

CHAPTER

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**Mandated report:  
Telehealth in Medicare**

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# Mandated report: Telehealth in Medicare

## Chapter summary

Telehealth includes health care services delivered through a range of online, video, telephone, and other communication methods. Medicare has historically been cautious about covering telehealth services broadly because of uncertainties about the impact of telehealth on quality and spending. However, Medicare temporarily expanded coverage of telehealth to allow beneficiaries to maintain access to care and to help limit community spread of COVID-19 during the public health emergency (PHE), which ended on May 11, 2023. The Congress has extended many of Medicare's telehealth expansions through December 31, 2024. In the Consolidated Appropriations Act, 2022, the Congress also mandated that the Commission submit a report by June 2023 on the use of telehealth services during the PHE and the impact of expanded telehealth coverage on quality and access to care. This chapter, which focuses on telehealth services that Medicare pays for separately under the physician fee schedule (PFS) and other payment systems, is intended to satisfy that mandate. We discuss approaches to paying for telehealth services, recent trends in spending and use of such services, beneficiaries' experiences with telehealth, telehealth and program integrity, and the relationship between expanded telehealth coverage during the PHE and quality, access, and costs.

## In this chapter

- Alternative approaches to paying for telehealth services
- Spending and use of telehealth services in Medicare
- Beneficiary and clinician experiences with telehealth
- Relationship between expanded telehealth coverage and quality, access, and cost during the coronavirus pandemic

## **Alternative approaches to paying for telehealth services**

Before the PHE, Medicare coverage of telehealth services was limited by statute under the PFS. Medicare covered a limited set of telehealth services, modalities, and providers, and only in rural locations (with certain exceptions). For most telehealth services, Medicare required the patient to be located at an “originating site”—specified types of health care providers—in a rural area and required the clinician to be located at a “distant site” without any geographic limitations. During the PHE, Medicare coverage of telehealth was expanded to include additional allowable telehealth services and providers, and originating site and geographic restrictions were lifted.

Medicare pays the clinician providing the telehealth visit a PFS payment based on the type of service provided (e.g., an evaluation and management (E&M) office/outpatient visit). Whether provided in person or by telehealth, many PFS services have two payment rates depending on whether they are provided in a facility setting (e.g., a hospital or a skilled nursing facility, which also receives a separate payment for the accompanying nonclinician services) or a nonfacility setting (e.g., a freestanding clinician’s office). Before the PHE, CMS paid clinicians performing the telehealth visit the PFS’s lower, facility-based payment rate instead of the higher, nonfacility rate. However, during the PHE, CMS paid the same rate it would pay if the telehealth service had been provided in person (the PFS’s facility rate or nonfacility rate, depending on the clinician’s location). CMS has said the agency will continue this policy through the end of 2023.

As described in our March 2021 report to the Congress, the Commission asserts that CMS should resume paying the lower, facility rate for telehealth services as soon as practicable after the PHE. CMS should also collect data from practices on the costs they incur to provide telehealth services and adjust future payment rates, if warranted, based on the information gathered.

Federally qualified health centers (FQHCs) and rural health clinics (RHCs) furnish services typically provided in outpatient clinic settings. Medicare pays higher rates for in-person clinician services provided in FQHCs and RHCs than for comparable services provided under the PFS in order to help ensure access to care in medically underserved areas or areas with clinician shortages. During the PHE (and continuing until the end of 2024), the Congress has permitted FQHCs and RHCs to bill for telehealth services as the distant site. Clinicians can furnish distant-site telehealth services from any location, including their home, while they are working for an FQHC or RHC. Until the end of 2024, the

Medicare payment rate for telehealth services provided by FQHCs and RHCs is based on PFS rates for comparable telehealth services billed under the PFS, which essentially establishes payment parity for telehealth services billed under these payment systems.

If policymakers decide to permanently cover distant-site telehealth services delivered by FQHCs and RHCs, a key question is how much Medicare should pay for those services. CMS could decide to pay these providers the same standard FQHC or RHC payment rate for both in-person and telehealth services or a lower rate based on PFS rates for comparable telehealth services. Paying the standard FQHC or RHC payment rates for telehealth services might create a disincentive to furnish in-person care, as telehealth services likely cost less than in-person visits due to lower facility costs. Moreover, standard FQHC or RHC rates are substantially higher than payment rates under the PFS for comparable services, which could lead to telehealth services shifting from one setting to another for financial reasons. The Commission supports paying FQHCs and RHCs for telehealth services after the PHE at rates that are comparable with PFS rates for telehealth services. This approach balances the dual goals of ensuring beneficiary access and prudent fiscal stewardship of the Medicare program. CMS does not believe it currently has the authority to pay FQHCs and RHCs the PFS rate for telehealth services, so the agency would likely need legislative authority to implement this policy.

### **Spending and use of telehealth services in Medicare**

FFS Medicare spending for telehealth services was very low in 2019 (\$130 million) but rose dramatically during the early months of the PHE, peaking at \$1.9 billion in the second quarter of 2020, as providers and beneficiaries shifted rapidly from in-person visits to telehealth. Telehealth spending declined in the latter half of 2020 and in 2021, falling to \$827 million in the fourth quarter of 2021. Similarly, between 2019 and 2020, the number of FFS beneficiaries who received at least one telehealth service paid under the PFS accelerated rapidly from 239,000 to 14.2 million (40 percent of Part B FFS beneficiaries), then declined in 2021 to 9.7 million (29 percent of Part B FFS beneficiaries).

In 2020 and 2021, E&M services accounted for almost all (98 percent) of PFS telehealth spending. Within the category of E&M services, office/outpatient visits (as opposed to other types of E&M services) accounted for 73 percent of spending for telehealth in 2020, declining to 68 percent of spending in 2021. Between 2020 and 2021, behavioral health services (e.g., psychiatric evaluation) rose from 17 percent of telehealth spending for all E&M services to 23 percent,

highlighting the growing significance of telehealth use for behavioral health services. When we grouped clinical categories into body systems, we found that mental, behavioral, and neurodevelopmental disorders accounted for the highest share of spending for telehealth in 2021 (34.4 percent), which was a higher share than in 2020 (25.4 percent).

### **Beneficiary and clinician experiences with telehealth**

In focus groups that we conducted in the summer of 2022, many beneficiaries reported having telehealth visits predominantly with clinicians with whom they had an existing relationship. They were generally satisfied with these visits. Consistent with our analysis of Medicare claims, clinicians in our focus groups reported some continued use of telehealth after initial rapid expansion early in the pandemic. Some clinicians appreciated the convenience and flexibility it allowed in terms of the visit location, while others preferred in-person visits due to perceived better quality of care or preferred to provide specific services better suited to in-person care. Clinicians reported that telehealth visits generally took less time and cost less. Beneficiaries and clinicians reported continued use of audio-only visits. Many beneficiaries and clinicians in our focus groups reported that they would like to continue the option of telehealth visits after the PHE ends. In the Commission's annual survey of Medicare beneficiaries, 40 percent of telehealth users said they were interested in continuing to use telehealth after the pandemic ends.

### **Telehealth and program integrity**

The Consolidated Appropriations Act, 2023, requires the Secretary to conduct a study using medical records to review program integrity related to telehealth services. Our findings support the need for medical records review and other program integrity activities to ensure that clinicians are accurately billing for telehealth services. In our focus groups with beneficiaries and clinicians, we heard that telehealth visits generally took less time than in-person visits. However, our analysis of claims found that the distribution of the levels of office/outpatient visits for established patients was about the same as for in-person and telehealth visits in 2021. If the time clinicians spend with patients is typically shorter during telehealth services than in-person visits, a smaller share of telehealth visits should be coded at higher levels (more time spent) than in-person visits. Another area that could be analyzed in the future is the use of audio-only services since, in 2023, clinicians are required to indicate audio-only services on Medicare claims.

## **Relationship between expanded telehealth coverage and quality, access, and costs during the coronavirus PHE**

We reviewed and summarized the literature on telehealth and quality that has been published during the PHE. We found that the body of literature has grown since the onset of the PHE, but it is still small, and many of the studies have methodological and data issues.

Our ability to assess the impact of telehealth on quality, access, and costs is limited because of the time lag in claims data. The available FFS claims data at the time of our analysis were from 2021, which overlaps with surges in COVID-19 cases that likely influenced the use of telehealth and patient outcomes, making it impossible to disentangle the effects of telehealth from the pandemic itself. As we stated in our March 2021 report to the Congress, decisions about whether to make PHE-related Medicare telehealth expansions permanent should be based on data that do not reflect the acute effects of the COVID-19 pandemic. Also, Medicare lacks comprehensive data sources like laboratory results and patient-reported outcomes, which limits the quality measures, in particular measures tied to clinical outcomes, that we can study.

Acknowledging these limitations, we used population-based measures to describe changes in the association between telehealth use and access and quality when both telehealth and in-person visits are available to FFS Medicare beneficiaries. We used Medicare FFS administrative data to compare population-based outcomes across hospital service areas (HSAs) with different levels of telehealth service use. For each HSA nationwide, we examined four population-based measures: ambulatory care-sensitive (ACS) hospitalizations per 1,000 FFS Medicare beneficiaries, ACS emergency department visits per 1,000 FFS Medicare beneficiaries, total clinician encounters per FFS Medicare beneficiary, and total cost of care for Part A and Part B services per FFS Medicare beneficiary. We compared measures from the second half of 2019 (baseline period) with those from the second half of 2021 (treatment period), a period chosen despite the presence of COVID-19 cases because it was the latest for which complete claims data were available. HSAs were categorized as having low or high telehealth intensity based on the number of telehealth visits per 1,000 beneficiaries in the second half of 2021, with the bottom third of HSAs assigned to the low-telehealth-intensity level and the top third of HSAs assigned to the high level. We then compared outcomes in high-telehealth-intensity HSAs with low-telehealth-intensity HSAs using a difference-in-differences approach.

We found that risk-adjusted rates of ACS hospitalizations were lower in the second half of 2021 for both HSA groups but decreased at a slower rate, on average, among HSAs with a high level of telehealth use. Risk-adjusted rates of ACS emergency department visits were lower during the treatment period than the baseline period for both groups of HSAs, but we did not find evidence of an association between telehealth intensity and emergency department visit rates. We also found that total clinician encounters per beneficiary were lower in the second half of 2021 than in the second half of 2019, though the decline was slower, on average, among high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs. Total cost of care per beneficiary increased in 2021 compared with 2019 across all HSAs but increased more in high-telehealth-intensity HSAs.

In summary, our findings suggest that during the pandemic, greater telehealth use was associated with little change in measured quality, slightly improved access to care for some beneficiaries, and slightly increased costs to the Medicare program. However, these findings should not be interpreted causally because of the confounding effects of COVID-19 and other variables that we could not measure, and which could affect both the use of telehealth and patient outcomes. Further research should be done using more recent data as they become available. As we stated in our March 2021 report to the Congress, policymakers should continue to monitor the impact of telehealth on access, quality, and cost and should use this evidence to inform any additional permanent changes to policy. ■



Telehealth includes health care services delivered through a range of online, video, telephone, and other communication methods. Medicare has historically been cautious about covering telehealth services broadly because of uncertainties about the impact of telehealth on quality and spending. However, during the coronavirus public health emergency (PHE), Medicare temporarily expanded telehealth coverage to allow beneficiaries to maintain access to care and help limit community spread of COVID-19. The PHE ended on May 11, 2023, but the Congress has extended many of Medicare’s telehealth expansions through December 31, 2024.<sup>1,2</sup> In the Consolidated Appropriations Act (CAA), 2022, the Congress mandated that the Commission submit a report by June 2023 on the use of telehealth services during the PHE and the impact of expanded telehealth coverage on access to care and quality (see text box on the mandate as written in legislation, p. 310). This chapter, which focuses on telehealth services that Medicare pays for separately under the physician fee schedule (PFS) and other payment systems, is intended to meet the CAA mandate.<sup>3</sup> We did not include Medicare Advantage in this chapter because those plans have the flexibility to offer additional telehealth benefits not covered by traditional Medicare outside of the PHE (e.g., telehealth provided to enrollees in their own homes and outside of rural areas).

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## Background

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Before the PHE, Medicare paid for a limited number of telehealth services, in a limited number of areas, and in most cases paid them the PFS’s lower, facility-based payment rates, regardless of the setting in which the clinician was located. During the PHE, Medicare coverage for telehealth services expanded substantially and payments were paid at parity with in-person services. After the PHE, some of the expansions will continue, although many for only a limited time.

### Payment for telehealth services before the PHE

Before the PHE, CMS was restricted by statute to covering a limited set of telehealth services under the PFS, and only in specified settings in rural locations

(with certain exceptions).<sup>4</sup> For most telehealth services, Medicare required the patient to be located at an “originating site” in a rural area, defined as a rural health professional shortage area or a county outside of a metropolitan statistical area, and required the clinician to be located at a “distant site” in any location. Originating sites included physicians’ offices, hospitals, critical access hospitals, rural health centers (RHCs), skilled nursing facilities, federally qualified health centers (FQHCs), community mental health centers, and hospital-based dialysis facilities.<sup>5</sup> Clinicians who were allowed to bill for telehealth services under the PFS included physicians, advanced practice registered nurses, physician assistants, licensed clinical social workers, registered dietitians, nutrition professionals, and clinical psychologists. Physical therapists, occupational therapists, speech–language pathologists, and audiologists were excluded from billing for telehealth.

Many covered telehealth services were defined in statute, and CMS has a regulatory process for adding services (for example, if there is a clinical benefit). Before the PHE, Medicare covered about 100 telehealth services, which included general health care services (e.g., evaluation and management (E&M) visits and annual wellness visits) and services related to kidney disease, behavioral health, substance use disorders, nutrition therapy, pharmacological management, stroke, and cardiovascular disease behavioral therapy.

Prior to the PHE, most telehealth services generated two Medicare payments: (1) a payment to the originating site where the beneficiary was located, and (2) a payment to the clinician at the distant site who provided the telehealth service. CMS annually updates the originating site fee using the Medicare Economic Index; in 2019 (the year preceding the PHE), Medicare’s originating site fee was \$26.15 per service. Medicare also paid the clinician at the distant site a PFS payment based on the type of service provided (e.g., an E&M office/outpatient visit). Medicare always paid clinicians at the distant site the PFS’s lower, facility-based payment rate instead of the PFS’s higher, nonfacility rate (see text box on PFS payment rates, p. 311). The practice of always paying the lower, facility-based payment rate was different from how Medicare pays for in-person services. For those services, Medicare pays the higher, nonfacility rate if the service is furnished

## Mandate to study the expansions of telehealth services as a result of the COVID-19 public health emergency

**T**itle III (A), section 308(a) of the Consolidated Appropriations Act, 2022, requires the Commission to submit a report on telehealth. Not later than June 15, 2023, the Medicare Payment Advisory Commission shall submit to Congress a report containing the results of the study conducted under paragraph (1), together with recommendations for legislative and administrative action as the Commission determines appropriate.

(a) MedPAC REPORT—

(1) STUDY—

(A) IN GENERAL—The Medicare Payment Advisory Commission (in this subsection referred to as the “Commission”) shall conduct a study on the expansions of telehealth services (as defined in section 1834(m)(4)(F) of the Social Security Act (42 U.S.C. 1395m(m)(4)(F)) under the Medicare program under title XVIII of such Act as a result of the COVID-19 public health emergency described in section 1135(g)(1)(B) of such Act (42 U.S.C. 1320b-5(g)(1)(B)) and the amendments made by sections 301 through 306.

(B) ANALYSIS—the study under subparagraph (A) shall include at least an analysis of each of the following: (i) the utilization of telehealth services under the Medicare program, which may include analysis by service, provider type, geographic area (including analysis of the provision of telehealth services by clinicians located in different States than the Medicare beneficiary receiving such services to the extent that reliable data are available), and beneficiary type (including reason of entitlement and such beneficiaries who are also enrolled under a State plan under title XIX of the Social Security Act); (ii) Medicare program expenditures on telehealth services; (iii) Medicare payment policy for telehealth services and alternative approaches to such payment policy, including for federally qualified health centers and rural health clinics; (iv) the implications of expanded Medicare coverage of telehealth services on beneficiary access to care and quality; and (v) other areas determined appropriate by the Commission. ■

in a nonfacility setting (e.g., a freestanding clinician’s office) and the lower, facility rate if it is furnished in a facility setting (e.g., a hospital or a skilled nursing facility). Medicare paid the facility rate for distant-site providers because the practice expenses for telehealth services were presumed to be lower than for services provided in person in a clinician’s office.

To receive Medicare payment prior to the PHE, CMS required telehealth services to be furnished using an interactive telecommunications system that included two-way audio and video communication technology (Centers for Medicare & Medicaid Services 2020). Medicare did not typically cover audio-only services.

In 2019, CMS began covering other remote services that, according to the agency, do not meet the statutory definition of “telehealth.” These services include:

- virtual check-ins, in which a patient checks in briefly with a clinician by telephone or other telecommunications device to decide whether an office visit is needed;
- clinicians’ remote evaluation of images or recorded videos sent to them by a patient and follow-up with the patient;
- remote monitoring and interpretation of physiological data (e.g., weight, blood pressure, pulse oximetry, and glucose monitoring) that are digitally stored or transmitted to a clinician;
- interprofessional consultations, in which a consulting clinician provides an opinion or advice to the patient’s treating clinician via telephone, internet, or electronic health record, without the need for face-to-face contact with the patient; and

## Physician fee schedule payment rates are usually lower when a service is provided in a facility setting compared with a nonfacility setting

Medicare's physician fee schedule (PFS) usually pays different rates depending on whether a service is provided in a facility setting (e.g., a hospital) or a nonfacility setting (e.g., a freestanding clinician's office). The portions of the PFS payment rate for the clinician's work and professional liability insurance (PLI) are the same in both settings, but the portion for practice expense is usually lower when a service is delivered in a facility setting because Medicare makes a separate payment to the facility (e.g., a hospital outpatient department) to cover the cost of the physical space, medical supplies, medical equipment, and clinical staff time.<sup>6</sup> For example, the 2023 PFS rate for a Level 3 office/outpatient evaluation and management visit (Current Procedural Terminology code 99213)

includes the following components: the clinician's work (\$44.05), PLI (\$3.39), and practice expense (\$18.64 in a facility setting and \$43.38 in a nonfacility setting) (Table 7-1). The total PFS rate for this service when it is provided in a facility setting is \$66.08, while the total PFS rate for this service when it is provided in a nonfacility setting is \$90.82. When this service is provided in a hospital outpatient department, Medicare pays the PFS rate for a facility setting and makes a separate payment to the hospital under the hospital outpatient prospective payment system (OPPS) (\$120.86 in 2023). Therefore, when a service is furnished in a facility setting, the PFS payment rate is generally lower but the total Medicare payment rate (e.g., PFS rate plus OPPS rate) is generally higher. ■

**TABLE  
7-1**

**Physician fee schedule payment rate for a Level 3 office/outpatient E&M visit is lower in a facility setting than a nonfacility setting, 2023**

	Facility	Nonfacility
Work component	\$44.05	\$44.05
PLI component	3.39	3.39
Practice expense component	<u>18.64</u>	<u>43.38</u>
Total PFS payment rate	66.08	90.82
OPPS payments	<u>120.86</u>	<u>N/A</u>
Total Medicare payment (PFS + OPPS)	186.94	90.82

Note: E&M (evaluation and management), PLI (professional liability insurance), PFS (physician fee schedule), OPPS (outpatient prospective payment system). The Current Procedural Terminology code for this service is 99213. Facility settings include hospitals. Nonfacility settings include freestanding clinician's offices. The total PFS payment rate is the national average rate and includes the program payment and beneficiary cost sharing. For services furnished in a hospital outpatient department (a facility setting), Medicare also makes a separate payment to the hospital under the hospital OPPS (\$120.86 in 2023). This example assumes the facility-based service is performed in an on-campus provider-based department. Numbers may not sum to totals due to rounding.

Source: Analysis of Medicare physician fee schedule payment rates for 2023.

- online digital evaluation services (e-visits), which are non-face-to-face patient-initiated communications with a clinician using an online patient portal (Centers for Medicare & Medicaid Services 2019, Centers for Medicare & Medicaid Services 2018).

Because these services do not meet the statutory definition of telehealth, CMS does not consider them subject to the geographic limits on where patients can be located. Consequently, Medicare has always paid for these services regardless of the patient's location. However, because these services involve the exchange

of medical information from one site to another through electronic communications, we consider them telehealth for the purpose of this chapter.

### **Payment for telehealth services during and after the PHE**

During the PHE, the Congress allowed CMS to waive all restrictions on telehealth under the PFS, including the originating site and geographic location restrictions. Consequently, CMS made the following broad changes:

- Clinicians may bill for telehealth services provided to beneficiaries in any location (including their homes) and in urban as well as rural areas.
- CMS added over 140 PFS services to the list of allowable telehealth services (e.g., emergency department visits, observation and inpatient care, nursing facility care, and home visits).
- CMS allows audio-only interactions to meet the requirements for some telehealth services (e.g., CMS pays for most behavioral health services that are provided through audio-only interaction, but not for audio-only physical therapy or eye exams).
- CMS pays the same rate it would pay if the telehealth service had been provided in person (the PFS's facility rate or nonfacility rate, depending on the clinician's location).
- CMS authorized additional types of clinicians to bill for telehealth services (physical therapists, occupational therapists, speech-language pathologists, and audiologists).

Most of the major expansions implemented during the PHE have been extended through 2024, while others will expire at the end of the PHE, are currently extended only through 2023, or have been made permanent. Table 7-2 details how major PFS telehealth policies will change after the PHE ends on May 11, 2023. (For information on telehealth services furnished by FQHCs and RHCs, see the text box on pp. 314–315.)

#### **Flexibilities extended through 2023 or 2024**

In the CAA, 2023, the Congress extended many of the PHE-era telehealth expansions through December 31, 2024. For example, the Congress extended the provisions allowing clinicians to bill for telehealth

services provided to Medicare beneficiaries in both urban and rural areas, allowing beneficiaries' homes to be the originating site, expanding the types of clinicians who can bill for telehealth services, and allowing Medicare to pay for certain audio-only services. Despite being covered through 2024, after the PHE ends, the statute does not require CMS to continue paying the same rate it would pay if the telehealth service had been provided in person. CMS has said the agency will continue the current approach of paying for a telehealth service as if it had been provided in person through the end of 2023 (Centers for Medicare & Medicaid Services 2022).

Prior to the PHE, CMS established a regulatory process and criteria to review whether a telehealth service should be added to or deleted from the Medicare list of allowable telehealth services. The criteria include whether the service is similar to an existing telehealth service in authorizing legislation or whether it demonstrates clinical benefit. In response to the coronavirus pandemic, CMS created a third category of services that are added to the Medicare telehealth services list on a temporary basis through the end of calendar year (CY) 2023. This new category, known as Category 3, includes services that likely have a clinical benefit when furnished via telehealth, but for which there is not yet sufficient evidence available to consider the services as permanent additions to the list. CMS will cover Category 3 telehealth services until the end of 2023 to give stakeholders more time to submit information to CMS about the impact of these telehealth services on quality of care (Centers for Medicare & Medicaid Services 2022). CMS will then evaluate which services should be permanent additions to the Medicare telehealth services list. (The information in this section is current as of March 22, 2023, but is subject to change. CMS anticipates addressing the coverage of Medicare telehealth services as part of the 2024 physician fee schedule proposed and final rules.)

#### **Flexibilities that end with the PHE**

During the PHE, clinicians were allowed to reduce or waive Medicare beneficiaries' cost-sharing obligations for telehealth services (Office of Inspector General 2020). However, this flexibility ends with the PHE (which ended on May 11, 2023).

**TABLE  
7-2**

**Major telehealth expansions to the physician fee schedule during and after the public health emergency**

	<b>Pre-PHE</b>	<b>During the PHE</b>	<b>Post-PHE</b>
<b>Who can receive telehealth services?</b>	Clinicians can provide telehealth services to Medicare beneficiaries at certain originating sites in rural areas (e.g., a clinician's office or hospital but not the beneficiaries' homes).	Clinicians may provide telehealth services to Medicare beneficiaries in both urban and rural areas and in the beneficiaries' homes.	Clinicians may provide telehealth services to Medicare beneficiaries in both urban and rural areas and in the beneficiaries' homes through the end of 2024.
<b>Which types of telehealth services does Medicare pay for?</b>	Limited set of services.  (~100 services, including general health care services (e.g., E&M visits and annual wellness visits) and services related to kidney disease, behavioral health, substance use disorders, nutrition therapy, pharmacological management, stroke, cardiovascular disease, and behavioral therapy.)  Must include audio and video technology.	CMS added over 140 services (e.g., emergency department visits, radiation treatment management).  CMS allows audio-only interaction for some of the telehealth services (over 80 services).	Limited set of services will be permanently covered.  CMS will temporarily pay for some telehealth services added during the PHE through the end of 2023.  CMS will pay for certain telehealth services furnished through audio-only interaction through 2024.  CMS will permanently pay for telehealth behavioral services (audio only or audio-video), and beneficiaries' homes can be the originating site.
<b>Which types of providers are eligible to bill for telehealth services?</b>	Physicians and some practitioners (e.g., physician assistants, clinical psychologists).  Physical therapists, occupational therapists, speech-language pathologists, and audiologists were not eligible to bill for telehealth.	All eligible Medicare providers.	All eligible Medicare providers through the end of 2024.
<b>How much does Medicare pay for telehealth services?</b>	PFS rate for facility-based services (less than the nonfacility rate).	PFS rate is same as if the service were furnished in person (facility or nonfacility rate, depending on the clinician's location); same for audio-only visits.	PFS rate is same as if the service were furnished in person (facility or nonfacility rate, depending on the clinician's location) through the end of 2023; same for audio-only visits.
<b>What are the costs to beneficiaries?</b>	Standard cost sharing.	Clinicians permitted to reduce or waive cost sharing.	Standard cost sharing.

Note: PHE (public health emergency), E&M (evaluation and management), PFS (physician fee schedule). Medicare coverage of telehealth services under the PFS began in 2001 with the enactment of the Balanced Budget Act of 1997 and has evolved since then. The PHE was effective January 27, 2020, and ended May 11, 2023. Under the PFS, clinicians who provide services in facilities such as hospitals receive a lower payment rate (the facility rate) than clinicians who provide services in offices (the nonfacility rate). The table addresses major flexibilities but does not address the totality of flexibilities CMS enacted. For more information about PHE flexibilities, see CMS's coronavirus waivers and flexibilities website at <https://www.cms.gov/coronavirus-waivers>.

Source: Analysis of federal rules and guidance.

## Medicare payment policy for in-person and telehealth visits furnished by federally qualified health centers and rural health clinics

Federally qualified health centers (FQHCs) and rural health clinics (RHCs) furnish services typically provided in outpatient clinic settings. FQHCs can be located in both urban and rural areas and must serve a medically underserved area (MUA) or a medically underserved population, such as migrant farmworkers or homeless individuals. FQHCs must also meet a number of other requirements, including governance as a nonprofit or public agency and free or reduced-cost care to low-income individuals. RHCs must initially be located in a nonurbanized area that qualifies as a primary care health professional shortage area, MUA, or governor-designated shortage area. RHCs are not subject to many of the requirements applicable to FQHCs, such as offering free or reduced-cost care, but must meet other standards (e.g., staffing standards).

### Medicare payment for in-person FQHC and RHC services

Medicare pays higher rates than the PFS for clinician services provided by FQHCs and RHCs to help ensure access to care in MUAs, or areas with clinician shortages.

- Medicare pays FQHCs an all-inclusive rate using a prospective payment system (PPS). In 2023, the FQHC PPS payment rate is \$187.19.<sup>7</sup> The rate is updated annually based on the FQHC market basket, and individual FQHC rates are adjusted based on geography.
- Medicare generally pays RHCs' costs, subject to a per visit limit. The per visit limit for provider-based RHCs that were enrolled in Medicare as of December 2020 and associated with a hospital with fewer than 50 beds is based on each RHC's cost-based payment rates in 2020, updated annually using the Medicare Economic Index (MEI). Because the per visit limit for these RHCs is based on each facility's costs, payment limits vary: Medicare's payment per visit in 2020 averaged about \$255, and many RHCs' rates far exceeded \$300. For all other RHCs, the per visit limit is set statutorily and was recently increased by 117 percent, from \$87.52 to \$190. The higher limit will be phased in over time and will be fully phased in by 2028, after which the limit will increase annually by the MEI. In 2023, the per visit limit for all other RHCs is \$126.

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### Permanent changes made during the PHE

Before 2018, beneficiaries had to receive telehealth for behavioral services at an originating site (e.g., a clinician's office or a hospital) in a rural area, with the clinician at a distant site. In 2018, the Congress permanently removed the geographic restrictions and added the patient's home as an originating site for telehealth treatment of a substance use disorder or a co-occurring mental health disorder. The CAA, 2021, permanently removed the geographic restrictions and added the patient's home as an originating site for telehealth services that are used to diagnose, evaluate,

or treat a mental health disorder (independent of a substance use disorder). The CAA, 2021, requires that a nontelehealth service (i.e., an in-person visit) be provided by the clinician furnishing mental telehealth services within six months prior to the initial telehealth service.<sup>8</sup> For subsequent mental telehealth services, the Secretary implemented an annual in-person visit requirement; however, the policy does not apply if the practitioner and patient agree that the benefits of an in-person service are outweighed by the risks and burdens associated with an in-person service. (The CAA, 2023, delayed the in-person visit requirements

## Medicare payment policy for in-person and telehealth visits furnished by federally qualified health centers and rural health clinics (cont.)

(For more information on Medicare's payment systems for FQHCs and RHCs, see our *Payment Basics* series at <https://www.medpac.gov/document-type/payment-basic/>.)

### Medicare payment for telehealth services furnished by FQHCs and RHCs

FQHC and RHC visits generally are face-to-face encounters between a patient and one or more FQHC or RHC practitioners during which one or more qualifying services are furnished. Thus, prior to the PHE, FQHCs and RHCs were not eligible to bill Medicare for telehealth services as a distant-site clinician. (They can serve as originating sites if they are in a qualifying area.)

The Coronavirus Aid, Relief, and Economic Security Act of 2020 (CARES Act) allows FQHCs and RHCs to bill for telehealth services as the distant site during the PHE. Clinicians can furnish distant site telehealth services from any location, including their home, while they are working for the FQHC

or RHC, and they can furnish any telehealth service that is approved as an allowable telehealth service under the PFS. In the Consolidated Appropriations Act, 2023, the Congress extended these flexibilities through December 31, 2024.

The CARES Act directed CMS to establish a payment rate for telehealth services billed by FQHCs and RHCs that is similar to the payment rates for comparable telehealth services billed under the PFS, essentially establishing payment parity for telehealth services billed under the PFS and by FQHCs and RHCs. In 2023, Medicare's payment rate for distant-site telehealth services billed by FQHCs and RHCs is \$98.27.

Starting in 2022, FQHCs and RHCs are permanently allowed to bill for mental health services performed via telehealth.<sup>9</sup> For these services, they receive the standard payment rates they would receive for furnishing in-person care, which are substantially higher than PFS rates for similar services. ■

until after December 31, 2024.) After the PHE, CMS continues to pay for audio-only telehealth behavioral health services when the originating site is the patient's home and the practitioner has the technical capability to use an interactive telecommunications system that includes video, but the patient is not capable of or does not consent to video use.

### Alternative approaches to paying for telehealth services

Under the mandate's requirement that we analyze alternative approaches to pay for telehealth services, we explored (1) paying under the PFS and (2) billing by FQHCs and RHCs.

### Alternative approaches to paying for telehealth services under the PFS

In our March 2021 report to the Congress, we described a policy option to temporarily continue fee-for-service (FFS) Medicare's expanded coverage of telehealth services for a limited duration following the end of the PHE (see text box on the Commission's policy option, p. 317) (Medicare Payment Advisory Commission 2021). Our policy option called for Medicare to pay the PFS's facility (lower) rate for telehealth services after the PHE ends, instead of paying either the facility or nonfacility rate, as it did during the PHE (see the text box on p. 311 for more information on facility and nonfacility PFS rates).<sup>10</sup> Before the PHE, CMS always paid the facility rate for telehealth services, and CMS should resume doing so as soon as practicable now that the PHE has ended.

Possible alternative approaches to paying for telehealth services under the PFS raise certain policy issues. For example, telehealth services could be bundled into a larger payment unit under the PFS, which could reduce a clinician's incentive to bill for more services. However, this option raises concerns about the complexity of developing appropriate payment bundles. With regard to a temporary or permanent expansion of telehealth services provided to all beneficiaries regardless of their location, CMS should return to paying a lower rate (i.e., the facility rate) for all telehealth services. As stated earlier, we expect the rates for telehealth services to be lower than rates for in-person services because services delivered via telehealth typically do not require the same practice costs as services provided in a physical office. CMS should also collect data from practices and other entities on the costs they incur to provide telehealth services and adjust future payment rates, if warranted, based on the information gathered.

An additional question for policymakers to consider is how much Medicare should pay, after the PHE, for telehealth services provided through a direct-to-consumer (DTC) telehealth vendor or telehealth-only company. One argument is that services provided by clinicians through a DTC telehealth vendor should be paid less than telehealth services provided by clinicians who also see patients in person because DTC vendors likely have lower costs. Clinicians providing services through a DTC telehealth vendor do not need to acquire office space or equipment (e.g., exam tables, blood pressure cuffs) because they do not see patients in person. While logically these lower practice costs should translate to lower Medicare payments for telehealth services provided by DTC vendors, in practice, such a policy would be difficult to implement. Medicare claims do not contain information on clinicians' employers or corporate affiliations. Nor does Medicare Part B currently make payment distinctions on the basis of ownership, raising the possibility that Medicare would need to define DTC vendors as a new provider type. Nevertheless, during the period of temporary expansion after the PHE, CMS should collect cost information from providers to determine whether services provided through a DTC telehealth vendor should be paid at lower rates than telehealth services provided by clinicians who also treat patients in person, and if so, what those rates should be.<sup>11</sup> Before paying lower rates for telehealth services

provided by DTC vendors, CMS would need to explore whether it is feasible to distinguish among types of telehealth providers. Currently, only a small number of large national telehealth vendors are actively billing Medicare FFS.

### **Alternative approach to paying for FQHC and RHC telehealth services**

If policymakers decide that Medicare should permanently pay FQHCs and RHCs for distant-site telehealth services after December 31, 2024, they need to determine the payment rates for these services. Two options for setting payment rates include:

- paying for telehealth services at rates equal to their standard in-person rates (which are substantially above PFS rates), which is how FQHCs and RHCs currently bill for mental health services performed via telehealth, or
- paying them a rate that is similar to the rate for comparable telehealth services billed under the PFS, which is how Medicare pays them for non-mental health telehealth services during the PHE.

Although paying standard FQHC and RHC payment rates could provide an incentive for clinicians to practice in medically underserved areas, there are several disadvantages to this policy. First, paying FQHCs and RHCs their standard rates for all telehealth services would increase costs for the program and beneficiaries. The standard payment rate in 2023 is \$187.19 per visit for FQHCs and an average of more than \$255 per visit for certain provider-based RHCs, compared with a PFS equivalent rate of \$98.27 for telehealth services in 2023. Depending on beneficiaries' supplemental insurance coverage, these high payment rates (especially for RHCs) could discourage access because of high out-of-pocket spending.<sup>12</sup>

Second, practitioners who furnish telehealth services do not need to be physically located in an underserved area, so the higher rates for FQHC- and RHC-provided telehealth services would not be necessary to ensure access. Third, paying standard rates for telehealth visits could also be a disincentive to furnish in-person care since telehealth visits likely cost less than in-person visits due to reduced facility costs. Providers should make decisions about what mode



## The Commission's policy option for expanding Medicare coverage of telehealth services after the public health emergency

In our March 2021 report to the Congress, we presented a policy option to temporarily continue fee-for-service Medicare's expanded coverage of telehealth services after the public health emergency (PHE) (Medicare Payment Advisory Commission 2021). In developing this policy option, we maintain our previous recommendation that policymakers use the principles of access, cost, and quality to evaluate individual telehealth services before covering them under Medicare (Medicare Payment Advisory Commission 2018). First, Medicare should temporarily pay for specified telehealth services provided to all beneficiaries regardless of their location. Second, Medicare should temporarily cover selected telehealth services in addition to services covered before the PHE if there is potential for clinical benefit. Third, to improve access for beneficiaries without the capability to engage in a video visit from their home, Medicare should temporarily cover certain telehealth services when they are provided through an audio-only interaction if there is potential for clinical benefit.

However, under the Commission's policy option, other telehealth policies that were adopted during the PHE should end now that the PHE has ended. First, Medicare should return to paying the PFS facility rate for telehealth services instead of paying either the facility or nonfacility rate (depending on where the service would have been provided if it

had been furnished in person), as it did during the PHE. CMS should also collect data from practices and other entities on the costs they incur to provide telehealth services and should consider these reported costs in making any changes to telehealth payment rates in the future. We expect the rates for telehealth services to be lower than the rates for in-person services because services delivered via telehealth likely do not require the same practice costs as services provided in a physical office (Mehrotra et al. 2020). In addition, now that the PHE has ended, Medicare should require the same level of beneficiary cost sharing for telehealth as it does for in-person services. Requiring beneficiaries to pay a portion of the cost of telehealth services would help reduce the possibility of overuse.

CMS should implement other safeguards to protect the Medicare program and its beneficiaries from unnecessary spending and potential fraud related to telehealth, including applying additional scrutiny to outlier clinicians who bill many more telehealth services per beneficiary than other clinicians, requiring clinicians to provide an in-person, face-to-face visit before they order high-cost durable medical equipment or high-cost clinical laboratory tests, and prohibiting "incident to" billing for telehealth services provided by any clinician who can bill Medicare directly. ■

of care is most beneficial to the patient based on clinical considerations, not on what is most financially advantageous. Moreover, paying standard rates for telehealth visits would result in paying substantially more for an FQHC- or RHC-provided telehealth service than if the same service were provided in person by a clinician billing under the PFS. This disparity could also discourage the provision of in-person care.

Fourth, because telehealth services can be delivered to beneficiaries outside FQHCs' or RHCs' local service areas, paying these providers rates far above PFS rates could increase costs for the Medicare program and beneficiaries (without improving access) in areas that are not underserved and could undermine competition (as clinicians compete to bill under the highest-paid facility as opposed to competing for patients based on quality and service).

For these reasons, the Commission supports paying rates that are comparable with PFS rates for telehealth services provided by FQHCs and RHCs. This approach balances the dual goals of ensuring beneficiary access and prudent fiscal stewardship of the Medicare program. CMS does not believe it currently has the authority to pay FQHCs and RHCs the PFS rate for telehealth services on a permanent basis, so the agency would likely need legislative authority to implement this policy.

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## Spending and use of telehealth services in Medicare

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We used Medicare FFS claims data from 2019 to 2021 (the most recent complete year of data available) to examine national and regional trends in spending and use of telehealth services, including the types of services that were delivered by telehealth, the characteristics of beneficiaries who received telehealth, the types of conditions that telehealth was used to treat, the types of clinicians who delivered telehealth, and the share of telehealth services provided to beneficiaries by out-of-state clinicians.

In general, we found that telehealth use and expenditures peaked in the second quarter of 2020 and leveled off in 2021. E&M services accounted for almost all telehealth spending in 2020 and 2021, and a growing share of these services were for behavioral health. Additionally, we found that the distribution of office/outpatient E&M visits for established patients across the five visit-complexity codes was about the same for in-person and telehealth visits in 2021, which implies that telehealth services take about the same amount of time as in-person visits or that the complexity of care provided is about the same, or both. This implication, however, is contrary to reports from some clinicians in our focus groups that telehealth visits take less time than in-person visits.

Use of telehealth varied by beneficiary characteristic: Beneficiaries who are younger, qualify for Medicare because of ESRD or disability, have lower income, and live in urban areas used more telehealth services on average. Use of telehealth services also varied by region in 2020 and 2021, but the general trends were similar across regions and were consistent with overall

trends in use. When we grouped clinical categories into body systems, we found that mental, behavioral, and neurodevelopmental disorders accounted for the highest share of spending for telehealth in 2021 (34.4 percent), which was a higher share than in 2020 (25.4 percent). We found that a small share of telehealth services was provided to beneficiaries in a state different from the clinician's, varying by state and type of service. Lastly, we found that FFS Medicare spending for telehealth services varied by type of clinician.

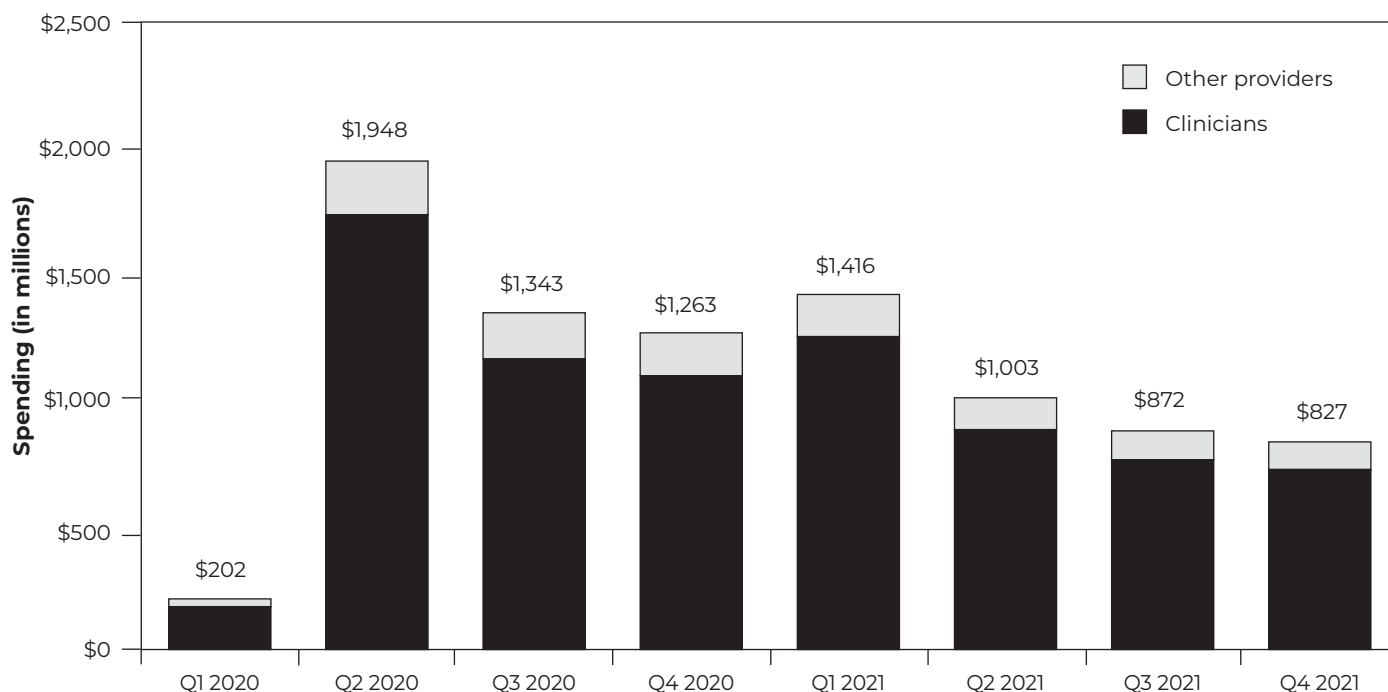
## Medicare spending for telehealth services rose rapidly in 2020, then leveled off in 2021

We examined FFS Medicare spending for telehealth services paid under the PFS and the payment systems for FQHCs, RHCs, and critical access hospitals (CAHs). Our analysis also includes originating site fees for telehealth services provided in hospital outpatient departments, skilled nursing facilities (SNFs), outpatient dialysis centers, and other settings.<sup>13</sup> FFS Medicare spending for telehealth services was very low in 2019 (annual spending of \$130 million) when coverage for telehealth services was restricted. During the early months of the PHE, after the Congress and CMS temporarily expanded coverage of telehealth services, providers and beneficiaries shifted rapidly from in-person to telehealth services. Consequently, FFS Medicare spending for telehealth services grew dramatically in 2020, peaking at \$1.9 billion in the second quarter of the year (Figure 7-1).<sup>14</sup> As the number of in-person services began to rebound after the second quarter of 2020, telehealth spending declined to about \$1.3 billion in each of the third and fourth quarters. Telehealth spending increased to \$1.4 billion in the first quarter of 2021, as the number of COVID-19 cases among individuals over age 65 rose sharply (Centers for Disease Control and Prevention 2022). Telehealth spending then declined during the second quarter of 2021, as the number of COVID-19 cases among this age group fell, and totaled \$827 million in the fourth quarter of 2021. In total, between 2020 and 2021, Medicare telehealth spending declined from \$4.8 billion to \$4.1 billion, which is still more than 30 times greater than spending in 2019 (data not shown).

The majority of FFS Medicare telehealth spending in 2020 and 2021 (87 percent) was for clinician services paid under the PFS. The remaining amount was spent

**FIGURE 7-1**

**FFS Medicare spending for telehealth services peaked in the second quarter of 2020 and leveled off in the last two quarters of 2021**



Note: FFS (fee-for-service), Q (quarter). FFS Medicare spending for telehealth services includes services provided by clinicians (which are paid under the physician fee schedule) and services furnished by other providers (rural health clinics, federally qualified health centers, critical access hospitals, hospital outpatient departments, skilled nursing facilities, and outpatient dialysis centers), which are paid under other payment systems. Spending includes Medicare program spending and beneficiary cost sharing.

Source: Analysis of Medicare claims data for 100 percent of FFS beneficiaries.

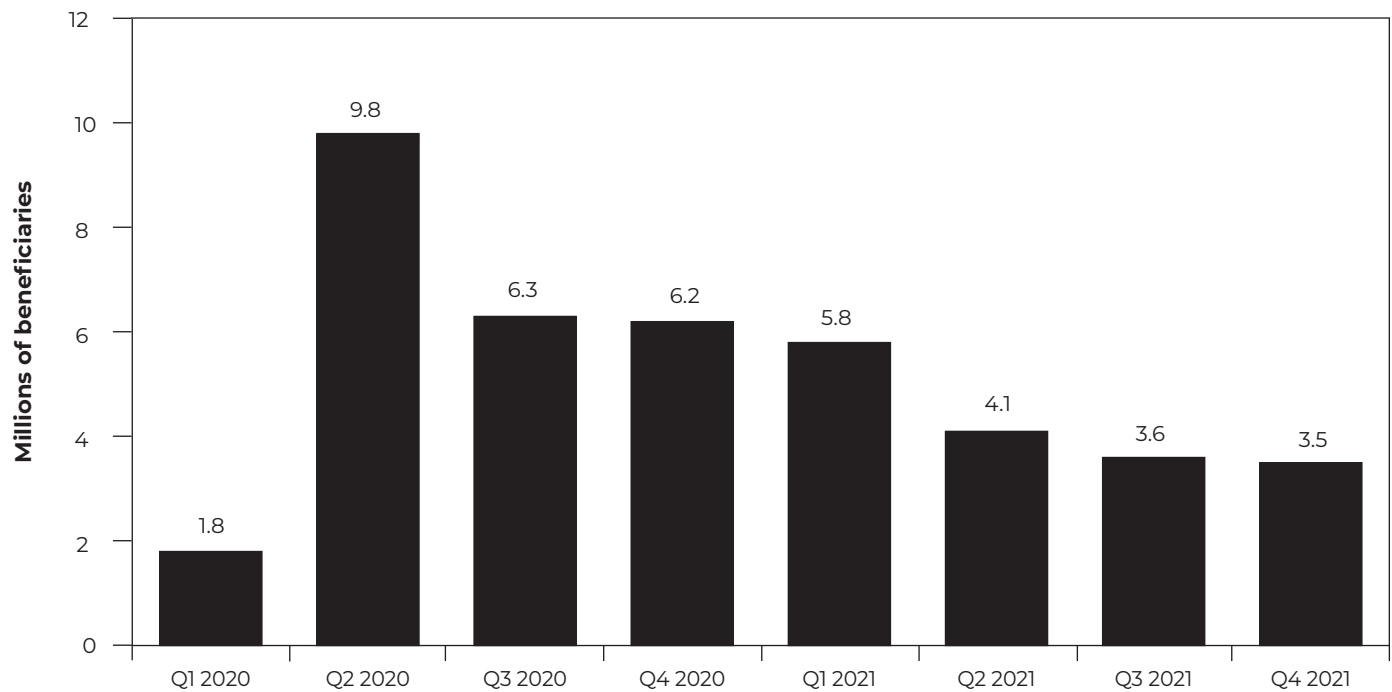
on telehealth services provided by FQHCs, RHCs, CAHs, hospital outpatient departments, SNFs, and outpatient dialysis centers. In 2020, spending for telehealth services under the PFS accounted for 5 percent of total PFS spending, declining to 4 percent in 2021. In 2020, Medicare spending for telehealth services provided by FQHCs made up 7 percent of total Medicare spending for FQHCs, falling to 6 percent in 2021. Medicare spending for telehealth services provided by RHCs made up a smaller share of total Medicare spending for RHCs (3 percent in 2020 and 2 percent in 2021). Our analyses focus only on telehealth services paid under the PFS because the PFS accounted for most of FFS Medicare spending for telehealth services.

**The number of FFS beneficiaries who received a telehealth service climbed rapidly in the second quarter of 2020 before leveling off**

In 2019, about 239,000 FFS beneficiaries received at least one telehealth service paid under the PFS. This number accelerated rapidly in early 2020, climbing to 9.8 million in the second quarter of 2020 alone, before falling to 6.3 million in the next quarter (Figure 7-2, p. 320). By the fourth quarter of 2021, the number of FFS beneficiaries who received at least one telehealth service paid under the PFS had leveled off to 3.5 million. Overall in 2020, 14.2 million beneficiaries received at least one telehealth service (40 percent of

**FIGURE  
7-2**

**The number of FFS Medicare beneficiaries who received a telehealth service peaked in the second quarter of 2020 and leveled off in 2021**



Note: FFS (fee-for-service), Q (quarter). Figure counts the number of beneficiaries who received at least one telehealth service paid under the physician fee schedule.

Source: Analysis of Medicare claims data for 100 percent of FFS beneficiaries.

Part B FFS beneficiaries); in 2021, a total of 9.7 million received a telehealth service (29 percent of Part B FFS beneficiaries) (data not shown).

Consistent with our findings, a Bipartisan Policy Center analysis of Medicare claims through the third quarter of 2021 found that the share of telehealth users and visits decreased over the first three quarters of 2021 but remained higher than prepandemic levels (Bipartisan Policy Center 2022).

**E&M services accounted for almost all telehealth spending in 2020 and 2021**

We examined the distribution of PFS telehealth spending in 2020 and 2021 by broad service categories (e.g., E&M, treatments, procedures). E&M accounted for almost all (98 percent) of telehealth spending in 2020

and 2021. Treatments accounted for the remaining 2 percent of telehealth spending (mainly for dialysis services and physical, occupational, and speech therapy). Within the broad E&M service category, office/outpatient visits accounted for almost three-quarters (73 percent) of spending for telehealth in 2020, declining to 68 percent of spending in 2021 (Figure 7-3). Behavioral health services (e.g., psychiatric evaluation) accounted for 17 percent of telehealth spending for E&M services in 2020, rising to 23 percent in 2021. Between 2020 and 2021, spending for behavioral health services delivered by telehealth grew from \$698 million to \$807 million (data not shown), even though total telehealth spending fell during that period, which highlights the growing significance of telehealth for behavioral health services. The spending estimates for these behavioral health services are an undercount

of actual spending on mental health services because some office/outpatient visits are also for mental health conditions.

Office/outpatient visits are divided into visits for established patients and visits for new patients. Visits for established patients comprised 95 percent of the volume of all office/outpatient visits provided by telehealth in 2020 and 2021 (visits for new patients comprised only 5 percent).<sup>15</sup> By comparison, among in-person office/outpatient visits in 2020 and 2021, visits for established patients accounted for 88 percent of the volume (data not shown).

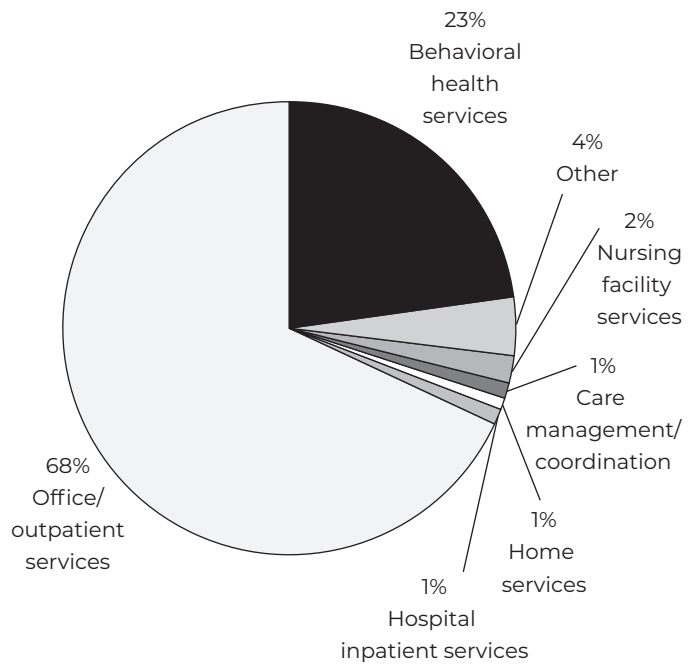
**The distribution of E&M service levels for established patients’ office/outpatient visits was about the same for telehealth and in-person services**

Clinicians code different levels for each service they provide based on the medical complexity of a patient visit or the amount of clinician time spent on the visit. For example, a Level 3 office/outpatient E&M visit for an established patient (Current Procedural Terminology (CPT) code 99213) should represent 20 to 29 minutes of total time spent on the date of the encounter, while a Level 4 office/outpatient E&M visit (CPT code 99214) should represent 30-39 minutes. When these services are provided in a nonfacility setting (e.g., a freestanding clinician’s office), the 2023 PFS rate is \$90.82 for a Level 3 visit and \$128.43 for a Level 4 visit.<sup>16</sup>

We compared the distribution of office/outpatient E&M visits in 2021 for established patients based on code levels and whether the visit was in person or done through telehealth. The distribution of levels was about the same across in-person and telehealth visits (Figure 7-4, p. 322). Fifty percent of in-person office/outpatient visits for established patients were Level 4, which is comparable with the 48 percent of telehealth office/outpatient visits that were Level 4. Thirty-eight percent of in-person office/outpatient visits for established patients were Level 3, which is comparable with the 41 percent of telehealth office/outpatient visits that were Level 3.

While our claims analysis found that the distribution of levels of E&M office/outpatient visits for established patients was about the same for in-person and telehealth visits, other sources suggest that telehealth visits are often shorter. For example, in our focus

**FIGURE 7-3** Office/outpatient services accounted for about two-thirds of physician fee schedule spending for E&M telehealth services, 2021



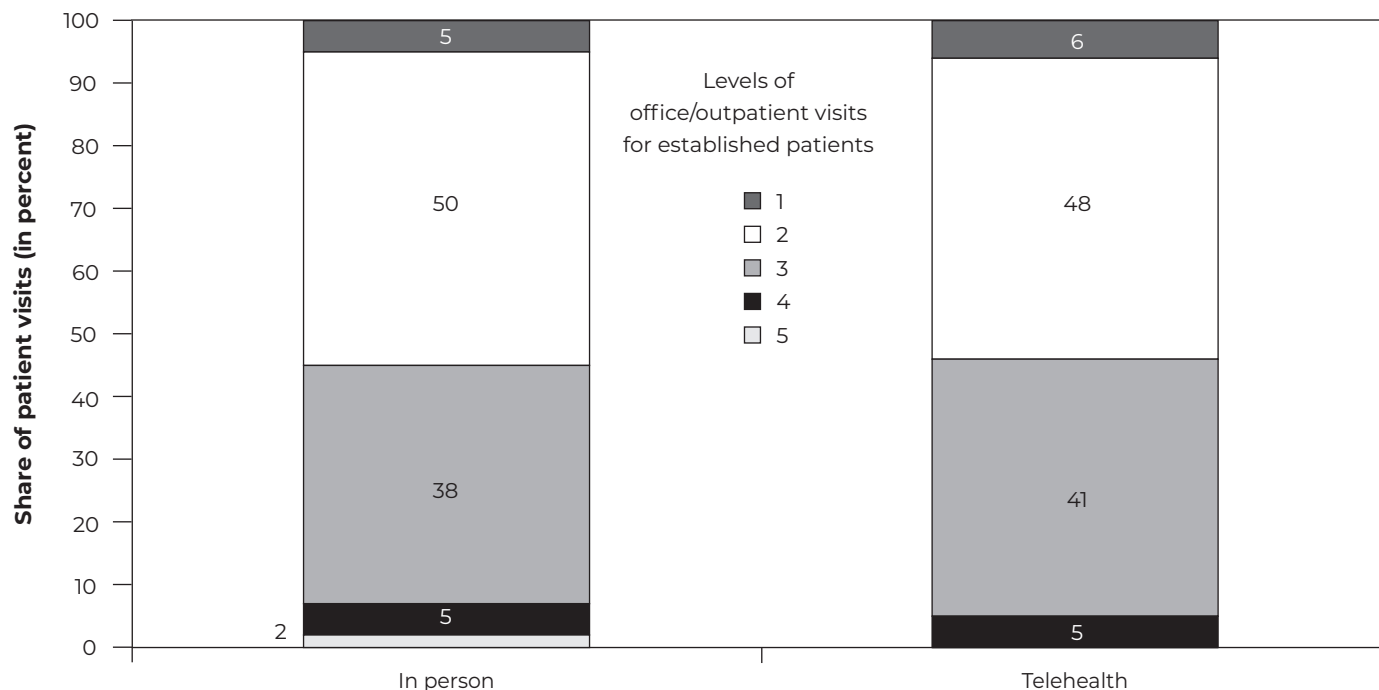
Note: E&M (evaluation and management). Spending includes Medicare program spending and beneficiary cost sharing for telehealth services.

Source: Analysis of Medicare claims data for 100 percent of fee-for-service beneficiaries.

groups with beneficiaries and clinicians, we heard that telehealth visits generally took less time than in-person visits. If clinicians spend less time with patients during telehealth visits compared with in-person visits, a smaller share of telehealth visits should be coded at high levels (more time spent) than in-person visits. Therefore, as part of the agency’s upcoming mandated report on telehealth program integrity, the Secretary should examine medical records to verify whether clinicians are spending the amount of time associated with the office/outpatient encounter that was billed. This review could identify the need for additional education to providers on appropriate billing for

**FIGURE 7-4**

**The distribution of E&M service levels for established patients' office/outpatient visits was about the same for in-person and telehealth services, 2021**



Note: E&M (evaluation and management). Figure shows the distribution of the share of office/outpatient E&M visit codes for established patients by code level when billed as in-person or as telehealth service. Levels of office/outpatient E&M visits for established patients represent Current Procedural Terminology codes 99211-99215.

Source: Analysis of Medicare claims data for 100 percent of fee-for-service beneficiaries.

telehealth services. (See text box for more information on telehealth and program integrity.)

### Spending for audio-only telehealth services

Beginning during the PHE, CMS pays for over 80 Healthcare Common Procedure Coding System (HCPCS) codes when they are provided using an audio-video or an audio-only interaction. However, there are only six codes (for telephone E&M services, for which CMS began paying in March 2020) that indicate whether a service was provided through an audio-only instead of an audio-video interaction. For the years we analyzed (2020 and 2021), claims data do not indicate whether the other 80 or so codes were provided through an audio-only or audio-video interaction. However, consistent with the Commission's

recent recommendation to the Secretary, CMS requires clinicians to include a billing modifier on the claim when they bill for any audio-only telehealth service beginning in 2023 (Medicare Payment Advisory Commission 2022c). Therefore, we are currently able to calculate spending for the six telephone E&M services but not for other services that were provided through an audio-only interaction.

We include telephone E&M services in the category of E&M office/outpatient visits. (Therefore, telephone E&M services do not appear separately in Figure 7-3, p. 321.) Spending for telephone E&M services totaled \$765 million in 2020 (19 percent of total spending for E&M telehealth services) and \$563 million in 2021 (16 percent of spending for E&M telehealth services). Almost 20 percent of telephone E&M services in 2021 were the

## Telehealth and program integrity

Historically, policymakers have been cautious about Medicare covering telehealth services because little is known about the effect of telehealth on quality of care or patient outcomes and because telehealth services are considered more susceptible to overuse and fraud. Expanding telehealth services therefore raises program integrity concerns. However, telehealth offers benefits to patients, including convenience, time savings, and not having to leave home if they feel ill. It also has the potential to reduce “no show” rates for scheduled medical appointments. In considering a permanent expansion of telehealth, a key issue is how to achieve the benefits of telehealth while limiting the risks to beneficiaries and the program.

### Office of Inspector General report on telehealth services to date

The Health and Human Services Office of Inspector General (OIG) reviewed Medicare data on telehealth use during the first year of the pandemic (March 2020 through February 2021) with a focus on potentially inappropriate billing for telehealth services (Office of Inspector General 2022b). Using several program integrity measures with very high thresholds, such as billing telehealth services at the highest, most expensive level every time, their study identified about 1,700 providers whose billing for telehealth posed a high risk to Medicare.<sup>17</sup> These high-risk providers billed telehealth services for about half a million beneficiaries and received a total of \$127.7 million in Medicare fee-for-service payments during the first year of the pandemic. For example, almost 700 providers inappropriately billed both a facility (originating site) fee and a telehealth service fee for more than 75 percent of their telehealth visits, costing the program \$14.3 million.

The high-risk providers represent a small proportion (about 0.2 percent) of the approximately 742,000

providers who billed for a telehealth service during the first year of the pandemic, and a small proportion (1 percent) of the 140,000 providers that pose a threat to Medicare in general. OIG recommended that CMS take specific actions to improve program integrity for Medicare telehealth services by strengthening monitoring and targeted oversight of telehealth services, providing additional education to providers on appropriate billing for telehealth services, improving the transparency of “incident to” services when clinical staff primarily deliver a telehealth service, identifying telehealth companies that bill Medicare, and following up on the providers identified in their report (Office of Inspector General 2022b). These recommendations are consistent with our March 2021 policy option on expanding coverage of telehealth services after the public health emergency (Medicare Payment Advisory Commission 2021).<sup>18</sup> CMS concurred with the recommendation to follow up on providers identified in the OIG report but did not explicitly indicate whether it concurred with the other four recommendations.

### Future program integrity analyses of telehealth

The Consolidated Appropriations Act, 2023, requires the Secretary to conduct a study on Medicare program integrity related to telehealth services. The Secretary is required to use medical records to analyze information on the duration of telehealth services furnished and, to the extent feasible, the impact of telehealth services on future utilization of services. An interim report is due by October 1, 2024, and a final report is due by April 1, 2026.

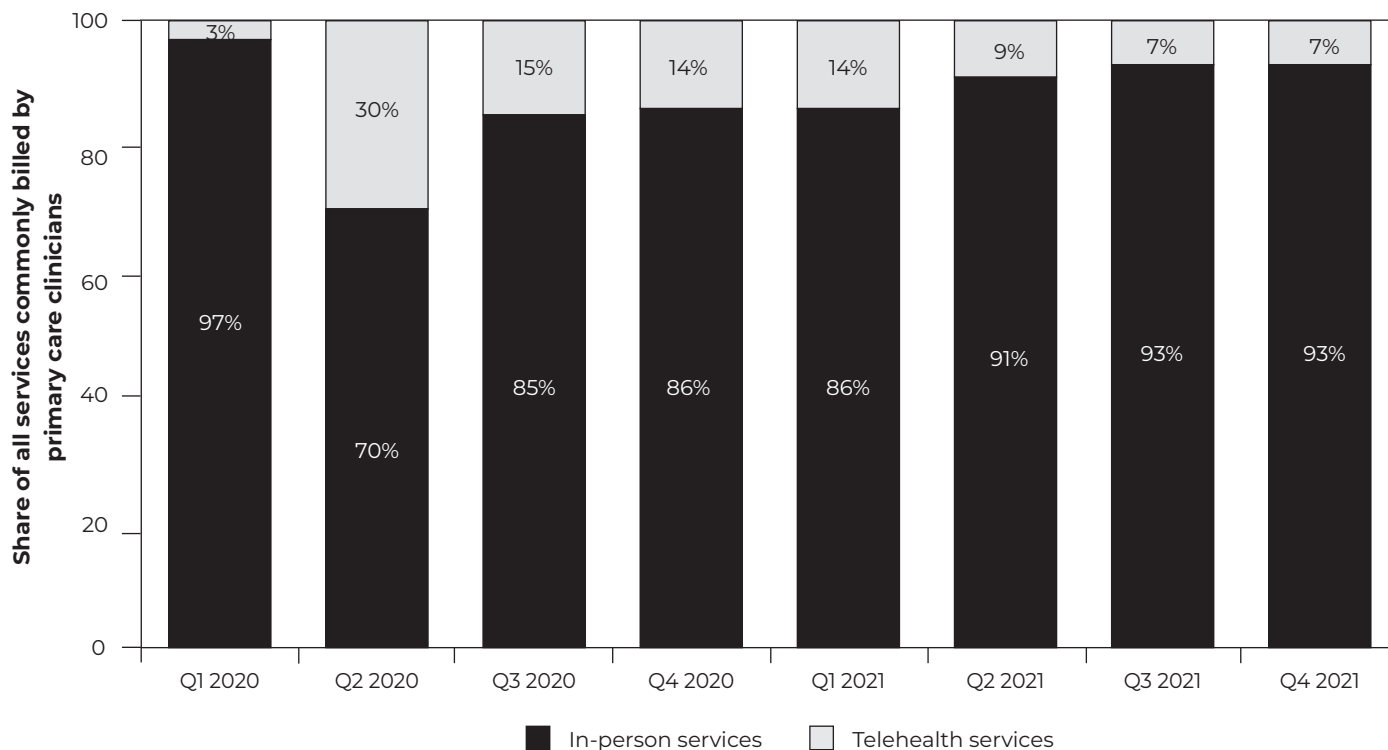
Another area that could be analyzed in the future is the use of audio-only services. Starting in 2023, clinicians are required to indicate on Medicare claims when they provide an audio-only telehealth service. ■

lowest intensity (5 to 10 minutes), 47 percent were middle intensity (11 to 20 minutes), and 34 percent were the highest intensity (21 to 30 minutes).

In general, studies of Medicare beneficiaries and broader populations have found that patients who had higher rates of audio-only telehealth use during

**FIGURE  
7-5**

**Telehealth accounted for 30 percent of services commonly billed by primary care clinicians in the second quarter of 2020, before declining to 7 percent in the last two quarters of 2021**



Note: Services commonly billed by primary care clinicians include the following physician fee schedule services: office/outpatient evaluation and management (E&M) visits, home E&M visits, E&M visits to patients in certain non-inpatient hospital settings (nursing facility, domiciliary, rest home, and custodial care), audio-only E&M visits, chronic care management, transitional care management, Welcome to Medicare visits, annual wellness visits, e-visits, and advance care planning services.

Source: Analysis of Medicare claims data for 100 percent of fee-for-service beneficiaries.

the PHE were more likely to be older, have a chronic condition and multiple comorbidities, be eligible for both Medicare and Medicaid, be low income, and identify as Black or Hispanic (Assistant Secretary for Planning and Evaluation 2022, Bipartisan Policy Center 2022, Office of Inspector General 2022a).

**Telehealth accounted for 30 percent of services commonly billed by primary care clinicians in the second quarter of 2020, before declining to 7 percent in the last two quarters of 2021**

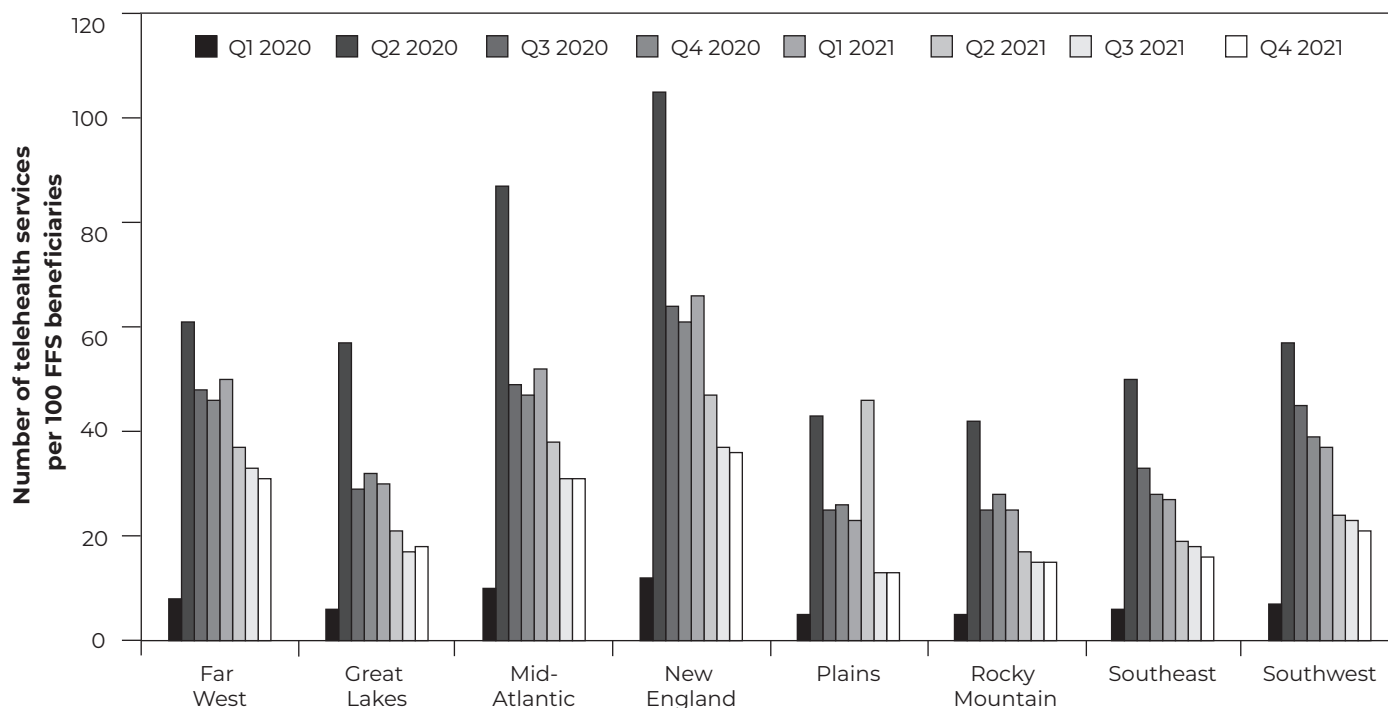
We examined the use of PFS services commonly billed by primary care clinicians (whether they were delivered in person or by telehealth) to determine the share that was provided by telehealth during 2020 and 2021. Most of these services are E&M office/

outpatient visits.<sup>19</sup> This analysis shows the relative importance of telehealth for primary care clinicians and how it changed over time. The share of services commonly billed by primary care clinicians provided by telehealth rose sharply from 3 percent in the first quarter of 2020 to 30 percent in the second quarter of 2020, partially offsetting the steep drop in the use of in-person primary care services between the first quarter and second quarter (Figure 7-5). As the number of in-person services rebounded in the third quarter of 2020, the share of services commonly billed by primary care clinicians as delivered by telehealth declined to 15 percent. Telehealth's share of these services continued to fall during the remainder of 2020 and 2021, and telehealth accounted for 7 percent of all such services in each of the last two quarters of 2021.



**FIGURE  
7-6**

**Number of Medicare telehealth services per 100 FFS beneficiaries, by region and quarter, 2020-2021**



Note: FFS (fee-for-service), Q (quarter). Figure includes telehealth services paid under the physician fee schedule.

Source: Analysis of Medicare claims data for 100 percent of FFS beneficiaries.

**The number of telehealth services varied by region in 2020 and 2021, but changes in the use of telehealth services were similar across regions**

We examined the use of telehealth services in 2020 and 2021 in eight geographic regions. Although the number of telehealth services per 100 FFS beneficiaries varied substantially by region, changes in the use of telehealth during this period were generally similar across regions (Figure 7-6). The number of telehealth services peaked in all regions in the second quarter of 2020, declined in the next quarter, and dropped again after the first quarter of 2021. The New England and Mid-Atlantic regions had the highest number of telehealth services per 100 FFS beneficiaries in 2020 (243 and 193, respectively) and 2021 (187 and 152, respectively) (data not shown). The Rocky Mountain

and Plains regions had the lowest number in 2020 (100 and 99, respectively) and 2021 (72 and 65, respectively). The regional patterns we observe for higher and lower telehealth use are consistent with regional variations in the overall number of clinician encounters per beneficiary.

**Use of telehealth varied by beneficiary age, reason for Medicare eligibility, income level, and location during 2021**

We examined the use of telehealth services by FFS beneficiaries in 2021 based on the following characteristics: age, race/ethnicity, reason for Medicare eligibility, income (using the low-income subsidy as a proxy), and urban/rural location (Table 7-3, p. 326). Overall, beneficiaries who were younger, qualified for Medicare because of ESRD or disability,

**TABLE  
7-3**

**Use of PFS telehealth services by beneficiary characteristics, 2021**

Cohort of beneficiaries	Share of FFS beneficiaries who received at least one telehealth service	Number of telehealth services received by FFS beneficiaries (among those who received at least one telehealth service)			
		Mean	25th percentile	Median	75th percentile
All FFS beneficiaries	28.7%	3.8	1	2	4
By age					
Under 65	29.3	5.4	1	2	6
65-74	27.2	3.6	1	2	3
75-84	30.4	3.3	1	2	3
Age 85 and older	30.0	3.1	1	2	3
By race/ethnicity					
White	28.6	3.8	1	2	4
Black	28.2	4.0	1	2	4
Non-White Hispanic	29.1	4.2	1	2	4
Medicare eligibility status					
Aged	28.4	3.5	1	2	3
Disabled	38.0	5.9	1	3	6
ESRD	44.4	4.0	1	2	5
LIS status					
LIS	34.9	5.0	1	2	5
Non-LIS	27.0	3.4	1	2	3
Beneficiary location					
Urban	29.6	3.9	1	2	4
Rural	18.9	3.1	1	1	3

Note: PFS (physician fee schedule), FFS (fee-for-service), ESRD (end-stage renal disease), LIS (low-income subsidy). LIS beneficiaries include those who received full or partial Medicaid benefits and those who did not qualify for Medicaid benefits but who received the Part D LIS. The number of telehealth services received by FFS beneficiaries is based on the beneficiaries in each cohort who received at least one telehealth service.

Source: Analysis of physician fee schedule claims data for 100 percent of FFS beneficiaries.

had lower income, and lived in urban areas used more telehealth services on average.<sup>20</sup> Many of these findings are consistent with trends that we see in overall health care utilization.

A similar share of beneficiaries received at least one telehealth service across different age categories (ranging from 27.2 percent to 30.4 percent), but

beneficiaries under age 65 received a larger number of telehealth services, on average, than other age groups (Table 7-3). For example, beneficiaries under age 65 who received at least 1 telehealth service had a mean of 5.4 telehealth services, compared with a mean of 3.1 telehealth services received by beneficiaries age 85 and older.<sup>21</sup> Consistent with these results, other

studies have found that younger beneficiaries generally use more telehealth services than older beneficiaries (Bipartisan Policy Center 2022, Bose et al. 2022, Office of Inspector General 2022a).

In our analysis, the share of beneficiaries who received at least one telehealth service did not vary substantially among Black, White, and non-White Hispanic beneficiaries, although non-White Hispanic beneficiaries had a slightly higher mean number of telehealth services than Black and White beneficiaries (among beneficiaries who received at least one telehealth service). Other studies that used Medicare data also showed differences among racial and ethnic groups. For example, Bose and colleagues found that, between March 7, 2020, and March 31, 2021, after adjusting for covariates, Asian and Hispanic beneficiaries were associated with higher levels of telehealth use than other beneficiaries (Bose et al. 2022). According to a report from the Office of Inspector General, Hispanic and Black beneficiaries were more likely to use telehealth services than White beneficiaries in 2020 (Office of Inspector General 2022a). The Bipartisan Policy Center found that the telehealth visit rate for American Indian/Alaska Native, Black, and Hispanic beneficiaries exceeded the overall telehealth visit rate, and the visit rate for non-Hispanic White beneficiaries was below the overall telehealth visit rate (Bipartisan Policy Center 2022).<sup>22</sup>

A much higher share of beneficiaries who were eligible for Medicare because they had ESRD or were disabled received at least one telehealth service compared with beneficiaries who were eligible because of age (44.4 percent, 38.0 percent, and 28.4 percent, respectively). In addition, disabled beneficiaries had a higher mean number of telehealth services than aged beneficiaries (5.9 vs. 3.5). Based on overall utilization patterns, we expected to find higher telehealth utilization among beneficiaries who qualified for Medicare because of disability than among beneficiaries who were eligible because of age (Medicare Payment Advisory Commission 2022a). Consistent with our analysis, the Bipartisan Policy Center found that beneficiaries who qualified for Medicare because of disability and/or ESRD used telehealth at higher rates than beneficiaries who qualified because of age (Bipartisan Policy Center 2022).

To evaluate the use of telehealth services by low-income beneficiaries, we assessed telehealth use by

beneficiaries who received full or partial Medicaid benefits or did not qualify for Medicaid benefits but received the Part D low-income subsidy (LIS) because they had limited assets and an income below 150 percent of the federal poverty level. (Collectively, we refer to this population as “LIS beneficiaries” because those who receive full or partial Medicaid benefits are automatically eligible to receive the LIS.) A higher share of LIS beneficiaries than non-LIS beneficiaries received at least one telehealth service (34.9 percent vs. 27.0 percent), and LIS beneficiaries received a higher mean number of telehealth services than non-LIS beneficiaries (5.0 vs. 3.4). This result is consistent with our previous finding that LIS beneficiaries use more Medicare services in general than their non-LIS counterparts (Medicare Payment Advisory Commission 2022b). In addition, a study of Medicare beneficiaries between March 7, 2020, and March 31, 2021, found that telehealth use increased directly with the area deprivation index, suggesting that beneficiaries in the most disadvantaged neighborhoods had the highest rates of telehealth use (Bose et al. 2022).

A much larger share of beneficiaries who lived in urban areas received at least one telehealth service billed under the PFS than beneficiaries in rural areas (29.6 percent vs. 18.9 percent), and urban residents also had a higher mean number of PFS telehealth services than rural residents (3.9 vs. 3.1). These differences could reflect the fact that rural beneficiaries disproportionately rely on FQHCs and RHCs, which were excluded from our analysis, to access telehealth, or could represent a real difference. Other studies have also found higher telehealth use in urban areas than rural areas during the PHE (Bipartisan Policy Center 2022, Bose et al. 2022, Lucas and Villarroel 2022, Office of Inspector General 2022a, Qu et al. 2022).

Telehealth spending varied by clinical category and body system in 2021. To examine the distribution of telehealth services in Medicare by clinical category, we used the Clinical Classifications Software Refined, which aggregates diagnosis codes from claims into over 530 clinically meaningful categories.<sup>23</sup> These categories are organized into 21 body systems, such as mental, behavioral, and neurodevelopmental disorders; diseases of the circulatory system; and diseases of the musculoskeletal system and connective tissue.

**TABLE  
7-4**

**Clinical categories accounting for the highest shares of FFS Medicare spending for telehealth services, 2021**

Clinical category	Spending (in millions)	Share of total spending
Depressive disorders	\$441	12.2%
Anxiety and fear-related disorders	222	6.2
Trauma-related and stressor-related disorders	215	6.0
Essential hypertension	215	6.0
Bipolar and related disorders	138	3.8
Spondylopathies/spondyloarthropathy (including infective)	118	3.3
Schizophrenia spectrum and other psychotic disorders	101	2.8
Diabetes mellitus with complication	87	2.4
Chronic kidney disease	84	2.3
Sleep-wake disorders	74	2.1
All other categories	1,904	52.9

Note: FFS (fee-for-service). Clinical categories are from the Clinical Classifications Software Refined, which was developed by the Agency for Healthcare Research and Quality. Spondylopathies are diseases of the vertebrae. Spondyloarthropathies are diseases of the joints. The table includes physician fee schedule spending (program payments and beneficiary cost sharing) for telehealth services.

Source: Analysis of Medicare claims data for 100 percent of fee-for-service beneficiaries.

The 10 clinical categories with the highest Medicare spending for telehealth services were relatively consistent in 2020 and 2021. Eight of these 10 clinical categories were chronic conditions (e.g., depression, hypertension, diabetes) (Table 7-4). Five of the 10 clinical categories were mental and behavioral health disorders: depressive disorders, anxiety and fear-related disorders, trauma-related and stressor-related disorders, bipolar and related disorders, and schizophrenia spectrum and other psychotic disorders. When we grouped clinical categories into body systems, we found that mental, behavioral, and neurodevelopmental disorders accounted for the highest share of spending for telehealth in 2021 (34.4 percent), which was a higher share than in 2020 (25.4 percent, data not shown) (Table 7-5). These findings indicate that telehealth services continued to play an important role in treating mental and behavioral health conditions during the PHE. Diseases of the circulatory system (e.g., essential hypertension and coronary atherosclerosis and other heart disease) also accounted for a substantial share of spending for telehealth services in 2021 (11.4 percent).

**Use of telehealth varied by type of clinician**

In 2021, of the almost 1.3 million clinicians who billed for at least one PFS service (of any type), over 500,000 billed for at least 1 telehealth service. Specialist physicians made up the highest share of clinicians who provided telehealth services (37 percent), followed by advanced practice registered nurses (APRNs) and physician assistants (PAs) (24 percent) and primary care physicians (22 percent) (Table 7-6). By comparison, specialist physicians accounted for 40 percent of the clinicians who billed for any PFS service (telehealth or in person), APRNs and PAs accounted for 27 percent, and primary care physicians made up 12 percent (data not shown). The fact that primary care physicians accounted for a far higher share of clinicians who billed for telehealth versus any PFS service (22 percent vs. 12 percent) highlights the importance of telehealth in primary care.

In 2021, clinical psychologists accounted for the highest mean and median spending on telehealth services per clinician (\$14,723 and \$7,083, respectively), followed by licensed clinical social workers (LCSWs) (\$8,195 and \$4,023, respectively) (Table 7-6). By comparison, mean

**TABLE  
7-5**

**Body systems accounting for the highest shares of FFS Medicare spending for telehealth services, 2021**

Clinical category	Spending (in millions)	Share of total spending
Mental, behavioral, and neurodevelopmental disorders	\$1,238	34.4%
Diseases of the circulatory system	412	11.4
Diseases of the musculoskeletal system and connective tissue	318	8.8
Endocrine, nutritional, and metabolic diseases	265	7.4
Symptoms, signs, and abnormal clinical and laboratory findings not elsewhere classified	259	7.2
Diseases of the nervous system	251	7.0
Diseases of the genitourinary system	159	4.4
Factors influencing health status and contact with health services	148	4.1
Neoplasms	132	3.7
Diseases of the respiratory system	132	3.7
All other categories	286	7.9

Note: FFS (fee-for-service). Clinical categories are from the Clinical Classifications Software Refined, which was developed by the Agency for Healthcare Research and Quality. Factors influencing health status and contact with health services include medical examination/evaluation and exposure, encounters, screening or contact with infectious disease. The table includes physician fee schedule spending (program payments and beneficiary cost sharing) for telehealth services.

Source: Analysis of Medicare claims data for 100 percent of fee-for-service beneficiaries.

**TABLE  
7-6**

**FFS Medicare spending for telehealth services varied by type of clinician, 2021**

Clinician type	Number of clinicians providing telehealth	Share of all clinicians providing telehealth	FFS Medicare spending for telehealth services			
			Mean	25th percentile	Median	75th percentile
Specialist physicians	201,500	37%	\$7,215	\$311	\$1,384	\$5,655
APRNs and PAs	131,500	24	3,995	237	946	3,400
Primary care physicians	120,800	22	7,589	601	2,252	6,729
Licensed clinical social workers	41,200	8	8,195	1,099	4,023	10,398
Clinical psychologists	22,500	4	14,723	1,945	7,083	18,196
Other practitioners	21,100	4	1,654	114	315	1,054
Total	538,600	100	6,682	351	1,556	5,843

Note: FFS (fee-for-service), APRN (advanced practice registered nurse), PA (physician assistant). Clinicians included in the analysis billed for at least one physician fee schedule service in the year. "Primary care physicians" includes family medicine, internal medicine, pediatric medicine, and geriatric medicine, with an adjustment to exclude hospitalists. Hospitalists are counted in "specialist physicians." "Other practitioners" includes clinicians such as physical therapists and podiatrists. Table counts telehealth services provided to Medicare FFS beneficiaries and billed under the physician fee schedule. Spending includes Medicare program spending and beneficiary cost sharing. Components may not sum to totals due to rounding. Number of clinicians providing telehealth rounded to the nearest hundred.

Source: Analysis of Medicare claims data for 100 percent of FFS beneficiaries.

spending on telehealth services across all clinicians was \$6,682 per clinician (median spending was \$1,556). High spending per clinician on telehealth services by clinical psychologists and LCSWs highlights the newly important role of telehealth in treating behavioral health conditions.

Compared with the other categories of clinicians, the distribution of Medicare spending per clinician was wider for specialist physicians, with a segment of specialist physicians billing relatively few telehealth services while others billed for many more. This difference is likely attributable to the fact that the specialist category in Table 7-6 (p. 329) comprises many different physician specialties that vary in their use of telehealth. For example, in 2021, the mean Medicare spending for telehealth services for endocrinologists was about \$12,300 but was only about \$1,200 for dermatologists (data not shown).<sup>24</sup>

### **Provision of telehealth services to beneficiaries by clinicians who are located in a different state**

The statutory mandate for this report requires the Commission to analyze the provision of telehealth services by clinicians to beneficiaries who are located in a different state, to the extent that reliable data are available. Before the PHE, clinicians were generally prohibited by state regulations from providing telehealth and in-person services to patients who were located outside of the state in which the clinician was licensed (Andino et al. 2022). During the PHE, however, all 50 states and Washington, DC, enacted temporary licensure waivers that allowed clinicians to provide telehealth services to out-of-state patients (out-of-state telehealth). In addition, CMS temporarily waived its requirement that clinicians be licensed in the state in which they are providing services, as long as the state waived its own licensure requirements. Now that the PHE has ended, CMS regulations will continue to allow for total deferral to state law. As of April 18, 2022, 15 states had licensure waivers, and some states had permanently allowed out-of-state clinicians to practice telehealth in their state (Andino et al. 2022).

We used FFS Medicare claims data to examine the prevalence of out-of-state telehealth services in 2020 and 2021. The share of telehealth services that were out-of-state services was relatively low in both years (5.1 percent in 2020 and 6.0 percent in 2021, data not shown). Other research based on FFS Medicare

claims also found that out-of-state telehealth services accounted for 5 percent of all telehealth services in 2020 (Andino et al. 2022).

The rate of out-of-state telehealth services varied by type of service. In 2021, for example, 21.5 percent of telehealth E&M visits that were provided to beneficiaries in emergency departments and 11.4 percent of telehealth E&M visits that were provided to beneficiaries in inpatient hospital settings were delivered to out-of-state beneficiaries (data not shown). The higher use of out-of-state telehealth for these types of services could be explained by hospitals relying on out-of-state clinicians during periods of staffing shortages. By contrast, only 2.8 percent of telehealth E&M home visits and 4.7 percent of telehealth care management/care coordination services were provided to out-of-state beneficiaries. Geographically, the share of telehealth services received by beneficiaries from out-of-state clinicians varied widely, from 1.4 percent in California to 46.0 percent in Washington, DC, which is part of a metropolitan area that includes Maryland and Virginia. States with high rates of out-of-state telehealth in 2021 included Wyoming (31.0 percent), South Dakota (20.8 percent), North Dakota (20.5 percent), and West Virginia (17.2 percent).

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### **Beneficiary and clinician experiences with telehealth**

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The Commission's annual beneficiary survey and focus groups with beneficiaries and clinicians provide additional insight about recent experiences with telehealth. Because the most recent survey and focus groups were conducted in the summer of 2022, they allow us to track more recent experiences than the claims analysis and literature review. What we hear also helps us identify emerging trends in access to care and the organization of care that are not yet detectable through claims data.

The beneficiary survey was administered to about 4,000 Medicare beneficiaries ages 65 and over in August 2022 and asked questions about whether the respondent had a video or telephone visit with a health care provider in the past year, their satisfaction with the visit, and their desire to have access to telehealth visits after the pandemic. Additionally, from May 2022

through July of 2022, we conducted in-person focus groups with beneficiaries and clinicians (e.g., primary care physicians, specialists, nurse practitioners/physician assistants) in three cities in different regions of the country. We also conducted virtual focus groups with beneficiaries residing in rural areas.<sup>25</sup> In all groups, we asked about experiences with telehealth during the PHE and perspectives on the role telehealth could play after the PHE.

In general, beneficiaries who had had telehealth visits reported being satisfied with them. Many of these visits were with clinicians that the beneficiaries had an existing relationship with. Clinicians reported mixed preferences about telehealth use but generally concurred that telehealth visits took less time and cost less than in-person visits. Telehealth utilization by clinicians varied, but the majority of clinicians reported that telehealth constituted 10 percent or less of their visits. Beneficiaries and clinicians in our focus groups both reported continued use of audio-only telehealth services, and most would like to have access to telehealth services after the PHE.

### **Beneficiaries reported having telehealth visits mainly with clinicians with whom they had an existing relationship**

In the 2022 survey, 35 percent of Medicare beneficiaries said they had a telehealth visit (a video visit and/or an audio-only telephone visit) in the past 12 months, and the majority of them said that it was because of the pandemic as opposed to telehealth visits being a normal source of care.<sup>26</sup> More beneficiaries (25 percent) reported having a telephone visit (audio only) than a video visit (19 percent) in the past 12 months.

Over half of beneficiaries in our focus groups had participated in a telehealth visit during the year. Over the past year, the choice for a telehealth appointment was largely based on patient preference—a noticeable shift from the first year of the PHE when beneficiaries reported that telehealth was often the only option for nonurgent visits.

In the focus groups, many beneficiaries received telehealth services from clinicians with whom they had an existing relationship, while slightly fewer saw new clinicians for the first time via telehealth (e.g., urgent care visits, initial appointments with specialists). Multiple beneficiaries with positive telehealth experiences said they were meeting with providers

with whom they had a preexisting relationship, so the conversation was easy and comfortable.

### **Beneficiaries are generally satisfied with their telehealth visits**

In the 2022 survey, over 90 percent of beneficiaries said they were very or somewhat satisfied with their telehealth visits with a health care provider. In the focus groups, generally, beneficiaries appreciated having the option of telehealth visits, citing advantages such as convenience and time. A few beneficiaries shared experiences for which telehealth was particularly beneficial when they had medical needs while traveling, including testing positive for COVID-19, and when they were unable to see their regular provider in person. However, there was also a common perception among beneficiaries that telehealth visits are neither thorough nor appropriate for all health issues or types of visits. As one beneficiary explained, “It depends on what the doctor’s specialty is. If it’s something like a therapist, that’s fine. If it’s something like my GI doctor or my urologist, I want to see them in person.” Several beneficiaries noted that the absence of hands-on care—such as checking blood pressure, listening to the patient’s heart, or receiving a physical exam when something is hurting—is a limitation of telehealth.

Clinicians’ descriptions of patients’ reception to telehealth were consistent with the beneficiary focus groups. Clinicians noted that many patients preferred the convenience and appreciated the option of having multiple family members join a telehealth visit and ask questions. However, clinicians also noted that some patients, including those who are older or have difficulty using technology, prefer in-person visits.

### **Clinicians report some continued use of telehealth after initial rapid expansion**

Over three-fourths of the clinicians in our focus groups offered telehealth visits to their Medicare patients. (Many of those clinicians who were not offering telehealth visits were proceduralists who focus on in-person care.) Clinicians described a significant increase in the volume of telehealth visits at the beginning of the PHE in the first half of 2020, which has since leveled off. Clinician reports of their current volume of telehealth visits varied across focus groups, from less than 1 percent of current visits to approximately

50 percent, with the majority of clinicians reporting that telehealth constituted 10 percent or less of their visits.

### **Clinicians had mixed preferences regarding telehealth versus in-person visits**

Clinicians' opinions were divided regarding telehealth. Some appreciated the convenience and flexibility it allows in terms of the visit location, while others preferred in-person visits due to perceived better quality of care or to specific services being better suited for in-person care. Clinicians described advantages of telehealth, including the ease of conducting telehealth visits with established patients and the use of telehealth for follow-up appointments, the impact it has on reducing burden and increasing access for patients, the ability to receive reimbursement equal to in-person visits, and the ability to see more patients in a day. Clinicians also described the limitations of telehealth, such as the inability to provide hands-on care and difficulties with technology issues.

### **Clinicians report that telehealth visits generally took less time**

The majority of clinicians in our focus groups reported less time commitment for telehealth visits compared with in-person visits. A few clinicians noted that video visits took longer than audio visits, due to the time it takes to set up and instances involving technological issues. Some clinicians reported that while most visits were shorter, some ended up taking longer if the patient was more conversational. One primary care physician noted, "Although sometimes they don't know if you're busy or not, they don't see your office. They would like to try to occupy your time. And then you sometimes say, 'Okay, you know what? I have another patient waiting for me.'" Some clinicians noted that telehealth visits took longer in the beginning of the PHE, when beneficiaries were less comfortable with the technology and process.

### **Most clinicians believe telehealth costs less**

Most clinicians said they believed telehealth costs less, while a few who worked for larger employers acknowledged that they were not aware of the cost. Several clinicians noted that it costs less than in-person visits because the visits are shorter and you

can see a higher volume of telehealth patients, which both offsets cost and increases payment. A few other clinicians noted that it costs less because their medical assistant and front office staff are not involved in the process, noting that these staff are happy that it saves them time in their day.

Among the clinicians who were familiar with payment for telehealth visits, several noted that commercial and Medicare Advantage payers generally paid less for telehealth visits than FFS Medicare. Multiple clinicians noted that their organization's leadership was encouraging them to schedule more in-person visits because commercial payers tend to reimburse telehealth—in particular, audio-only visits—at lower rates. However, a few clinicians reported that in some cases commercial payers actually paid higher rates than Medicare.

### **Beneficiaries and clinicians report continued use of audio-only visits**

About 40 percent of clinicians participating in the focus groups were offering audio-only visits (compared with over three-fourths of participants offering telehealth with both audio and video). Clinicians offering audio-only visits reported that these visits sometimes resulted from video visits that were disrupted by technology issues or were offered to patients who lacked the ability or the necessary technology for a video visit. Clinicians often reported using telephone visits for services such as routine check-ups and follow-up consultations. Additionally, clinicians and beneficiaries reported using audio-only visits for medication refills and review of lab results.

Some clinicians reported billing for these audio visits. Several noted that they had previously offered these kinds of phone calls (e.g., delivering lab results) but had never billed for them (including early in the PHE).

### **Many beneficiaries and clinicians would like to continue the option of telehealth visits**

Across focus groups, clinicians agreed that telehealth will likely remain a permanent fixture of the health care landscape. Most participants planned to continue offering audio and video telehealth visits after the PHE. A few clinicians explained that their decision to continue offering telehealth was motivated by the fact that it increases access to care, reduces burden



for certain patients, and is highly favored among their patients. A few clinicians said that they would continue to offer telehealth to a select group of patients, weighing issues such as patient access and whether they could provide high-quality care virtually.

In our 2022 survey, about 40 percent of beneficiaries who had had a telehealth visit in the past year said they would be interested in continuing to use telehealth after the pandemic ends (equivalent to 14 percent of all beneficiaries). Among focus group participants, most beneficiaries said they would like to continue having the option to use telehealth, though many noted that it would depend on the purpose of the visit, with some issues better addressed through an in-person visit.

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### **Relationship between expanded telehealth coverage and quality, access, and cost during the coronavirus pandemic**

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The Congress mandated that the Commission's report include analysis of the implications of expanded Medicare coverage of telehealth services on beneficiary access to care and quality. As part of this analysis, we reviewed and summarized the literature on telehealth and quality that was published during the PHE. We found that the body of literature has grown since the onset of the PHE but is still small, and many of the studies have methodological and data issues.

We used population-based measures to describe the association between telehealth use and outcomes when both telehealth and in-person visits are available to FFS Medicare beneficiaries. A major limitation of our study is that the time period we used overlaps with surges in COVID-19 cases, which could itself influence the use of telehealth and the outcomes we measure. As a result, we cannot make any causal interpretations of our findings; however, the findings indicate that during the pandemic, telehealth was associated with little change in measured quality, slightly improved access to care for some beneficiaries, and slightly increased costs to the Medicare program.

More work needs to be done using more recent data so that the interruption of care and other effects of the pandemic do not confound results. As we discussed in

our March 2021 report to the Congress, policymakers should continue to monitor the impact of telehealth on access, quality, and cost and should use this evidence to inform any additional permanent changes to policy.

### **Recent literature related to telehealth and quality of care**

Before the PHE, coverage for telehealth in Medicare was limited to certain services and areas, so pre-pandemic literature and data are of limited use in understanding the impact of broad access to telehealth. During the PHE, the body of literature examining the relationship between telehealth and quality of care grew but remains small. One limitation of the literature published during the PHE is that the outcomes were themselves influenced by the coronavirus pandemic. Further, the peer-reviewed literature published recently generally consists of observational studies conducted using data from a single health care system or health plan; these data are limited by potential bias, and the results may not be generalizable to the whole Medicare population. In the paragraphs below, we summarize some of the studies published during the PHE.

One study of primary care practices across Michigan using data from 2019 and 2020 found that high-telehealth-use practices were associated with a higher rate of risk-adjusted ambulatory care-sensitive (ACS) visits (hospitalizations and emergency department (ED) visits) compared with low-telehealth use practices (Li et al. 2022). Another study using data from a large health care system concluded that patients who had a telehealth follow-up visit with a primary care provider after an ED visit were more likely to return to the ED than those who had an in-person follow-up visit, even after controlling for acuity, comorbidities, and sociodemographic factors (Shah et al. 2022). A study using data from over 40 million commercially insured adults found that patients with an initial telehealth encounter for new acute conditions, compared with an in-person encounter, had greater likelihood of any follow-up encounter, an emergency department encounter, and inpatient admission. The opposite was true for patients with an initial telehealth encounter for chronic conditions (Hatef et al. 2022).

A recent study using data from an integrated health system concluded that telehealth exposure was associated with favorable quality of primary care;

## Study design: Using population-based measures to assess the relationship between Medicare's telehealth expansion and quality, access, and cost during the coronavirus pandemic

Working with a team of health economists from the American Institutes for Research (AIR), we used population-based measures to determine the association between telehealth use and outcomes when both telehealth and in-person visits are available to FFS Medicare beneficiaries (Saharkhiz et al. 2023). We compared outcomes from the second half of 2021 (during telehealth expansion) with those from the second half of 2019 (before telehealth expansion). The second half of 2021 was selected because it was the most recent data available at the time of our study. We used hospital service areas (HSAs) as defined by the Dartmouth Atlas of Health Care to represent health care markets.<sup>27</sup> To measure an HSA's telehealth intensity, we ranked HSAs based on the number of telehealth services per 1,000 beneficiaries used in the second half of 2021. We assigned the bottom third of HSAs to the low-telehealth-intensity level (comparison group) and the top third of HSAs to the high-telehealth-intensity level (intervention group).<sup>28</sup>

Our analysis examined changes across time and HSA level of telehealth intensity for four population-based measures of quality of care (two measures), access, and cost:

- **Quality:** We measured quality of care using two measures: risk-adjusted ambulatory care-sensitive (ACS) hospitalizations and emergency department (ED) visits per 1,000 fee-for-service (FFS) beneficiaries. Conceptually, an ACS hospitalization or ED visit refers to hospital use that could potentially have been prevented with timely, appropriate, high-quality ambulatory care. For example, if a diabetic patient's primary care

physician and specialists effectively control the condition and they have a system to allow urgent visits, the patient may be able to avoid a visit to the ED for a diabetic crisis. These measures include hospital use for both chronic (e.g., diabetes, asthma, hypertension) and acute (e.g., bacterial pneumonia, cellulitis) conditions. For these measures, lower rates denote better quality of care. But lack of access can make rates lower than they would otherwise be in an equal access environment.

- **Access:** We measured access to care by using the number of clinician encounters per FFS beneficiary. Encounters are a direct measure of entry into the health care system. We define encounters as unique combinations of beneficiary identification numbers, claim identification numbers (for paid claims), and national provider identifiers of the clinicians who billed for the service. We use the number of FFS Medicare beneficiaries enrolled in Part A and Part B to define encounters per beneficiary. Claims for services provided at rural health clinics and federally qualified health centers are not included as encounters in this measure.
- **Cost:** We calculated the total cost of care for Part A and Part B services per FFS beneficiary, which includes Medicare program payments, beneficiary cost sharing, and primary payer payments (Chronic Condition Warehouse 2022). The measure includes the following service types: hospital inpatient, hospital outpatient, skilled nursing facility, home health, hospice, physicians, and durable medical equipment.

*(continued next page)*

however, limitations of this study hinder our ability to draw any conclusions from the findings (Baughman et al. 2022). The study compared the results of clinical process measures between a group of patients who had at least one telehealth visit from March 2020 to November 2021 and a group of patients who had no telehealth visits (only office visits) during that time.

This study asserted that for testing-based measures (cardiovascular disease with lipid panel, diabetes with hemoglobin A1c, and nephropathy testing) and counseling-based measures (blood pressure control; cervical, breast, and colon cancer screening; tobacco screening; vaccination compliance; and depression screening), the telemedicine-exposed group exhibited

## Study design: Using population-based measures to assess the relationship between Medicare's telehealth expansion and quality, access, and cost during the coronavirus pandemic (cont.)

Ideally, we could estimate what effect greater telehealth use in market areas had on quality, access, and cost outcomes. However, assessing a causal relationship between telehealth and outcomes is complicated by the presence of the COVID-19 pandemic and differences across areas in the impact of COVID-19 and non-COVID factors. Simply looking at the differences in outcomes before and after telehealth expansion does not account for changes in other factors that influence the outcomes over time. Likewise, looking at differences in the outcomes between the groups during the intervention period does not account for existing baseline differences. Thus, we apply a difference-in-differences (DID) framework, which measures the difference in an average outcome in the high-telehealth-intensity HSAs (intervention group) between the second half of 2019 and the second half of 2021 (before and after intervention) minus the average change in that outcome for low-telehealth-intensity HSAs (comparison group) during the same period. DID approaches are frequently used to measure associations between interventions and outcomes.

The DID approach already controls for any baseline differences in outcome levels between the two groups and for any factors that remain constant over time that affect outcomes at the HSA level (e.g., HSA urbanicity). However, factors that affect both the outcomes and telehealth use, and that can change between the baseline and intervention period, could confound the association between telehealth and outcomes. Therefore, we also performed DID with several covariates (DID with controls). In general,

we controlled for variables that were found in the literature and descriptive analysis to correlate with both the outcome variables and telehealth intensity and that varied over time between the baseline and treatment periods (see text, pp. 338–339, on differences between low- and high-telehealth-intensity HSAs, which informed some covariate selection). The covariates we used included the share of beneficiaries across age ranges, the share of FFS beneficiaries eligible for Medicaid and Medicare, and FFS beneficiaries' average hierarchical condition category scores, as well as the share of FFS beneficiaries, the share of FFS beneficiaries attributed to alternative payment models, and new and cumulative COVID-19 cases per 10,000 people.<sup>29</sup>

We checked whether the outcomes for the low- and high-telehealth-intensity HSAs moved in parallel (i.e., had similar patterns) by examining whether there was a statistically significant difference in outcomes between the low- and high-telehealth-intensity groups, incorporating outcome values from 2018 and 2019 (before the 2020 telehealth expansions). For the DID with a set of controls, the formal parallel trends assumption passed for two of the four measures (ACS ED visits per 1,000 beneficiaries and total cost of care per beneficiary). For the other two measures, the team from AIR concluded that the violations of the parallel trends assumption detected by the formal tests are primarily driven by the small magnitude of the differences. Future analysis will allow us to use other time periods, which may improve parallel trends test results. ■

moderately better performance. Defining telehealth exposure as having at least one telehealth visit in a 20-month period is a weak measure of telehealth use since a telehealth visit could have been for any reason and not tied to these preventive or chronic care management services. Additionally, the study did not control the number of visits between office-only and telehealth-exposed groups.

### Using population-based measures to assess the relationship between Medicare's telehealth expansion and quality, access, and costs during the coronavirus pandemic

Our ability to assess the impact of telehealth on quality, access, and costs is limited by several factors. Medicare lacks comprehensive data sources like laboratory results and patient-reported outcomes, which limits

the quality measures, in particular measures tied to clinical outcomes, that we can study. We can use administrative claims data to calculate some measures; however, there is a time lag in the availability of that data. The latest complete claims data available during the time period of the mandated report are from calendar year 2021. The second half of 2021 overlapped with the surge in cases due to the Delta variant of COVID-19, which peaked in early September 2021, and the beginning of the surge in cases due to the Omicron variant, which began in December 2021. In addition, the PHE continued to influence patient behavior in 2021 through delayed medical care.

Acknowledging these limitations, we worked with a team of health economists from the American Institutes for Research (AIR) to use population-based measures to determine the association between telehealth use and outcomes when both telehealth and in-person visits are available to FFS Medicare beneficiaries (Saharkhiz et al. 2023). (See text box, pp. 334–345, on the study design.) We compared outcomes from the second half of 2021 (during telehealth expansion) with those from the second half of 2019 (before telehealth expansion) for hospital service areas (HSAs) with low telehealth intensity (comparison group) and for those with high telehealth intensity (intervention group). Our analysis examined changes across time and HSA level of telehealth intensity for four population-based measures: risk-adjusted ACS hospitalizations and ED visits per 1,000 FFS beneficiaries, the number of clinician encounters per FFS beneficiary, and the total cost of care for Part A and Part B services per FFS beneficiary. We applied a difference-in-differences (DID) framework, which measures the difference in an average outcome in the high-telehealth-intensity HSAs (intervention group) between the second half of 2019 and the second half of 2021 (before and after intervention) minus the average change in that outcome for low-telehealth-intensity HSAs (comparison group) during the same period. We applied this approach with and without controlling for several variables that were found in the literature and descriptive analysis to correlate with both the outcome variables and telehealth intensity, including HSAs' share of beneficiaries of different age ranges and share of beneficiaries dually eligible for Medicare and Medicaid, and average beneficiary hierarchical

condition category scores (see text box on differences between low- and high-telehealth-intensity hospital service areas, pp. 338–339).

### **Changes in outcome measures during the coronavirus pandemic**

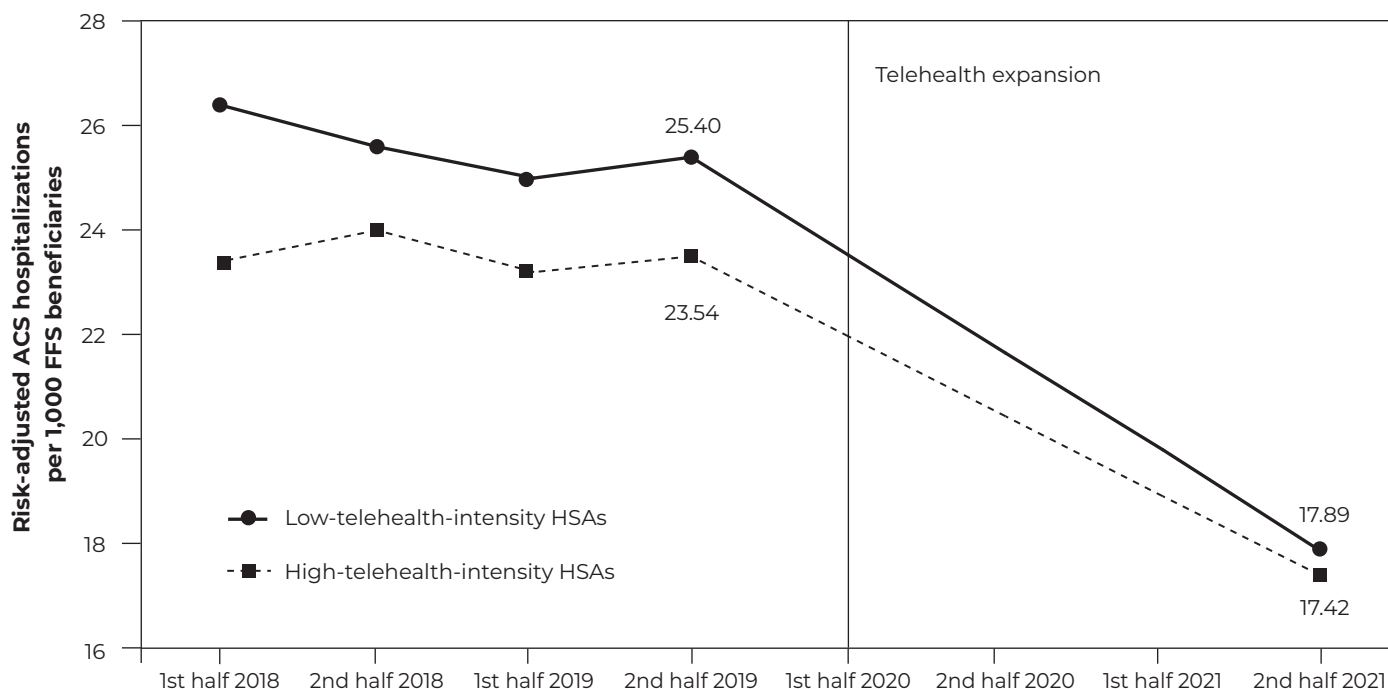
We used a DID framework to examine whether changes in four outcome measures across baseline and treatment periods were associated with high-telehealth-intensity HSAs (compared with low-telehealth-intensity HSAs). We found that risk-adjusted rates of ACS hospitalizations were lower in the second half of 2021 for both HSA groups, but the rate decreased more slowly, on average, among HSAs with a high level of telehealth use compared with HSAs with relatively low telehealth use. Risk-adjusted rates of ACS emergency department visits were lower during the treatment period than the baseline period for both groups of HSAs, with no association between telehealth intensity and ED visit rates. We also found that total clinician encounters per beneficiary were lower in the second half of 2021 than in the second half of 2019, though the rate decreased more slowly, on average, among high-telehealth-intensity HSAs. Total cost of care per beneficiary increased in 2021 compared with 2019 across all HSAs but increased more in high-telehealth-intensity HSAs.

Given the higher urbanicity of the high-telehealth-intensity HSAs, we conducted sensitivity analyses to analyze the extent to which the differences in outcomes we described above were due to differences in urbanicity levels rather than due to differences in telehealth usage. We found that differences for a subsample of only urban HSAs followed the same general pattern in magnitude and statistical significance as the full sample, which could suggest that the association between telehealth intensity and outcomes was not related to different levels of urbanicity between the low- and high-telehealth-intensity HSA groups.

**Quality** On the one hand, one might posit that the higher telehealth intensity of some HSAs could be associated with improved ACS hospital use (that is, lower rates of both hospitalizations and ED visits) because beneficiaries had more access to timely and appropriate clinician care to treat and manage some acute and chronic conditions. On the other hand,

**FIGURE  
7-7**

**Rates of risk-adjusted ACS hospitalizations per 1,000 FFS beneficiaries across low- and high-telehealth-intensity HSAs**



Note: ACS (ambulatory care-sensitive), FFS (fee-for-service), HSA (hospital service area). We calculated the risk-adjusted rates of hospitalizations tied to a set of acute and chronic conditions per 1,000 FFS Medicare beneficiaries in each HSA. There are about 3,400 Dartmouth-defined HSAs nationally. We created two levels of telehealth intensity by ranking HSAs based on the number of telehealth services per 1,000 FFS beneficiaries in the second half of 2021. We assigned the bottom third of HSAs to the low-telehealth-intensity level and the top third of HSAs to the high level. The figure shows trends from the second half of 2019 (before telehealth expansion) to the second half of 2021 (during the telehealth expansion). Other 2018 and 2019 time periods are included to show additional data points. Data for 2020 and the first half of 2021 results are omitted.

Source: Analysis of FFS Medicare claims data.

telehealth visits may not be an adequate substitute for in-person care, which can lead to greater downstream demand for acute and chronic care hospital use (higher rates). (ACS hospital use rates are also affected by changes in access that do not pertain to telehealth.)

Risk-adjusted ACS hospitalization rates were higher in low-telehealth-intensity HSAs compared with high-telehealth-intensity HSAs during both the baseline and intervention periods (Figure 7-7). Risk-adjusted rates of ACS hospitalizations were lower for both HSA groups during the intervention period but decreased at a slower rate, on average, among high-telehealth-intensity HSAs. Between the second half

of 2019 and the second half of 2021, the risk-adjusted ACS hospitalization rate for low-telehealth-intensity HSAs fell by 7.51 ACS hospitalizations per 1,000 beneficiaries (25.40 to 17.89). By comparison, the rates for HSAs with high telehealth intensity fell by 6.12 ACS hospitalizations per 1,000 beneficiaries (23.54 to 17.42). The DID estimate (or difference between these two differences) is 1.39 ACS hospitalizations per 1,000 beneficiaries (-6.12 minus -7.51), meaning that ACS hospitalization rates dropped by 1.39 fewer ACS hospitalizations per 1,000 beneficiaries in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs.<sup>30</sup> After controlling for factors that may have changed across the

## Differences between low- and high-telehealth-intensity hospital service areas

In the second half of 2019, low-telehealth-intensity hospital service areas (HSAs) had an average of 28 telehealth visits per 1,000 beneficiaries (note that telehealth-intensity groups were defined by 2021 use) (Table 7-7).<sup>31</sup> This figure was slightly higher than that of the high-telehealth-intensity HSAs, with an average of 23 telehealth visits per 1,000 beneficiaries. Telehealth increased dramatically in both groups in the second half of 2021; however, average telehealth intensity in the high-telehealth-intensity HSAs was almost four times the average in the low-telehealth-intensity HSAs. Telehealth visits per 1,000 fee-for-service (FFS) Medicare beneficiaries averaged 174 in low-telehealth-intensity HSAs and 679 in high-telehealth-intensity HSAs.

Our comparison of various characteristics between the low- and high-telehealth-intensity HSAs found a number of differences across the groups (Table 7-8). (These findings are generally consistent with the telehealth use analysis presented earlier in the chapter.) The low- and high-telehealth-intensity HSAs were similar in terms of average age and sex of beneficiaries. The high-telehealth-intensity HSAs were more diverse in regard to the race/ethnicity of beneficiaries and included a larger share of beneficiaries who were eligible for Medicaid. There were substantial differences between the two groups in terms of the share of FFS Medicare beneficiaries living in urban areas (24 percent and 77 percent for the low and high groups, respectively).

*(continued next page)*

**TABLE  
7-7**

**In the second half of 2021, high-telehealth-intensity HSAs had an average number of telehealth visits that was almost four times as high as low-telehealth-intensity HSAs**

Telehealth-intensity group (based on 2021 use)	Average telehealth visits per 1,000 FFS beneficiaries	
	2nd half of 2019	2nd half of 2021
Low-telehealth-intensity HSAs	28	174
High-telehealth-intensity HSAs	23	679

Note: HSA (hospital service area), FFS (fee-for-service). We created two levels of telehealth intensity by ranking HSAs based on the number of telehealth services per 1,000 beneficiaries in the second half of 2021. We assigned the bottom third of HSAs to the low-telehealth-intensity level and the top third of HSAs to the high level. There are about 3,400 Dartmouth-defined HSAs nationally.

Source: Analysis of FFS Medicare claims data.

periods or affected ACS hospitalization rates and telehealth use, we estimate the DID to be 1.63.<sup>32</sup> That is, risk-adjusted ACS hospitalization rates per 1,000 beneficiaries dropped by 1.63 more hospitalizations in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs. The interpretation is that the rate of ACS hospitalizations fell in both groups

of HSAs but at a slower rate, on average, in high-telehealth-intensity HSAs.

DID estimates can represent a causal relationship if the intervention is the only change that occurs between the baseline and intervention period (or all other

## Differences between low- and high-telehealth-intensity hospital service areas (cont.)

The low-telehealth-intensity HSAs had more hospital beds but fewer primary care physicians per 10,000 people than the high-telehealth-intensity HSAs. On average, the low-telehealth-intensity HSAs had

37 hospital beds per 10,000 people, while the high-telehealth-intensity HSAs had 26. On average, the low group had 11 primary care physicians per 10,000 people, compared with 15 in the high group. ■

**TABLE  
7-8**

### High-telehealth-intensity HSAs had a much larger share of beneficiaries living in urban areas

HSA characteristics	Average telehealth visits per 1,000 FFS beneficiaries	
	Low-telehealth-intensity HSAs	High-telehealth-intensity HSAs
Average beneficiary age	71	71
Share:		
Female	54%	55%
Non-Hispanic White	88	78
Black	5	7
Hispanic	2	8
Asian/Pacific Islander	<1	4
With full Medicaid eligibility for 6 months	11	15
With partial Medicaid eligibility for 6 months	5	4
Attributed to an APM for at least one month	33	37
Living in urban areas	24	77
Average ADI	73	45
Hospital beds per 10,000 persons	37	26
Primary care physicians per 10,000 persons	11	15

Note: HSA (hospital service area), FFS (fee-for-service), APM (alternative payment model), ADI (area deprivation index). We created two levels of telehealth intensity by ranking HSAs based on the number of telehealth services per 1,000 beneficiaries in the second half of 2021. We assigned the bottom third of HSAs to the low-telehealth-intensity level and the top third of HSAs to the high level. There are about 3,400 Dartmouth-defined HSAs nationally. All statistics are an average of the HSAs in that telehealth-intensity level and pertain to the second half of 2019. The ADI ranks neighborhood socioeconomic disadvantages using U.S. Census data (1 to 100, with 100 being the most deprived).

Source: Analysis of FFS Medicare claims data.

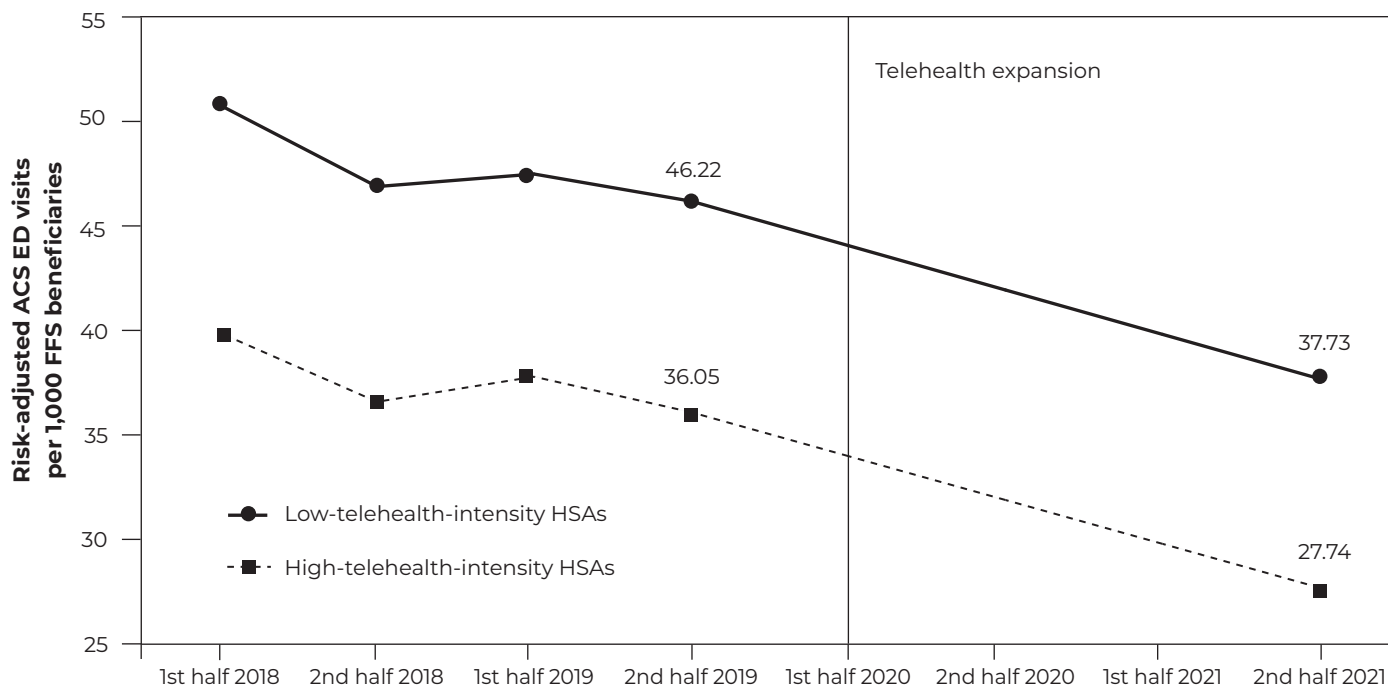
changes are fully accounted for). However, although we controlled for COVID-19 prevalence and incidence, we know that COVID-19 had widespread impacts that could have affected outcomes in ways we have not fully accounted for. There could be other time-varying changes that affect our analysis. We therefore cannot

interpret our findings as causal inferences. More work can be done in the future using more periods of study, along with other refinements, which could improve our ability to interpret any results as causal.

The second population-based measure of quality we analyzed was rate of risk-adjusted ACS ED visits per

**FIGURE  
7-8**

**Rates of risk-adjusted ACS ED per 1,000 FFS beneficiaries across low- and high-telehealth-intensity HSAs**



Note: ACS (ambulatory care-sensitive), ED (emergency department), FFS (fee-for-service), HSA (hospital service area). We calculated the risk-adjusted rates of ED visits tied to a set of acute and chronic conditions per 1,000 FFS Medicare beneficiaries in each HSA. There are about 3,400 Dartmouth-defined HSAs nationally. We created two levels of telehealth use intensity by ranking HSAs based on the number of telehealth services per 1,000 FFS beneficiaries in the second half of 2021. We assigned the bottom third of HSAs to the low-telehealth-intensity level and the top third of HSAs to the high level. The figure shows trends from the second half of 2019 (before telehealth expansion) to the second half of 2021 (during the telehealth expansion). Other 2018 and 2019 time periods are included to show additional data points. Data from 2020 and the first half of 2021 are omitted.

Source: Analysis of FFS Medicare claims data.

1,000 FFS beneficiaries. Risk-adjusted ACS ED visit rates were higher in low-telehealth-intensity HSAs compared with high-telehealth-intensity HSAs during both the baseline and intervention periods (Figure 7-8). Risk-adjusted rates of ACS ED visits decreased over time for both HSA groups at about the same rate. Between the second half of 2019 and second half of 2021, the risk-adjusted ACS ED visit rate for low-telehealth-intensity HSAs fell by 8.49 visits per 1,000 beneficiaries (46.22 to 37.73). In comparison, the rates for high-telehealth-intensity HSAs dropped by 8.31 visits per 1,000 beneficiaries (36.05 to 27.74). The DID estimate (or difference between these two differences)

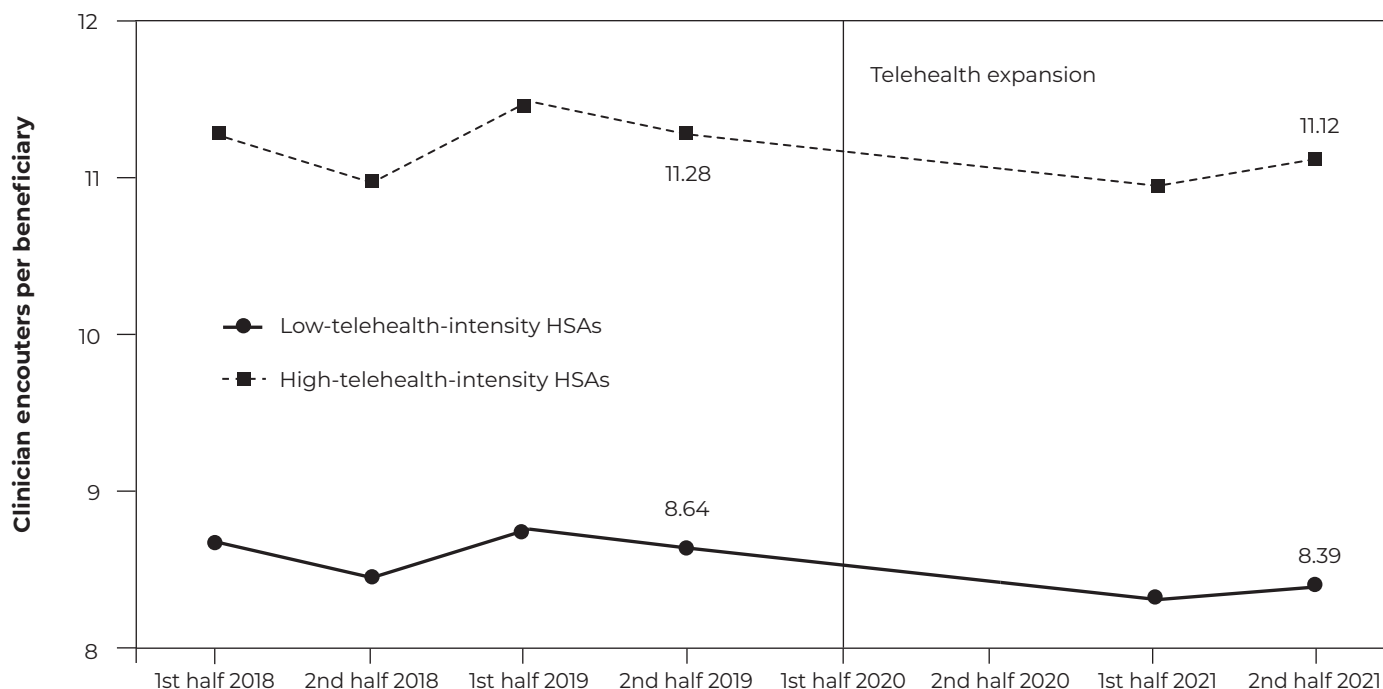
is 0.18 ACS ED visit per 1,000 beneficiaries (-8.31 minus -8.49), meaning that ACS ED visit rates fell by 0.18 fewer in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs; however, the DID estimate is not statistically significant. The DID estimate when controlling for other factors decreased to 0.10 ACS ED visits and remained statistically insignificant. Thus, we did not find evidence of a significant association between telehealth intensity and rates of ACS ED visits.

**Access** The higher telehealth intensity for some HSAs could be associated with increased total clinician encounters per beneficiary since telehealth expansions improved beneficiary access to clinicians for reasons



**FIGURE 7-9**

**Total clinician encounters per beneficiary across low- and high-telehealth-intensity HSAs**



Note: HSA (hospital service area). We define “encounters” as unique combinations of beneficiary identification numbers, claim identification numbers (for paid claims), and national provider identifiers of the clinicians who billed for the service. We use the number of fee-for-service (FFS) Medicare beneficiaries enrolled in Part B to define encounters per beneficiary. There are about 3,400 Dartmouth-defined HSAs nationally. We created two levels of telehealth use intensity by ranking HSAs based on the number of telehealth services per 1,000 FFS beneficiaries in the second half of 2021. We assigned the bottom third of HSAs to the low-telehealth-intensity level and the top third of HSAs to the high level. The figure shows trends from the second half of 2019 (before telehealth expansion) to the second half of 2021 (during the telehealth expansion). Other 2018 and 2019 time periods are included to show additional data points. Data from 2020 and the first half of 2021 are omitted.

Source: Analysis of FFS Medicare claims data.

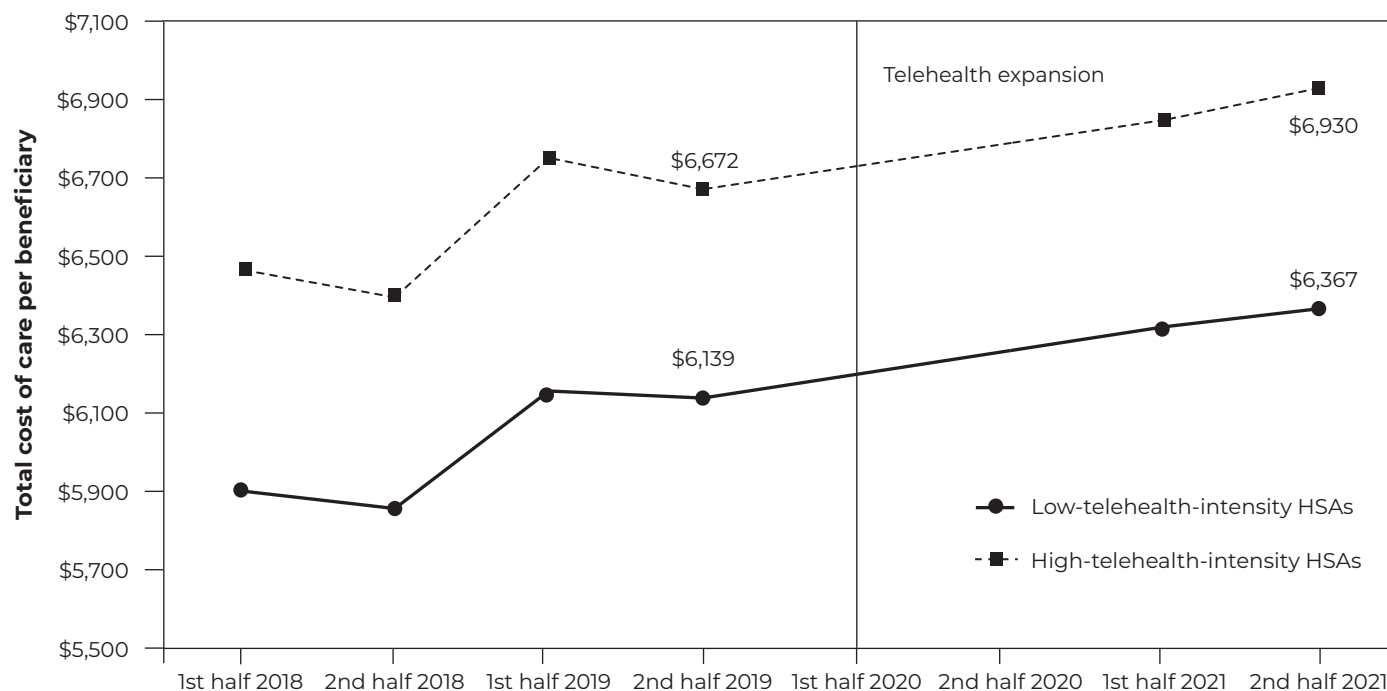
related to increased convenience and not having to leave home if feeling ill. High telehealth intensity may have also decreased “no show” rates for planned clinician visits, resulting in an increase in total clinician encounters per beneficiary.

Total clinician encounters per beneficiary were higher in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs during both the baseline and intervention periods (Figure 7-9). Total clinician encounters per beneficiary were lower in the second half of 2021 than in the second half of 2019 for both HSA groups, though the rate decreased more slowly, on average, among high-telehealth-intensity HSAs.

Between the second half of 2019 and the second half of 2021, the rate of total clinician encounters per beneficiary in low-telehealth-intensity HSAs fell by 0.25 encounters (from 8.64 to 8.39 clinician encounters). However, the rates for high-telehealth-intensity HSAs dropped by 0.16 encounters (11.28 to 11.12). The DID estimate (or difference between these two differences) is 0.10 total encounters per clinician (-0.25 clinician encounters minus -0.16), meaning that rates of total clinician encounters fell by 0.10 encounters fewer in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs.<sup>33,34</sup> After controlling for factors that may have changed across the periods or affected total clinician encounter rates and telehealth

**FIGURE 7-10**

**Total cost of care per beneficiary across low- and high-telehealth-intensity HSAs**



Note: HSA (hospital service area). We define “encounters” as unique combinations of beneficiary identification numbers, claim identification numbers (for paid claims), and national provider identifiers of the clinicians who billed for the service. We use the number of fee-for-service (FFS) Medicare beneficiaries enrolled in Part B to define encounters per beneficiary. There are about 3,400 Dartmouth-defined HSAs nationally. We created two levels of telehealth-use intensity by ranking HSAs based on the number of telehealth services per 1,000 FFS beneficiaries in the second half of 2021. We assigned the bottom third of HSAs to the low-telehealth-intensity level and the top third of HSAs to the high level. The figure shows trends from the second half of 2019 (before telehealth expansion) to the second half of 2021 (during the telehealth expansion). Other 2018 and 2019 time periods are included to show additional data points. Data from 2020 and the first half of 2021 are omitted.

Source: Analysis of FFS Medicare claims data.

use, we estimate the DID to be 0.30.<sup>35</sup> That is, total clinician encounters fell by 0.30 less in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs. Thus the rate of total clinician encounters per beneficiary fell in both HSA groups but decreased more slowly, on average, among high-telehealth-intensity HSAs.

**Cost** Some have argued that higher-telehealth-intensity HSAs could be associated with higher total costs due to additional spending on telehealth clinician encounters without offsetting reductions in in-person encounters or other health care utilization. Alternatively, some stakeholders assert that higher-telehealth-intensity HSAs could be associated with

lower total costs per beneficiary if the higher costs for telehealth clinician services was offset (or more than offset) by lowering downstream services, such as inpatient hospitalizations.

We found that total cost of care per beneficiary was higher in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs during both the baseline and intervention periods (Figure 7-10). Total cost of care per beneficiary was higher in 2021 than in 2019 across all HSAs, but the difference between the baseline and treatment periods was greater in high-telehealth-intensity HSAs than in low-telehealth-intensity HSAs. Between the second half of 2019 and the second half of 2021, total cost of care per

**TABLE  
7-9**

**Difference-in-differences estimates were relatively similar when splitting the sample into urban and rural HSAs**

**DID impact estimates**

<b>Outcome</b>	<b>Full sample</b>	<b>Urban subsample</b>	<b>Rural subsample</b>
Risk-adjusted ACS hospitalizations per 1,000 beneficiaries	1.63**	1.30**	0.92
Risk-adjusted ACS ED visits per 1,000 beneficiaries	0.10	-0.08	-1.0
Total clinician encounters per FFS beneficiary	0.30**	0.36**	0.19*
Total cost of care per FFS beneficiary	\$165**	\$212**	\$2

Note: HSA (hospital service area), DID (difference-in-differences), ACS (ambulatory care-sensitive), ED (emergency department), FFS (fee-for-service). The DID model includes controls for factors that could change across the time periods and affect the outcomes and telehealth use (e.g., changes in average hierarchical condition category risk scores). We assigned the bottom third of HSAs to the low-telehealth-intensity level and the top third of HSAs to the high level. There are about 3,400 Dartmouth-defined HSAs nationally.  
 \*Denotes significance at the 5 percent level.  
 \*\*Denotes statistical significance at the 1 percent level.

Source: Analysis of Medicare claims data for 100 percent of FFS beneficiaries.

beneficiary in low-telehealth-intensity HSAs increased by \$228 (from \$6,139 to \$6,367). However, the total cost of care per beneficiary for high-telehealth-intensity HSAs increased by \$258 (from \$6,672 to \$6,930). The DID estimate (or difference between these two differences) is \$30 (\$258 minus \$228), meaning that rates of total spending per beneficiary increased by \$30 more in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs. However, the DID estimate is not statistically significant. After controlling for factors that may have changed across the periods or affected total spending per beneficiary and telehealth use, the DID estimate rose to \$165 and was statistically significant.<sup>36</sup> The covariates capturing average risk scores and the rate of cumulative and new COVID-19 cases explain this difference. The higher costs in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs is consistent with our findings that the high-telehealth-intensity HSAs had slower declines in ACS hospitalization rates and total clinician encounters per beneficiary.<sup>37</sup>

**Sensitivity analysis: Splitting the sample into urban and rural HSAs** One of the biggest differences between our low- and high-telehealth-intensity groups was in the level of urbanicity. The average percentage of beneficiaries living in an urban area was 24 percent for

the low-telehealth-intensity HSAs and 77 percent for the high-telehealth-intensity HSAs.

Given the higher urbanicity of the high-telehealth-intensity HSAs, we conducted a sensitivity analysis to test the extent to which the differences in outcomes we describe above were due to differences in urbanicity levels rather than differences in telehealth usage. We separated HSAs into equally sized urban and rural subsamples and repeated the DID analysis for all four outcomes for urban and rural areas separately (i.e., calculating the difference in differences for changes in high-telehealth-intensity HSAs relative to low-telehealth-intensity HSAs for the urban and rural subsamples). Differences in magnitude and statistical significance between the DID estimates for the subsamples and the full sample would be due to differences in urbanicity and not telehealth intensity.

However, we found that the DID estimates for the urban subsample followed the same general pattern in magnitude and statistical significance as the full sample, which suggests that the association between telehealth intensity and outcomes was not caused by different levels of urbanicity between the low- and high-telehealth-intensity HSA groups (Table 7-9). For example, for the risk-adjusted rate of ACS

hospitalizations per 1,000 beneficiaries measure, the estimate of the DID with controls for the urban sample was 1.30 compared with 1.63 for the full sample (both were statistically significant at 1 percent). That is, for the full sample of HSAs, the risk-adjusted ACS hospitalization rate per 1,000 beneficiaries dropped by 1.63 less in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs. This rate is comparable with the urban subsample, in which the risk-adjusted ACS hospitalization rate per 1,000 beneficiaries dropped by 1.30 less in high-telehealth-intensity HSAs compared with low-telehealth-intensity HSAs. The interpretation for both the full sample and urban subsample DID estimates is that the rate of ACS hospitalizations fell across all HSAs but at a slower rate, on average, among high-telehealth-intensity HSAs, meaning that higher telehealth intensity was not associated with improved ACS hospitalizations.

We found notable differences in the DID impact estimates between the full sample of HSAs and the subsample of rural HSAs. For example, under the risk-adjusted rate of ACS hospitalizations per 1,000 beneficiaries measure, the DID with controls estimate for the rural sample was 0.92 (not statistically significant) compared with 1.63 for the full sample (statistically significant at 1 percent). The differences in the impact estimates between the rural HSA subsample and the full sample of HSAs (and urban HSA subsample) is at least partly because the number of rural high-telehealth-intensity HSAs was small. Therefore, the comparison between rural low-telehealth-intensity HSAs and rural high-telehealth-intensity HSAs was likely less precise. More fully exploring the association between telehealth intensity and outcomes in rural areas could be an avenue for future research. The overall associations we report are driven by the association we observe in urban areas.

## Discussion

Our findings must be considered in the context of the extensive effects of the coronavirus pandemic. Between the second half of 2019 and the second half of 2021, risk-adjusted ACS hospitalization rates dropped 32 percent and ACS ED visits dropped 26 percent across all HSAs. These declines are directly related to the coronavirus pandemic, which disrupted the health care system and fundamentally altered the behavior of the population, the way individuals

access the health care system, and their likelihood of acquiring ACS conditions. While these trends were observed at the national level, differences in the timing and implementation of local regulations on masking, school closures, screening for illnesses, vaccine uptake, and local transmission of other viruses could all have affected the degree and timing of these phenomena across communities. Further, different geographic areas have health care systems with different degrees of resilience and different abilities to rebound from the pandemic. All these factors suggest that by the second half of 2021, different geographic areas were at very different points in terms of their recovery from the pandemic in ways that directly affected our outcomes.

Our findings are also likely to be correlated with the level of telehealth intensity. For example, health systems that had enhanced telehealth capabilities already in place may also have been more likely to adapt to pandemic restrictions and challenges relatively quickly (Whaley et al. 2022). In addition, the timing of the COVID-19 case surges, implementation of and compliance with mask and social-distancing mandates, and the speed of health care system responses across HSAs, among other things, very likely had an impact on both an area's telehealth intensity and outcomes such as ACS hospitalizations and clinician encounters.

Though the underlying data of our study are confounded by COVID-19, our findings suggest the possibility that during the pandemic, telehealth use was associated with little change in measured quality, slightly improved access to care for some beneficiaries, and slightly increased costs to the Medicare program. More work needs to be done using more recent data so that the interruption of care and other effects of the pandemic do not confound results. As we discussed in our March 2021 report to the Congress, policymakers should continue to monitor the impact of telehealth on access, quality, and cost and should use this evidence to inform any additional permanent changes to policy.

Although our analysis may be affected by unmeasured time-varying factors that were occurring during the period we studied, the associations we report were consistent across multiple sensitivity analyses (more information on the additional sensitivity analyses is included in the AIR report on the Commission's website at <http://www.medpac.gov>). Future work

could include updating the analysis using more recent claims data (i.e., 2022). More measures could also be included in future analysis, such as clinical process and intermediate outcome measures that can be calculated using claims data (e.g., diabetic A1c screening, breast cancer screening, medication adherence).

Future analysis could also consider the impact of telehealth use on subpopulations of beneficiaries (e.g., beneficiaries residing in rural compared with urban areas, beneficiaries receiving telehealth for behavioral health care). ■

## Endnotes

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- 1 CMS initially expanded Medicare's telehealth services on a temporary and emergency basis under its Section 1135 waiver authority, as well as additional authority given by the Congress under the Coronavirus Preparedness and Response Supplemental Appropriations Act and the Coronavirus Aid, Relief, and Economic Security Act of 2020 (CARES Act).
- 2 The Consolidated Appropriations Act, 2023, extended the provisions allowing clinicians to provide telehealth services to Medicare beneficiaries outside of rural areas and in the beneficiary's home. The Act expanded the types of clinicians who can bill for telehealth services, allowed federally qualified health centers and rural health clinics to bill for telehealth services as the distant-site provider, and allowed Medicare to pay for certain audio-only services.
- 3 Although many providers across settings may deliver services via telehealth, Medicare does not always pay separately for each discrete service. For example, under the hospital inpatient prospective payment systems, hospitals have the flexibility to use telehealth services as needed, and payment for any telehealth services is included as a part of a fixed payment for each hospital stay.
- 4 Section 1834(m) of the Social Security Act specifies telehealth coverage under the PFS, including the permitted originating sites, authorized practitioners, and geographic restrictions to patients in rural areas. The law gives CMS the authority to make regulatory changes to telehealth policy that include adding, removing, or revising codes under the PFS. Section 1834(m) defines telehealth services as "professional consultations, office visits, and office psychiatry services" plus any other services specified by the Department of Health and Human Services.
- 5 A clinician was not required to be present at the originating site with the beneficiary unless it was medically necessary.
- 6 For example, Medicare pays for the cost of services provided in hospital outpatient departments through the hospital outpatient prospective payment system.
- 7 The FQHC PPS generally bundles all professional services furnished in a single day into one payment, with limited exceptions. The payment bundle covers professional services but excludes other services commonly furnished in conjunction with a visit, such as laboratory tests and technical components of imaging services.
- 8 This requirement does not apply to telehealth services used to treat substance use disorders or a co-occurring mental health disorder.
- 9 As with telehealth for mental health services paid for under the PFS, beginning on January 1, 2025, an in-person mental health service must be furnished within six months prior to furnishing telecommunications service, and in general, an in-person mental health service (without the use of telecommunications technology) must be provided at least every 12 months while the beneficiary is receiving services furnished via telecommunications technology for diagnosis, evaluation, or treatment of mental health disorders. However, exceptions to the in-person visit requirement may be made based on beneficiary circumstances.
- 10 During the PHE, Medicare paid the facility rate for a telehealth service if the service would have been provided in a facility setting in person and pays the nonfacility (office) rate had the service been provided in a nonfacility setting in person.
- 11 The Office of Inspector General (OIG) recommended that CMS collect information on DTC vendors by updating the Medicare provider enrollment application (e.g., CMS-855B) to identify telehealth companies that enroll in Medicare (Office of Inspector General 2022b). OIG also stated that CMS could work with the National Uniform Claim Committee to add a taxonomy code that identifies telehealth companies.
- 12 Beneficiaries' out-of-pocket spending may be particularly high when receiving services at RHCs. In addition to the Part B deductible, beneficiaries who use RHCs must pay coinsurance equal to 20 percent of the RHC's charges. By contrast, beneficiaries who use FQHCs pay no deductible and have coinsurance equal to the lesser of 20 percent of the FQHC's charges or Medicare's payment amount.
- 13 Prior to the PHE, most telehealth services generated two Medicare payments: (1) a payment to the originating site where the beneficiary was located (e.g., a clinician's office or hospital) and (2) a payment to the clinician at the distant site who provided the telehealth service.
- 14 Our measure of spending includes Medicare program spending and beneficiary cost sharing.
- 15 We measured volume as the number of services.
- 16 These payment rates are the national average rates.
- 17 To identify telehealth providers whose billing for telehealth services poses a high risk to Medicare, OIG developed seven measures based on analysis and input from OIG investigators: (1) billing telehealth services at the highest, most expensive

- level every time; (2) billing telehealth services for a high number of days in a year; (3) billing a high average number of hours of telehealth services per visit; (4) billing telehealth services for a high number of beneficiaries; (5) billing for a telehealth service and ordering medical equipment for a high proportion of beneficiaries; (6) billing both FFS Medicare and a Medicare Advantage plan for the same service for a high proportion of services; and (7) billing both a telehealth service and a facility fee for most visits.
- 18 In addition, in our June 2019 report to the Congress, the Commission recommended that the Congress require advanced practice registered nurses and physician assistants to bill the Medicare program directly, eliminating “incident to” billing for services they provide, whether in person or by telehealth.
  - 19 In addition to E&M office/outpatient services, these services include the following: home E&M visits, E&M visits to patients in certain non-inpatient hospital settings (nursing facility, domiciliary, rest home, and custodial care), telephone E&M services, chronic care management services, transitional care management services, Welcome to Medicare visits, annual wellness visits, e-visits, and advance care planning services.
  - 20 This analysis does not include FQHC, RHC, or critical access hospital (Method II) data. Including those data would increase the use of telehealth among rural beneficiaries since rural beneficiaries access more of their care in these settings. The Commission may explore this topic in the future.
  - 21 The denominator in this calculation is beneficiaries in each age group who received at least one telehealth service.
  - 22 This study used data from 2020 and the first three quarters of 2021.
  - 23 The diagnosis codes on claims are based on the International Classification of Diseases, Tenth Revision, Clinical Modification, which consists of more than 70,000 diagnosis codes. The Clinical Classifications Software Refined was developed by the Agency for Healthcare Research and Quality.
  - 24 Like the numbers presented in Table 7-5 (p. 329), these figures are among those clinicians who billed for at least one telehealth service in 2021.
  - 25 The survey and focus groups include beneficiaries enrolled in traditional Medicare and Medicare Advantage.
  - 26 According to our analysis of Medicare claims data from 2021, 29 percent of beneficiaries in traditional Medicare had a telehealth visit. Differences between these estimates are likely related to the type of data source (survey vs. claims data), the time frame (mid-2022 vs. 2021), and whether the estimate includes Medicare Advantage beneficiaries (the survey does but claims data do not).
  - 27 The Dartmouth Atlas of Health Care defines HSAs as local health care markets that satisfy most of the residents’ health care needs, including hospitalizations (Dartmouth Atlas Project 2022). There are about 3,400 HSAs in the country, and most contain only one hospital. Given the purpose behind their definition and the granularity that they allow, the HSA is the geographic level we chose for the calculation of the outcome measures. HSAs may differ in many observable and unobservable ways.
  - 28 The study included a medium-telehealth-intensity level, but for simplicity we present results focusing on differences between the low- and high-telehealth-intensity HSAs.
  - 29 The complete list of covariates used in our DID analyses includes (1) FFS Medicare beneficiaries as a share of the population; (2) shares of FFS beneficiaries under age 65, 65 to 74 years old, 75 to 84 years old, and ages 85 and older; (3) share of FFS beneficiaries who were male, female, or of unknown sex; (4) shares of FFS beneficiaries who were White, Black, Hispanic, Asian, or of other/unknown race; (5) share of FFS beneficiaries who were fully or partially eligible for Medicaid; (6) average hierarchical condition category risk scores and the average of squared risk scores for FFS Medicare beneficiaries; (7) share of FFS beneficiaries attributed to alternative payment models; (8) average area deprivation index for FFS Medicare beneficiaries; (9) population size; and (10) new and cumulative COVID-19 cases per 10,000 people. Certain variables, mainly HSA sex and racial/ethnic composition, showed very little variation between the two time periods, but we opted to control for them anyway; adding such variables does not bias our estimates because variables that are mostly constant over time do not have explanatory power in a DID model.
  - 30 The results were statistically significant at the 1 percent level.
  - 31 The greater telehealth use in 2019 among the low-intensity HSAs could be related to the fact that Medicare allowed greater use of telehealth pre-public health emergency in rural areas and that the low-intensity HSAs are disproportionately rural (Table 7-7, p. 338).
  - 32 The results were statistically significant at the 1 percent level.
  - 33 The DID impact estimate is based on outcome values that are not rounded, so they do not exactly match the differences presented in the prior paragraph.

34 The results were statistically significant at the 1 percent level.

35 The results were statistically significant at the 1 percent level.

36 The results were statistically significant at the 1 percent level.

37 The DID with controls estimates were approximately \$64 for hospital inpatient spending per beneficiary and \$101 for physician spending per beneficiary (both statistically significant at 1 percent). Thus, high-telehealth-intensity HSAs' total spending for hospital inpatient and clinician care per beneficiary grew at a faster rate than that for the low-telehealth-intensity HSAs.



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