



# Updated Medicare FFS Telehealth Trends by Beneficiary Characteristics, Visit Specialty, and State, 2019-2021

Medicare telehealth flexibilities during the COVID-19 pandemic continued to encourage use of telehealth among Medicare beneficiaries in 2021, with telehealth use highest in 2020, decreasing slightly in 2021 and highest use for behavioral health and primary care visits; as in prior years, utilization varied across states.

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## KEY POINTS

- Utilization of telehealth among Medicare fee-for-service (FFS) beneficiaries in 2021 continued to be far above pre-pandemic levels, but lower than at the peak of 2020.
- Audio-only eligible telehealth visits comprised about one quarter of Medicare telehealth visits in both 2020 and 2021.
- Telehealth utilization in 2021 remained highest for behavioral health compared to non-behavioral health visits; telehealth made up 35% of visits to behavioral health specialists, down from a peak of 56% in 2020. Among visits to primary care providers for behavioral health conditions, telehealth represented 10% of visits by the end of 2021, down from a high of 37% in 2020. Telehealth use by the end of 2021 comprised 5% of primary care visits and 1% of specialist visits for non-behavioral health conditions.
- Hispanic beneficiaries as well as beneficiaries dually enrolled in Medicaid and those with disabilities continued to have the highest use of telehealth in 2021, but at lower levels than 2020.
- In 2021, rural beneficiaries continue to be less likely to use telehealth compared with urban beneficiaries, regardless of whether they resided in a health care professional shortage area or not, or the relative wealth of their community as measured by an index of neighborhood deprivation levels.
- There was wide variation across states in use of telehealth in Medicare, despite uniform federal flexibilities, from under 2% in Alabama to a high of 6-7% in some states in 2020 and 2021; this may be due to variation in state level public health emergency (PHE) flexibilities for telehealth and state licensure requirements that extended for a longer period in some states (e.g., MA, CA, VT).
- About 5 to 6% of all telehealth visits in 2020 and 2021 were with providers located in a different state from the beneficiary's residence. In 2021, this was highest for visits with out-of-state specialists for non-behavioral health conditions (7.5%), and lowest for visits with behavioral health specialists (4.7%). Telehealth visits with an out-of-state primary care provider made up 6.1% of primary care telehealth visits for non-behavioral health conditions and 5.4% of primary care telehealth visits for behavioral health conditions.

## INTRODUCTION

The Medicare telehealth flexibilities introduced during the COVID-19 public health emergency (PHE) and the precautions providers and patients took during the pandemic to avoid in-person health care visits led to an increase in the use of telehealth by beneficiaries from their homes. In earlier ASPE issue briefs on overall trends in Medicare fee-for-service (FFS) health care utilization, we found in-person primary care visits in early 2020 dropped precipitously at the start of the pandemic, but that drop was partially offset by an initial large increase in telehealth services.<sup>1,2,3</sup> This report examines whether the high use of telehealth persists or if health care use has returned to pre-pandemic levels for in-person and telehealth visits by the end of 2021.

This report provides updated 2019-2021 trends in Medicare FFS telehealth utilization. To complement this report, we are also publishing an interactive Medicare Telehealth Trends Dashboard, which will allow people to address questions of interest and examine the uptake of telehealth among Medicare beneficiaries using aggregated claims data by beneficiary characteristics, visit specialty, state, and other geographic variables.

## BACKGROUND

To protect Medicare beneficiaries from exposure to COVID-19, the Centers for Medicare & Medicaid Services (CMS) announced initial telehealth flexibilities on March 17, 2020, augmented through the passage of the Coronavirus Aid, Relief, and Economic Security (CARES) Act<sup>4</sup> and other legislation that allowed telehealth in patients' homes for all Medicare beneficiaries during the pandemic. These were intended to ensure beneficiaries had continued access to care despite the pandemic (see Box 1).<sup>5</sup> This led to a significant increase in the use of telehealth relative to 2019, especially in urban areas as Medicare telehealth was previously limited to rural areas from a health care facility. Subsequently, Congress extended telehealth flexibilities to Medicare beneficiaries several times: first with the Consolidated Appropriations Act and American Rescue Plan of 2021, which permanently extended telehealth for behavioral health care in homes and provided grants for rural areas and behavioral health to increase telehealth capacity. These were followed by the Consolidated Appropriations Act of 2022, which extended Medicare telehealth flexibilities for 151 days after the end of the public health emergency (PHE). Most recently, the Consolidated Appropriations Act of 2023 has extended Medicare telehealth flexibilities until December 2024, even though the federal PHE ended on May 11, 2023.<sup>6</sup>

This report focuses on Fee-for-Service (FFS) Medicare to help inform discussions around making permanent some of the Medicare FFS telehealth flexibilities after the pandemic ends. Of note, Medicaid programs,<sup>7,8,9</sup> Medicare Advantage (MA) plans, and commercial payers<sup>10</sup> already had substantial discretion to implement telehealth even before the pandemic, but many also increased telehealth coverage during the PHE. For example, while MA plans offered contracted telehealth services to their enrollees prior to the pandemic, a review of private payer telehealth coverage found most commercial insurers expanded telehealth coverage at the start of the PHE for all

### BOX 1: PANDEMIC TELEHEALTH FLEXIBILITIES

#### The COVID-19 related waivers allowed for expansion of Medicare FFS telehealth services:

- in urban areas (previously only rural beneficiaries could receive telehealth services)
- in the patient's home (previously beneficiaries had to go to a health care facility for the telehealth visit)
- for 140 additional health care services
- for additional types of providers, who are also now allowed to serve as distant site providers, including federally qualified health centers (FQHCs) and rural health clinics (RHCs)
- through audio-only interactions for some services; and with reduced or waived cost-sharing

medically necessary services and reimbursed providers at the in-person rate and waived cost-sharing for some services.<sup>11</sup> Across payers, telehealth utilization was low prior to the pandemic and increased dramatically at the start of the pandemic, as evidenced by data from national surveys,<sup>12,13</sup> Medicare<sup>14</sup> and commercial claims.<sup>15</sup>

## METHODS

Using the same methodology as prior reports on Medicare telehealth trends, this report provides updated trends from 2019–2021 in Medicare FFS use by beneficiary characteristics, beneficiary geography including urban vs. rural areas defined as Metropolitan Statistical Area (MSA) or non-MSA, state of beneficiary’s residence (to identify visits with out of state providers) and primary care health professional shortage areas (HPSAs). This report also examines telehealth use by visit specialty based on whether the visit was with a primary care provider or specialist/behavioral health specialist; and for primary care visits, whether the primary reason for the visit was for a behavioral health vs. other conditions based on the primary diagnosis code. Behavioral health specialists include general psychiatrists, neuropsychiatrists, psychologists, clinical psychologists, and licensed clinical social workers, and all other specialists. Behavioral health conditions include mental health and substance use disorders. Primary care providers include general practice, family practice, internal medicine, chiropractors, hospice and palliative care, pediatric medicine, geriatric medicine, nurse practitioner, preventive medicine, certified clinical nurse specialists, and physician assistants.

In this report we refer to Part B clinician-billed services from claims line items as “visits” to capture changes in the total volume of services from 2019 to 2021. A typical in-person “visit” to a clinician by a patient may include multiple services on the same day or over several days, such as lab work, imaging, clinician consultation and procedure. Part B visits mostly occur in doctor’s offices, clinics, and hospital outpatient departments; however, they may also include physician consultations in inpatient settings and other facilities.

We used a broad definition of telehealth in this study (Box 2) – a list of codes used in this study is provided in Appendix 1. This includes specific codes for telehealth visits defined and provided by CMS.\* These telehealth codes are intended to substitute for in-person visits and allow the use of both live video chat using *two-way audio-video* communications technology; or the use of audio without video during the PHE, otherwise known as “*audio-only*” telehealth for a subset of the telehealth codes.\* For this study, we also included additional telehealth codes relevant for federally qualified health centers (FQHC) and rural health clinics (RHC); communications technology-based services for virtual check-ins and e-visits;<sup>†</sup> and existing CPT codes for telephone communications (such as brief follow-up calls. Note: CMS added CPT code 98966, 98967, and 98968, in May 2023 which ASPE already included in the dashboard and study as part of ASPE’s expanded telehealth definition). Telecommunications codes were introduced administratively by CMS in 2019 to allow brief virtual check-ins or e-visits – non face-to-face communications initiated by a patient via online patient portals – which do not meet Medicare’s statutory definition of an interactive telehealth visit which requires the use of two-way audio-video communications technology in real-time.

### BOX 2: STUDY DEFINITION OF TELEHEALTH DURING PHE

- CMS defined list of telehealth visits via two-way audio-video communications technology
- Audio-only telehealth visits (subset of CMS telehealth visits) allowed during the COVID-19 public health emergency
- Additional telehealth codes for FQHC and RHCs
- Telecommunications services – virtual check-ins and e-visits
- Follow-up telephone communications

\* <https://www.cms.gov/Medicare/Medicare-General-Information/Telehealth/Telehealth-Codes>

† <https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet>

We also consider the modality of telehealth by assessing what share of telehealth visits are *audio-only eligible*, meaning they *could* be reimbursable by Medicare as a telehealth visit if it was conducted via audio-only modality, for instance, by telephone; however, we are unable to determine whether the telehealth visit was provided with audio-only technology or via a two-way audio-video interaction, and as such represents an *upper bound* on the share of Medicare telehealth visits using audio-only technology. Of note, the subset of telehealth services designated as audio-only eligible include mostly psychotherapy services and preventive health counseling services.

The results presented in this report are based on aggregated Medicare FFS claims data, developed, and published by ASPE on an interactive dashboard, available on ASPE's website: [www.aspe.hhs.gov](http://www.aspe.hhs.gov) as well as the HHS Telehealth website: [www.Telehealth.HHS.gov](http://www.Telehealth.HHS.gov). We would like to acknowledge the contributions of the HHS telehealth interagency workgroup, which included AHRQ, CMS, HRSA, and OASH, for their input into the design of this dashboard.

## Medicare Telehealth Trends Dashboard



Telehealth.HHS.gov

Users can use the dashboard to address their own questions of interest by manipulating charts in the dashboard for the population, geography and visit type of interest.

## RESULTS

The findings from our analyses are presented in five main areas:

1. Medicare FFS telehealth trends 2019-2021
2. Telehealth modalities – two-way audio-video vs. audio-only eligible telehealth visits, by geography
3. Telehealth trends by visit specialty
4. Telehealth use by beneficiary characteristics (race/ethnicity, disability, dual enrollment in Medicaid, geography)
5. State telehealth use by state and with out-of-state providers

### Medicare FFS Telehealth Trends 2019-2021

*Use of telehealth continues among Medicare beneficiaries in 2021, but at lower levels than 2020.*

Medicare FFS data showed telehealth use peaked in early 2020 at the start of the pandemic and has been declining since. However, telehealth utilization still remained higher throughout 2021 than it was before the pandemic. Prior to the start of the COVID-19 pandemic, telehealth use was low (< 1% of Medicare FFS Part B services and visits) - primarily due to Medicare's geographic restriction limiting telehealth to beneficiaries in health care facilities in rural areas. Telehealth visits increased from under 1 million in 2019 to 53 million in 2020 and 37 million in 2021 (Table 1).

However, telehealth visits only partially offset decreased levels of in-person visits, which have not yet resumed to pre-pandemic levels - a decrease of 11% in total visits in 2020 and a decrease of 6% in 2021 compared with 2019. Medicare FFS enrollment has remained somewhat steady during this period, albeit with a slight decline due to changes in enrollment from FFS to MA, as well as deaths. Our separate analysis of MA data generally showed similarly large increase in uptake of telehealth as FFS, despite availability of telehealth as a supplemental benefit among MA plans pre-pandemic (data not shown). The low rates of telehealth use in MA

pre-pandemic (<1% of total visits) is likely because telehealth in MA plans was mostly provided via national telehealth companies and not directly by the health care providers regularly seen by beneficiaries. The Medicare FFS telehealth flexibilities allowed MA providers to also offer telehealth during the pandemic. Other studies have shown similar rates of telehealth use among FFS and MA beneficiaries during the pandemic,<sup>16</sup> and an increase in MA plans offering telehealth as a supplemental benefit from 91% in 2020 to 98% in 2021.<sup>17</sup>

**Table 1. Changes in Medicare FFS Part B Visits by Modality (In-Person, Telehealth), 2019-2021**

Visit Modality	2019	2020	2021	Change 2019-2020	Change 2019-2021	Change 2020-2021
<b>Total Visits</b>	1,120,819,592	994,228,089	1,053,389,364	<b>-11%</b> -126,591,503	<b>-6%</b> -67,430,228	<b>6%</b> 59,161,275
<b>In-Person</b>	99.9% 1,119,958,785	94.7% 941,143,301	96.5% 1,016,341,701	<b>-16%</b> -178,815,484	<b>-9%</b> -103,617,084	<b>8%</b> 75,198,400
<b>Telehealth</b>	0.08% 860,807	5.3% 53,084,788	3.5% 37,047,663	<b>6,067%</b> 52,223,981	<b>4,204%</b> 36,186,856	<b>-30%</b> -16,037,125
Audio-Video Telehealth	0.06% 674,199	3.5% 34,827,479	2.2% 23,032,594	<b>5,066%</b> 34,153,280	<b>3,316%</b> 22,358,395	<b>-34%</b> -11,794,885
Audio-only Eligible	0.02% 186,608	1.8% 18,257,192	1.3% 14,015,020	<b>9,684%</b> 18,070,584	<b>7,410%</b> 13,828,412	<b>-23%</b> -4,242,172

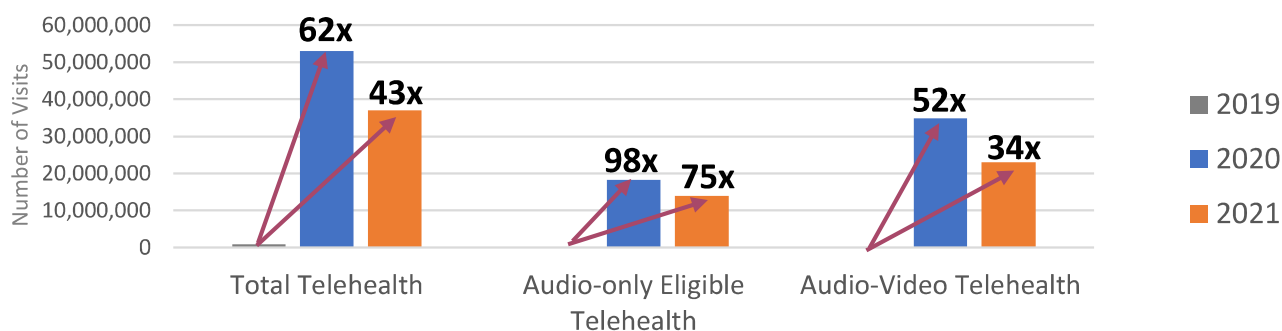
Source: ASPE analysis of Medicare FFS claims 2019-2021

Note: The change in Part B health care services between 2019 and 2019 was calculated for all Part B services and separately for in-person and telehealth services using telehealth service codes CMS published for 2021. Medicare telehealth services are reported as a percentage of total Part B services.

This represents a 62-fold increase from 2019 to 2020 (Figure 1) and represents a shift from less than 1% of total visits in 2019 to a high of 5.3% in 2020 and down to 3.5% in 2021. From 2020 to 2021, telehealth visits decreased by a third but were still over 40 times higher than before the pandemic. The subset of audio-only eligible telehealth visits – a newly added flexibility during the PHE – saw a much larger relative increase (98 and 75 times increase between the 2019 baseline and 2020, and 2021, respectively) than two-way audio-video telehealth visits (52 and 34 times increase compared to 2020, and 2021, respectively) from pre-pandemic levels. Audio-only eligible telehealth visits increased from less than 200,000 in 2019 to 18 million in 2020 and 14 million in 2021.

*Telehealth use increased drastically in 2020 and has remained above pre-pandemic levels*

**Figure 1. Change in Number of Medicare FFS Telehealth Visits, 2019-2021**



Source: ASPE analysis of Medicare FFS claims 2019-2021

## Telehealth Modalities – Two-Way Audio-Video vs. Audio-Only Eligible Telehealth Visits, by Geography

In 2021, telehealth visits comprised about 3.5% of total visits, with a slightly higher rate in urban areas (3.8%) compared with rural areas (2.7%) (figure 2a), reversing pre-pandemic trends when Medicare telehealth was mostly restricted to rural areas. However, there were smaller urban-rural differences in rates of audio-only eligible telehealth.

Figure 2b shows that audio-only eligible telehealth visits comprised a small portion of total Part B visits, increasing from <1% of total visits in 2019 to a high of 2% among urban beneficiaries and 1.4% among rural beneficiaries in 2020, and declining slightly in 2021 to 1.4% in urban areas and 1% in rural areas. Beneficiaries living in primary care health professional shortage areas (HPSA) had slightly lower use of audio-only eligible telehealth visits during the pandemic than their counterparts in urban and rural areas. Further research is needed to understand this trend, and whether providers in shortages areas were more or less likely to adopt audio-only telehealth visits, or if may be due to pressures on capacity. There was also a shortage of health care workers especially in rural areas during the pandemic and closures of some rural hospitals and primary care clinics.<sup>18,19,20</sup> One study of federally qualified health centers in California found much higher use of audio-only telehealth visits than two-way audio-video telehealth visits, which this has declined since the peak of the pandemic in favor of in-person visits for primary care.<sup>21</sup>

Figure 2c shows the proportion of total telehealth visits among the subset of audio-only eligible telehealth visits by urban and rural areas, with a higher rate of change for urban beneficiaries than rural beneficiaries from 2019 to 2020 and 2021.

Note: the subset of audio-only eligible telehealth codes includes many for behavioral health services, and the increase in the use of audio-only eligible telehealth visits may also reflect increased demand for tele-behavioral health, in addition to potential need and preference by beneficiaries for audio-only telehealth modalities.

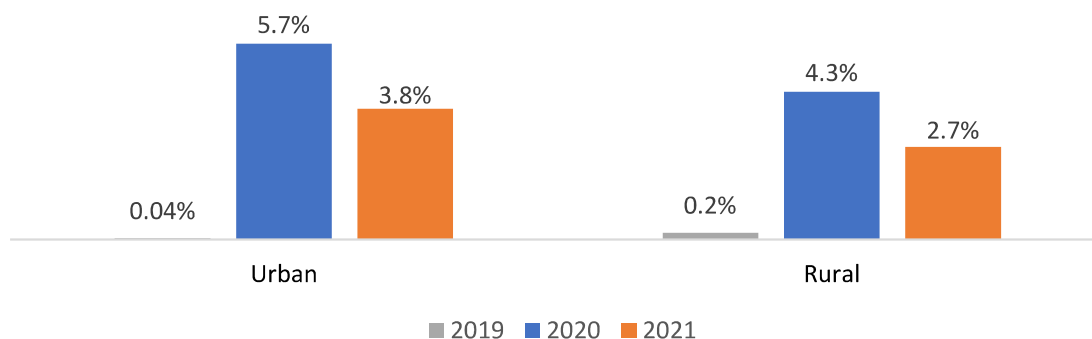
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*Telehealth use was higher in urban areas compared to rural in 2020 and 2021, whereas rates of audio-only eligible telehealth visits in urban and rural areas were more similar and comprised about one quarter of telehealth visits in both 2020 and 2021.*

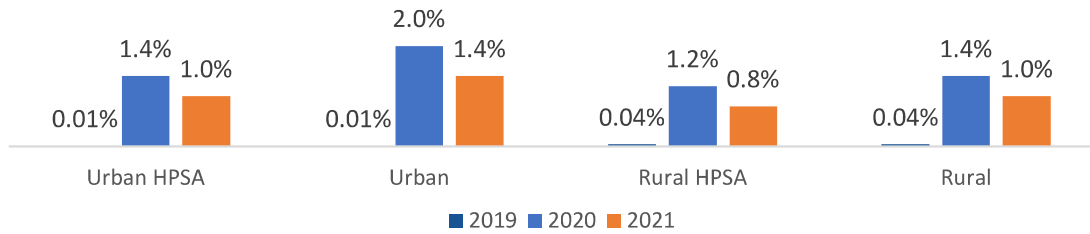
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**Figure 2. Telehealth and Audio-only Eligible\* Visits by Geography, 2019-2021**

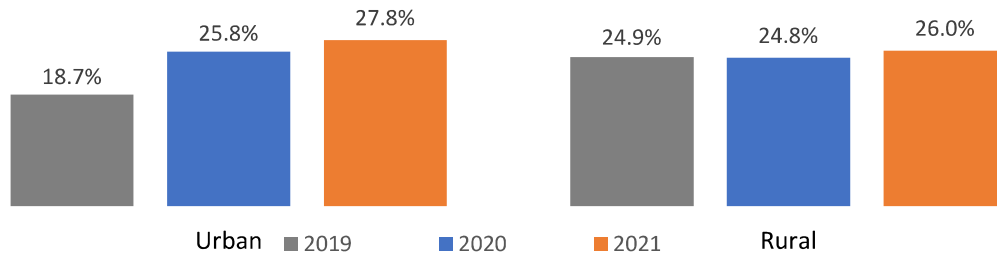
2a: Percent of Total Visits via Telehealth, Urban vs Rural, 2019-2021



2b: Percent of Total Visits via *Audio-only Eligible* Telehealth,\* Urban vs. Rural HPSAs, 2019-2021



2c. Audio-only Eligible as a Proportion of Telehealth Visits,\* Urban vs. Rural, 2019-2021



Source: ASPE analysis of Medicare FFS claims 2019-2021

\*These data do not reflect actual receipt of telehealth via audio-only technology; actual use may be much lower as this reflects a subset of telehealth codes that could be reimbursed by Medicare if the visit was via an audio-only interaction.

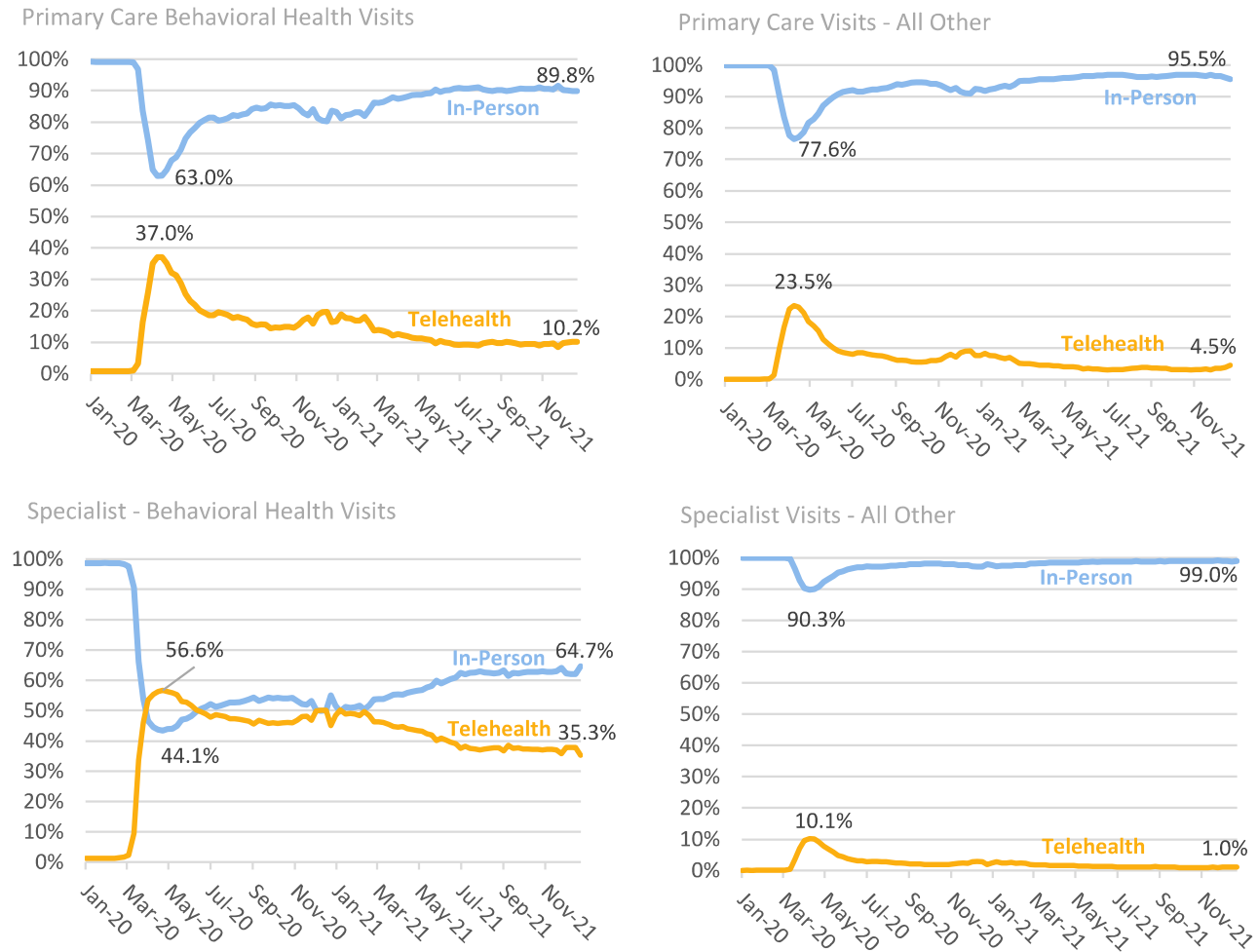
### Telehealth Trends by Visit Specialty

The share of Medicare services conducted via telehealth at the end of 2021 was highest for behavioral health specialists (35%), followed by primary care providers for a behavioral health condition (10%) or a non-behavioral health condition (5%), and lowest for specialists for non-behavioral health conditions (1%).

We examined trends in telehealth categorized by a combination of visit specialty (primary care vs. specialist provider), and whether the primary reason for the visit was for a behavioral health condition or a medical condition. Telehealth use was highest in April 2020 during the lock-down, with use increasing from <1% of Medicare visits to 57% of behavioral health specialist visits, 37% of primary care visits for a behavioral health condition, 10% of specialist visits for non-behavioral health conditions, and 23% of primary visits for all other conditions (Figure 3).

By the end of 2021, telehealth use continued to represent more than one-third of visits to behavioral health specialists (35%) and 10% of primary care visits for behavioral health, but only 5% of non-behavioral health primary care visits and 1% of specialist visits for all other conditions. This underscores the major reliance on tele-behavioral health during the pandemic. The increase in total number of tele-behavioral health visits from 2019-2021 was large, increasing from < 1 million in 2019 to 53 million in 2020, and decreasing to 37 million telehealth services in 2021, which is still substantially higher than pre-pandemic levels. Figure 3 shows telehealth as a share of total visits by visit specialty type.

**Figure 3. Telehealth Use by Visit Specialty (Provider Specialty and Reason for Visit), 2020-2021**



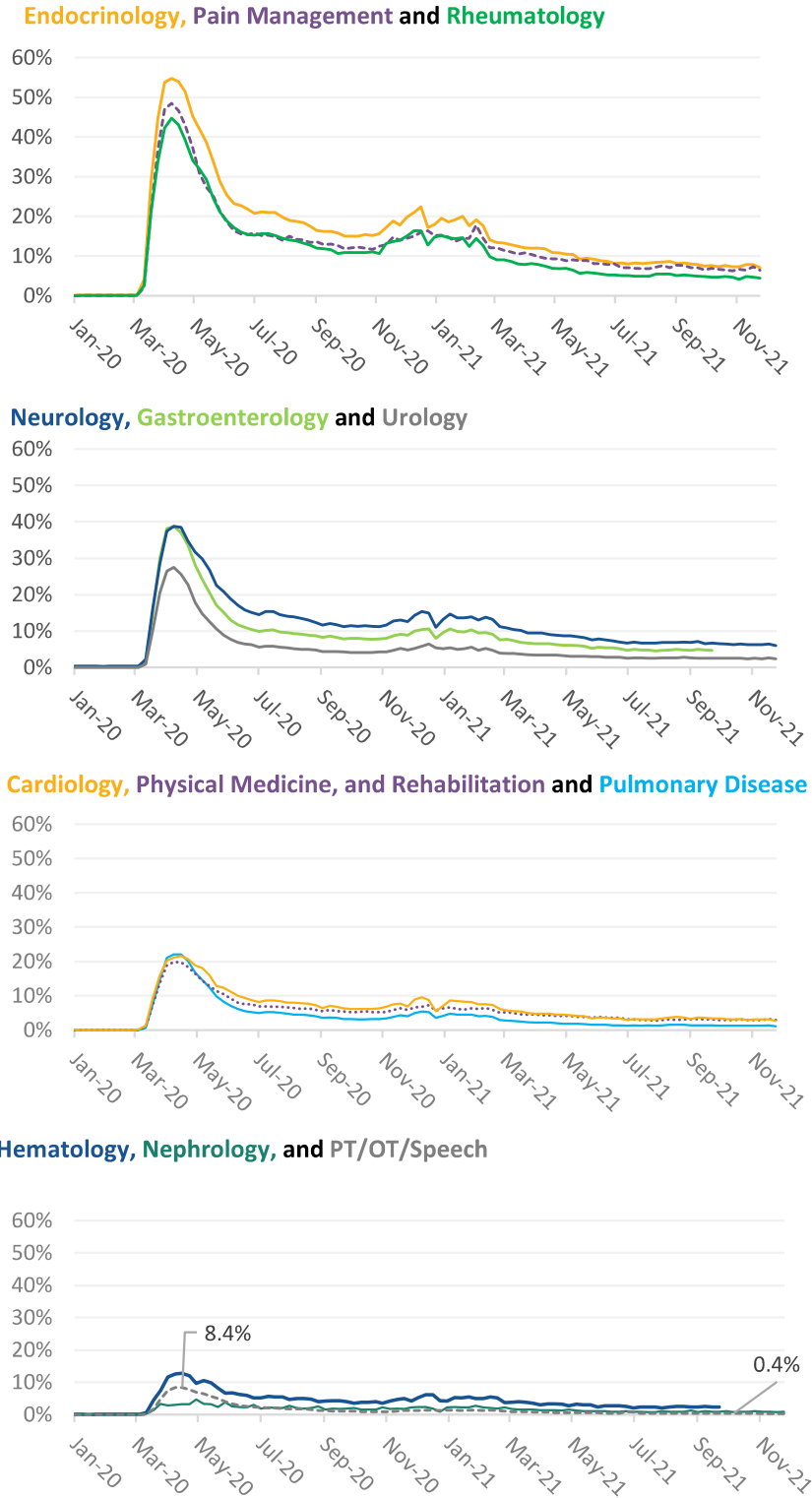
Source: ASPE analysis of Medicare FFS claims 2019-2021

**Clinical Specialties Most Likely to Use Telehealth**

Next, we identified the top 12 non-behavioral health specialist providers who used telehealth as a proportion of total visits for each specialty (see Figure 4 from top to bottom), in descending order: Endocrinology, Pain Management, Rheumatology, Neurology, Gastroenterology, Urology, Cardiology, Physical Medicine and Rehabilitation, Pulmonary Disease, Hematology, Nephrology, PT/OT/Speech. As may be expected, specialties that treat conditions that rely less on in-person exams and lab tests may have been able to switch to telehealth at the start of the pandemic. However, the sharp drop in telehealth use after the peak of the pandemic – for example, from a high of 50% of endocrinology visits in March 2020 to about 10% by the end of 2021 – suggests most specialists and their patients resumed in-person visits.



**Figure 4. Top 12 Specialties: Proportion of Specialist Visits (for non-behavioral health conditions) via Telehealth, 2020-2021**



**TOP 12 SPECIALTIES USING TELEHEALTH IN PANDEMIC**

Non-behavioral health specialties:

1. Endocrinology
2. Pain Management
3. Rheumatology
4. Neurology
5. Gastroenterology
6. Urology
7. Cardiology
8. Physical Medicine and Rehabilitation
9. Pulmonary Disease
10. Hematology
11. Nephrology
12. PT/OT/Speech\*

*Under Medicare telehealth flexibilities, **physical, occupational and speech therapists** were allowed to deliver care via telehealth for the first time during the pandemic; telehealth rates were about 8% at the peak of the pandemic in 2020, and declined to below 1% by the end of 2021.*

Source: ASPE analysis of Medicare FFS claims 2019-2021

*\*These graphs specifically included PT/OT/speech providers as these specialties are not on the list of provider types allowed to provide care via telehealth without the PHE Medicare telehealth flexibilities. Primary care providers were also not included in this ranking; primary care visits were more likely to be via telehealth than visits to specialists.*

## Telehealth Use by Beneficiary Characteristics

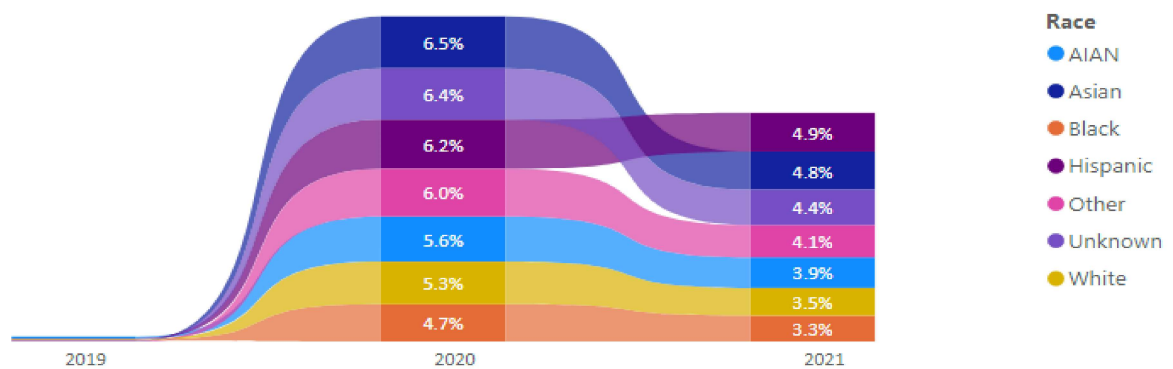
Hispanic and Asian beneficiaries, as well as beneficiaries dually enrolled in Medicaid and those with disabilities continued to have the highest use of telehealth in 2021, but at lower levels than in 2020.

### Telehealth use by race/ethnicity

Overall, all racial and ethnic groups experienced higher use of telehealth use as a proportion of total visits in 2020 and 2021 compared with 2019, but with lower rates in 2021 than 2020 for all groups (Figure 5).

Although telehealth use as a proportion of total visits was similarly low (<1%) among all race/ethnic groups, during the pandemic Medicare beneficiaries who were Hispanic, Asian, or of Unknown race/ethnicity had higher rates of telehealth use than White beneficiaries, while Black beneficiaries had the lowest rates of telehealth use. The relative rankings of telehealth use by race/ethnicity groups in 2020 and 2021 are shown in Figure 5. As telehealth use declined from 2020 to 2021, there were changes in the relative rankings of race/ethnicity groups based on telehealth use. Hispanic beneficiaries rose in their relative ranking of telehealth use from third to first, while Asian beneficiaries dropped in their relative ranking from first to second.

**Figure 5. Telehealth Use by Race/Ethnicity, 2019-2021**



Source: Medicare Telehealth Trends Dashboard – developed by ASPE’s Office of Health Policy

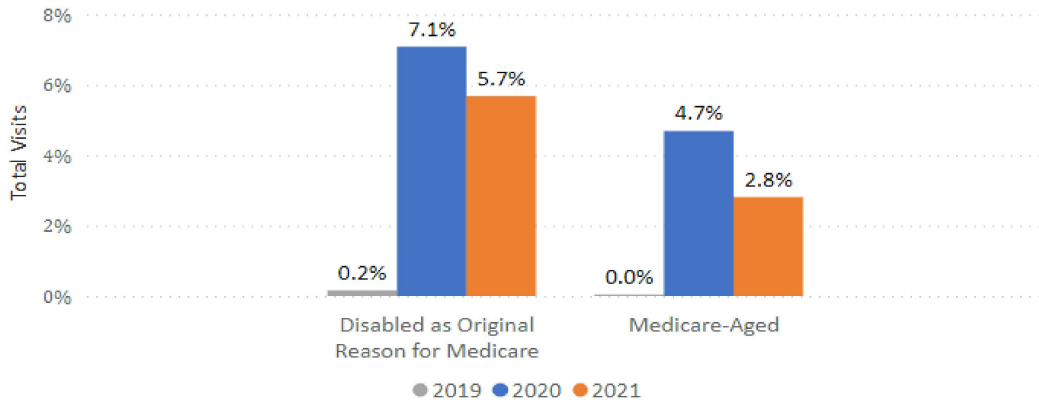
Note: These graphs only represent the breakdown of telehealth among health care users, and do not reflect whether the availability of telehealth may have changed access to care among all beneficiaries, including those who may previously have not accessed health care or had challenges accessing health care. The differences in telehealth use may reflect differences in health care needs, in addition to patient preferences and whether providers offered telehealth.

### Telehealth use by disability status and dual enrollment in Medicaid

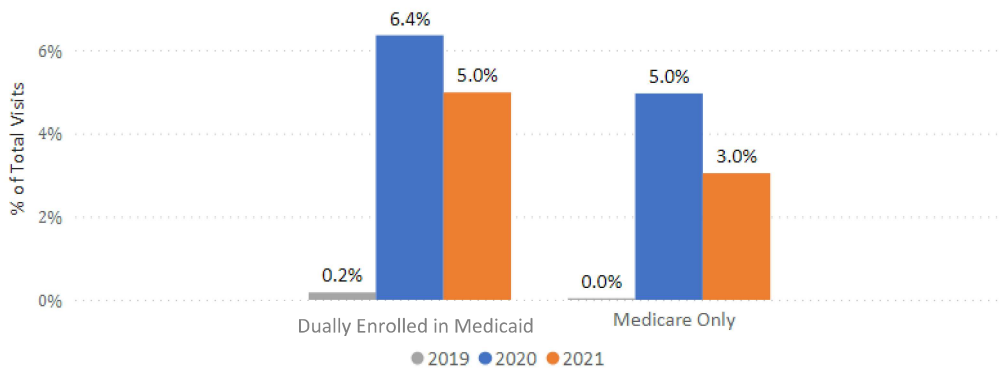
Telehealth use among beneficiaries whose original reason for Medicare entitlement was a disability and those dually-enrolled in Medicaid and Medicare continued to be higher in 2021 compared with Medicare aged or Medicare-only population, but at lower rates than 2020. The decline in telehealth use between 2020 and 2021 was larger for the Medicare aged or Medicare-only groups than for disabled or dually-enrolled beneficiaries. The continued higher use of telehealth in these vulnerable populations may reflect greater concern about the COVID-related risk of in-person health care visits, mobility, and transportation challenges for in-person care, or other factors. Furthermore, these populations generally have higher rates of health care utilization and expenditures compared to Medicare-only and Medicare-aged populations due to greater severity and complexity of illness.<sup>22</sup>

**Figure 6. Telehealth Use as Proportion of Total Visits by Disability Status (original reason for Medicare) and Dual-Enrollment in Medicaid, 2019-2021**

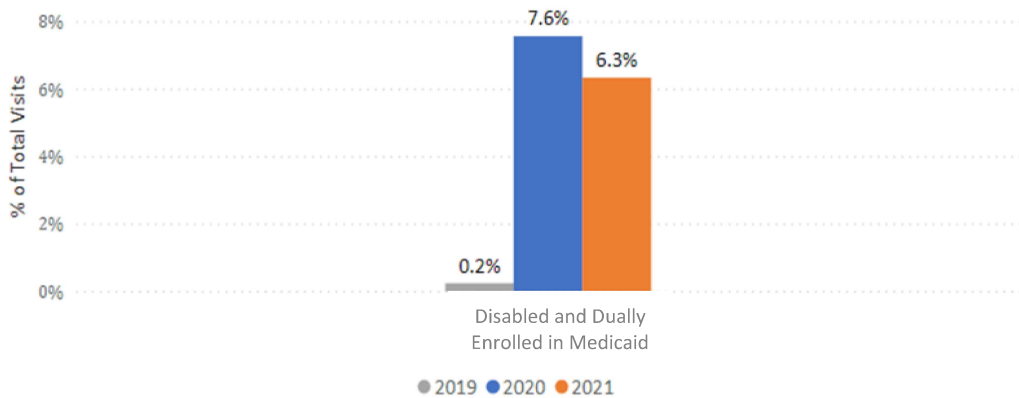
6a. Telehealth Use by Disability Status from 2019-2021 – Percent of Total Visits



6b. Telehealth Use by Dual Enrolled Status from 2019-2021 – Percent of Total Visits



6c. Telehealth Use by Disability and Dual Enrolled Status from 2019-2021 – Percent of Total Visits



Source: ASPE analysis of Medicare FFS claims 2019-2021

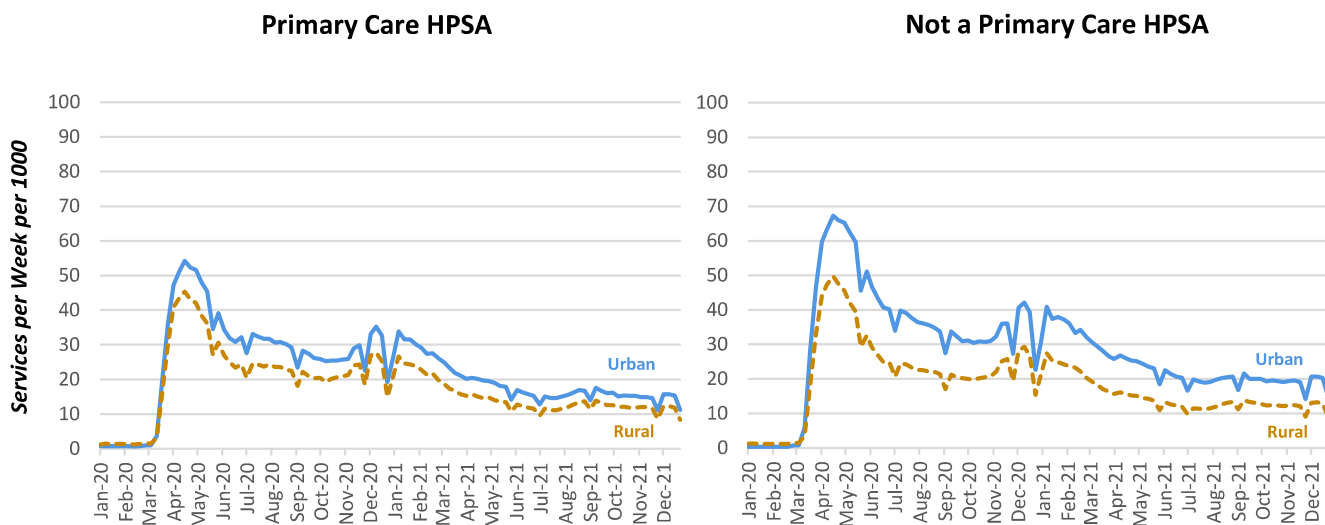
## Telehealth Use by Beneficiary Geography

Overall, the increase in telehealth use in 2020 and 2021 was lower in rural areas compared with urban areas (18-fold increase vs. 120-fold increase respectively between 2019 and 2020), with a slight decline in telehealth use from 2020 to 2021 (Figure 7). This reverses geographic trends prior to the PHE when Medicare telehealth was limited to rural areas and required rural beneficiaries to be present in a health care facility.

The availability of providers in a geographic area may also play a role in telehealth use. Beneficiaries residing in a primary care health professional shortage area (HPSA) had similar rates of telehealth for both urban and rural HPSAs which may reflect capacity issues among providers serving beneficiaries in shortage areas (Figure 7, left panel). An urban advantage in access to telehealth is evident for urban beneficiaries not residing in a primary care shortage area (Figure 7, right panel), with higher use of telehealth compared with those in rural non-shortage areas. Similar patterns were found for telehealth use in mental health shortage areas. This suggests rural beneficiaries may have less access to telehealth due to infrastructure and technology issues, such as limited access to broadband.

*Rates of telehealth use were lower in rural areas than urban areas in 2020-2021, but similar in both primary HPSA and non-shortage areas after the peak of the pandemic, and regardless of the wealth of the community, as measured by an index of neighborhood*

**Figure 7. Weekly Trend in Medicare Telehealth Services per 1000 Beneficiaries in Urban and Rural Areas by Primary Care Health Professional Shortage Areas, 2019-2021**

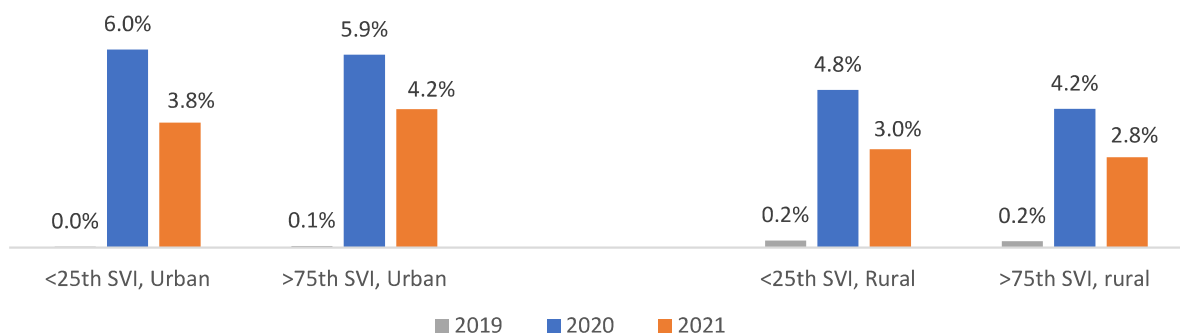


Source: ASPE analysis of Medicare FFS claims 2019-2021

## Neighborhood deprivation not a factor in Medicare telehealth use in urban and rural areas

Neighborhood deprivation, as measured by CDC's Social Vulnerability Index (SVI) did not appear to be a factor in telehealth use within urban and rural areas. Urban beneficiaries in high deprivation areas with SVI greater than the 75<sup>th</sup> percentile had similar rates of telehealth use compared to those in more-resource rich communities (SVI <25<sup>th</sup> percentile); see Figure 8, left set of bars. Similarly, rural beneficiaries (right set of bars) in both deprived and more advantaged communities had similar rates of telehealth use, although at lower levels than urban beneficiaries.

**Figure 8. Telehealth Use as Proportion of Total Visits by CDC’s Social Vulnerability Index in Urban and Rural Areas**



### Telehealth Use by State and with Out-of-State Providers

*During the pandemic there was wide variation in telehealth use by state, and there was greater use of telehealth visits with out-of-state providers for visits with specialists for non-behavioral health conditions than for other visit types.*

Even though Medicare telehealth policy flexibilities applied to all states during the PHE and allowed reimbursement of telehealth services delivered across state lines, providers practicing across state lines are subject to requirements set by the states involved. The chart of telehealth use across states in Figure 9 shows there was wide variation across states in use of telehealth in Medicare in 2021,<sup>‡</sup> from under < 2% in Alabama<sup>§</sup> to a high of 6-7% in some states where public health emergency flexibilities for telehealth and state licensure continued for a longer period such as in MA,<sup>\*\*</sup> CA,<sup>††</sup> and VT<sup>††</sup>. See appendix, table 1 for percent of telehealth visits by state.

This variation may partly reflect state differences in the duration of each state’s public health emergency and policy flexibilities for telehealth and medical licensure for out-of-state providers, access to broadband, and provider factors, as well as state participation in the inter-state medical licensure compact for physicians (IMLC) or psychologists (PSYPACT) prior to the pandemic.<sup>23</sup> While Medicare offered telehealth flexibilities uniformly across the country for determining payment, providers still have to meet state licensure requirements to practice in the state via telehealth. Most states waived their state licensing requirements in 2020 due to the pandemic, but these waivers began to expire at the end of 2021 while others extended these for longer into 2022 and 2023. Participation in licensure compacts facilitates providers to be licensed to deliver care in other states in support of telehealth.<sup>24</sup>

<sup>‡</sup> CMS clarified recognition of the Interstate Medical Licensure Compact (IMLC) as part of meeting federal license requirements for Medicare payment, but not all states participate, <https://www.cms.gov/files/document/se20008.pdf> A map of states participating in the IMLC is available at, <https://www.imlcc.org/>

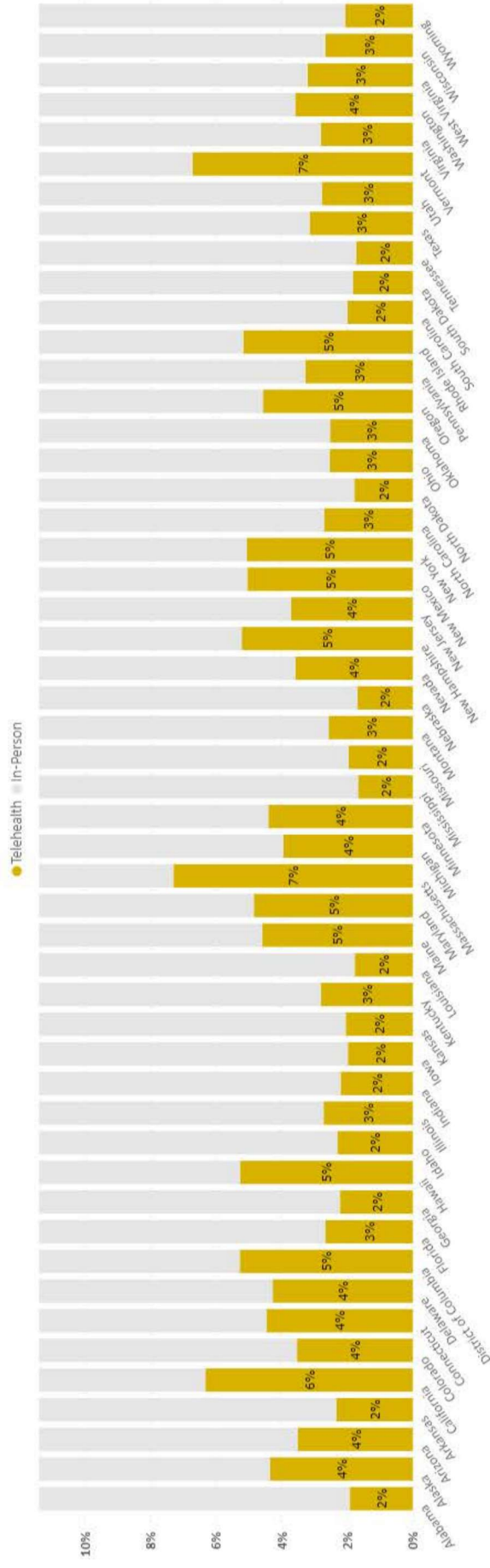
<sup>§</sup> In mid-2020 in response to the COVID-19 pandemic, Alabama allowed out-of-state providers to obtain an emergency license to practice, effective for 4 months only. In mid-2021, it required providers to either be licensed in the state, or through the Interstate Medical Licensure Compact (IMLC) or have obtained a Special Purpose License to practice across state lines via telehealth; the latter was abolished in mid-2022.

<sup>\*\*</sup> Massachusetts implemented a temporary license application process during the state emergency to allow out-of-state providers, which was rescinded in mid-2021.

<sup>††</sup> California’s state of emergency, allowing out-of-state providers is still in effect until end of February 2023. Telehealth flexibilities including use of audio-only technologies and relaxed privacy laws continued until end of 2022.

<sup>††</sup> Vermont allowed out-of-state providers to practice via telemedicine during the state’s public health emergency; these waivers are extended until mid-2023.

Figure 9. State Telehealth Use, Chart – Percent of Telehealth Visits by State in 2021



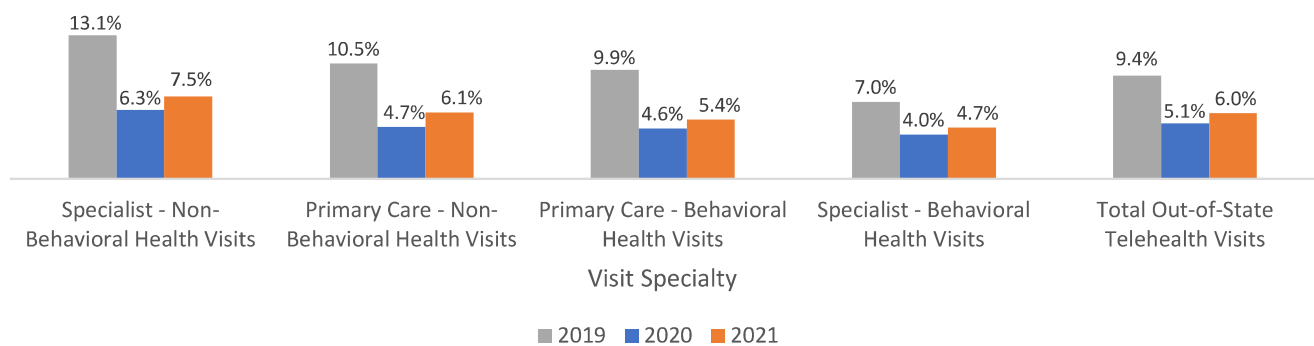
Source: Medicare Telehealth Trends Dashboard – developed by ASPE’s Office of Health Policy, using Medicare FFS claims 2019-2021

## Telehealth visits with out-of-state providers, national and by state

We also examined the proportion of telehealth visits with a provider in a different state from where the beneficiary resides. Nationally, telehealth visits with an out-of-state provider increased from nearly 81,000 in 2019 to 2.9 million in 2020 and 2.2 million in 2021, although as a proportion of all telehealth visits this decreased from 9% in 2019 to 5% to 6% of total Medicare Part B telehealth visits in 2020 and 2021 (Figure 10, right set of bars).

Prior to the pandemic, the highest proportion of Medicare telehealth visits with out-of-state providers were among non-behavioral health specialists (13%, bottom set of bars), followed by primary care providers for non-behavioral health (11%) and behavioral health conditions (10%), while telehealth visits with specialist behavioral health providers (7%) had the lowest use of out-of-state providers. This trend persisted during the pandemic but is proportionally lower than before the pandemic.

**Figure 10. Proportion of Telehealth Visits with Out-of-State Providers, by Visit Specialty**



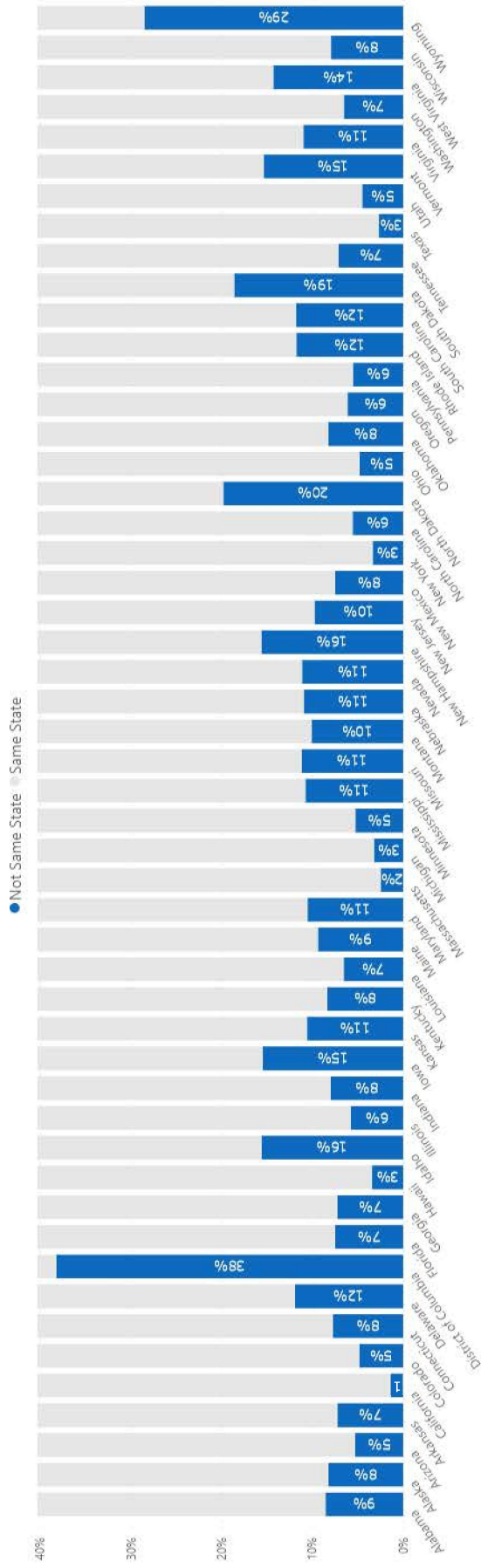
Source: ASPE analysis of Medicare FFS claims 2019-2021

Nationally, about 5-6% of Medicare telehealth visits were with an out-of-state provider in 2020 and 2021, whereas a higher proportion of in-person visits were an out-of-state provider (about 9%, Appendix Table 1 and 2), nationally and in each state. These findings are consistent with another study, which found 5% of Medicare FFS telehealth visits in 2021 were with out of state providers and almost 60% of beneficiaries with an out of state telehealth claim lived within 15 miles of the state border.<sup>25</sup>

Telehealth visits with non-behavioral health specialists had the highest share of out-of-state providers during the pandemic (6.3%-7.5%), followed by primary care providers for non-behavioral health conditions (4.7%-6.1%) and for behavioral health conditions (4.6%-5.4%) and behavioral health specialists (4.0%-4.7%). Given telehealth increased 64 to 44-fold in 2020 and 2021 from pre-pandemic levels and increased 32-fold and 27-fold for telehealth visits with out-of-state providers located in a different state from the beneficiary's residence, these rates reflect large increases in absolute numbers of telehealth visits with out-of-state providers. Figure 11 shows the proportion of telehealth visits with out-of-state-providers by state in 2021

Similar to the wide range of rates of telehealth use across states, there was also wide variation across states in the proportion of telehealth visits with an out-of-state provider; for example, from 1.4% in California to 29% in Wyoming in 2021 (Figure 11). For most states, the highest use of telehealth visits with out-of-state providers were for visits with specialists for non-behavioral health conditions, ranging from 2.3% to 23%, likely reflecting shortage and availability of specialists in the state relevant for the beneficiary's health condition, as well as proximity to other states

**Figure 11. Percent of Telehealth Visits Performed by an Out-of-State Provider by State in 2021**



Source: Medicare Telehealth Trends Dashboard – developed by ASPE’s Office of Health Policy, using Medicare FFS claims 2019-2021



## DISCUSSION

Continued use of telehealth among Medicare beneficiaries in 2021 – even after the availability of COVID-19 vaccines and effective therapeutics – suggests beneficiaries and providers have embraced telehealth as part of routine health care, especially for primary care and behavioral health visits. According to CMS telehealth utilization reports nearly half of all Medicare beneficiaries used telehealth at least once in 2020, which decreased to a third in 2021.<sup>26</sup> However, this analysis revealed lower uptake in rural areas, where limited broadband due to rural infrastructure issues may be a factor in lower uptake and remains a source of concern for telehealth disparities. Broadband infrastructure is continuing to develop across the country through broadband access grants programs under the federal *Internet for All* initiative through the Infrastructure Investment and Jobs Act of 2021.<sup>27,28</sup>

Telehealth may also increase risks to program integrity for Medicare. A recent report from Offices of the Inspector General across six Departments<sup>29</sup> acknowledged that while telehealth is “here to stay,” federal programs need to safeguard the benefits of telehealth and minimize program integrity risks.<sup>30</sup> The report found some program integrity risks associated with telehealth billing and suggests additional monitoring of telehealth use and quality, including collecting additional data and implementing billing controls. This is underscored by an earlier HHS OIG report that assessed Medicare telehealth during the first year of the pandemic and identified a small portion of providers (<1%) whose telehealth billing practices posed a high risk to Medicare.<sup>31</sup>

In recognition of continued interest in telehealth, the Consolidated Appropriations Act, 2023 Congress extended Medicare telehealth flexibilities until December 31, 2024.<sup>32</sup> This will provide additional time to monitor use of telehealth after the end of the PHE, assess the quality and effectiveness of these services, and for whom. Additional time for implementation will also inform whether new grants targeting rural areas can improve broadband access and use of telehealth to address observed disparities in telehealth access. The state variation in Medicare telehealth use during the pandemic in 2020 and 2021 suggests this may have been affected by the types of flexibilities each state adopted and the duration of states’ PHE flexibilities. Although federal Medicare reimbursement policies are applied uniformly across states and providers, providers still have to comply with state licensure requirements to provide health care via telehealth,<sup>33</sup> and states varied in the duration of their state’s public health emergency and the types of flexibilities offered to providers to deliver care via telehealth.

Ongoing monitoring of other potential factors in telehealth adoption will also be important to understand changes in telehealth use over time and reasons for geographic variation. For example, changes to state telehealth and licensure policies and participation in interstate medical licensure may affect post-pandemic use of telehealth for Medicare and is an area for future research. CMS has recently indicated it will now defer

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*Data through the end of 2021 shows telehealth use continued among Medicare beneficiaries – though at slightly reduced levels than in 2020.*

*Telehealth use was higher among vulnerable beneficiaries - disabled or dually enrolled in Medicaid, those with behavioral health needs and those living in urban areas.*

*Disparities in telehealth remains a concern for rural beneficiaries, while state variation in Medicare telehealth use suggests alignment between state and federal policies are needed to support access to telehealth in a post-pandemic environment.*

to state licensure policies, rather than require Medicare providers be licensed in each state in which providers are enrolled with Medicare, as it previously did.<sup>55</sup>

Many state legislatures have begun to change their state policies on telehealth and licensure requirements since the start of the pandemic. As of spring 2023, the Center for Connected Health Policy found 26 states have medical professional boards that allow practitioners to register with an in-state board instead of obtaining full licensure to practice in a state that supports the practice of telehealth.<sup>34</sup> More states are also joining the interstate licensure compacts for the various health professions (Table 2).<sup>35</sup> This variation across states and time reflects a shifting policy landscape for telehealth policies across payers, including Medicare.

Table 2 lists the number of states participating in the various interstate licensure compacts.

**Table 2. State Medical Licensure Compacts and Number of Participating States, Spring 2023**

Interstate Compact or Topic	Number of Participating States
Private payer telehealth laws on telehealth reimbursement	43 + DC + Guam
- Payment parity	24
Medical Licensure	37 + DC + Guam
Nurse Licensure	37 + Guam + Virgin Islands
Physical Therapy	33 + DC
Psychology Interjurisdictional Compact (PSYPACT)	34 + DC
Special licenses for telehealth	25
Audiology and Speech-Language Pathology (ASLP-IC)	25
Occupational Therapy	25
Emergency Medical Services Personnel Licensure (REPLICA)	22
Counseling	20
Advanced Registered Nurse	3

Source: Center for Connected Health Policy, Spring 2023 (Jan-March), State Telehealth Laws & Reimbursement Policies, [https://www.cchpca.org/2023/05/Spring2023\\_Infographic5.pdf](https://www.cchpca.org/2023/05/Spring2023_Infographic5.pdf)

## STUDY LIMITATIONS

There are several study limitations. First, this study reports unadjusted rates of telehealth use to monitor changes in utilization during the pandemic; differences may reflect different health needs among patient subgroups. This study captured telehealth use as a proportion of total Part B visits, based on claims line-items, to better reflect changes in total volume of services over time, and how components of an in-person “visit” may be parsed out differently using a combination of telehealth and in-person services. For example, physician consultations may be substituted via telehealth, with lab tests conducted in-person at a separate lab facility. While this approach supports monitoring of broad changes in trends across subgroups, future research should consider person-level regression analyses to account for differences in patient characteristics and underlying health that may drive use of health care.

Second, the subset of audio-only eligible telehealth codes that are reimbursable by Medicare as a telehealth visit only captures whether the visit may have been conducted via audio-only and not actual use. Many of the audio-only eligible telehealth codes are for behavioral health therapies as well as some preventive health counseling services, so the increased rate for this subset of telehealth codes could also reflect the increased

<sup>55</sup> “State Licensure: During the PHE, CMS allowed licensed physicians and other practitioners to bill Medicare for services provided outside of their state of enrollment. CMS has determined that, when the PHE ends, CMS regulations will continue to allow for a total deferral to state law. Thus, there is no CMS-based requirement that a provider must be licensed in its state of enrollment.” Physicians and Other Clinicians: CMS Flexibilities to Fight COVID-19, p15, <https://www.cms.gov/files/document/physicians-and-other-clinicians-cms-flexibilities-fight-covid-19.pdf>

demand for behavioral health care during the pandemic, in addition to use of audio-only technologies. However, the increase in use of this subset of codes from future codes and modifiers for audio-only telehealth visits may support study of patients' preferences for different telehealth modalities.

Third, our ability to discern disparities in telehealth use based on beneficiaries' race/ethnicity depends on the accuracy of Medicare's race/ethnicity variable which has known limitations. Medicare's race/ethnicity variable on race/ethnicity are not self-reported data, but come from the Social Security Administration (SSA) which historically only collected the categories Black, White and Other, and was later amended using the RTI race algorithm<sup>36</sup> to improve identification of Asians and Pacific Islanders, and Hispanics based on their surnames, request for Spanish materials and whether a beneficiary lives in Puerto Rico or Hawaii. A recent OIG report found that while RTI's algorithm improved identification of Hispanic beneficiaries by 55 percentage points, there are inaccuracies - 28% of beneficiaries categorized as Hispanic in the administrative data do not self-identify as Hispanic, while 13% of beneficiaries who had a nursing home stay and self-reported as Hispanic were not captured as Hispanic from this data.<sup>37</sup> Furthermore, the RTI algorithm does not explicitly seek to identify beneficiaries who are of Latino<sup>38</sup> origin based on origins from Latin America.

Lastly, we did not assess the effectiveness or quality of telehealth services, providers or patients' satisfaction with telehealth compared with in-person visits, neither did we directly assess if a telehealth visit may have resulted in subsequent visits or additional health care use. These are areas for future research.

Recent evidence to date suggests telehealth may be comparable to in-person care during the pandemic. A recent evidence review of telehealth during the pandemic conducted by the Agency for Healthcare Research and Quality (AHRQ) concluded that *“telehealth produced similar clinical outcomes as compared with in-person care; differences in clinical outcomes, when seen, were generally small and not clinically meaningful when comparing in-person with telehealth care”*; however reviewers noted telehealth may be *“less suitable and less desirable for patients with complex clinical conditions, those needing physical exams, and for therapies requiring the development of rapport between patients and providers.”*<sup>39</sup> An earlier evidence review of telehealth, prior to the pandemic, also found moderate evidence for acute and chronic care tele-consultations, such as remote intensive care unit (ICU) consultations to reduce ICU and mortality, specialty telehealth to reduce ER wait times, emergency medical services for those experiencing heart attacks, and remote consultations for outpatient care to improve access to care and health outcomes.<sup>40</sup>

## CONCLUSION

Telehealth among Medicare beneficiaries continued throughout the pandemic in 2020 and 2021 at higher rates than before the pandemic, though was slightly lower in 2021 compared to 2020. Telehealth utilization was most common for behavioral health conditions and primary care visits and among beneficiaries with greater health needs, while telehealth use among other specialists was lower. Disparities in telehealth use by rural beneficiaries during the pandemic may indicate infrastructure issues such as broadband access may limit their access to telehealth. As broadband infrastructure strengthens through the efforts under the Infrastructure Investment and Jobs Act, uptake of telehealth may change, especially in rural areas, and mitigate disparities in urban and rural utilization.

## APPENDIX

**Table 1. State Telehealth Use and Visits with Out-of-state Providers; State Membership in Licensure Compacts**

State	% of Total Visits via Telehealth		Visits with Out-of-State Providers				Membership in Licensure Compacts		
	2020	2021	% of In-Person Visits		% of Telehealth Visits		IMLC*	PSYPACT**	NLC***
Year	2020	2021	2020	2021	2020	2021			
<b>Total US</b>	5%	4%	9%	9%	5%	6%			
Alabama	4%	2%	11%	11%	6%	9%			
Alaska	7%	4%	4%	4%	7%	8%			
Arizona	5%	4%	7%	9%	4%	5%			
Arkansas	4%	2%	14%	13%	6%	7%			
California	8%	6%	4%	4%	1%	1%			
Colorado	6%	4%	8%	9%	4%	5%			
Connecticut	7%	4%	11%	11%	6%	8%			
Delaware	7%	4%	2%	2%	11%	12%			
District of Columbia	7%	5%	29%	31%	40%	38%	waiting		
Florida	4%	3%	7%	8%	6%	7%		waiting	
Georgia	3%	2%	10%	11%	5%	7%			
Hawaii	7%	5%	5%	6%	3%	3%			
Idaho	4%	2%	2%	2%	12%	16%			
Illinois	5%	3%	10%	11%	5%	6%			
Indiana	4%	2%	10%	10%	5%	8%			
Iowa	4%	2%	12%	12%	11%	15%			
Kansas	3%	2%	18%	19%	9%	11%			
Kentucky	5%	3%	13%	13%	7%	8%			
Louisiana	4%	2%	7%	8%	4%	7%			
Maine	7%	5%	9%	10%	8%	9%			
Maryland	7%	5%	16%	16%	8%	11%			
Massachusetts	11%	7%	6%	6%	2%	2%			
Michigan	6%	4%	7%	7%	3%	3%			
Minnesota	7%	4%	10%	11%	5%	5%			
Mississippi	4%	2%	13%	13%	7%	11%			
Missouri	4%	2%	12%	13%	8%	11%			
Montana	4%	3%	2%	2%	7%	10%			
Nebraska	3%	2%	21%	20%	8%	11%			
Nevada	5%	4%	12%	13%	9%	11%			
New Hampshire	8%	5%	3%	3%	16%	16%			
New Jersey	6%	4%	9%	9%	8%	10%	waiting		
New Mexico	7%	5%	15%	17%	6%	8%			
New York	7%	5%	9%	10%	3%	3%			
North Carolina	4%	3%	7%	7%	4%	6%			

State	% of Total Visits via Telehealth		Visits with Out-of-State Providers				Membership in Licensure Compacts		
	2020	2021	% of In-Person Visits		% of Telehealth Visits		IMLC*	PSYPACT**	NLC***
Year	2020	2021	2020	2021	2020	2021			
North Dakota	3%	2%	8%	8%	13%	20%		waiting	
Ohio	5%	3%	7%	7%	4%	5%			
Oklahoma	4%	3%	10%	10%	6%	8%			
Oregon	6%	5%	10%	11%	5%	6%			
Pennsylvania	5%	3%	7%	8%	5%	6%	waiting		waiting
Rhode Island	9%	5%	3%	3%	11%	12%	waiting	waiting	
South Carolina	3%	2%	14%	14%	10%	12%		waiting	
South Dakota	4%	2%	13%	12%	13%	19%			
Tennessee	3%	2%	9%	9%	6%	7%			
Texas	5%	3%	4%	4%	2%	3%			
Utah	5%	3%	6%	6%	3%	5%			
Vermont	10%	7%	6%	6%	13%	15%		waiting	
Virginia	5%	3%	14%	14%	9%	11%			
Washington	5%	4%	7%	8%	6%	7%			waiting
West Virginia	5%	3%	21%	22%	15%	14%			
Wisconsin	4%	3%	7%	8%	7%	8%			
Wyoming	3%	2%	20%	21%	22%	29%			

\*IMLC= [Interstate Medical Licensure Compact](#) for physicians and physician assistants; \*\* PSYPACT= [Psychology Interjurisdictional Compact](#); \*\*\*NLC=[Nurse Licensure Compact](#). “Waiting” indicates compact is enacted by state but waiting implementation.

Source: Center for Connected Health Policy, State Telehealth Laws and Reimbursement Policies, Jan-March 2022, [https://www.cchpca.org/2023/05/Spring2023\\_SummaryChart.pdf](https://www.cchpca.org/2023/05/Spring2023_SummaryChart.pdf); National Center for Interstate Compacts, State Membership in Interstate Licensure Compacts, as of December, 2022; <https://compacts.csg.org/wp-content/uploads/2023/04/State-Participation-in-Licensure-Compacts-Chart-December-2022.pdf>

**Table 2. In-person and Telehealth Visits with Out-of-State Providers, by Visit Type**

Visit Type	Visits with Out-of-State Providers					
	Provider in different state than beneficiary’s state of residence					
	% of In-Person Visits			% of Telehealth Visits		
	2019	2020	2021	2019	2020	2021
N	1,119,958,785	941,143,301	1,016,341,701	860,807	53,084,788	37,047,663
<b>All Visit Types</b>	8.1%	8.8%	9.3%	9.4%	5.1%	6.0%
<b>Primary Care Visit - Behavioral Health</b>	5.0%	5.2%	5.2%	9.9%	4.6%	5.4%
<b>Primary Care Visit – Non-behavioral health</b>	5.1%	5.2%	5.3%	10.5%	4.7%	6.1%
<b>Behavioral Health Specialist Visit</b>	4.9%	5.6%	5.8%	7.0%	4.0%	4.7%
<b>Specialist Visit – Non-behavioral health</b>	9.7%	8.8%	9.3%	13.1%	6.3%	7.5%

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