
Long-term Impact of Telemedicine Adoption on Outcomes, Spending and ER Visits



During the COVID-19 pandemic, telemedicine saw a significant surge in usage, which has persisted even after the initial spike. This was facilitated by temporary regulatory changes and reimbursement expansions by various payers. Congress extended Medicare's coverage of telemedicine until December 2024, but without further action, this coverage will cease. Concerns about increased spending and lowered quality have hindered long-term telemedicine coverage. To address this, policymakers have called for more research. A study examined the relationship between telemedicine use and costs and quality by comparing health systems with varying levels of telemedicine adoption. They focused on health system-level variation due to differences in technology adoption and policies. [A recent study published in Health Affairs](#), analysed changes in utilisation, spending, and quality between 2019 and 2021–22.

Comparative Study Among Medicare Patients

The study compared traditional Medicare patients receiving care at health systems with differing levels of telemedicine utilisation during the COVID-19 pandemic. Patients were assigned to health systems based on their care in 2019 to mitigate selection bias. Health systems were categorised into quartiles based on telemedicine use in 2020, and outcomes were compared between 2019 (pre-pandemic) and 2021–22 (post-pandemic) across these quartiles. Sensitivity analyses were conducted to examine 2022 outcomes separately. All patients assigned to health systems were analysed, not just telemedicine users, to avoid bias and estimate the broader societal impact of telemedicine expansion. Health systems were identified using various data sources and patients were assigned to primary care practices within these systems. Demographic and disease burden information was extracted for the study cohort, and subgroup analyses were conducted on patients with specific chronic conditions and high frailty.

Measuring Medication Adherence and ER Visits

The study assessed the impact of telemedicine on various healthcare metrics. They measured outpatient visits per person per year and care continuity by analysing the share of visits at patients' primary care practices and health systems. Hospital admissions and emergency department visits were examined, excluding those related to COVID-19. Preventive services utilisation and medication adherence were also analysed, along with imaging, laboratory testing, and spending patterns. The study employed a difference-in-differences framework but noted limitations such as potential biases from time-varying confounders and regional differences in healthcare-seeking behaviour due to COVID-19. Additionally, the study focused solely on the traditional Medicare population and didn't consider fraud, abuse, or patient travel time. Despite these limitations, the study aimed to provide insights into the impact of telemedicine on healthcare outcomes and spending.

Slight Spending Increase Was Reported

The study found a decrease in non-COVID-19 ED visits and an increase in non-COVID-19 hospitalisations among patients at high-telemedicine health systems. However, there were no significant changes in preventive care utilisation, imaging, or laboratory testing between high- and low-telemedicine health systems. Regarding medication adherence, patients at high-telemedicine health systems demonstrated better adherence for medications like metformin and statins compared to those at low-telemedicine health systems. Health care spending increased slightly more among patients at high-telemedicine health systems, mainly due to higher inpatient admissions and pharmaceutical expenses, although this was offset by decreases in outpatient hospital spending. The impact of telemedicine varied across different patient subgroups, with more pronounced changes observed among patients without chronic illness, lower-income individuals, non-White individuals, disabled individuals, and rural patients. Sensitivity analyses generally confirmed these findings, although the magnitude of association varied across different metrics. However, the association between telemedicine use and non-COVID-19 hospitalisations, as well as total spending, was not consistently positive or negative across sensitivity analyses.

Care Continuity Improved as Treatment Adherence Improved

Firstly, patients at high-telemedicine health systems experienced modest increases in office visits, indicating a potential shift towards telemedicine for accessing healthcare services. This increase was accompanied by improvements in care continuity and medication adherence,

suggesting that telemedicine may enhance patient engagement and treatment adherence, particularly for chronic conditions. Interestingly, there were reductions in emergency department visits among patients from high-telemedicine health systems, indicating a potential diversion of acute care needs to telemedicine channels. However, there were no significant differences observed in testing or preventive service utilisation between high- and low-telemedicine health systems, suggesting that telemedicine may not significantly impact preventive care delivery.

Financial and Equity Implications of Telemedicine Adoption

Despite these positive trends in healthcare utilisation and continuity, there was a slight increase in healthcare spending among patients from high-telemedicine health systems. This increase was primarily driven by higher inpatient and drug spending, which may reflect complex healthcare needs requiring more intensive interventions among telemedicine users. The study also explored the differential impact of telemedicine across various patient subgroups. It found that patients without chronic illness and lower-income, non-White patients experienced larger relative increases in healthcare utilisation, highlighting potential disparities in telemedicine access and uptake. Although the findings generally support the notion that telemedicine can improve access to care and enhance treatment adherence, the study acknowledges the need for continued monitoring of telemedicine's impact on quality and spending. Policy makers have shown willingness to accept modest increases in spending to maintain access to telemedicine services, especially considering its potential benefits for certain patient populations and healthcare delivery efficiency.

Overall, the study suggests that restricting telemedicine payment in Medicare may be challenging, given the observed improvements in access and quality of care, combined with patient and clinician preferences for telemedicine services. However, further research is needed to fully understand the long-term implications of telemedicine adoption on healthcare delivery and spending.

Source: [Health Affairs](#)

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