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DATA HIGHLIGHT
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CARES Act Telehealth Expansion: Trends in Post-Discharge Follow-Up and Association with 30-Day Readmissions for Hospital Readmissions Reduction Program Health Conditions

Introduction

Hospital readmissions are costly, often preventable events that are widely believed to reflect poor quality of care.[1–3] In 2012, the Centers for Medicare & Medicaid Services (CMS) implemented the Hospital Readmissions Reduction Program (HRRP) to reduce excess readmissions. There are currently six readmission measures in the program covering four health conditions and two surgical procedures for which patients are frequently readmitted.[2] The four health conditions are acute myocardial infarction (AMI), chronic obstructive pulmonary disease (COPD), heart failure, and pneumonia; the two surgical procedures are coronary artery bypass and elective primary total hip and/or knee arthroplasty.

The HRRP aims to reduce excess readmissions among Medicare beneficiaries by applying financial penalties to hospitals with higher-than-expected 30-day all-cause readmission rates among hospitalizations for any of the aforementioned conditions or procedures.[2] Poor care transitions increase the risk of avoidable readmissions[4–7] for patients hospitalized for HRRP conditions and highlight the importance of evidence-based strategies, such as timely post-discharge follow-up, as drivers of risk mitigation.[8–15] Despite the marked decrease in 30-day readmissions among Medicare beneficiaries following HRRP implementation,[16] there remain persistent disparities in readmission by sociodemographic factors such as race and ethnicity and between Medicare-only beneficiaries and beneficiaries dually eligible for Medicare and Medicaid.[17,18]

Post-discharge follow-up refers to patient engagement via office visit, home visit, or telehealth following discharge from an inpatient hospitalization; while follow-up can occur with a primary care provider, the HRRP encourages hospitals to support effective care transitions. Prior to the COVID-19 pandemic, some studies suggested that using telehealth for post-discharge follow-up could reduce readmissions among patients hospitalized for heart failure and COPD, two of the four HRRP conditions.[19–22] However, before the enactment of the CARES Act, CMS covered only a limited number of telehealth services. Allowable telehealth services

Key Findings:

- Rates of seven-day follow-up after hospitalization for HRRP health conditions decreased briefly following the COVID-19 national emergency declaration on March 13, 2020, but quickly rebounded to pre-COVID levels.
- Known sociodemographic disparities in follow-up rates from before the pandemic did not appear to be exacerbated in the six months after telehealth expansion (April – September 2020).
- In this six-month period, use of telehealth for post-discharge follow-up varied by beneficiaries' sociodemographic characteristics. Higher telehealth utilization for post-discharge visits was associated with hospitalizations for beneficiaries who were dually eligible or living in areas with greater social deprivation.
- Telehealth follow-up was associated with lower 30-day readmissions than no timely post-discharge follow-up, but was associated with slightly higher 30-day readmissions than in-person follow-up.

primarily targeted rural beneficiaries, who were required to receive the services in certain types of medical facilities using specific telecommunications systems.[23,24]

COVID-19 caused profound disruption to healthcare delivery,[25,26] and shortly after the National Emergency was announced, the CARES Act became law on March 27, 2020. This legislation expanded Medicare payment for telehealth services, including use of these technologies for post-discharge follow-up.[23] Telehealth expansion under the CARES Act not only increased the breadth of allowable services but also expanded which patients were eligible to receive services, where they could receive services, and what technologies could be used to deliver services.[23,27] In response to these policy changes, use of telehealth services increased sharply.[28]

This sharp increase in telehealth services, together with research suggesting that telehealth-based follow-up could reduce HRRP readmissions, raise important, policy-relevant questions about whether telehealth-based post-discharge follow-up has been effective at reducing HRRP readmissions during the COVID-19 National Emergency. Related questions concern whether sociodemographic disparities in service utilization and outcomes have been exacerbated by telehealth expansion,[29,30] and whether variation in use of telehealth follow-up among beneficiaries hospitalized for HRRP conditions are associated with differences in 30-day readmissions.[31]

This Data Highlight aims to:

- Describe trends in seven-day post-discharge follow-up after hospitalization for HRRP health conditions among Medicare fee-for-service (FFS) beneficiaries before and in the six months after the CARES Act telehealth expansion.
- Describe trends in the use of telehealth for post-discharge follow-up during the first six months after telehealth expansion overall, as well as by HRRP health condition and sociodemographic characteristics.
- Compare 30-day readmission rates for each HRRP health condition during the first six months after telehealth expansion by post-discharge follow-up method.

These data could inform how CMS approaches telehealth policy after the COVID-19 National Emergency, particularly the role of telehealth services for enhancing post-discharge follow-up and reducing readmissions.

Methods

This study used Medicare administrative claims for FFS beneficiaries that covered the period from April 1, 2019, through September 30, 2020. Inpatient, outpatient, and carrier files were obtained from CMS's Chronic Conditions Warehouse (CCW). These data were used to calculate post-discharge follow-up and 30-day readmission rates and were merged with information from the Master Beneficiary Summary File (MBSF), which describes beneficiary level sociodemographic characteristics.[i] The unit of analysis was

[i] The CCW is a virtual environment that contains claim files and MBSF data and is only accessible by approved individuals with a license. For more information on the CCW, visit Home - Chronic Conditions Data Warehouse at ccwdata.org. For documents on data dictionaries, refer to Data Dictionaries - Chronic Conditions Data Warehouse at ccwdata.org. Percentage Correctly Identifying CKD and Recommending Referral to Nephrologist," Centers for Disease Control and Prevention, accessed November 1, 2019, https://nccd.cdc.gov/ckd/detail.aspx?QNum=Q268#refreshPosition.

hospitalizations. Data derived from the 2012-2016 American Community Survey 5-year estimates that measured area-level deprivation were also used.

Results are based on all hospitalizations of Medicare FFS beneficiaries aged 18 and older who were hospitalized for any of the four HRRP health conditions (AMI, COPD, heart failure, and pneumonia) and discharged from short-term and critical access hospitals to home or home health care. HRRP health conditions were identified with ICD-10 codes using guidance from CMS's hospital-level 30-day risk-standardized readmission measures.32 We excluded hospitalizations for which there was no 30-day observation window post-discharge (i.e., due to death, loss of coverage in Medicare Part A and B, or enrollment in Medicare Part C). Hospitalizations for cancer medical treatment and for which beneficiaries were discharged against medical advice were also excluded.

A hospital readmission was defined as an unplanned all-cause inpatient admission within 30 days of the index hospitalization discharge date. Timely post-discharge follow-up was defined as a follow-up encounter that occurred during a seven-day observation window following the index hospitalization discharge date. Research has shown that follow-up within seven days is effective at reducing readmissions among patients with chronic conditions, particularly those with or at risk for heart failure.[1,8,34,35]

Follow-up method was first categorized as telehealth only, in-person only, mixed (including both telehealth and in-person visits within seven days of discharge), or no follow-up. However, descriptive analyses excluded mixed visits, as the primary focus of this study was to explore telehealth in the absence of in-person visits. Telehealth follow-up visits were also categorized as synchronous audio/visual (e.g., a real-time video call with Skype or FaceTime), synchronous telephone (real-time voice call only), or asynchronous (e.g., email communication, use of online patient portal).

Beneficiary sociodemographic characteristics (age, race and ethnicity, Medicaid-Medicare dual eligibility status, rurality, Social Deprivation Index [SDI]) were obtained for hospitalizations. Rurality was assessed by linking Rural-Urban Commuting Area Codes with beneficiaries' ZIP codes and categorized using four levels (metropolitan, micropolitan, small town, rural).[36] Social deprivation was examined by linking data with the SDI, a summary measure that incorporates ZIP code-level data on poverty, education, family structure, housing, and employment.[37] SDI was examined by quartile (Q1 [lowest social deprivation]: -1.89 to < 0.39; Q2: -0.39 to <0.12; Q3: 0.12 to <0.75; Q4 [highest social deprivation]: 0.75-7.58).

Monthly rates of seven-day post-discharge follow-up were calculated before and during the first six months after telehealth expansion for all hospitalizations, as well as by HRRP condition and by beneficiary sociodemographic characteristics. Proportions of follow-up visits after the onset of telehealth expansion that were telehealth-based were examined overall, and by HRRP condition and beneficiary sociodemographic characteristics. Frequencies of various telehealth modalities were examined among hospitalizations with telehealth follow-up visits.

Finally, descriptive statistics were used to study the association between seven-day post-discharge follow-up and 30-day readmission rates by follow-up method and HRRP condition. All analyses were conducted using SAS Enterprise Guide 7.12 between December 7, 2020, and March 16, 2021.

Results

The analysis sample included N=1,319,554 hospitalizations for the four HRRP health conditions: AMI, COPD, heart failure, and pneumonia. Seven-day post-discharge follow-up rates dipped in March 2020, immediately after several measures to mitigate the COVID-19 National Emergency were announced, but quickly rebounded to pre-COVID levels by April 2020. There was no evidence that pre-COVID disparities in follow-up rates by sociodemographic characteristics were exacerbated after telehealth was expanded under the CARES Act. After telehealth expansion, the frequency of follow-up visits that were delivered using telehealth varied by race and ethnicity, rurality, dual eligibility status, and SDI. Thirty-day readmissions were lowest for hospitalizations with an in-person follow-up, and they were also lower for those with a telehealth follow-up as compared to no follow-up.

1. Trends in Seven-Day Post-Discharge Follow-Up Before and After Telehealth Expansion Under the CARES Act

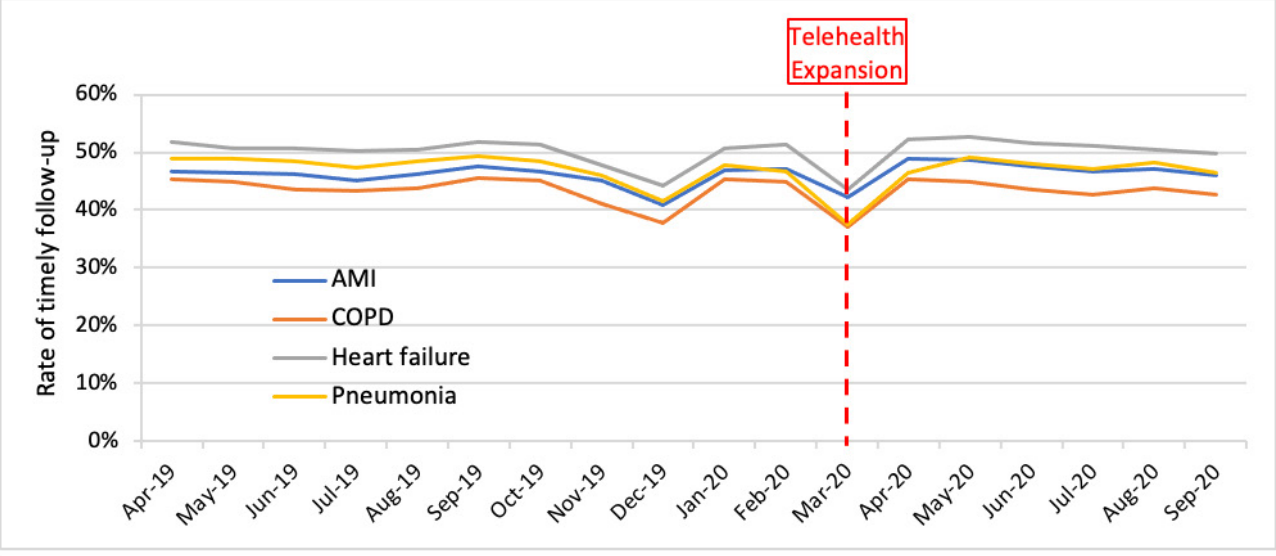
- The average seven-day post-discharge follow-up rate before telehealth expansion was approximately 49%. A seasonal dip in follow-up occurred in late 2019, but rates returned to typical levels in January 2020. This seasonality in health service use is consistent with observations for this population in the prior year (results not shown) and other reports.38,39
- A sudden, and more pronounced decrease in follow-up was concurrent with the announcement of COVID-19 emergency measures in March 2020, but rates quickly returned to pre-COVID levels by April 2020.

Rates of Post-Discharge Follow-Up by HRRP Conditions (Figure 1)

Differences by HRRP health condition in rates of seven-day post-discharge follow-up generally followed the same pattern before and after telehealth expansion.

- Follow-up occurred most frequently after hospitalization for heart failure and least often for COPD, a pattern that was also observed during the temporary dip in follow-up immediately after the telehealth expansion was enacted.

Figure 1. Rates of Seven-Day Follow-Up Among Hospitalizations for HRRP Health Conditions Among Medicare FFS Beneficiaries, April 2019-September 2020



Notably, known sociodemographic disparities in rates of post-discharge follow-up were observed during the study period but did not appear to be worsened by telehealth expansion. For context, details on these findings are included in the Appendix.

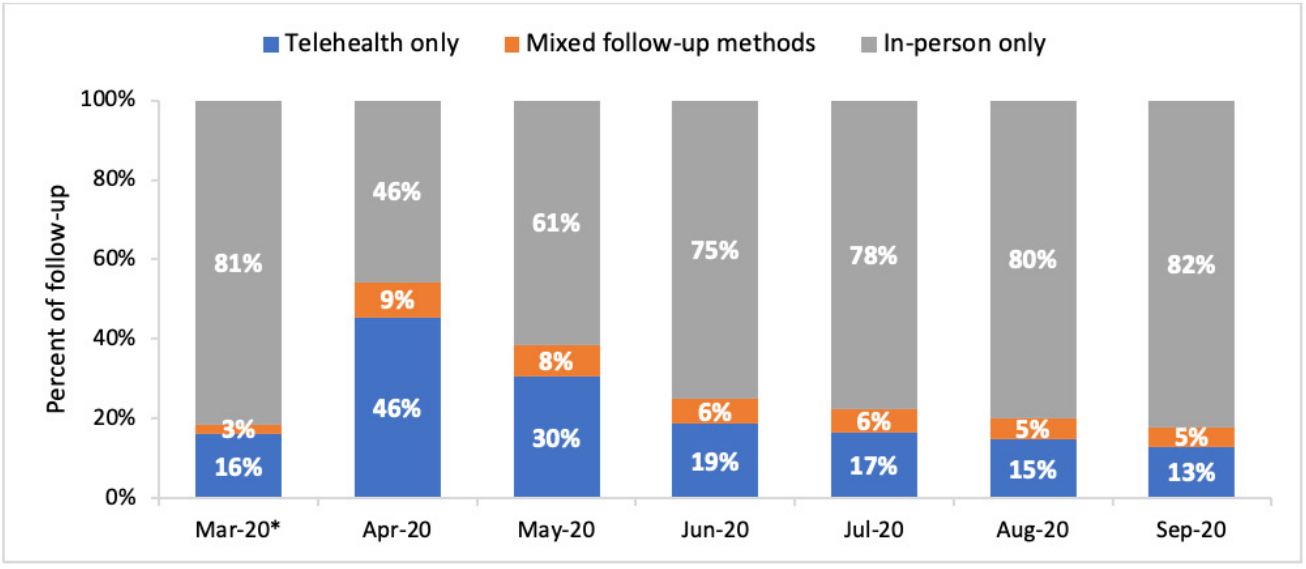
2. Utilization of Telehealth as a Follow-Up Method After Telehealth Expansion Under the CARES Act

In the year prior to telehealth expansion in March 2020, telehealth accounted for substantially less than 1% of all seven-day follow-up visits among hospitalizations for HRRP health conditions. After telehealth expansion, the proportion of follow-up visits using telehealth increased substantially.

Use of Timely Follow-Up by Follow-Up Method (Figure 2)

- Telehealth-only follow-up accounted for 46% of follow-up visits in April 2020, but this share declined steadily, reaching 13% of visits by September 2020.
- In an additional 9% of hospitalizations with follow-up in April 2020, beneficiaries used both telehealth and in-person follow-up (i.e., mixed follow-up methods) within seven days of hospital discharge; this share also declined, accounting for 5% of hospitalizations with follow-up in September 2020.

Figure 2. Method of Follow-Up After Hospitalizations for HRRP Health Conditions Among Medicare FFS Beneficiaries, April-September 2020
*March 2020, when telehealth expansion was authorized, is also shown for context.

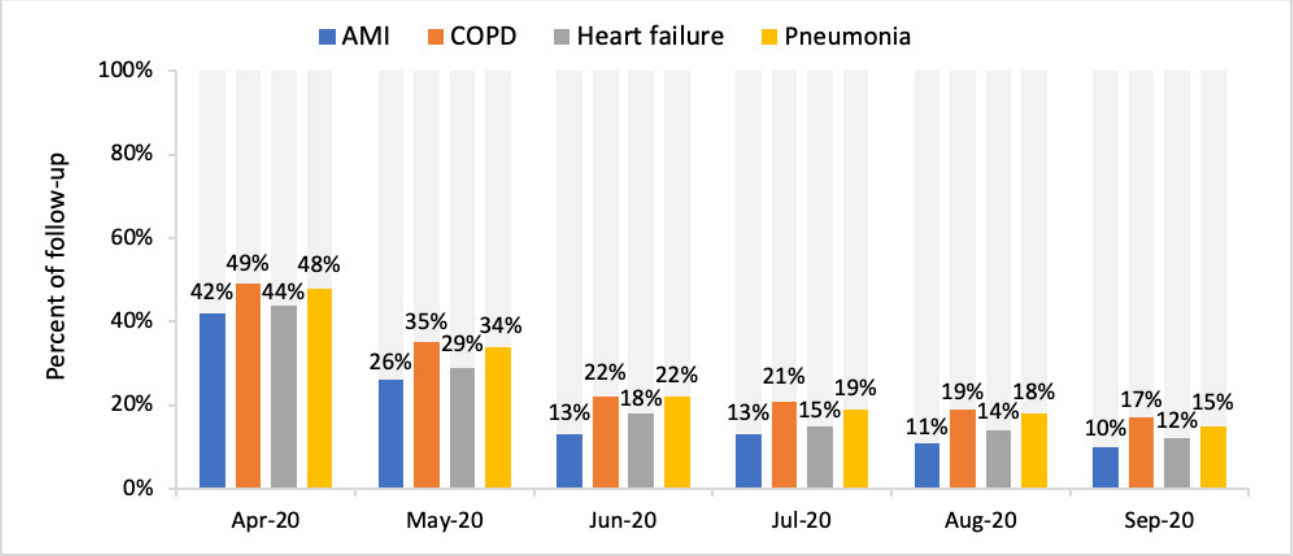


To understand the role of telehealth-only as a follow-up method, we do not show mixed follow-up visits (i.e., in person visits and telehealth visits within seven days of hospital discharge) in our analyses below.

Use of Telehealth Follow-Up by HRRP Health Condition (Figure 3)

- Among hospitalizations for all HRRP health conditions (AMI, COPD, heart failure, and pneumonia), telehealth follow-up was most frequent in April 2020, ranging from 42% to 49% of follow-up visits.
- Proportions of follow-up that were telehealth steadily declined for hospitalizations for all HRRP health conditions over the subsequent five months, reaching between 10% and 17% by September 2020.
- Telehealth was used more often for follow-up after hospitalizations for COPD and pneumonia than for AMI and heart failure.

Figure 3. Percent of Follow-Up Visits that Were Telehealth After Hospitalizations for HRRP Health Conditions, April-September 2020

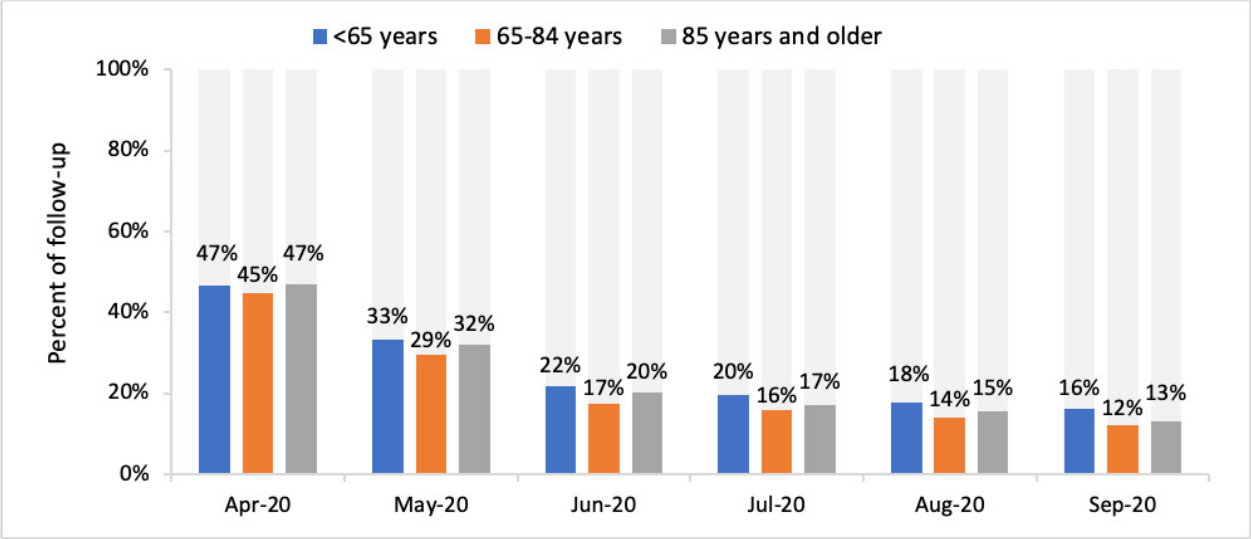


3. Use of Telehealth for Follow-Up Visits Post-Hospital-Discharge Varied by Sociodemographic Characteristics

Telehealth Follow-Up by Age (Figure 4)

- Compared to follow-up after hospitalizations among beneficiaries aged 65-84 years, younger beneficiaries (<65 years) and those aged 85 and older had a slightly higher use of telehealth. This pattern persisted through September 2020.

Figure 4. Percent of Follow-Up Visits that Were Telehealth, by Age Group, April-September 2020

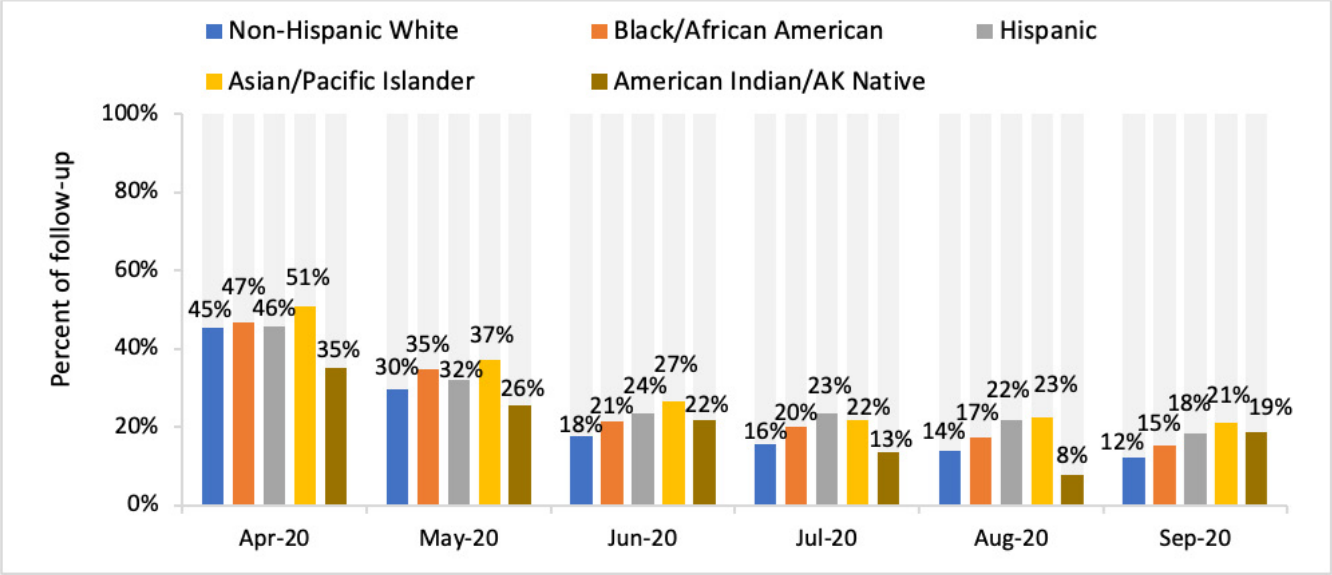


Telehealth Follow-Up by Race and Ethnicity (Figure 5)

After telehealth expansion, there were marked differences by hospitalized beneficiaries' race and ethnicity in the proportion of telehealth follow-up visits.

- A greater percent of follow-up among hospitalizations of Asian/Pacific Islanders was telehealth than among other race and ethnicity groups.
- By June 2020, follow-up was more often telehealth among hospitalizations of Black/African Americans, Hispanics, and Asian/Pacific Islanders than among hospitalizations of non-Hispanic Whites. This pattern persisted through September 2020.
- Decreases in the percent of telehealth follow-up visits between April and September 2020 differed by beneficiaries' race and ethnicity:
    - Among follow-up visits of non-Hispanic White beneficiaries, the percent of telehealth use dropped more quickly than it did for other race and ethnicity groups between April and September 2020–from 45% to 12%.

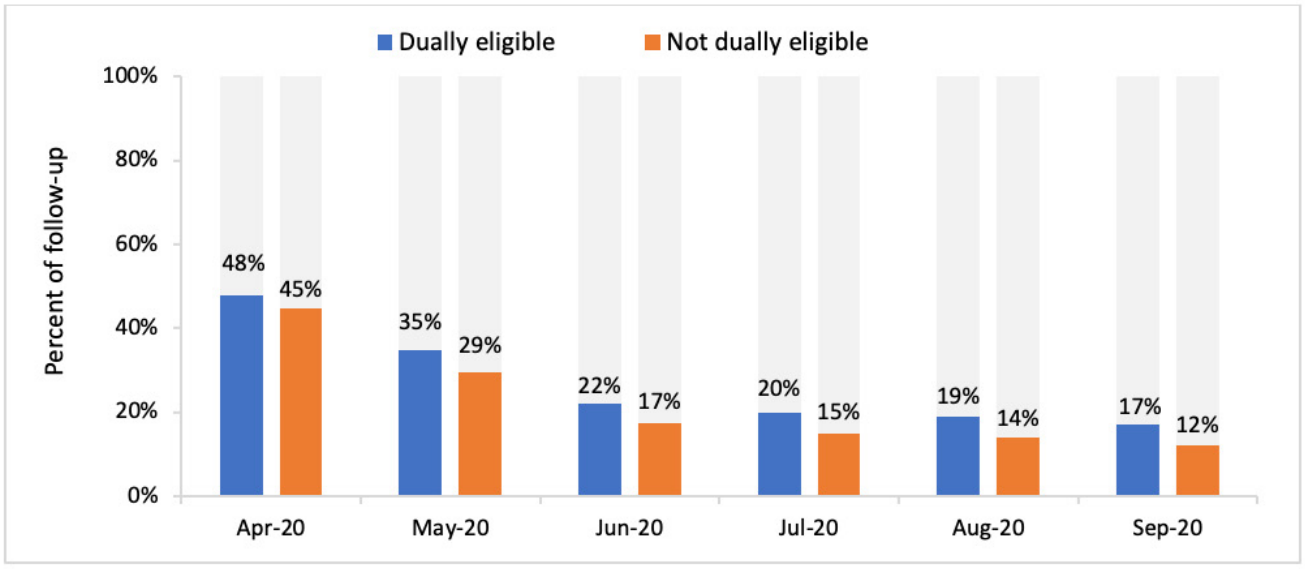
Figure 5. Percent of Follow-Up Visits that Were Telehealth, by Race and Ethnicity, April-September 2020



Telehealth Follow-Up by Dual Eligibility Status (Figure 6)

- Compared to follow-up after hospitalizations among beneficiaries who were not dually eligible for Medicare and Medicaid, follow-up of those with dual eligibility were more often telehealth after telehealth expansion.
- The difference in the percent of follow-up visits that were telehealth between beneficiaries who were and were not dually eligible was 3 percentage points (pp) in April 2020; this difference increased to 5 pp through September 2020.

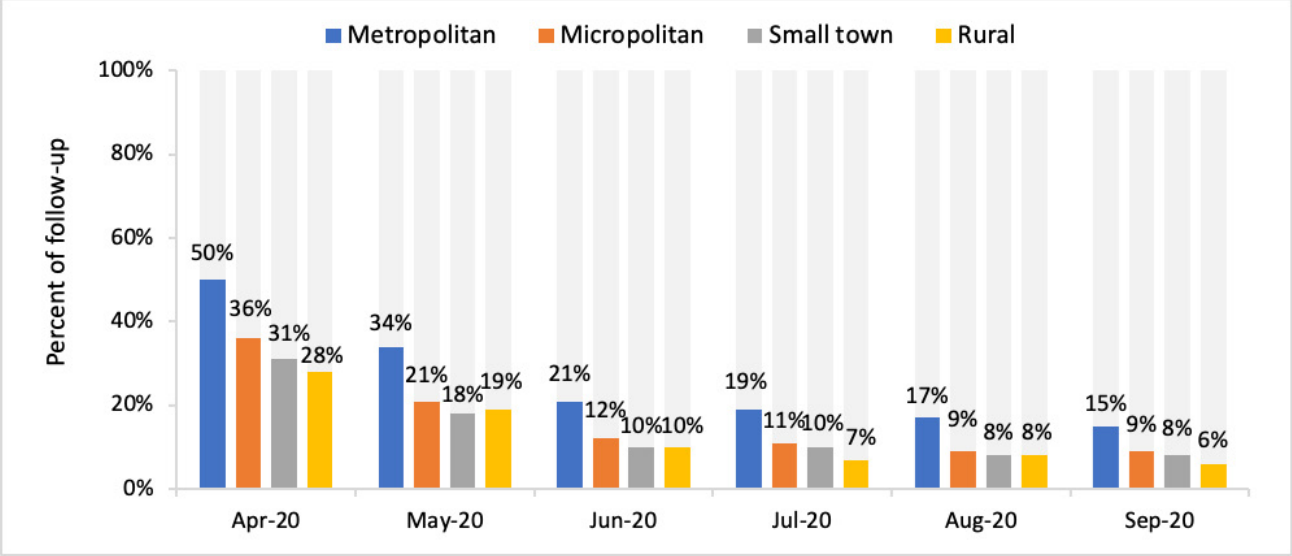
Figure 6. Percent of Follow-Up Visits that Were Telehealth, by Dual Eligibility Status, April-September 2020



Telehealth Follow-Up by Rurality (Figure 7)

- Use of telehealth for follow-up decreased as the degree of rurality increased; this pattern was consistent during the first six months after telehealth expansion.
- Differences in the proportion of telehealth for follow-up visits after hospitalization among beneficiaries living in metropolitan versus rural areas were most pronounced immediately after the start of telehealth expansion (50% vs. 28% in April 2020), but they diminished over time (15% vs. 6% in September 2020).

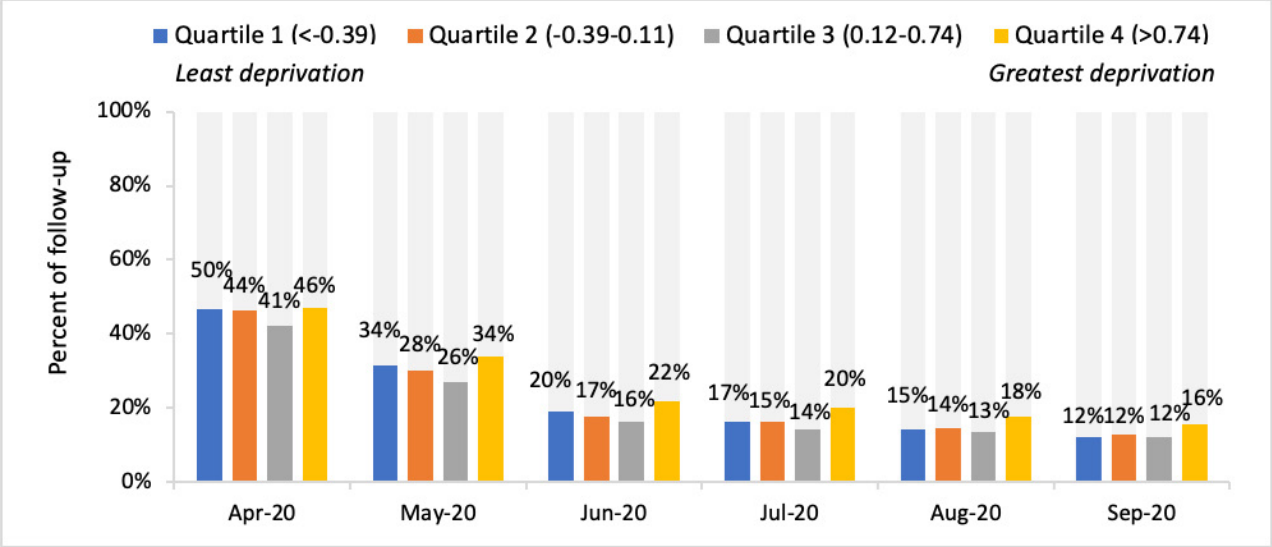
Figure 7. Percent of Follow-Up Visits that Were Telehealth, by Rurality, April-September 2020



Telehealth Follow-Up by Social Deprivation Index (Figure 8)

- In the early months of telehealth expansion, follow-up after hospitalizations of beneficiaries living in areas with the lowest (quartile 1) and highest (quartile 4) social deprivation were more often telehealth than in intermediate SDI areas.
- Beginning in June 2020, follow-up visits among those living in the most socially deprived areas (quartile 4) were more often telehealth relative to use in less socially deprived areas.

Figure 8. Percent of Follow-Up Visits that Were Telehealth, by Quartile of Area Deprivation, April-September 2020

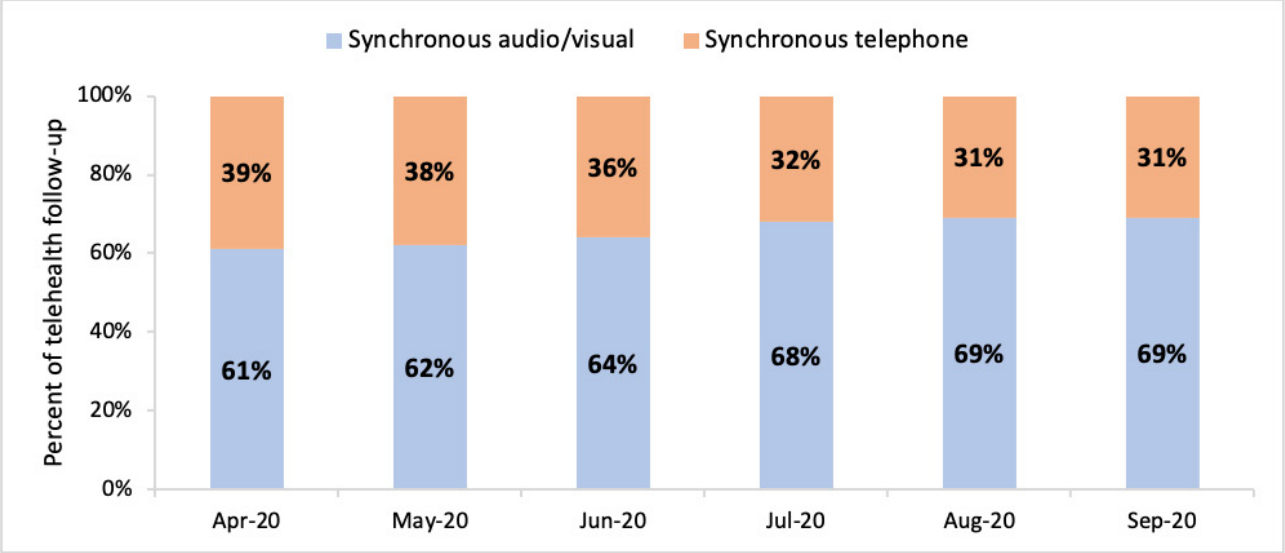


Mode of Telehealth Delivery (Figure 9)

Among follow-up visits delivered by telehealth, there was differential use of the available modes of service delivery.

- Synchronous audio/visual follow-up accounted for the majority of post-discharge telehealth follow-up visits after telehealth expansion. Asynchronous visits were negligible.
- Between April and September 2020, synchronous audio/visual follow-ups increased from 61% to 69% of all telehealth visits and synchronous telephone visits showed a parallel decrease from 39% to 31% of all visits.

Figure 9. Percent of Telehealth Follow-Up Visits by Mode of Delivery, April-September 2020



Note: Asynchronous technology use was minimal and is not shown in the figure.

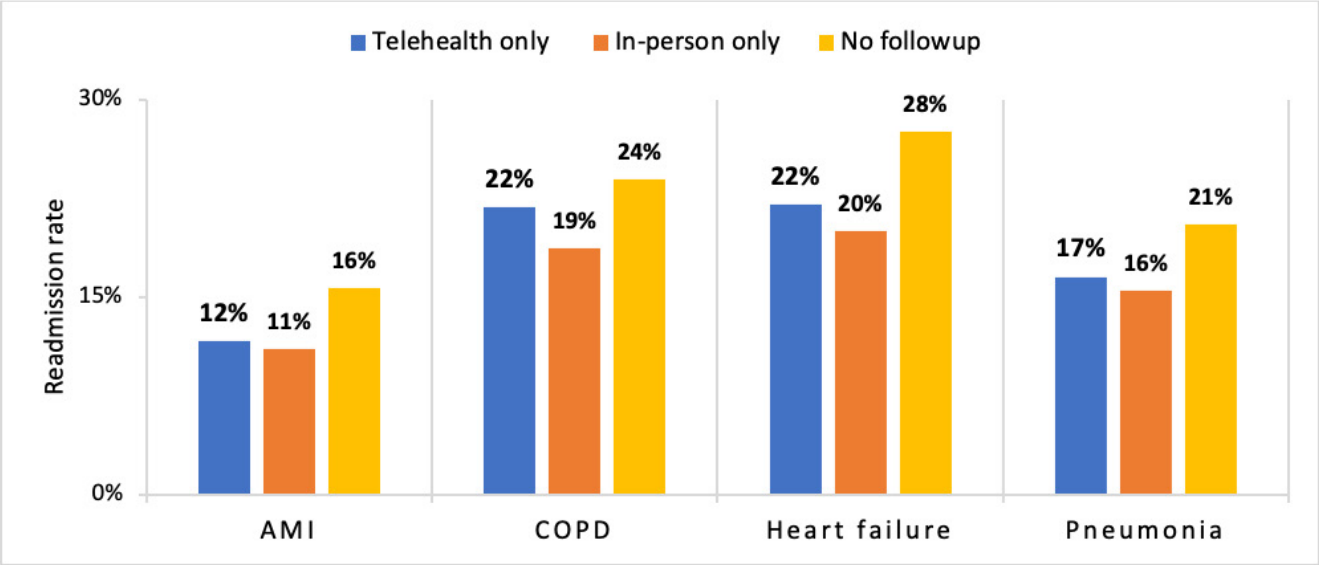
4. Method of Post-Discharge Follow-Up and 30-Day Readmissions After Enactment of Telehealth Expansion Under the CARES Act

Among hospitalizations for AMI, COPD, heart failure, and pneumonia, between April and September 2020, the unadjusted 30-day readmission rate among those without timely follow-up was 23.2%, considerably higher than the corresponding rates for hospitalizations that had telehealth follow-up (19.1%) or in-person follow-up (17.2%).

Thirty-Day Readmissions by Follow-Up Method and HRRP Condition (Figure 10)

- A consistent pattern of higher 30-day readmission rates among hospitalizations without follow-up and lower rates among those with telehealth and in-person follow-up was observed for the four HRRP conditions.
- Thirty-day readmission rates were higher among hospitalizations with telehealth follow-up compared to an in-person visit, but these differences varied by HRRP condition.
    - The difference in readmission rates between telehealth and in-person follow-up was 1 pp for AMI and pneumonia, 2 pp for heart failure, and 3 pp for COPD.
- Thirty-day readmission rates were lower when there was telehealth follow-up compared with hospitalizations having no follow-up visit; these differences were largest for heart failure (6 pp), followed by AMI (4 pp), pneumonia (4 pp), and COPD (2 pp).

Figure 10. Thirty-Day Readmission Rate by Method of Follow-Up and HRRP Condition Among Medicare FFS Beneficiaries, April-September 2020



Discussion

This study shows that after a temporary drop in seven-day post-discharge follow-up, driven by the start of the COVID-19 National Emergency in March 2020, follow-up rates among hospitalizations for HRRP health conditions quickly returned to pre-COVID levels and remained stable through September 2020. During this period, telehealth expansion under the CARES Act did not appear to exacerbate pre-COVID disparities in follow-up by age, race and ethnicity, dual eligibility status, or a measure of area deprivation; that is, follow-up rates for specific sociodemographic groups largely remained consistent before and after the onset of COVID-19. Prior to telehealth expansion, telehealth was rarely used for follow-up visits after hospitalizations for HRRP health conditions, but in April 2020, 46% of follow-up was by telehealth. The percent of follow-up visits delivered by telehealth diminished over the next several months, but they remained higher than pre-COVID levels through September 2020.

Among post-discharge follow-up visits between April and September 2020, use of telehealth differed across HRRP conditions and by beneficiary sociodemographic characteristics. Use of telehealth follow-up was more common among hospitalizations of beneficiaries:

- With COPD or pneumonia.
- Under the age of 65 and age 85 and older.
- Who identified as Black/African American, Hispanic, or Asian/Pacific Islander.
- Who were dually eligible for Medicare and Medicaid.
- Who lived in metropolitan areas.
- Who lived in areas with the highest level of social deprivation.

After telehealth expansion, the 30-day readmission rates among hospitalizations with no timely follow-up were considerably higher than rates among hospitalizations with telehealth follow-up (23.2% vs. 19.1%) or in-person follow-up (17.2%). Although 30-day readmissions were higher among HRRP health condition hospitalizations associated with a telehealth follow-up visit compared to an in-person visit, these differences varied by condition, with the smallest difference (1 pp) observed for AMI and pneumonia and the largest difference (3 pp) for COPD.

The rapid increase in use of telehealth for post-discharge follow-up after telehealth expansion suggests that providers and patients were able to leverage existing technology and adapt quickly to widespread disruptions in healthcare delivery. Although telehealth follow-up reduced the risk of COVID-19 transmission by providing a safer alternative to in-person follow-up,[23] access to this follow-up method is only available for Americans with sufficient digital literacy and, for audio/visual visits, among those who have broadband access and Wi-Fi-enabled technology.[40] Broadband access, while much improved in recent years, is still limited in rural areas relative to urban areas,[41] and this disparity may be reflected by results showing lowest use of telehealth follow-up in rural areas.

There are also racial and ethnic disparities in broadband access, with non-Hispanic Whites being more likely than both Black/African Americans and Hispanics to own computers and have broadband access at home.[42] Still, by June 2020, Black/African Americans, Hispanics, and Asian/Pacific Islanders were more likely than non-Hispanic Whites to use telehealth for post-discharge follow-up. During the study's time period, telephone follow-up was permitted in addition to audio/visual visits and accounted for over 30% of telehealth visits. While findings may reflect greater willingness and/or capacity of minority beneficiaries to adopt telehealth, if future telehealth policies disallow telephone visits, some of this initial adoption could be at risk. Additionally, it is possible that these findings reflect a greater preference among Whites for in-person follow-up.

Prior to the onset of COVID-19, beneficiaries from disadvantaged populations (i.e., racial and ethnic minorities, those with lower income, and those with lower educational attainment) have higher 30-day readmission rates and worse health outcomes than their more-advantaged peers,[43–45] and racial and ethnic minorities and those dually eligible for Medicare and Medicaid are less likely to have post-discharge follow-up.[5,46] It is therefore of particular importance to ensure that historically underserved populations receive timely follow-up, and that disruptions to healthcare delivery do not disproportionately impact these beneficiaries.

This study indicated that the COVID-19 National Emergency and the accompanying telehealth expansion under the CARES Act did not exacerbate pre-COVID disparities in post-discharge follow-up. It also demonstrated that during the first six months of telehealth expansion, use of telehealth for follow-up was more common after hospitalization for an HRRP health conditions among dually eligible beneficiaries, racial and ethnic minorities, and those living in areas with greater social deprivation compared with follow-up use after hospitalizations among beneficiaries who are not identified with these groups.

The expansion of telehealth flexibilities under the CARES Act emergency waiver authorities, as well as temporary regulatory changes, allowed Medicare payment for a greater range of providers, patients, care delivery settings, and communication media.[23] Positive feedback on telehealth expansion from providers and patients led the current administration to make certain limited telehealth service expansions permanent, as permitted by the statute, while others remain in force only for the duration of the Public Health Emergency.[27] The ultimate form that telehealth reimbursement policy will take when the COVID-19 National Emergency is over remains undetermined. However, the results of this study have several potential policy implications:

- Willingness on the part of dually eligible beneficiaries to use telehealth may present an opportunity for targeted interventions that promote telehealth-based follow-up in this group. Targeted interventions may help reduce inequities in the frequency of follow-up, potentially driving improvements in 30-day readmission among dually eligible beneficiaries.
- Continued telehealth expansion among beneficiaries in areas with greater social deprivation may also help increase follow-up and potentially address longstanding disparities in 30-day readmission among these underserved beneficiaries.

- Tailored provider education about the benefits of telehealth follow-up on reducing risk of 30-day readmission for HRRP patients who would otherwise not pursue follow-up may be beneficial, especially among those who are hospitalized for AMI and heart failure.

Although COVID-19 caused sudden and profound disruptions to healthcare delivery, it also resulted in expansion of payment policies that facilitated rapid uptake of telehealth services, as well as an opportunity to examine how these changes impacted quality indicators in the early months after telehealth expansion. Although more evidence is needed, descriptive results from the first six months after telehealth expansion indicated no exacerbation of pre-COVID disparities in use of post-discharge follow-up. The data also suggest that with targeted policies, continued telehealth expansion may help increase follow-up and reduce 30-day readmissions among underserved populations.

Limitations

Several important limitations should be considered when interpreting the findings of this study. First, telehealth visits may not have been accurately coded, particularly at the beginning of the telehealth expansion period. Implementation of expanded telehealth under the CARES Act was accompanied by a considerable increase in acutely ill hospitalized patients, as well as introduction of new protocols and workflows for clinicians and administrative staff, including personnel who are responsible for coding and billing. It was in this context that CMS expanded reimbursement for telehealth services, and although there was a sharp increase in telehealth use immediately after expansion policies were enacted, it is possible that some provider organizations did not know how to accurately code for these services during the early months of the study period.

A second limitation is that analyses in this study are descriptive and do not demonstrate cause-and-effect between telehealth and 30-day readmissions, nor do they account for the role of potential confounders in these association. A third limitation concerns external validity. These analyses were based on an analytic data set that was defined using specific inclusion and exclusion criteria to define eligible hospitalizations, and results can therefore only be generalized to hospitalizations that share characteristics that are consistent with these criteria.

Keywords

Chronic conditions warehouse; Medicare fee-for-service; sociodemographic characteristics; chronic conditions; telehealth; readmissions; follow-up

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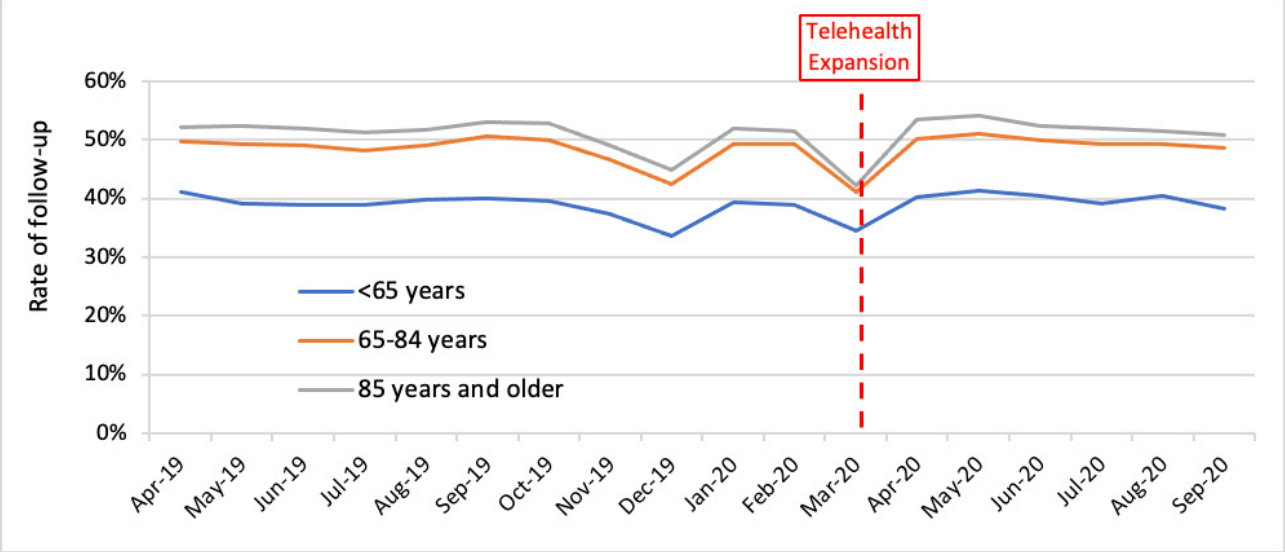
Appendix. Trends of Seven-Day Follow-Up After Hospitalization for HRRP Health Conditions by Sociodemographic Characteristics

Rates of Post-Discharge Follow-Up by Age Group (Figure A)

- Throughout the study period, hospitalizations among beneficiaries in the oldest age group (85 years and older) had higher rates of follow-up than both younger age groups (<65 years and 65-84 years), and the difference in rates of follow-up between the youngest and oldest age groups ranged from 7 pp to 13 pp.
- Although follow-up rates dipped temporarily in all age groups coinciding with the announcement of telehealth expansion in March 2020, age-specific differences were consistent before and after these services were expanded.

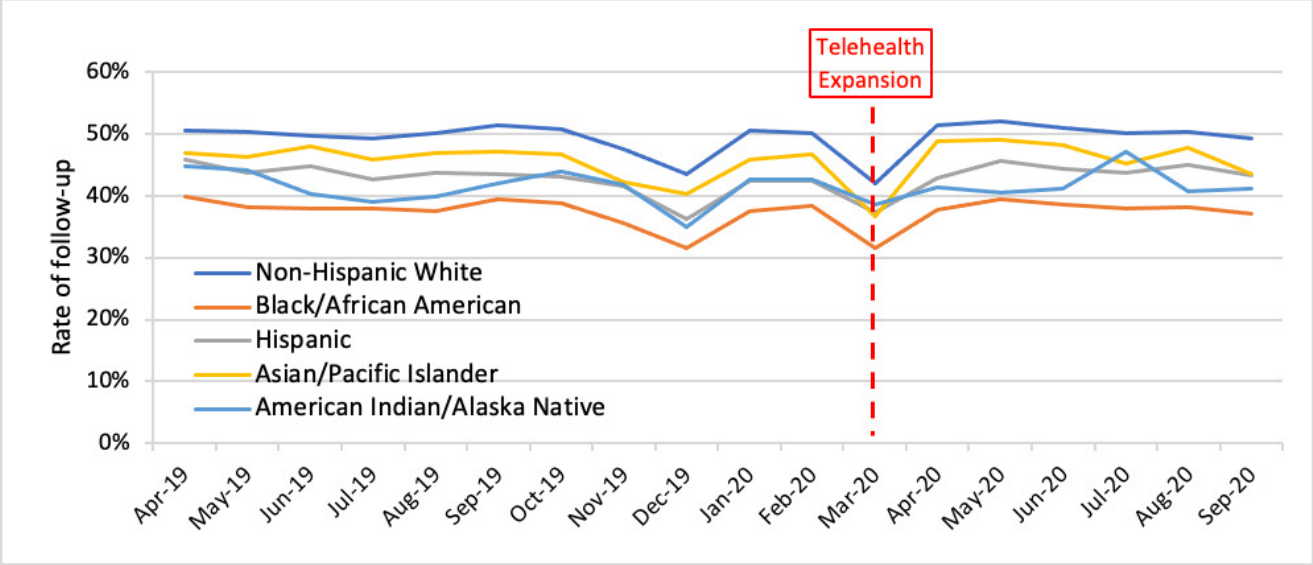
Figure A. Rates of Follow-Up Among Hospitalizations of Medicare FFS Beneficiaries Admitted for an HRRP Condition, by Age Group, April 2019-September 2020



Rates of Post-Discharge Follow-Up by Race and Ethnicity (Figure B)

- Hospitalizations of non-Hispanic White beneficiaries had the highest rate of timely post-discharge follow-up before and after telehealth expansion; hospitalizations of Black/African American beneficiaries had the lowest rates.
- The difference in rates of follow-up between hospitalizations of non-Hispanic White and Black/African American beneficiaries was approximately 10% throughout the study period.
- The observed fluctuation in rates of follow-up among hospitalizations of American Indian/Alaska Native beneficiaries was likely due to small numbers in this group.

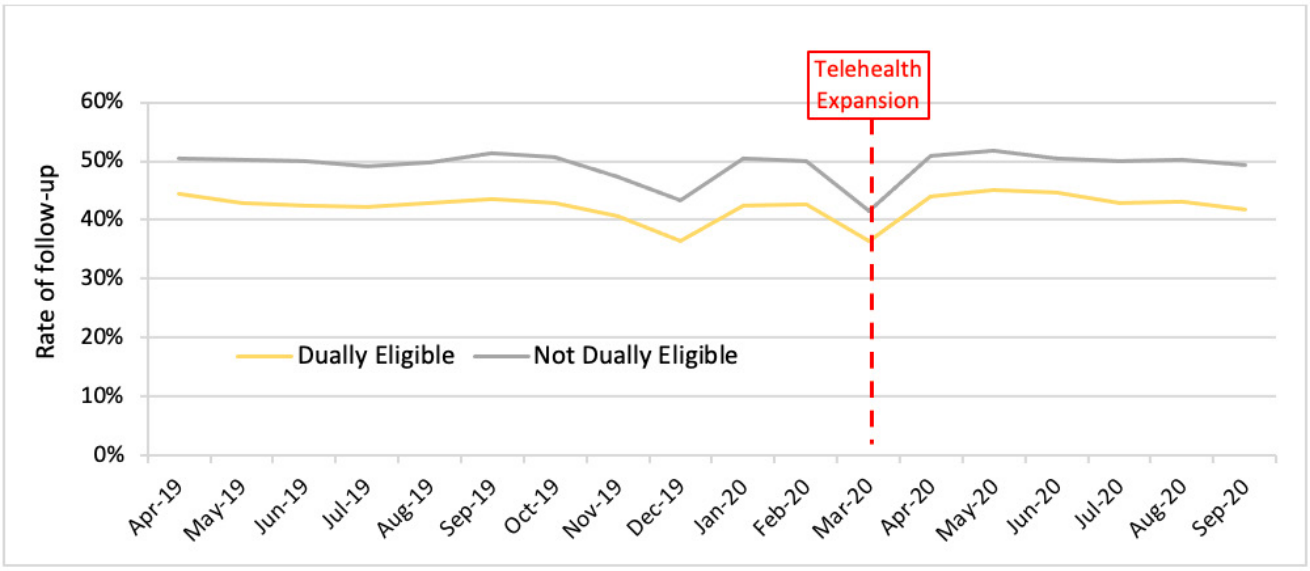
Figure B. Rates of Follow-Up Among Hospitalizations of Medicare FFS Beneficiaries Admitted for an HRRP Condition, by Race and Ethnicity, April 2019-September 2020



Rates of Post-Discharge Follow-Up by Dual Eligibility Status (Figure C)

- Hospitalizations of beneficiaries with dual eligibility for Medicare and Medicaid had lower rates of follow-up than those of non-dually eligible beneficiaries.
- These differences were consistent before and after telehealth expansion, ranging from 5 pp to 8 pp.

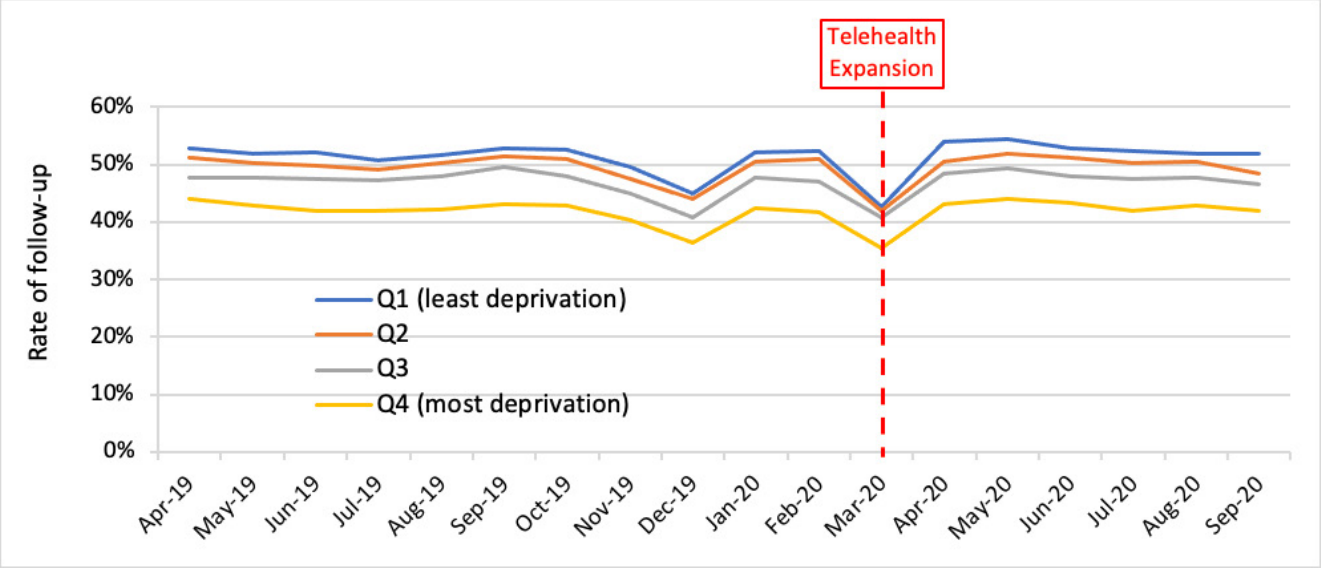
Figure C. Rates of Follow-Up Among Hospitalizations of Medicare FFS Beneficiaries Admitted for an HRRP Condition, by Dual Eligibility Status, April 2019-September 2020



Rates of Post-Discharge Follow-Up by Social Deprivation Index (Figure D)

- Rates of follow-up decreased as hospitalized beneficiary SDI quartile increased (worsened).
- Differences in rates of follow-up between hospitalizations of beneficiaries living in areas with the lowest and highest SDI quartiles remained steady at approximately 10 pp before and after telehealth expansion.

Figure D. Rates of Follow-Up Among Hospitalizations of Medicare FFS Beneficiaries Admitted for an HRRP Condition, by Quartile of Area Deprivation, April 2019-September 2020



Rates of Post-Discharge Follow-Up by Rurality (Figure E)

- Compared to hospitalizations of beneficiaries living in metropolitan areas, follow-up rates were slightly higher for hospitalizations among beneficiaries living in rural areas throughout the study period.
- The difference in follow-up rates between hospitalizations of beneficiaries living in rural versus metropolitan areas slightly diminished from an average of 3.5 pp before telehealth expansion to 2.5 pp after the expansion.

Figure E. Rates of Follow-Up Among Hospitalizations of Medicare FFS Beneficiaries Admitted for an HRRP Condition, by Rurality (RUCA), April 2019-September 2020