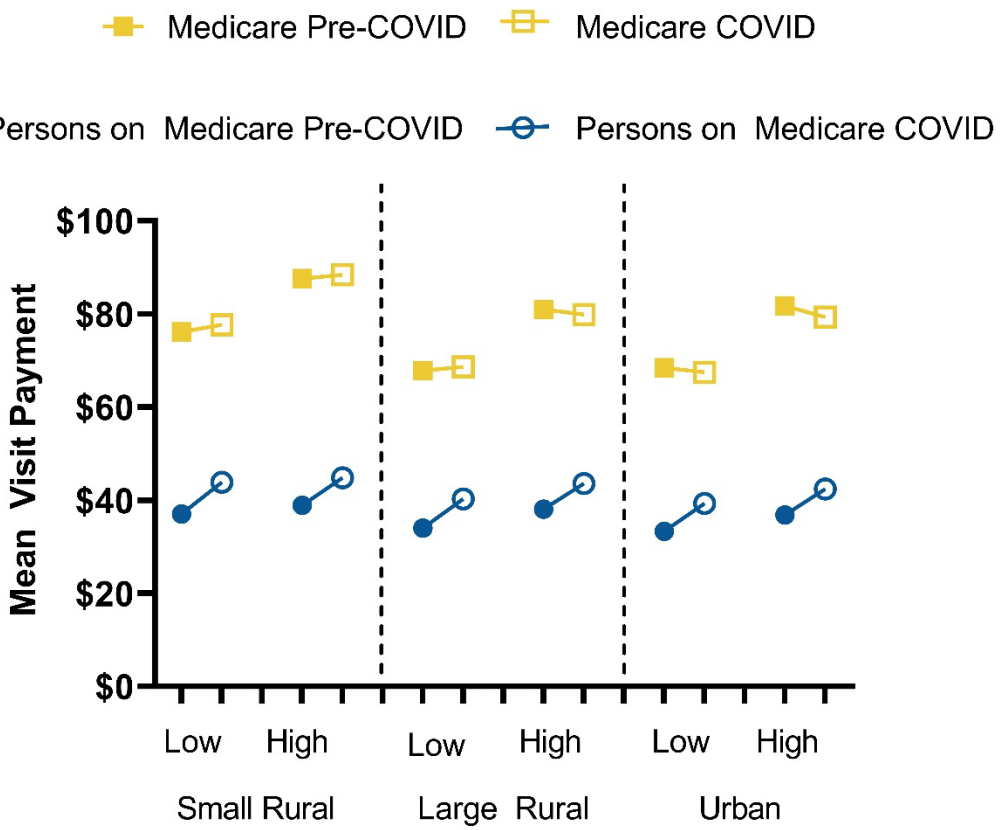
Figure 20: A Comparison of Telehealth Use for Medicare Enrollees from Low and High Telehealth Use States During COVID by Rural/Urban Residence: Depression and Anxiety



Did average payments (paid by Medicare and Medicare enrollees) differ between high and low telehealth use states pre-COVID and during COVID by Medicare enrollees' rural/urban residence?

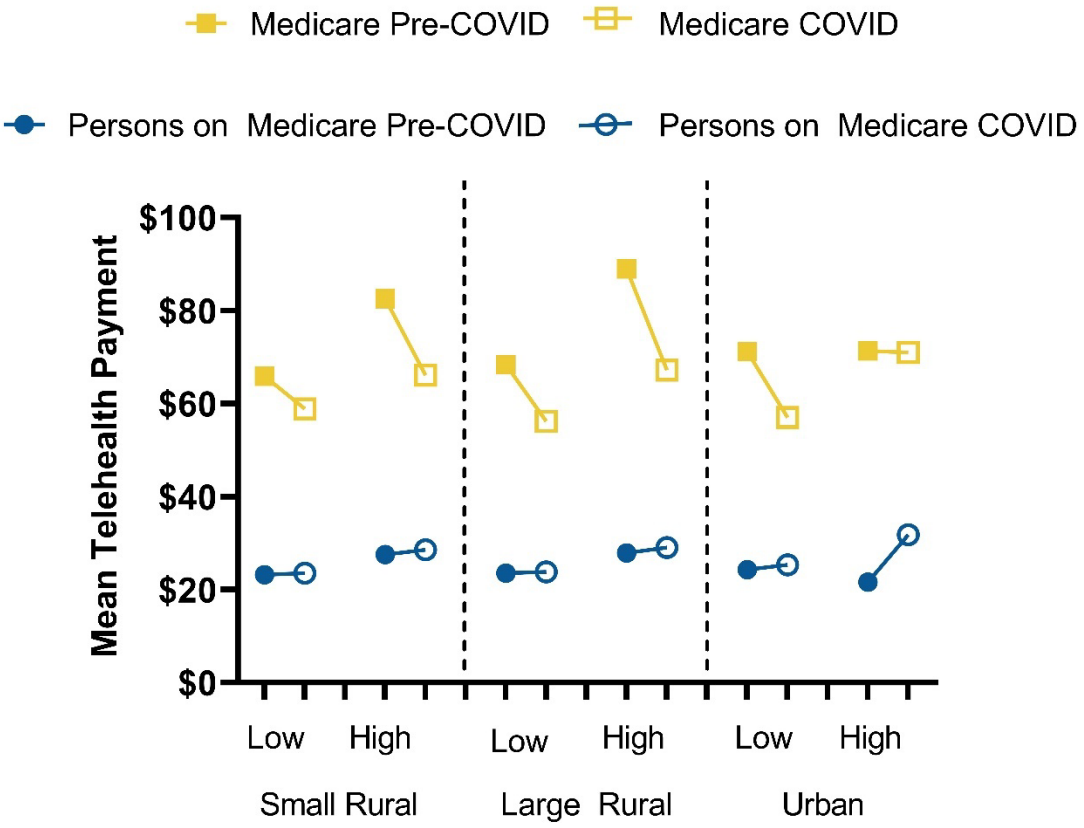
Average payments by Medicare and Medicare enrollees for an office visit pre-COVID and during COVID were estimated by comparing low and high telehealth use states and stratifying by Medicare enrollees' rural/urban residence (**Figure 21**). Both average payments for Medicare and Medicare enrollees were slightly higher in high telehealth use states. Average COVID payments increased for Medicare enrollees from low and high use states across all rural/urban designations.

Figure 21: Mean Payments for All Visits (Telehealth and In-Person) by Medicare and Persons on Medicare from Low and High Telehealth Use States: Comparing Pre-COVID and COVID Payments by Rural/Urban Status



We also examined payments per telehealth visit and found a decrease in payments from pre-COVID to COVID (see **Figure 22**). The decreased mean telehealth payment was for Medicare payments, while the amount per visit for Medicare enrollees paid stayed about the same. The exception was for Medicare enrollees who resided in urban areas where the enrollee payment per visit increased from pre-COVID to COVID. Note that there were very few telehealth visits paid for urban Medicare FFS enrollees pre-COVID and the visits paid pre-COVID were for specialty providers located at a distant site for a Medicare enrollee located at a rural originating site (e.g., rural health clinic or critical access hospital).

Figure 22: Mean Payments for Telehealth Visits by Medicare and Persons on Medicare from Low and High Telehealth Use States: Comparing Pre-COVID and COVID Payments by Rural/Urban Status



Did average total, minimum, and maximum distances differ between Medicare enrollees of different rural/urban status for high and low telehealth use states, pre-COVID and during COVID? Did distances differ between Medicare enrollees who received telehealth visits versus in-person visits?

For each visit, the distance between the person on Medicare and the provider was estimated using ZIP code centroids (**Figure 23**). Average distances were greater for those residing in low use states from small rural areas, but nearly the same for large rural areas. The average closest (minimum) distance increased from pre-COVID to COVID; however, the average farthest (maximum) distance decreased. The low telehealth use states during COVID had larger minimum and maximum distances for enrollees living in small rural areas. For enrollees in large rural areas, distances for cases were smaller. For urban enrollees in the low telehealth use states, the minimum distances were greater, but the maximum distances were smaller.

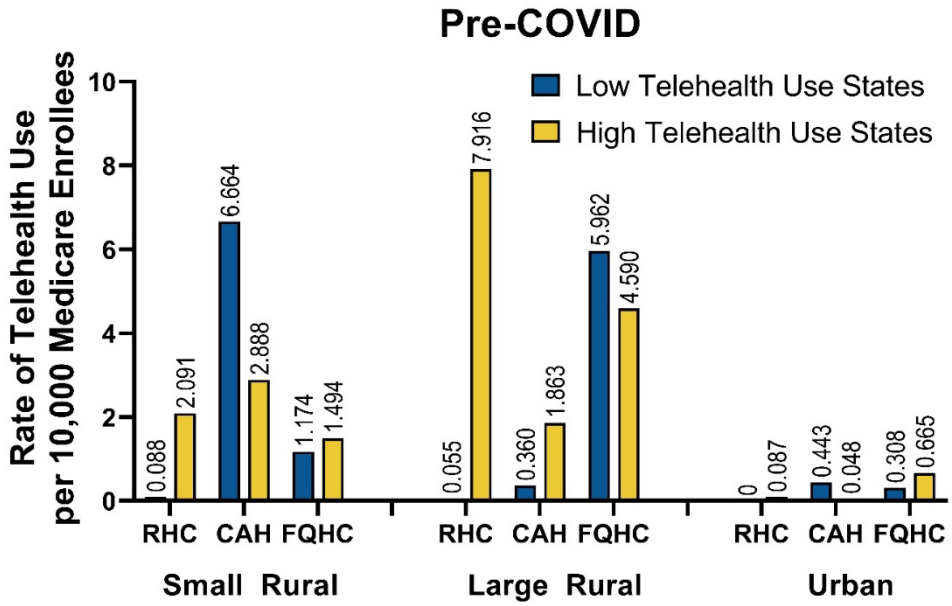
Figure 23: Total and Maximum Distance between Medicare Enrollee and Provider in Miles

	Enrollees Residing in High or Low Telehealth Use States During COVID	Total N	Total Mean	Total Standard Deviation	Max N	Max Mean	Max Standard Deviation
Small Rural							
Pre-COVID	Low	338,924	**53.4**	139.1	340,652	**130.7**	274.5
Pre-COVID	High	99,732	**47.1**	138.0	100,410	**129.0**	344.2
COVID	Low	318,307	**53.7**	142.6	318,516	**118.3**	258.0
COVID	High	97,293	**47.2**	143.6	97,386	**111.5**	313.6
Large Rural							
Pre-COVID	Low	359,736	**35.5**	109.3	360,630	**107.6**	264.9
Pre-COVID	High	149,322	**35.8**	125.0	150,327	**113.1**	328.8
COVID	Low	335,101	**35.7**	113.1	335,368	**94.6**	241.8
COVID	High	141,637	**35.6**	134.2	141,730	**95.0**	298.5
Urban							
Pre-COVID	Low	810,609	**29.1**	111.3	812,461	**91.9**	276.4
Pre-COVID	High	1,252,795	**31.3**	142.4	1,262,990	**108.6**	377.9
COVID	Low	760,115	**28.6**	114.7	760,909	**74.7**	240.2
COVID	High	1,174,060	**29.9**	144.0	1,175,669	**86.1**	326.3

Did facility type (RHC, CAH, FQHC) affect how telehealth use differed between low and high use states for Medicare enrollees residing in small rural, large rural and urban areas pre-COVID and during COVID?

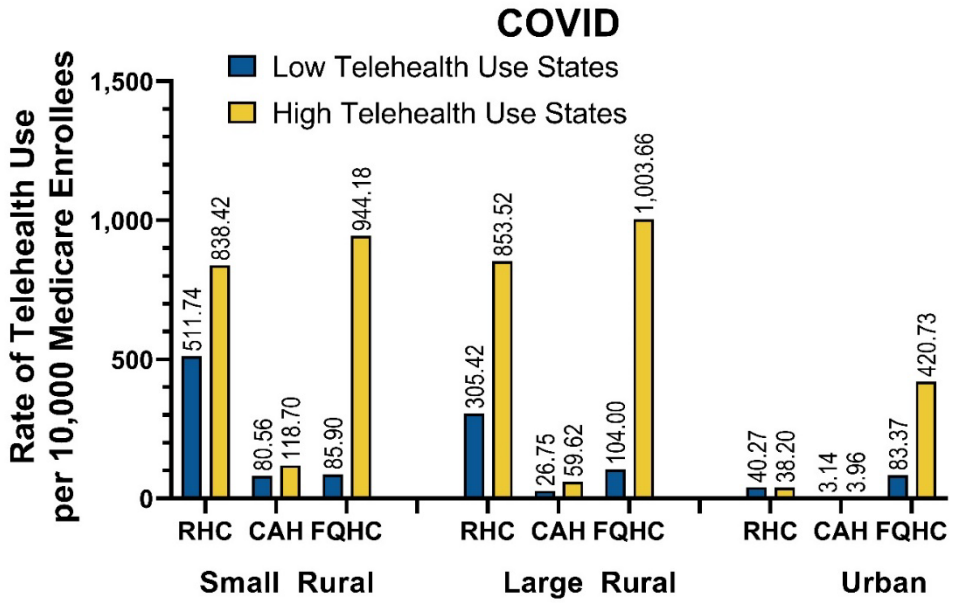
Figure 24 shows how telehealth use differed by facility type during pre-COVID. Note that pre-COVID, RHCs, FQHCs, and CAHs could only serve as an originating site in a rural area (where the patient was located) and the distant site was where the specialty provider was located. During COVID, the RHCs, FQHCs and CAHs could serve as a distant telehealth provider. The highest rate of telehealth use (7.9 per 10,000 enrollees) pre-COVID was at RHCs for Medicare enrollees residing in large rural areas who were from high telehealth use states. However, FQHCs had higher rates of telehealth visits in low telehealth use states than in high use telehealth use states. During COVID, Medicare enrollees from large rural areas had the highest rates of telehealth visits except for Medicare enrollees from small rural areas who used CAHs for telehealth, and large rural enrollees using FQHCs for telehealth.

Figure 24: Rate of Telehealth Use per 10,000 Medicare Enrollees from Low/High Telehealth Use States by Rural/Urban Status Who Used Rural Health Clinics, Critical Access Hospitals and Federally Qualified Health Centers Pre-COVID



During COVID, the rate of telehealth used by Medicare enrollees increased from 50 times to over 400 times the rate in high telehealth states during COVID (See **Figure 25**). Rural persons enrolled in Medicare increased their use of RHCs and FQHCs for telehealth visits while urban persons enrolled in Medicare primarily used FQHCs.

Figure 25: Rate of Telehealth Use per 10,000 Medicare Enrollees from Low/High Telehealth Use States by Rural/Urban Status Who Used Rural Health Clinics, Critical Access Hospitals and Federally Qualified Health Centers During COVID



QUALITATIVE FINDINGS

Interview participants included leaders, managers, and providers from RHCs, FQHCs, and physician practices located in rural areas of four low telehealth use states and four high telehealth use states. Participants across states had similar experiences regarding the use of telehealth at the beginning of the COVID-19 PHE, patient and provider acceptance of telehealth, and policy and payment considerations for the use of telehealth in the future.

Telehealth Use Pre-COVID

Interview participants described the limited use of telehealth prior to the PHE. RHCs and FQHCs were only eligible to serve as originating sites and could not provide distant site services. As a result, telehealth was used to offer specialty and behavioral health services from providers located outside of the rural community to patients being seen in the rural clinic. A few interview participants commented on plans to expand the use of telehealth prior to the start of the PHE that were accelerated when the PHE began.

Telehealth Use During COVID

All interview participants described the need to rapidly provide care using telehealth at the start of the PHE, particularly for primary care and urgent care services. While they were able to pivot to provide services via telehealth quickly, often within weeks, they experienced some challenges with the technology. Previous use of telehealth facilitated the transition. Some interview participants noted that their electronic health records (EHRs) included platforms for providing telehealth services. A few interview

respondents did not find these platforms to be user-friendly and pivoted to other external platforms. Some interviewees were able to leverage the telehealth platforms that were used pre-COVID.

Most visits were provided through interactive video, but some had to be provided with audio only, particularly if there were technology or broadband issues. Interviewees most often scheduled patients for visits via interactive video. However, some patients were not familiar with the technology or the clinic experienced technical difficulties. Some providers chose to use their personal phones to FaceTime the patient for ease of use. Patients with limited access to broadband used audio only. Alternatively, patients may access telehealth services from public locations with Wi-Fi; however, those locations may not provide patients appropriate privacy for a health visit.

Interviewees noted the demand for health information at the beginning of the PHE was high. Interview participants commented that call volumes increased dramatically. Some providers' telehealth systems were not robust enough to accommodate the increased demand. For example, one FQHC reported their call system could not handle the volume, forcing them to constantly upgrade.

Interview participants commented on high telehealth use in the early months of the PHE, particularly as patients and providers expressed fear of COVID exposure. One RHC in a low telehealth use state commented that telehealth use increased once people in the region began experiencing COVID exposure and infection. An FQHC in a low telehealth use state reported that up to 40% of visits in a day were provided via telehealth at the height of the pandemic. The FQHC reported transforming rooms for providers to deliver services via telehealth.

Demand for telehealth has decreased over time for most services. The decrease is primarily driven by patient and provider preference. Interview participants commented that behavioral health services provided via telehealth were effective and efficient and they continue to provide a high volume of behavioral health services using telehealth.

Provider Perspectives

Provider acceptance of telehealth use varied. Many providers understood telehealth as a viable option during the height of the pandemic, especially older providers who were at risk of illness themselves. In some instances, older providers were less amenable to telehealth than younger providers. Providers may also be more likely to use telehealth with patients they already have an established relationship with. Over time, many providers preferred to return to practicing in-person instead of using telehealth.

Providers can find it difficult to make diagnoses via telehealth without certain tests or physical assessments. One interviewee shared,

"I think what our providers aren't bought in with is this virtual clinic that exists for anybody to use that hardly knows us, and they have maybe a [urinary tract infection], or they have strep throat, or they have pain…and now [the provider is] not practicing the best medicine because [they] don't have a [urinalysis]…[they] can't look in their ears to see if it's an ear infection. [They are] not going to prescribe narcotics over a telehealth visit."

However, one interviewee noted that more experienced providers may be more comfortable making diagnoses based on symptoms alone without physical components.

Despite challenges, some providers liked using telehealth. Telehealth can have positive advantages for providers, such as the ability to work from home, the ability for specialists to serve populations that live at a distance, and the ability to practice in rural areas without having to live near the clinic.

Patient Perspectives

Patient acceptance of telehealth varied over time and by age and ability to access technology. Some patients were more likely to use telehealth earlier in the pandemic due to anxiety about COVID-19 exposure, but use has somewhat decreased over time as patients prefer to return to the clinic. A few participants mentioned that patients were easily frustrated when issues occurred while using telehealth and that patients were less likely to wait around for a provider on a telehealth visit as opposed to in the clinic. One interview participant mentioned that they saw an overall increase in patients after stay-at-home orders ended, suggesting that patients opted to delay care instead of using telehealth.

Older patients were more likely to experience challenges with telehealth and less likely to use telehealth. Older patients experienced challenges with owning and operating smartphones, accessing the internet, and using the telehealth platform or apps. Virtual care can also limit opportunities for social connections, especially for isolated older adults. One interviewee stated,

"…for [the Medicare] population of people, the clinic visit is their social outing. They get all dressed up. They come in, and they're looking all sharp. They check in, and they chat with the receptionist…It's like a privilege to come and talk to the provider…that's just the nature of rural primary care."

However, one interviewee noted that older patients were more likely to use telehealth if it was encouraged by a trusted provider. Older patients who used telehealth were more likely to use audio-only modes. In contrast, younger generations often like using telehealth to save time and for convenience.

Policy and Payment Considerations

Interview participants commented on the policy challenges and limited payment prior to the PHE. Specifically, RHC and FQHC leaders commented that they were not eligible to serve as distant site providers; telehealth services were only provided to patients located at the RHC or FQHC. Billing for the originating site facility fee was challenging and was an administrative burden for a small payment. Further, interview participants noted the complexity of telehealth regulations prior to the PHE, particularly for Part A providers (RHCs/FQHCs) and in school-based settings.

The PHE increased opportunities to provide telehealth services. Participants appreciate the temporary audio-only codes; however, there were concerns about the payment amount, particularly in areas with limited broadband access or for many patients who

were unable to use video technology. One interview participant commented on the need for payment parity for audio-only services.

Interview participants commented that payment for telehealth visits is not sufficient. Specifically, payment for telehealth services is lower than for in-person visits, though costs are similar. One RHC reported a two-fold difference in payment for visits provided in-person -- $100 for a telehealth visit and $200 for an in-person visit. Interviewees noted that the costs to provide a telehealth visit are similar to an in-person visit, including staffing and space for the provider to meet with the patient.

A few interview participants are providing remote patient monitoring (RPM) to better support patients with chronic conditions, such as hypertension. RHC and FQHC providers said they did not have appropriate billing codes to cover all of the costs and use Chronic Care Management (CCM) codes to support some of their RPM services. When speaking about the additional nurse hired to provide RPM, one interview participant stated,

"Rural and small providers are at a disadvantage because of the scale they are operating at. They have to staff up to do telehealth, and again I'm especially thinking of RPM. Larger providers can spread that work among existing staff, whereas small providers cannot. And if you are providing those services for hundreds, rather than tens of thousands of patients, the economies of scale are not there."

Telehealth provides flexibility for providers to serve multiple sites and can expand access when there is limited space in a clinic's physical plant. However, interviewees noted that provider licensure continues to be a challenge. One FQHC noted barriers for providers seeking loan repayment through the National Health Service Corps (NHSC). The FQHC had a full-time provider living in an urban area who provided in-person and telehealth services to the underserved rural community. Due to the providers location while providing telehealth services, the provider was not eligible for NHSC.

Opportunities for Future Telehealth Use

Overall, interview participants agreed that telehealth is going to continue to be used as a health care tool moving forward. Providers are continuing to build infrastructure that supports telehealth. Several participants mentioned investments in telehealth services, such as acquiring peripherals and tablets to support RPM, developing telehealth clinics at local hospitals to connect patients to distant specialists, and expanding broadband. Interviewees also mentioned that more robust policies, procedures, and training are needed to fully integrate and cement telehealth practices into routine care. While many interview participants described value in improving telehealth, they also indicated that payment policies were a major consideration in the sustainability of telehealth services.

LIMITATIONS

Our analyses were subject to several limitations. First, the quantitative analysis was limited to FFS Medicare enrollees and represents about 51 percent of the patients served and services provided by physicians and practitioners in their communities.[23] Second, we used the Medicare enrollee's address ZIP code centroid (the point marking the center of the ZIP code) and the ZIP code centroid for the place of services that physicians provided. An enrollee's mailing address ZIP code may not necessarily represent the enrollee residence or the location where a medical provider was located for a visit. Also, during the public health emergency there were no restrictions on where the service was provided, which means that physicians and mid-level practitioners may have provided the service from their homes instead of where the provider's office was located. Third, Medicare paid for audio-only telehealth visits when using phone only telehealth CPT codes. However, Medicare is temporarily waiving the audio-video requirement for many telehealth services during the COVID-19 public health emergency. We are not able to differentiate the audio-only from the audio-visual claims data when providers billed those services through telehealth. The volume of audio-only services may be underestimated. Additionally, the January to June 2021 claims were updated after the CCW April data refresh, which indicates the claim run-out is 10 months compared with the 2018 to 2020 claims that were updated with 12 months claim run-out. Although most claims are submitted within the first 6 months of service, providers may submit claims late and adjusted bills could be submitted late after medical review and correction. Lastly, it should also be noted that qualitative findings represent the experiences of eight interview participants who bring perspectives that are specific to their roles and locations.

SUMMARY OF FINDINGS

Consistent with other studies, we found significant increases in Medicare enrollees' utilization of telehealth services from pre-COVID (2018-2019) to COVID (2020-June 2021). The CARES Act expanded what provider types could provide telehealth services and allowed Medicare enrollees to receive telehealth services from their homes. Our findings indicate that uptake of telehealth visits differed across the country and by location of Medicare enrollees' residences. Key findings include:

- **Medicare enrollees who had the highest percentage of telehealth visits during COVID (2020 – June 2021) were more likely to be younger, female, and dually eligible for Medicaid. There were differences by race/ethnicity with Black Medicare enrollees having the fewest telehealth visits.**

Across all rural/urban designations, Medicare enrollees who used the highest proportion of telehealth services were less than 65 years of age while those over 80 years old used the fewest telehealth services. In addition, females used more telehealth services than males and persons with dual eligibility (Medicare and Medicaid) used more telehealth services than those persons with solely Medicare coverage. Black Medicare enrollees used the least telehealth services with those residing in small rural areas having the lowest percentage of telehealth visits (8%).

- **Medicare enrollees were most likely to use telehealth for behavioral health visits during the early part of 2020 and this utilization pattern continued through June 2021 compared to other services. Rural Medicare enrollees were more likely to use telehealth for nursing facility and emergency department visits than urban Medicare enrollees**.

The use of telehealth visits for behavioral health significantly increased during COVID. While 60 percent of behavioral health visits were provided through telehealth technologies in April 2020 for rural and urban Medicare enrollees, over 30 percent of rural and 40 percent of urban Medicare behavioral health visits were conducted via telehealth in June 2021. Given that over 83 percent of the U.S. is designated as a health professional shortage area (HPSA) for mental health (there is no distinction in this federal definition for behavioral health), access to behavioral health services via telehealth may bridge some of the long-term geographic maldistribution of mental health providers. Additional research is needed to determine if the Consolidated Appropriations Act of 2021policy change expanding access to behavioral health services via telehealth results in improved health outcomes and potentially avoidable utilization (e.g., decrease in ED visits and hospital admissions).

- **States that were high telehealth users pre-COVID became low telehealth users during COVID while low telehealth use states pre-COVID became high telehealth users during COVID.**

During COVID, telehealth use among persons with Medicare was twice as high in the high telehealth use states (Massachusetts, California, Utah, Vermont, and Maryland) compared to low telehealth use states (North Dakota, South Dakota, Wyoming, Tennessee, and Kansas), across rural status.

The states with the highest telehealth use during COVID, located in the West and Northeast U.S. Census regions, were also states that had early detected COVID-19 cases. In contrast, the low telehealth states during COVID located in the Midwest and South U.S. Census regions did not detect COVID-19 cases until later in the outbreak. Additional research is needed to determine if Medicare enrollees and providers perceived risk differently based on local COVID-19 cases, which may have influenced their choice in using telehealth visits.

Differences in access to telehealth technologies may have also played a role. Some of the low use telehealth states during COVID noted that primary care providers did not have the technology available locally, such as HIPAA approved audio-visual platforms, to rapidly shift to providing primary care directly to patients in their homes. Likewise, patients did not necessarily have the technology (e.g., smartphones and tablets) or robust and reliable broadband connectivity to support audio-visual telehealth visits. In contrast, some of the high use telehealth states' providers were positioned to leverage new telehealth technologies to meet patient demand when routine in-person care was shuttered.

The culture of health care may also play a role. Medicare enrollees from low telehealth use states were accustomed to going to their rural provider as an originating site to access a distant provider who was a specialist. They had an in-person care experience

at the rural originating site even though they participated in a telehealth visit. That in-person experience at a clinic was deemed a valuable part of rural Medicare enrollees' health experience – it provided an opportunity for socialization when other usual gathering places were shuttered.

- **States with the highest telehealth use during COVID had slightly higher percentages of household internet subscriptions than states with the lowest telehealth use during COVID (3% to 5% difference based on rural/urban status).**

Household internet subscriptions did not measurably change from 2018- 2020 by rural/urban status in high and low telehealth utilization states. It is interesting to note that some states with high household internet subscriptions, such as North Dakota and Nebraska, had low use of telehealth visits by rural Medicare enrollees during COVID, while Texas and Virginia had lower household internet subscriptions, but greater use of telehealth visit by rural Medicare enrollees.

Access to reliable broadband coverage and telehealth technologies may have also differed by provider and patient locations. Although current broadband coverage maps indicate that 99% of the country has coverage, the quality and reliability of broadband coverage varies greatly. The new Federal Communications Commission's (FCC) program, Broadband Data Collection Program, will help to identify at a more granular level than previous FCC programs the availability and quality of broadband internet access. This level of specificity will help to target federal investments in areas of greatest need that may also improve access to telehealth visits. Additional research is needed to assess the role that robust access to broadband internet access on telehealth plays for both providers and patients.

New providers authorized to serve as distant providers, such as RHCs and FQHCs, may not have had the resources, technology, or training to implement telehealth technologies as quickly as other providers. Likewise, differences in Medicare enrollees' access to technology to support a telehealth visit, such as smart phones and tablets, robust broadband connectivity, and technology literacy may have contributed to lower utilization of telehealth visits in some states.

- **States with the highest telehealth use during COVID had 50-100% more telehealth visits across diagnoses than states with the lowest telehealth use during COVID**.

For different diagnoses, there were similar patterns of telehealth use among Medicare enrollees in high use and low use states, while controlling for differences in Medicare enrollees by rural status. During the COVID period, Medicare enrollees living in small rural areas of high telehealth use states (controls) used twice as much telehealth as enrollees in low telehealth use states (cases). Similarly, enrollees living in urban areas of high telehealth use states used twice as much telehealth as those enrollees living in low telehealth use states.

- **Overall, the average total payment per telehealth visit decreased. This decrease was due to how telehealth visits were paid pre-COVID with two**

payment components including the distant provider (a specialist) and the originating site at a designated rural provider, such as at a critical access hospital or a rural health clinic. During COVID, there were few originating site payments.

Prior to the PHE, most telehealth visits were for rural fee-for-service (FFS) Medicare enrollees, and they had limited access to telehealth services for psychiatry, counseling, the management of chronic conditions and some follow-up visits in a hospital or nursing home. Persons with Medicare could receive a telehealth consult from a "distant site" provider, such as a specialist located at a tertiary medical center but were generally restricted to accessing the telehealth consultation at a designated rural health care site ("originating site"), such as a rural health clinic. After telehealth was expanded per authorities in the CARES Act and other COVID-19 legislation, primary care providers and other providers, such as behavioral health providers, could bill for telehealth services directly provided to the patient in the patient's home. Telehealth visit payments to a specialty provider are generally higher than for a primary care or behavioral health provider, which could contribute to decrease in Medicare's lower payment per visit. In addition, there were few telehealth services paid for urban Medicare enrollees prior to the PHE so it is difficult to draw conclusions on how these payments may have shifted.

- **Distance to telehealth providers was greatest for Medicare enrollees who resided in small rural areas.**

There were differences in the average distances between Medicare enrollees in low telehealth use and high telehealth use states and their providers. During the pre-COVID and COVID periods, Medicare enrollees living in small rural areas from low use telehealth saw providers who were farther away than similar enrollees in high telehealth use states. There were fewer differences in distance to providers for Medicare enrollees who resided in large rural and urban areas. Telehealth continued to bridge large geographic divides for the most remote located Medicare enrollees.

- **Some RHC and CAH leaders interviewed reported they did not use telehealth due to negative financial implications. RHC leaders reported uncertainty about payments continuing as a distant site after the PHE, which limited RHCs' investments in telehealth infrastructure and technology.**

Some RHC and CAH administrators shared concerns about how the expansion of telehealth services affected their cost reports. They reported if a rural provider uses a dedicated space as an originating site for telehealth, the cost should be allocated to a telehealth cost center. The costs in this separate cost center are not paid based on cost as the originating fee is a flat fixed fee ($27.59 during CY22),[iii] which does not cover the actual costs. If rural providers choose not to offer telehealth as an originating site, they risk losing market share. In addition, RHCs are hesitant to make additional

[iii] CY2022 Telehealth Update Medicare Physician Fee Schedule. January 2022. https://www.cms.gov/files/document/mm12549-cy2022-telehealth-update-medicare-physician-fee-schedule.pdf.

investments in telehealth infrastructure and technology given the uncertainty about payment as a distant site after the PHE.

CONCLUSION

In summary, the expansion of telehealth services for fee-for-service Medicare enrollees increased access to health care, particularly behavioral health services. As telehealth policies are revisited after the PHE expires, it will be important to understand how access to care may change for Medicare enrollees who are at high risk, especially those who have dual eligibility and reside in nursing facilities. In addition, it is important to understand how current telehealth payment policies may be aligned better to support access to telehealth services for rural Medicare enrollees, particularly those who seek care at RHCs and CAHs, after the PHE expires.

Although home internet subscriptions were comparable across states and by rural/urban residence, it did not fully account for the differences in telehealth use by rural Medicare enrollees. Some states with the highest home internet subscriptions had the lowest use of telehealth services. Access to robust and reliable broadband to support audio-visual telehealth visits continues to be a barrier for many rural providers and Medicare enrollees. Exploring other factors that contribute to telehealth use will help to elucidate the future role of telehealth including: providers and patients' attitudes, knowledge, and experiences using telehealth technology; its role in supporting the patient-provider relationship; and, emerging telehealth modalities, such as remote patient monitoring for chronic care management.

It is also important to understand how telehealth can play a role in fostering a culture of equity to expand access to care for Medicare enrollees who have experienced structural and geographic barriers. Additional research is needed to understand how telehealth visits affect health outcomes and total cost of care, such as potentially avoidable utilization (e.g., reduced emergency department use and readmissions). Likewise, telehealth quality metrics need to be established that capture patient safety, coordination of services, and the patient's experience. The PHE provided us with a unique "lived experiment" by which we can learn and align telehealth services to meet the health needs of Medicare enrollees most efficaciously.

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APPENDIX A. SUPPLEMENTARY MATERIALS

Selection of States for Cases and Controls

The prevalence of telehealth users, multiple (more than one time) users, and telehealth claims in each state and for rural enrollees only in each state were found. Principal component factor analysis for the total, multiple, and claims percentages were done to estimate weights to apply to the percentage values and create a composite percentage for each state, total and rural. This allowed an estimate for each state based on a weighted average of these three types of telehealth use, as well as these estimates for rural enrollees.

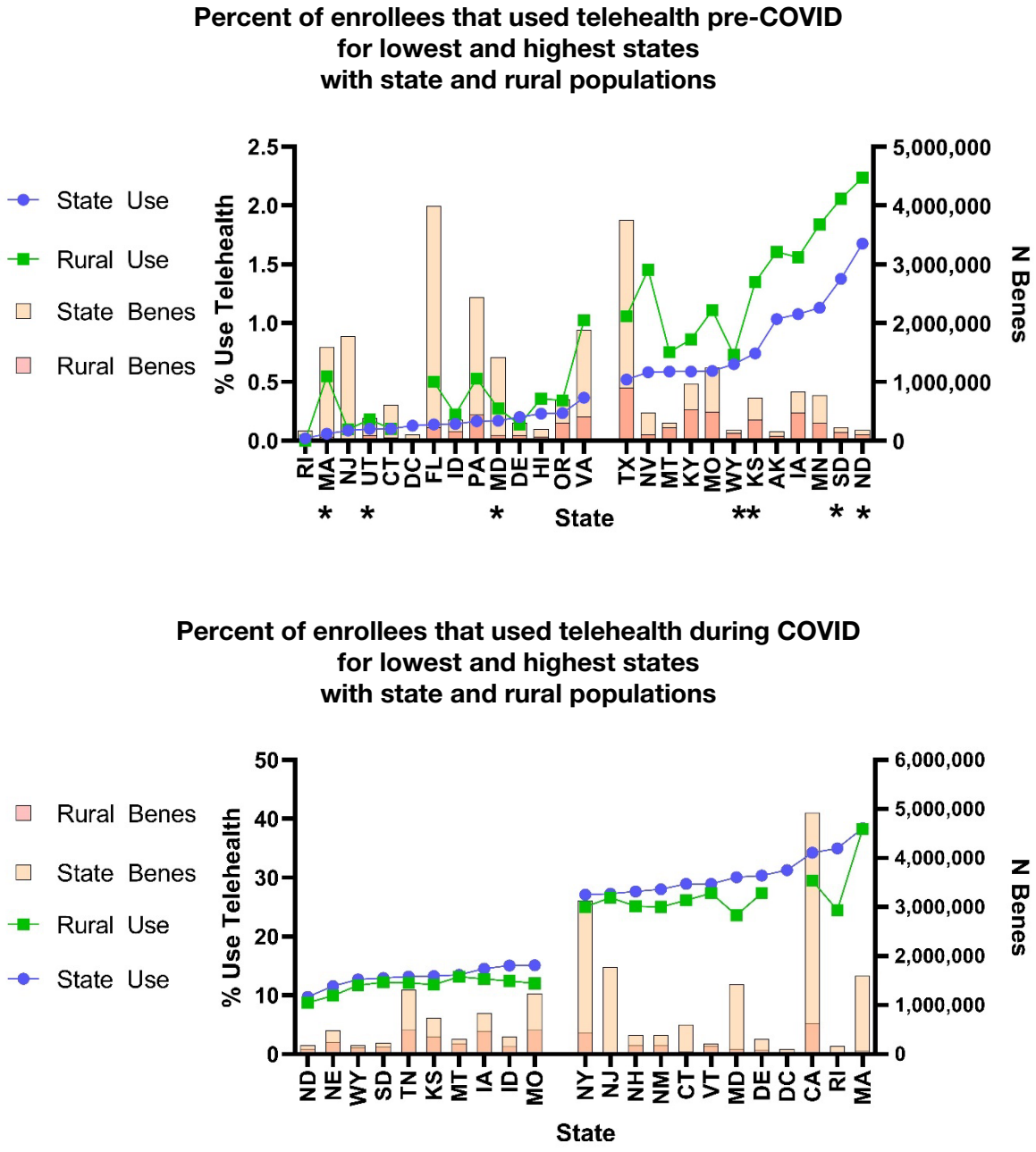
Figure A.1. Weights for Telehealth Use Percentages for Each State and Rural Populations based on Telehealth Use, Multiple Telehealth Use, and Telehealth Claims

	Used Telehealth	Multiple Telehealth Used	Telehealth Claims
Pre-COVID State	0.97381	0.99307	0.97033
Pre-COVID Rural	0.96337	0.99138	0.96076
COVID State	0.98570	0.98472	0.94185
COVID Rural	0.98488	0.98664	0.94736

These composite percent scores were ranked for each state, pre-COVID and during COVID, total and rural. Figure A.2 below shows these ranking for the highest and lowest states along with the state's rural percentage of population. Weighted percent of telehealth use for each state (blue lines) and for rural enrollees in each state (green lines). The number of enrollees in each state are shown in the bars with the darker lower part of each bar representing rural enrollees. States selected are marked with an asterisk.

Five cases, or states with low telehealth use were selected (ND, SD, KS, WY, TN) and five controls with high use were selected (CA, UT, MA, MD, VT). As well as having very high or low telehealth use relative to other states, they had over 10% of the population rural and represented different regions of the United States.

Figure A.2. Telehealth Use and Rural Population for States with Extreme Telehealth Use



Propensity Matching

From the five states identified as low telehealth use and thus cases, one control from the five high telehealth use states was found. Each control was matched to a case by the enrollee's sex (male and female), race (White, Black, Other), percent of ZIP code below poverty level (0 -5.9%, <10%, <14.6%, <21.7%, ≥21.8% for pre-COVID years and 0 -5%, <9.3%, <13.7%, <20.4%, ≥20.5% for COVID years), and age (<65 years, 65-<70 years, 70-<75 years, 75-<80 years, 80-<85 years, and 85 years and older). We used a method consisting of greedy matching with exact matches for sex, race, and poverty. There were 1,514,463 cases and 4,901,400 controls to match from. One matching control was found for each case with no absolute difference (Exhibits A.3, A.4, and A.5).

Figure A.3. Propensity Analysis for Case Control One-to-one Matching

	Cases (Low Telehealth Use)					Control (High Telehealth Use)					Diff
	N	Mn	SD	Min	Max	N	Mn	SD	Min	Max	Mn Diff
Pre-COVID											
All	1,514,463	0.2851	0.0903	0.0321	0.4165	4,901,400	0.2209	0.1073	0.0321	0.4165	0.0643
Region	1,514,463	0.2851	0.0903	0.0321	0.4165	4,901,400	0.2209	0.1073	0.0321	0.4165	0.0643
Matched	1,514,463	0.2851	0.0903	0.0321	0.4165	1,514,463	0.2851	0.0903	0.0321	0.4165	0
COVID											
All	1,415,601	0.2868	0.0967	0.0336	0.4490	4,631,001	0.2180	0.1095	0.0336	0.4490	0.0688
Region	1,415,601	0.2868	0.0967	0.0336	0.4490	4,631,001	0.2180	0.1095	0.0336	0.4490	0.0688
Matched	1,415,601	0.2868	0.0967	0.0336	0.4490	1,415,601	0.2868	0.0967	0.0336	0.4490	0

Figure A.4. Distribution of Cases and Controls by Matching Variables, Pre-COVID

	High Telehealth Use (Control) N	Low Telehealth Use (Case) N	Total N	Total %
Total	1,514,463	1,514,463	3,028,926	100
Sex				
Female	841,874	841,874	1,683,748	55.59
Male	672,589	672,589	1,345,178	44.41
Race				
White	1,346,642	1,346,642	2,693,284	88.92
Black	92,408	92,408	184,816	6.1
Other	75,413	75,413	150,826	4.98
% Below Poverty Level				
Under 5.9%	215,877	215,877	431,754	14.25
6% - 9.9%	317,745	317,745	635,490	20.98
10% - 14.5%	336,165	336,165	672,330	22.2
14.6% - 21.7%	394,374	394,374	788,748	26.04
21.7% or Higher	250,302	250,302	500,604	16.53

	High Telehealth Use (Control) N	Low Telehealth Use (Case) N	Total N	Total %
Age Group				
Under 65	202,711	202,711	405,422	13.39
65 – 69	368,015	368,015	736,030	24.3
70 – 74	339,231	339,231	678,462	22.4
75 – 79	237,882	237,882	475,764	15.71
80 – 84	167,039	167,039	334,078	11.03
85 or Older	199,585	199,585	399,170	13.18

Figure A.5. Distribution of Cases and Controls by Matching Variables, COVID

	High Telehealth Use (Control) N	Low Telehealth Use (Case) N	Total N	Total %
Total	1,415,601	1,415,601	2,831,202	100
Sex				
Female	787,733	787,733	1,575,466	55.65
Male	627,868	627,868	1,255,736	44.35
Race				
White	1,263,454	1,263,454	2,526,908	89.25
Black	78,019	78,019	156,038	5.51
Other	74,128	74,128	148,256	5.24
% Below Poverty Level				
Under 5.9%	201,077	201,077	402,154	14.2
6% - 9.9%	298,590	298,590	597,180	21.09
10% - 14.5%	348,117	348,117	696,234	24.59
14.6% - 21.7%	344,085	344,085	688,170	24.31
21.7% or Higher	223,732	223,732	447,464	15.8
Age Group				
Under 65	156,972	156,972	313,944	11.09
65 – 69	325,129	325,129	650,258	22.97
70 – 74	344,614	344,614	689,228	24.34
75 – 79	239,699	239,699	479,398	16.93
80 – 84	162,361	162,361	324,722	11.47
85 or Older	186,826	186,826	373,652	13.2

Inclusion and Exclusion Criteria

Enrollees must have a paid service, be fee-for-service, and enrolled in Medicare Part B.

Enrollees must have had at least one claims of evaluation and management (E/M) as defined by service type of:

Office or other outpatient, emergency department services, hospital inpatient services, behavioral health services, nursing facility services, care management/coordination, observation care services, critical care services, home services, hospice, or E/M – Miscellaneous.

Figure A.6 below shows the percentage of claims that were included in the analyses.

Figure A.6. Percentage of Claims for Evaluation & Management by Year

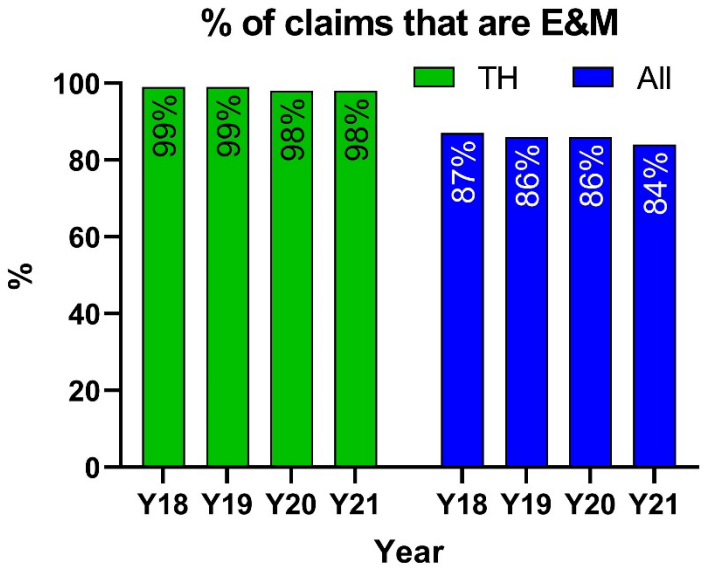
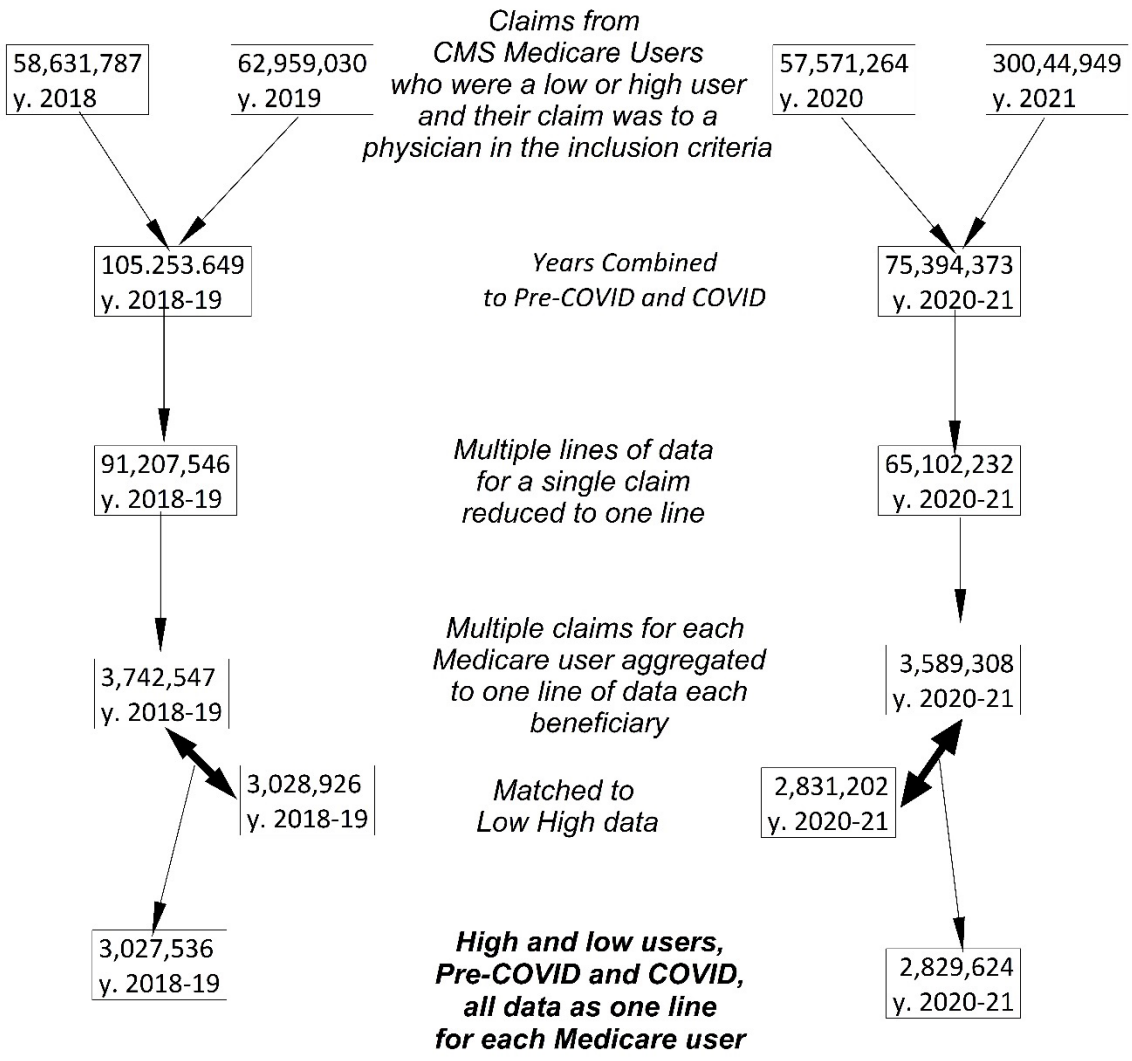


Figure A.7. Flow Diagram of Selection of Claims for Analyses



2018-2019
1,513,768 low telehealth use
(ND, SD, WY, KS, TN)
1,513,768 high telehealth use
(CA, UT, MD, MA, VT)

2020-2021
1,414,812 low telehealth use
(ND, SD, WY, KS, TN)
1,414,812 high telehealth use
(CA, UT, MD, MA, VT)

Figure A.8. Number and Percentage of Medicare Enrollees Who Used Telehealth by State

State	Pre-COVID: N	COVID: N	Mean: N	Pre-COVID: %	COVID: %	Difference: %
AK	154,318	151,271	152,795	1.03%	24.39%	23.36%
AL	1,032,579	863,934	948,257	0.38%	18.58%	18.20%
AR	819,729	718,650	769,190	0.55%	18.02%	17.47%
AZ	1,261,608	1,180,604	1,221,106	0.34%	25.72%	25.37%
CA	5,134,075	4,711,749	4,922,912	0.26%	34.48%	34.21%
CO	850,879	758,902	804,891	0.41%	22.01%	21.60%
CT	649,936	556,295	603,116	0.10%	29.04%	28.94%
DC	108,088	94,737	101,413	0.13%	31.40%	31.27%
DE	312,263	292,667	302,465	0.20%	30.57%	30.37%
FL	4,161,026	3,828,603	3,994,815	0.14%	22.24%	22.10%
GA	1,714,045	1,504,902	1,609,474	0.36%	18.97%	18.62%
HI	199,513	184,400	191,957	0.23%	27.33%	27.09%
IA	871,369	791,602	831,486	1.08%	15.58%	14.51%
ID	365,677	334,873	350,275	0.14%	15.19%	15.05%
IL	2,690,095	2,375,237	2,532,666	0.19%	20.95%	20.76%
IN	1,492,448	1,291,227	1,391,838	0.27%	20.04%	19.77%
KS	765,451	695,670	730,561	0.74%	14.00%	13.25%
KY	1,064,684	882,464	973,574	0.59%	21.64%	21.05%
LA	907,197	774,464	840,831	0.28%	17.87%	17.59%
MA	1,643,473	1,541,401	1,592,437	0.06%	38.47%	38.41%
MD	1,460,000	1,386,882	1,423,441	0.17%	30.23%	30.07%
ME	365,094	284,098	324,596	0.48%	24.06%	23.58%
MI	2,054,803	1,656,635	1,855,719	0.40%	24.31%	23.92%
MN	765,000	783,348	774,174	1.13%	25.96%	24.83%
MO	1,328,760	1,149,468	1,239,114	0.59%	15.70%	15.11%
MS	859,708	754,916	807,312	0.47%	17.96%	17.49%
MT	316,871	296,496	306,684	0.59%	14.08%	13.50%
NC	2,186,910	1,923,043	2,054,977	0.45%	20.02%	19.58%
ND	183,894	171,768	177,831	1.68%	11.41%	9.73%
NE	503,236	449,005	476,121	0.54%	12.10%	11.57%
NH	413,445	364,874	389,160	0.38%	28.04%	27.66%
NJ	1,891,306	1,654,580	1,772,943	0.09%	27.36%	27.28%
NM	416,471	366,606	391,539	0.56%	28.58%	28.02%
NV	494,350	448,961	471,656	0.58%	21.86%	21.28%
NY	3,258,998	2,998,849	3,128,924	0.23%	27.33%	27.10%
OH	2,193,400	1,943,354	2,068,377	0.22%	21.72%	21.50%
OK	997,003	871,257	934,130	0.44%	19.36%	18.92%
OR	732,692	673,326	703,009	0.23%	24.48%	24.25%
PA	2,551,714	2,324,777	2,438,246	0.17%	24.10%	23.94%
RI	177,157	159,651	168,404	0.02%	35.01%	34.99%
SC	1,323,083	1,207,448	1,265,266	0.34%	16.73%	16.39%

State	Pre-COVID: N	COVID: N	Mean: N	Pre-COVID: %	COVID: %	Difference: %
SD	237,219	219,002	228,111	1.38%	14.33%	12.95%
TN	1,385,945	1,248,254	1,317,100	0.24%	13.41%	13.17%
TX	3,947,589	3,548,753	3,748,171	0.52%	25.02%	24.50%
UT	395,117	363,658	379,388	0.10%	18.57%	18.47%
VA	1,977,963	1,787,419	1,882,691	0.36%	21.27%	20.91%
VT	226,090	205,463	215,777	0.45%	29.39%	28.95%
WA	1,432,642	1,286,135	1,359,389	0.21%	20.71%	20.50%
WI	1,122,807	981,595	1,052,201	0.54%	18.75%	18.21%
WV	500,704	417,719	459,212	0.43%	21.07%	20.64%
WY	180,245	175,795	178,020	0.65%	13.34%	12.69%

Figure A.9. Number and Percentage of Medicare Enrollees Living in Rural Areas Who Used Telehealth by State

State	Pre-COVID: N	COVID: N	Mean: N	Pre-COVID: %	COVID: %	Difference: %
AK	81,135	80,144	80,640	1.61%	22.70%	21.09%
AL	389,757	314,394	352,076	0.60%	16.95%	16.35%
AR	403,821	346,147	374,984	0.75%	16.56%	15.81%
AZ	220,634	197,603	209,119	0.75%	22.90%	22.16%
CA	666,153	602,748	634,451	0.80%	30.28%	29.48%
CO	221,309	200,271	210,790	0.77%	17.90%	17.13%
CT	51,144	44,298	47,721	0.10%	26.26%	26.16%
DC	0	0	0	-	-	-
DE	93,256	91,756	92,506	0.14%	27.51%	27.37%
FL	239,380	210,587	224,984	0.50%	17.74%	17.23%
GA	463,111	388,586	425,849	0.64%	17.28%	16.63%
HI	66,156	60,834	63,495	0.36%	22.50%	22.14%
IA	496,371	449,355	472,863	1.56%	14.33%	12.77%
ID	166,716	151,635	159,176	0.22%	12.64%	12.42%
IL	559,296	490,613	524,955	0.61%	15.10%	14.48%
IN	484,656	415,434	450,045	0.53%	17.37%	16.84%
KS	375,788	339,167	357,478	1.35%	13.16%	11.81%
KY	598,348	475,387	536,868	0.86%	22.88%	22.02%
LA	259,372	216,707	238,040	0.49%	17.68%	17.18%
MA	65,284	62,108	63,696	0.55%	38.80%	38.25%
MD	98,756	95,815	97,286	0.27%	23.88%	23.61%
ME	221,739	171,401	196,570	0.69%	22.95%	22.26%
MI	586,283	464,152	525,218	1.02%	19.79%	18.77%
MN	296,006	302,175	299,091	1.84%	19.10%	17.26%
MO	531,940	452,194	492,067	1.11%	13.15%	12.04%
MS	549,792	476,414	513,103	0.63%	16.79%	16.15%
MT	226,470	212,280	219,375	0.75%	13.89%	13.13%
NC	779,667	664,596	722,132	0.80%	18.74%	17.94%

State	Pre-COVID: N	COVID: N	Mean: N	Pre-COVID: %	COVID: %	Difference: %
ND	112,728	104,791	108,760	2.24%	10.97%	8.73%
NE	261,414	231,671	246,543	0.88%	10.83%	9.95%
NH	195,140	168,350	181,745	0.74%	25.87%	25.13%
NJ	24,207	19,730	21,969	0.10%	26.69%	26.59%
NM	205,402	174,683	190,043	0.75%	25.79%	25.04%
NV	108,839	100,922	104,881	1.45%	17.23%	15.78%
NY	473,631	416,650	445,141	0.36%	25.38%	25.02%
OH	697,742	608,470	653,106	0.45%	20.57%	20.12%
OK	529,248	456,138	492,693	0.71%	18.34%	17.63%
OR	317,294	295,456	306,375	0.34%	20.86%	20.51%
PA	471,980	414,011	442,996	0.53%	19.07%	18.54%
RI	482	387	435	0.00%	24.49%	24.49%
SC	306,005	266,801	286,403	0.58%	14.80%	14.22%
SD	151,219	139,296	145,258	2.06%	14.30%	12.24%
TN	524,174	458,531	491,353	0.41%	12.50%	12.09%
TX	964,078	840,700	902,389	1.06%	20.90%	19.84%
UT	98,856	90,663	94,760	0.18%	16.87%	16.69%
VA	442,928	381,542	412,235	1.02%	17.45%	16.43%
VT	176,403	159,987	168,195	0.53%	27.89%	27.35%
WA	367,005	336,388	351,697	0.44%	18.24%	17.80%
WI	452,047	398,405	425,226	0.98%	16.52%	15.54%
WV	216,986	177,371	197,179	0.60%	19.61%	19.00%
WY	127,719	124,227	125,973	0.73%	12.40%	11.67%

Figure A.10. Number and Percentage of Medicare Enrollees Living in Urban Areas Who Used Telehealth by State

State	Pre-COVID: N	COVID: N	Mean: N	Pre-COVID: %	COVID: %	Difference: %
AK	73,183	71,127	72,155	0.39%	26.32%	25.92%
AL	642,822	549,540	596,181	0.25%	19.53%	19.28%
AR	415,908	372,503	394,206	0.35%	19.40%	19.05%
AZ	1,040,974	983,001	1,011,988	0.26%	26.30%	26.04%
CA	4,467,922	4,109,001	4,288,462	0.18%	35.12%	34.93%
CO	629,570	558,631	594,101	0.28%	23.46%	23.18%
CT	598,792	511,997	555,395	0.10%	29.31%	29.20%
DC	108,088	94,737	101,413	0.13%	31.42%	31.29%
DE	219,007	200,911	209,959	0.23%	31.99%	31.76%
FL	3,921,646	3,618,016	3,769,831	0.12%	22.52%	22.40%
GA	1,250,934	1,116,316	1,183,625	0.25%	19.58%	19.33%
HI	133,357	123,566	128,462	0.17%	29.70%	29.53%
IA	374,998	342,247	358,623	0.44%	17.25%	16.81%
ID	198,961	183,238	191,100	0.08%	17.27%	17.20%

State	Pre-COVID: N	COVID: N	Mean: N	Pre-COVID: %	COVID: %	Difference: %
IL	2,130,799	1,884,624	2,007,712	0.08%	22.45%	22.37%
IN	1,007,792	875,793	941,793	0.14%	21.31%	21.17%
KS	389,663	356,503	373,083	0.17%	14.81%	14.65%
KY	466,336	407,077	436,707	0.24%	20.26%	20.02%
LA	647,825	557,757	602,791	0.19%	17.97%	17.78%
MA	1,578,189	1,479,293	1,528,741	0.04%	38.49%	38.45%
MD	1,361,244	1,291,067	1,326,156	0.16%	30.72%	30.56%
ME	143,355	112,697	128,026	0.16%	25.77%	25.61%
MI	1,468,520	1,192,483	1,330,502	0.16%	26.05%	25.89%
MN	468,994	481,173	475,084	0.69%	30.16%	29.47%
MO	796,820	697,274	747,047	0.25%	17.36%	17.11%
MS	309,916	278,502	294,209	0.18%	19.99%	19.80%
MT	90,401	84,216	87,309	0.16%	14.60%	14.44%
NC	1,407,243	1,258,447	1,332,845	0.25%	20.72%	20.47%
ND	71,166	66,977	69,072	0.79%	12.11%	11.31%
NE	241,822	217,334	229,578	0.17%	13.47%	13.30%
NH	218,305	196,524	207,415	0.07%	29.94%	29.87%
NJ	1,867,099	1,634,850	1,750,975	0.09%	27.39%	27.30%
NM	211,069	191,923	201,496	0.37%	31.15%	30.78%
NV	385,511	348,039	366,775	0.34%	23.19%	22.85%
NY	2,785,367	2,582,199	2,683,783	0.21%	27.67%	27.46%
OH	1,495,658	1,334,884	1,415,271	0.12%	22.27%	22.15%
OK	467,755	415,119	441,437	0.14%	20.51%	20.37%
OR	415,398	377,870	396,634	0.15%	27.29%	27.14%
PA	2,079,734	1,910,766	1,995,250	0.08%	25.20%	25.11%
RI	176,675	159,264	167,970	0.02%	35.06%	35.04%
SC	1,017,078	940,647	978,863	0.27%	17.29%	17.02%
SD	86,000	79,706	82,853	0.17%	14.42%	14.26%
TN	861,771	789,723	825,747	0.14%	13.95%	13.81%
TX	2,983,511	2,708,053	2,845,782	0.35%	26.31%	25.96%
UT	296,261	272,995	284,628	0.08%	19.15%	19.08%
VA	1,535,035	1,405,877	1,470,456	0.18%	22.31%	22.14%
VT	49,687	45,476	47,582	0.13%	34.78%	34.65%
WA	1,065,637	949,747	1,007,692	0.13%	21.60%	21.47%
WI	670,760	583,190	626,975	0.25%	20.27%	20.02%
WV	283,718	240,348	262,033	0.29%	22.18%	21.88%
WY	52,526	51,568	52,047	0.46%	15.57%	15.11%

Figure A.11. COVID: Percentage of Medicare Enrollees Who Used Telehealth and Household Internet Subscription by State and Rural/Urban Status

STATE	REGION	Rural vs. Urban	Total Number of FFS Enrollees	Enrollees who used Telehealth %	Household Internet Subscription %
AK	West	Urban	41,266	53.3%	73.8%
AK	West	Rural	46,517	48.4%	61.7%
AL	South	Urban	315,336	47.7%	63.8%
AL	South	Rural	181,524	41.7%	48.0%
AR	South	Urban	211,692	46.1%	60.1%
AR	South	Rural	197,428	40.9%	45.5%
AZ	West	Urban	558,128	56.4%	73.3%
AZ	West	Rural	116,940	49.1%	50.9%
CA	West	Urban	2,338,890	65.9%	76.2%
CA	West	Rural	344,068	58.6%	60.4%
CO	West	Urban	324,314	51.0%	79.2%
CO	West	Rural	117,954	40.8%	59.2%
CT	Northeast	Urban	292,521	61.8%	76.8%
CT	Northeast	Rural	25,403	56.8%	80.4%
DC	South	Urban	55,282	63.4%	78.0%
DE	South	Urban	113,163	66.1%	76.9%
DE	South	Rural	51,185	61.9%	69.5%
FL	South	Urban	2,029,675	51.4%	72.9%
FL	South	Rural	120,794	41.6%	52.2%
GA	South	Urban	640,879	45.7%	73.1%
GA	South	Rural	224,694	41.1%	53.4%
HI	West	Urban	69,688	60.3%	77.7%
HI	West	Rural	35,590	47.5%	70.4%
IA	Midwest	Urban	193,707	41.7%	70.6%
IA	Midwest	Rural	251,986	34.4%	59.1%
ID	West	Urban	105,652	40.1%	71.8%
ID	West	Rural	88,321	30.6%	57.7%
IL	Midwest	Urban	1,082,052	51.3%	72.5%
IL	Midwest	Rural	283,462	37.3%	56.9%
IN	Midwest	Urban	503,472	50.2%	69.3%
IN	Midwest	Rural	237,479	42.8%	55.1%
KS	Midwest	Urban	202,899	36.3%	73.4%
KS	Midwest	Rural	191,701	31.6%	60.4%
KY	South	Urban	231,574	48.3%	71.0%
KY	South	Rural	274,397	49.8%	57.1%
LA	South	Urban	324,440	44.4%	64.9%
LA	South	Rural	125,604	43.7%	42.5%
MA	Northeast	Urban	826,523	72.4%	78.8%
MA	Northeast	Rural	34,984	71.1%	73.2%

STATE	REGION	Rural vs. Urban	Total Number of FFS Enrollees	Enrollees who used Telehealth %	Household Internet Subscription %
MD	South	Urban	729,205	63.3%	77.1%
MD	South	Rural	52,965	54.7%	59.9%
ME	Northeast	Urban	65,351	53.2%	77.1%
ME	Northeast	Rural	99,419	48.5%	68.5%
MI	Midwest	Urban	691,190	55.2%	70.9%
MI	Midwest	Rural	269,061	45.8%	54.9%
MN	Midwest	Urban	282,633	60.1%	76.8%
MN	Midwest	Rural	173,626	43.0%	60.9%
MO	Midwest	Urban	398,930	41.6%	69.2%
MO	Midwest	Rural	258,988	32.0%	51.7%
MS	South	Urban	159,076	49.5%	60.8%
MS	South	Rural	272,996	43.1%	41.5%
MT	West	Urban	48,617	33.8%	71.8%
MT	West	Rural	122,491	33.5%	62.3%
NC	South	Urban	717,864	48.4%	73.4%
NC	South	Rural	380,708	44.9%	59.1%
ND	Midwest	Urban	38,466	29.6%	73.6%
ND	Midwest	Rural	59,955	26.8%	69.5%
NE	Midwest	Urban	124,129	33.5%	76.1%
NE	Midwest	Rural	132,281	27.2%	60.5%
NH	Northeast	Urban	111,466	61.2%	82.3%
NH	Northeast	Rural	96,085	54.2%	76.2%
NJ	Northeast	Urban	924,842	59.6%	77.6%
NJ	Northeast	Rural	11,457	58.1%	74.0%
NM	West	Urban	112,100	61.8%	65.8%
NM	West	Rural	103,489	53.2%	49.7%
NV	West	Urban	204,180	49.1%	72.9%
NV	West	Rural	58,946	40.0%	63.2%
NY	Northeast	Urban	1,462,153	57.8%	74.3%
NY	Northeast	Rural	235,316	55.1%	65.5%
OH	Midwest	Urban	762,544	51.8%	73.1%
OH	Midwest	Rural	345,547	48.6%	61.4%
OK	South	Urban	239,005	47.1%	67.8%
OK	South	Rural	262,350	42.1%	46.1%
OR	West	Urban	220,089	56.4%	76.4%
OR	West	Rural	170,725	46.9%	63.3%
PA	Northeast	Urban	1,079,278	56.7%	73.2%
PA	Northeast	Rural	233,993	45.5%	64.6%
RI	Northeast	Urban	90,709	70.0%	75.0%
RI	Northeast	Rural	218	51.8%	73.5%
SC	South	Urban	528,029	42.8%	68.9%

STATE	REGION	Rural vs. Urban	Total Number of FFS Enrollees	Enrollees who used Telehealth %	Household Internet Subscription %
SC	South	Rural	152,003	37.1%	50.4%
SD	Midwest	Urban	46,062	35.8%	76.3%
SD	Midwest	Rural	80,148	34.5%	64.6%
TN	South	Urban	447,807	35.5%	68.8%
TN	South	Rural	259,579	31.7%	52.3%
TX	South	Urban	1,559,708	56.1%	69.8%
TX	South	Rural	486,311	46.2%	48.3%
UT	West	Urban	156,945	43.8%	76.7%
UT	West	Rural	52,439	39.1%	67.3%
VA	South	Urban	792,602	51.1%	75.0%
VA	South	Rural	217,472	43.4%	48.0%
VT	Northeast	Urban	26,365	67.9%	78.0%
VT	Northeast	Rural	90,787	56.1%	68.6%
WA	West	Urban	549,380	48.3%	79.7%
WA	West	Rural	193,435	42.3%	65.4%
WI	Midwest	Urban	337,582	45.7%	72.5%
WI	Midwest	Rural	230,778	39.0%	60.8%
WV	South	Urban	137,877	50.5%	66.3%
WV	South	Rural	102,015	44.7%	61.0%
WY	West	Urban	29,337	37.3%	74.5%
WY	West	Rural	71,161	31.6%	64.1%

Figure A.12. COVID: Monthly Percentage of Medicare Enrollees Who Used Telehealth Out of Nursing Facility E/M Visits by Rural/Urban Status

Year	Month	Urban: Number of Nursing Facility Visit	Urban: Telehealth Visits %	Large Rural: Number of Nursing Facility Visit	Large Rural: Telehealth Visits %	Small Rural: Number of Nursing Facility Visit	Small Rural: Telehealth Visits %
2020	Jan	2,366,496	0.0%	305,106	0.3%	220,654	0.5%
2020	Feb	2,197,641	0.0%	282,120	0.2%	206,863	0.4%
2020	Mar	2,182,414	1.6%	284,552	2.4%	201,414	2.6%
2020	Apr	1,933,230	13.8%	260,761	17.3%	183,371	16.8%
2020	May	1,924,272	14.9%	253,176	19.2%	176,120	17.9%
2020	Jun	2,067,177	11.8%	270,496	16.8%	186,949	15.6%
2020	Jul	2,086,199	10.6%	270,627	16.2%	188,263	14.9%
2020	Aug	2,018,361	9.1%	265,368	14.7%	183,425	13.8%
2020	Sep	2,080,485	7.5%	270,814	13.7%	187,872	13.1%
2020	Oct	2,119,740	6.5%	275,772	13.2%	192,846	12.5%
2020	Nov	1,964,038	7.0%	253,561	13.8%	177,961	13.4%
2020	Dec	2,070,437	7.7%	268,331	14.4%	185,573	13.8%

Year	Month	Urban: Number of Nursing Facility Visit	Urban: Telehealth Visits %	Large Rural: Number of Nursing Facility Visit	Large Rural: Telehealth Visits %	Small Rural: Number of Nursing Facility Visit	Small Rural: Telehealth Visits %
2021	Jan	1,981,340	6.4%	256,279	11.7%	178,418	11.5%
2021	Feb	1,930,367	4.8%	245,478	9.9%	173,709	9.2%
2021	Mar	2,215,564	3.2%	283,119	6.4%	198,032	6.0%
2021	Apr	2,089,296	2.6%	268,089	5.1%	188,522	4.6%
2021	May	1,981,412	2.2%	255,604	4.4%	180,269	4.0%
2021	Jun	2,086,977	1.9%	270,854	3.8%	191,096	3.5%

Figure A.13. COVID: Monthly Percentage of Medicare Enrollees Who Used Telehealth Out of Office/Outpatient E/M Visits by Rural/Urban Status

Year	Month	Urban: Number of Office/ outpatient Visit	Urban: Telehealth Visits %	Large Rural: Number of Office / outpatient Visit	Large Rural: Telehealth Visits %	Small Rural: Number of Office/ outpatient Visit	Small Rural: Telehealth Visits %
2020	Jan	18,290,973	0.2%	3,280,083	0.4%	2,395,757	0.5%
2020	Feb	16,116,120	0.2%	2,886,996	0.4%	2,110,190	0.5%
2020	Mar	13,131,266	10.1%	2,423,154	7.2%	1,763,399	6.5%
2020	Apr	10,543,247	53.8%	1,907,733	44.0%	1,360,683	41.7%
2020	May	13,207,664	36.1%	2,428,987	26.3%	1,778,505	24.6%
2020	Jun	16,996,379	21.6%	3,091,277	14.8%	2,273,418	13.7%
2020	Jul	16,628,069	19.4%	2,976,266	13.7%	2,185,885	12.5%
2020	Aug	15,886,005	17.7%	2,866,259	12.7%	2,092,307	11.7%
2020	Sep	16,828,376	15.3%	2,985,363	11.2%	2,191,562	10.4%
2020	Oct	16,995,782	14.7%	2,969,945	11.1%	2,181,049	10.6%
2020	Nov	15,342,457	16.5%	2,699,327	13.2%	1,968,466	13.0%
2020	Dec	16,141,283	19.9%	2,847,471	16.0%	2,061,246	15.3%
2021	Jan	15,608,313	18.8%	2,706,763	14.6%	1,971,351	13.8%
2021	Feb	14,229,991	18.1%	2,447,399	14.0%	1,772,182	13.4%
2021	Mar	17,894,455	13.6%	3,146,807	9.8%	2,313,043	9.1%
2021	Apr	16,714,490	12.1%	2,904,538	8.5%	2,155,958	7.9%
2021	May	15,673,413	11.0%	2,718,547	7.7%	2,011,281	7.1%
2021	Jun	17,323,015	9.6%	3,023,589	6.6%	2,230,927	6.2%

Figure A.14. COVID: Monthly Percentage of Medicare Enrollees Who Used Telehealth Out of Behavior Health E/M Visits by Rural/Urban Status

Year	Month	Urban: Number of Behavior Health Visit	Urban: Telehealth Visits %	Large Rural: Number of Behavior Health Visit	Large Rural: Telehealth Visits %	Small Rural: Number of Behavior Health Visit	Small Rural: Telehealth Visits %
2020	Jan	1,231,996	0.5%	148,438	2.3%	101,724	3.3%
2020	Feb	1,144,695	0.6%	134,595	2.4%	91,826	3.5%
2020	Mar	1,078,246	18.1%	126,026	15.7%	85,730	17.2%
2020	Apr	994,831	60.0%	117,879	55.0%	78,575	57.8%
2020	May	1,000,171	59.6%	115,448	54.1%	78,024	55.6%
2020	Jun	1,128,001	54.7%	131,596	47.2%	88,765	48.5%
2020	Jul	1,142,950	52.6%	131,647	44.1%	89,844	45.2%
2020	Aug	1,093,052	50.9%	127,136	42.3%	86,273	43.5%
2020	Sep	1,163,111	49.8%	134,824	41.2%	91,065	42.4%
2020	Oct	1,178,496	49.2%	134,181	40.7%	91,972	41.5%
2020	Nov	1,064,602	50.3%	121,362	42.8%	82,361	43.8%
2020	Dec	1,115,081	52.8%	125,538	46.4%	86,124	47.1%
2021	Jan	1,043,281	52.6%	120,174	45.5%	81,768	46.3%
2021	Feb	1,029,359	52.5%	117,893	45.4%	80,449	45.8%
2021	Mar	1,209,864	49.3%	142,867	40.7%	97,863	41.0%
2021	Apr	1,122,456	47.4%	132,022	38.0%	91,169	38.0%
2021	May	1,055,946	45.3%	122,760	35.5%	84,826	35.8%
2021	Jun	1,112,332	42.7%	130,804	32.8%	90,164	33.4%

Figure A.15. COVID: Monthly Percentage of Medicare Enrollees Who Used Telehealth Out of Emergency Department E/M Visits by Rural/Urban Status

Year	Month	Urban: Number of Emergency Department Visit	Urban: Telehealth Visits %	Large Rural: Number of Emergency Department Visit	Large Rural: Telehealth Visits %	Small Rural: Number of Emergency Department Visit	Small Rural: Telehealth Visits %
2020	Jan	1,257,879	0.1%	272,969	0.5%	202,724	0.5%
2020	Feb	1,144,371	0.1%	250,117	0.5%	188,185	0.5%
2020	Mar	964,767	0.3%	216,859	0.6%	163,769	0.6%
2020	Apr	679,677	0.9%	153,417	0.9%	116,367	0.9%
2020	May	843,643	0.6%	193,769	0.7%	147,535	0.7%
2020	Jun	925,283	0.5%	212,171	0.6%	161,288	0.6%
2020	Jul	981,408	0.4%	224,963	0.6%	170,588	0.6%
2020	Aug	991,160	0.4%	224,585	0.6%	170,522	0.6%
2020	Sep	977,001	0.4%	220,330	0.6%	166,611	0.6%
2020	Oct	1,007,380	0.4%	226,656	0.6%	172,820	0.7%
2020	Nov	970,786	0.5%	221,855	0.6%	168,358	0.7%
2020	Dec	996,526	0.5%	224,671	0.7%	168,451	0.7%
2021	Jan	933,665	0.5%	207,208	0.7%	156,829	0.7%
2021	Feb	831,943	0.5%	181,001	0.7%	135,638	0.7%
2021	Mar	970,759	0.5%	210,183	0.7%	159,710	0.7%
2021	Apr	969,312	0.4%	212,294	0.7%	161,449	0.7%
2021	May	1,013,561	0.4%	223,350	0.6%	170,632	0.6%
2021	Jun	1,029,616	0.4%	226,502	0.6%	173,127	0.7%

Figure A.16. List of HCPCS Codes Physicians or Other Qualified Health Professionals can Provide by Telehealth for Medicare Enrollees

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
77427	Radiation tx management x5	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
90785	Psytx complex interactive		Yes			
90791	Psych diagnostic evaluation		Yes			
90792	Psych diag eval w/med srvcs		Yes			
90832	Psytx w pt 30 minutes		Yes			
90833	Psytx w pt w e/m 30 min		Yes			
90834	Psytx w pt 45 minutes		Yes			
90836	Psytx w pt w e/m 45 min		Yes			
90837	Psytx w pt 60 minutes		Yes			
90838	Psytx w pt w e/m 60 min		Yes			
90839	Psytx crisis initial 60 min		Yes			
90840	Psytx crisis ea addl 30 min		Yes			
90845	Psychoanalysis		Yes			
90846	Family psytx w/o pt 50 min		Yes			
90847	Family psytx w/pt 50 min		Yes			
90853	Group psychotherapy		Yes			
90875	Psychophysiological therapy	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20		Non-covered service	30Apr2020	
90951	Esrd serv 4 visits p mo <2yr					
90952	Esrd serv 2-3 vsts p mo <2yr					
90953	Esrd serv 1 visit p mo <2yrs	Available up Through the Year in Which the PHE Ends			01Jan2021	
90954	Esrd serv 4 vsts p mo 2-11					
90955	Esrd srv 2-3 vsts p mo 2-11					
90956	Esrd srv 1 visit p mo 2-11	Available up Through the Year in Which the PHE Ends			01Jan2021	
90957	Esrd srv 4 vsts p mo 12-19					
90958	Esrd srv 2-3 vsts p mo 12-19					
90959	Esrd serv 1 vst p mo 12-19	Available up Through the Year in Which the PHE Ends			01Jan2021	
90960	Esrd srv 4 visits p mo 20+					
90961	Esrd srv 2-3 vsts p mo 20+					
90962	Esrd serv 1 visit p mo 20+	Available up Through the Year in Which the PHE Ends			01Jan2021	
90963	Esrd home pt serv p mo <2yrs					
90964	Esrd home pt serv p mo 2-11					

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
90965	Esrd home pt serv p mo 12-19					
90966	Esrd home pt serv p mo 20+					
90967	Esrd svc pr day pt <2					
90968	Esrd svc pr day pt 2-11					
90969	Esrd svc pr day pt 12-19					
90970	Esrd svc pr day pt 20+					
92002	Eye exam new patient	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
92004	Eye exam new patient	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
92012	Eye exam establish patient	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
92014	Eye exam&tx estab pt 1/>vst	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
92507	Speech/hearing therapy	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
92508	Speech/hearing therapy	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20	Yes		30Apr2020	
92521	Evaluation of speech fluency	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
92522	Evaluate speech production	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
92523	Speech sound lang comprehen	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
92524	Behavral qualit analys voice	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
92526	Oral function therapy	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92550	Tympanometry & reflex thresh	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92552	Pure tone audiometry air	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92553	Audiometry air & bone	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92555	Speech threshold audiometry	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92556	Speech audiometry complete	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92557	Comprehensive hearing test	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
92563	Tone decay hearing test	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92565	Stenger test pure tone	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92567	Tympanometry	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92568	Acoustic refl threshold tst	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92570	Acoustic immitance testing	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92587	Evoked auditory test limited	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92588	Evoked auditory tst complete	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 5/10/21			10May2021	
92601	Cochlear implt f/up exam <7	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
92602	Reprogram cochlear implt <7	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
92603	Cochlear implt f/up exam 7/>	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
92604	Reprogram cochlear implt 7/>	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
92607	Ex for speech device rx 1hr	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92608	Ex for speech device rx addl	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92609	Use of speech device service	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92610	Evaluate swallowing function	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92625	Tinnitus assessment	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92626	Eval aud funcj 1st hour	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
92627	Eval aud funcj ea addl 15	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
93750	Interrogation vad in person	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
93797	Cardiac rehab	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	
93798	Cardiac rehab/monitor	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	
94002	Vent mgmt inpat init day	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
94003	Vent mgmt inpat subq day	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
94004	Vent mgmt nf per day	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
94005	Home vent mgmt supervision	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20		Bundled code	30Apr2020	
94664	Evaluate pt use of inhaler	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
95970	Alys npgt w/o prgrmg	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	
95971	Alys smpl sp/pn npgt w/prgrm	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	
95972	Alys cplx sp/pn npgt w/prgrm	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	
95983	Alys brn npgt prgrmg 15 min	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	
95984	Alys brn npgt prgrmg addl 15	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	
96105	Assessment of aphasia	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
96110	Developmental screen w/score	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20		Non-covered service	30Apr2020	
96112	Devel tst phys/qhp 1st hr	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
96113	Devel tst phys/qhp ea addl	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
96116	Nubhvl xm phys/qhp 1st hr		Yes			
96121	Nubhvl xm phy/qhp ea addl hr		Yes			
96125	Cognitive test by hc pro	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
96127	Brief emotional/behav assmt	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20	Yes		30Apr2020	
96130	Psycl tst eval phys/qhp 1st	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
96131	Psycl tst eval phys/qhp ea	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
96132	Nrpsyc tst eval phys/qhp 1st	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
96133	Nrpsyc tst eval phys/qhp ea	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
96136	Psycl/nrpsyc tst phy/qhp 1st	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
96137	Psycl/nrpsyc tst phy/qhp ea	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
96138	Psycl/nrpsyc tech 1st	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
96139	Psycl/nrpsyc tst tech ea	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
96156	Hlth bhv assmt/reassessment		Yes			
96158	Hlth bhv ivntj indiv 1st 30		Yes			
96159	Hlth bhv ivntj indiv ea addl		Yes			
96160	Pt-focused hlth risk assmt		Yes			
96161	Caregiver health risk assmt		Yes			
96164	Hlth bhv ivntj grp 1st 30		Yes			
96165	Hlth bhv ivntj grp ea addl		Yes			
96167	Hlth bhv ivntj fam 1st 30		Yes			
96168	Hlth bhv ivntj fam ea addl		Yes			
96170	Hlth bhv ivntj fam wo pt 1st	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20		Non-covered service	30Apr2020	
96171	Hlth bhv ivntj fam w/o pt ea	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20		Non-covered service	30Apr2020	
97110	Therapeutic exercises	Available up Through the Year in Which the PHE Ends			01Jan2021	
97112	Neuromuscular reeducation	Available up Through the Year in Which the PHE Ends			01Jan2021	
97116	Gait training therapy	Available up Through the Year in Which the PHE Ends			01Jan2021	
97129	Ther ivntj 1st 15 min	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
97130	Ther ivntj ea addl 15 min	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 3/30/21			30Mar2021	
97150	Group therapeutic procedures	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97151	Bhv id assmt by phys/qhp	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
97152	Bhv id suprt assmt by 1 tech	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97153	Adaptive behavior tx by tech	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97154	Grp adapt bhv tx by tech	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97155	Adapt behavior tx phys/qhp	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97156	Fam adapt bhv tx gdn phy/qhp	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97157	Mult fam adapt bhv tx gdn	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97158	Grp adapt bhv tx by phy/qhp	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97161	Pt eval low complex 20 min	Available up Through the Year in Which the PHE Ends			01Jan2021	
97162	Pt eval mod complex 30 min	Available up Through the Year in Which the PHE Ends			01Jan2021	
97163	Pt eval high complex 45 min	Available up Through the Year in Which the PHE Ends			01Jan2021	
97164	Pt re-eval est plan care	Available up Through the Year in Which the PHE Ends			01Jan2021	
97165	Ot eval low complex 30 min	Available up Through the Year in Which the PHE Ends			01Jan2021	
97166	Ot eval mod complex 45 min	Available up Through the Year in Which the PHE Ends			01Jan2021	
97167	Ot eval high complex 60 min	Available up Through the Year in Which the PHE Ends			01Jan2021	
97168	Ot re-eval est plan care	Available up Through the Year in Which the PHE Ends			01Jan2021	
97530	Therapeutic activities	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97535	Self care mngment training	Available up Through the Year in Which the PHE Ends	Yes		01Jan2021	
97542	Wheelchair mngment training	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
97750	Physical performance test	Available up Through the Year in Which the PHE Ends			01Jan2021	
97755	Assistive technology assess	Available up Through the Year in Which the PHE Ends			01Jan2021	
97760	Orthotic mgmt&traing 1st enc	Available up Through the Year in Which the PHE Ends			01Jan2021	
97761	Prosthetic traing 1st enc	Available up Through the Year in Which the PHE Ends			01Jan2021	
97802	Medical nutrition indiv in		Yes			
97803	Med nutrition indiv subseq		Yes			
97804	Medical nutrition group		Yes			

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
99202	Office/outpatient visit new					
99203	Office/outpatient visit new					
99204	Office/outpatient visit new					
99205	Office/outpatient visit new					
99211	Office/outpatient visit est					
99212	Office/outpatient visit est					
99213	Office/outpatient visit est					
99214	Office/outpatient visit est					
99215	Office/outpatient visit est					
99217	Observation care discharge	Available up Through the Year in Which the PHE Ends			01Jan2021	
99218	Initial observation care	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99219	Initial observation care	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99220	Initial observation care	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99221	Initial hospital care	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99222	Initial hospital care	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99223	Initial hospital care	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99224	Subsequent observation care	Available up Through the Year in Which the PHE Ends			01Jan2021	
99225	Subsequent observation care	Available up Through the Year in Which the PHE Ends			01Jan2021	
99226	Subsequent observation care	Available up Through the Year in Which the PHE Ends			01Jan2021	
99231	Subsequent hospital care					
99232	Subsequent hospital care					
99233	Subsequent hospital care					
99234	Observ/hosp same date	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99235	Observ/hosp same date	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99236	Observ/hosp same date	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99238	Hospital discharge day	Available up Through the Year in Which the PHE Ends			01Jan2021	
99239	Hospital discharge day	Available up Through the Year in Which the PHE Ends			01Jan2021	
99281	Emergency dept visit	Available up Through the Year in Which the PHE Ends			01Jan2021	
99282	Emergency dept visit	Available up Through the Year in Which the PHE Ends			01Jan2021	

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
99283	Emergency dept visit	Available up Through the Year in Which the PHE Ends			01Jan2021	
99284	Emergency dept visit	Available up Through the Year in Which the PHE Ends			01Jan2021	
99285	Emergency dept visit	Available up Through the Year in Which the PHE Ends			01Jan2021	
99291	Critical care first hour	Available up Through the Year in Which the PHE Ends			01Jan2021	
99292	Critical care addl 30 min	Available up Through the Year in Which the PHE Ends			01Jan2021	
99304	Nursing facility care init	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99305	Nursing facility care init	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99306	Nursing facility care init	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99307	Nursing fac care subseq					
99308	Nursing fac care subseq					
99309	Nursing fac care subseq					
99310	Nursing fac care subseq					
99315	Nursing fac discharge day	Available up Through the Year in Which the PHE Ends			01Jan2021	
99316	Nursing fac discharge day	Available up Through the Year in Which the PHE Ends			01Jan2021	
99324	Domicil/r-home visit new pat	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
99325	Domicil/r-home visit new pat	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
99326	Domicil/r-home visit new pat	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
99327	Domicil/r-home visit new pat	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99328	Domicil/r-home visit new pat	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99334	Domicil/r-home visit est pat					
99335	Domicil/r-home visit est pat					
99336	Domicil/r-home visit est pat	Available up Through the Year in Which the PHE Ends			01Jan2021	
99337	Domicil/r-home visit est pat	Available up Through the Year in Which the PHE Ends			01Jan2021	
99341	Home visit new patient	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99342	Home visit new patient	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
99343	Home visit new patient	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99344	Home visit new patient	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99345	Home visit new patient	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99347	Home visit est patient					
99348	Home visit est patient					
99349	Home visit est patient	Available up Through the Year in Which the PHE Ends			01Jan2021	
99350	Home visit est patient	Available up Through the Year in Which the PHE Ends			01Jan2021	
99354	Prolong e&m/psyctx serv o/p		Yes			
99355	Prolong e&m/psyctx serv o/p		Yes			
99356	Prolonged service inpatient		Yes			
99357	Prolonged service inpatient		Yes			
99406	Behav chng smoking 3-10 min		Yes			
99407	Behav chng smoking > 10 min		Yes			
99441	Phone e/m phys/qhp 5-10 min	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20	Yes		30Apr2020	Audio-only
99442	Phone e/m phys/qhp 11-20 min	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20	Yes		30Apr2020	Audio-only
99443	Phone e/m phys/qhp 21-30 min	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20	Yes		30Apr2020	Audio-only
99468	Neonate crit care initial	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99469	Neonate crit care subsq	Available up Through the Year in Which the PHE Ends			01Jan2021	
99471	Ped critical care initial	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99472	Ped critical care subsq	Available up Through the Year in Which the PHE Ends			01Jan2021	
99473	Self-meas bp pt educaj/train	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99475	Ped crit care age 2-5 init	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99476	Ped crit care age 2-5 subsq	Available up Through the Year in Which the PHE Ends			01Jan2021	

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
99477	Init day hosp neonate care	Temporary Addition for the PHE for the COVID-19 Pandemic			01Mar2020	
99478	Ic lbw inf < 1500 gm subsq	Available up Through the Year in Which the PHE Ends			01Jan2021	
99479	Ic lbw inf 1500-2500 g subsq	Available up Through the Year in Which the PHE Ends			01Jan2021	
99480	Ic inf pbw 2501-5000 g subsq	Available up Through the Year in Which the PHE Ends			01Jan2021	
99483	Assmt & care pln pt cog imp					
99495	Trans care mgmt 14 day disch					
99496	Trans care mgmt 7 day disch					
99497	Advncd care plan 30 min		Yes			
99498	Advncd care plan addl 30 min		Yes			
0373T	Adapt bhv tx ea 15 min	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
S9152	Speech therapy, re-eval	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20		Not valid for Medicare purposes	30Apr2020	
0362T	Bhv id suprt assmt ea 15 min	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
G0108	Diab manage trn per indiv		Yes			
G0109	Diab manage trn ind/group		Yes			
G0270	Mnt subs tx for change dx		Yes			
G0296	Visit to determ ldct elig		Yes			
G0396	Alcohol/subs interv 15-30mn		Yes			
G0397	Alcohol/subs interv >30 min		Yes			
G0406	Inpt/tele follow up 15		Yes			Telehealth Only
G0407	Inpt/tele follow up 25		Yes			Telehealth Only
G0408	Inpt/tele follow up 35		Yes			Telehealth Only
G0410	Grp psych partial hosp 45-50	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20		Statutory exclusion	30Apr2020	
G0420	Ed svc ckd ind per session		Yes			
G0421	Ed svc ckd grp per session		Yes			
G0422	Intens cardiac rehab w/exerc	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	
G0423	Intens cardiac rehab no exer	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
G0424	Pulmonary rehab w exer	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 10/14/20			14Oct2020	
G0425	Inpt/ed teleconsult30		Yes			Telehealth Only
G0426	Inpt/ed teleconsult50		Yes			Telehealth Only
G0427	Inpt/ed teleconsult70		Yes			Telehealth Only
G0438	Ppps, initial visit		Yes			
G0439	Ppps, subseq visit		Yes			
G0442	Annual alcohol screen 15 min		Yes			
G0443	Brief alcohol misuse counsel		Yes			
G0444	Depression screen annual		Yes			
G0445	High inten beh couns std 30m		Yes			
G0446	Intens behave ther cardio dx		Yes			
G0447	Behavior counsel obesity 15m		Yes			
G0459	Telehealth inpt pharm mgmt		Yes			Telehealth Only
G0506	Comp asses care plan ccm svc		Yes			
G0508	Crit care telehea consult 60					Telehealth Only
G0509	Crit care telehea consult 50					Telehealth Only
G0513	Prolong prev svcs, first 30m		Yes			
G0514	Prolong prev svcs, addl 30m		Yes			
G2086	Off base opioid tx 70min		Yes			
G2087	Off base opioid tx, 60 m		Yes			
G2088	Off base opioid tx, add30		Yes			
G2211	Complex E/M visit add on		Yes	Bundled code		
G2212	Prolong outpt/office vis		Yes			
G9685	Acute nursing facility care	Temporary Addition for the PHE for the COVID-19 Pandemic-Added 4/30/20			30Apr2020	
99421	Online digital E/M services					E-Visit
99422	Online digital E/M services					E-Visit
99423	Online digital E/M services					E-Visit
G2061	Online digital E/M services					E-Visit
G2062	Online digital E/M services					E-Visit
G2063	Online digital E/M services					E-Visit
G0071	Online digital E/M services FQHC					Virtual check-in
G2012	Brief communication (5-10 minutes) technology-					Virtual check-in

Code	Short Description	Status	Can Audio-only Interaction Meet the Requirements?	Medicare Payment Limitations	Start Date	Telehealth Type
	based service, new or established					
G2010	Remote evaluation of recorded video and/or images submitted					Virtual check-in
G2025	FQHC and RHC telehealth services					Telehealth Only
98966	Telephone assessment and management service p					Audio-only
98967	Telephone assessment and management service p					Audio-only
98968	Telephone assessment and management service p					Audio-only
98969	online assessment and management					Telehealth Only
98970	online digital E/M service				01Jan2021	E-Visit
98971	online digital E/M service				01Jan2021	E-Visit
98972	online digital E/M service				01Jan2021	E-Visit
99444	Online evaluation and management					Telehealth Only
99453	Remote monitoring of physiologic parameters					Telehealth Only
99454	Monthly remote monitoring of the physiological parameters					Telehealth Only
99457	Monthly remote monitoring of the physiological parameters					Telehealth Only
99458	interactive virtual care during the calendar month					Telehealth Only
G2250	Remote assessment of recorded video and/or images submitted by an established patient				01Jan2021	Virtual check-in
G2251	synchronous Brief communication technology-based service, e.g. virtual check-in, by a physician or other qualified health care professional 5-10 minutes				01Jan2021	Virtual check-in
G2252	synchronous Brief communication technology-based service, e.g. virtual check-in, by a physician or other qualified health care professional 11-20 minutes				01Jan2021	Virtual check-in

Note: Telehealth CPT codes was downloaded from https://www.cms.gov/Medicare/Medicare-General-Information/Telehealth/Telehealth-Codes in October 2021.