

Telemedicine Utilization Trends During the COVID-19 Public Health Emergency

Shannon Dowler, Kelly Crosbie, Sam Thompson, Erin Drucker, Carlos Jackson

At the outset of the COVID-19 public health emergency, patients, providers, and payers suddenly found themselves using telemedicine more often and for care that was previously only delivered in person. Telemedicine supported continuity of care during this time. There is merit in continuing to track costs, utilization, and health outcomes to determine the value of telemedicine.

Introduction

North Carolina reported its first case of COVID-19 on March 3, 2020. To mitigate transmission, Governor Cooper instituted a stay-at-home order from March 27 to May 8 with significant social distancing measures continuing through the time of this writing in March 2021. These measures precipitated a dramatic decrease in the volume of in-person care delivered to North Carolina Medicaid beneficiaries. By the week of April 19, 2020, the midpoint of the stay-at-home order, in-person primary care claims were down 56.28% from the beginning of March (internal data, NC Medicaid). On March 8, 2020, NC Medicaid instituted a broad array of telemedicine (telephonic and computer-based telehealth) policies to support social distancing and maintain continuity of care. Prior to this, NC Medicaid supported almost no telemedicine, only reimbursing for remote behavioral health telehealth visits in a consultative model and only when the remote encounter was delivered to the beneficiary at a local health care provider's office. Moreover, Medicare and Medicaid did not allow federally qualified health centers (FQHCs) and rural health centers (RHCs) to bill for telemedicine as distance sites in North Carolina.

Telemedicine Uptake

Initial analyses of NC Medicaid claims and encounters suggest that telemedicine supported continuity of care during the public health emergency (PHE). Using practices' enrollment figures to estimate the relevant volume of services expected to be delivered, primary care practices that adopted telemedicine at higher rates saw a larger proportion of their enrolled Medicaid patients during the first five months of the PHE (through August 31, 2020). Specifically, practices with high uptake saw the equivalent of 76% of their patient panel, compared to only 29% for practices that did not adopt any telehealth or telephonic services (Table 1).

By the week of April 19, 2020, telehealth professional claims were up 2,961% from the beginning of March (an increase from 1,890 to 57,857 claims) and 3,158% from the same week the previous year (1,776 claims). Professional claims for telephonic care went from zero at the beginning of March to 17,613 the week of April 19. Behavioral health and primary care saw the largest proportions of telemedicine, with behavioral health climbing to 18.88% of claims and primary care climbing to 18.92% for the week of April 19. Almost 16% of beneficiaries served during the week of April 19 received their care via telemedicine (internal data, NC Medicaid).

Telemedicine Utilization Varied Between Demographic Subgroups

Counties' rates of primary care services delivered via telehealth decrease as the percent of counties' populations living in rural areas increases and increase as the percent of counties' populations with broadband access increases [1]. These relationships are at least partially explained by the fact that there is a strong negative correlation between broadband access and rurality. The relationships described here do not hold for behavioral health claims, likely because some behavioral health services were delivered via telehealth prior to the PHE.

The odds of telemedicine utilization among Hispanic/Latinx beneficiaries were 30% lower than among non-Hispanic/Latinx beneficiaries. Hispanic/Latinx beneficiaries' telemedicine utilization odds were 3% lower than those of non-Hispanic/Latinx beneficiaries when the beneficiary has a COVID-19 diagnosis. Hispanic/Latinx beneficiaries have a much higher rate of laboratory-confirmed COVID-19 cases. As of September 18, 2020, 24.4% of Hispanic/Latinx beneficiaries tested positive whereas 8.8% of non-Hispanic/Latinx beneficiaries did. These findings suggest that there may be barriers to telemedicine participation for in this population. However, the low rate of telemedicine participation

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Address correspondence to Sam Thompson, 820 S. Boylan Ave, McBryde Building, Office 417, Raleigh, NC 27603 (Sam.Thompson@dhhs.nc.gov).

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TABLE 1.
Greater Uptake of Telemedicine Services Supports Access to Primary Care Services

Level of Uptake (number of teleservice claims during the PHE so far)	No. of Practices	No. of Patients Receiving Primary Care During PHE	Est. % of Panel Accessing Practice During PHE
HIGH (300+)	132	339,476	76%
MED (50-299)	482	320,402	62%
LOW (1-49)	740	192,349	48%
NONE	393	56,666	29%
GRAND TOTAL	1,747	908,893	58%

among Hispanic/Latinx beneficiaries with a COVID-19 diagnosis may be because the population skews younger and thus is less prone to complications and severe illness that would require medical attention. This is evident in the fact that a smaller portion of the Hispanic/Latinx population's cases result in death (.05%) compared to Non-Hispanic/Latinx beneficiaries (2.8%) (internal data, North Carolina Division of Public Health; NC Medicaid).

The odds of telemedicine utilization among beneficiaries with a chronic disease are almost three times greater than utilization odds among beneficiaries without a chronic disease. The odds of telemedicine utilization among beneficiaries with a chronic disease are 3.6 times greater than utilization odds among beneficiaries without a chronic disease. Providers are likely managing these high-risk beneficiaries with in-person care, including hospitalization, due to their increased vulnerability to COVID-19.

The aged, blind, and disabled (ABD) population participated in telehealth at higher rates. Twenty-five percent of ABD beneficiaries (27,467 out of 110,279) who received a service during the PHE did so via telehealth compared to 16% of non-ABD beneficiaries (101,686 out of 648,500), suggesting that NC Medicaid's most vulnerable beneficiaries are benefiting from this modality (internal data, NC Medicaid).

Providers' use of telemedicine varied as well. Between March 8 and August 31, 2020, speech, language, and hear-

ing service providers delivered the highest proportion of services via telehealth (47% of services delivered; 235,608 claims) with behavioral health and social service providers delivering the highest volume (41% of services delivered; 372,767 claims) (internal data, NC Medicaid).

Many of the providers that submitted telemedicine claims during the first three months of the PHE (March through May 2020) were slower to submit claims than they were during a comparable period prior to the PHE (September through December 2019). For example, during the week of April 19, 2020, 1,537 of 3,476 (44%) providers engaging in telemedicine processed less than 33% of their claims within 14 days of the original date of service, whereas only 1,134 (33%) of that same provider cohort processed less than 33% of their claims within 14 days for the paired week, which started October 22, 2019 (internal data, NC Medicaid). This is likely attributable to providers' unfamiliarity with the coding requirements associated with the newly implemented telemedicine policies.

Outcomes

We were also interested in whether there were any early signals suggesting telemedicine was resulting in higher cost and increased utilization compared to in-person services. To examine this, we evaluated two utilization outcomes plus total cost of care incurred during the first two weeks

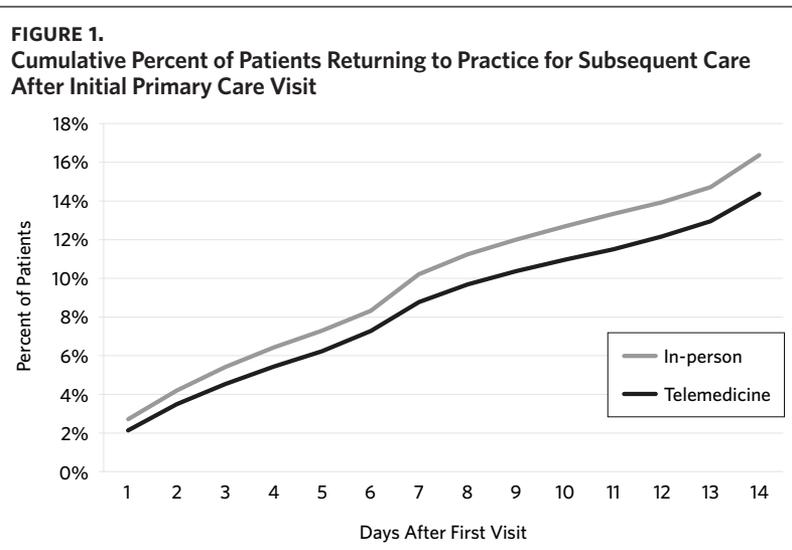
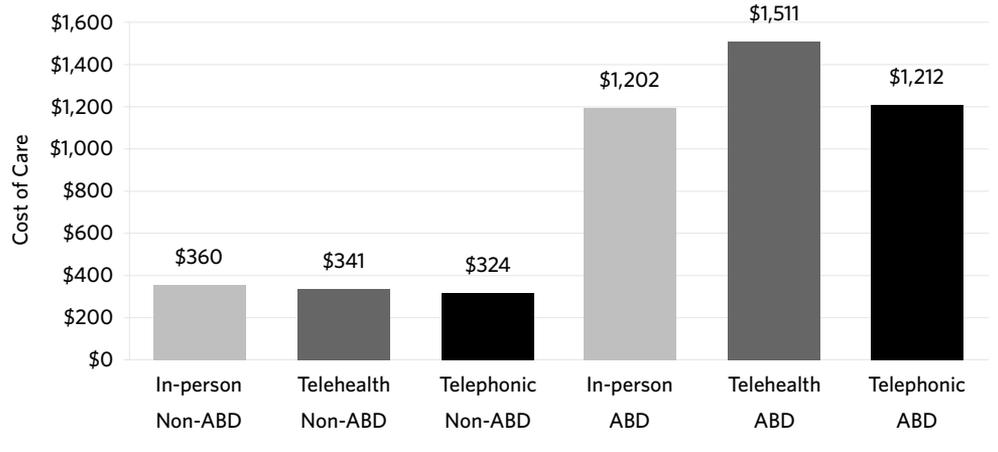


FIGURE 2.
Total Cost of Care in Two Weeks Following the Initial Visit



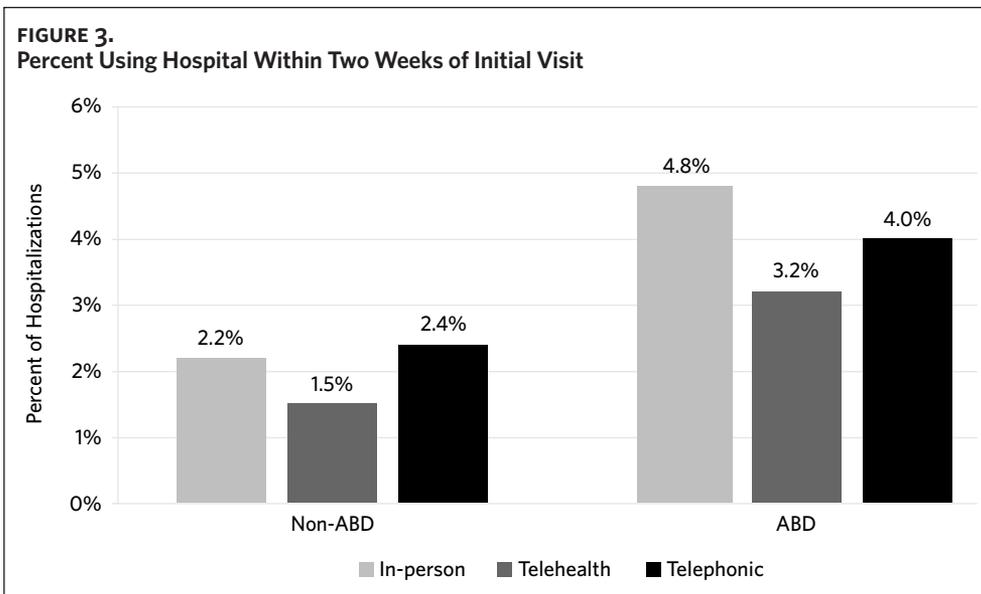
following an initial primary care service. For these analyses, we considered primary care services delivered between March 1, 2020 and August 15, 2020, with the two-week follow-up period extending to the end of August 2020, allowing for a minimum one-month claims run-out at the time the analyses were conducted. Taking the first primary care visit received during this period, we stratified patients by whether their initial visit was in person or telemedicine. Because patients with greater clinical burden are expected to have higher hospital utilization and total cost of care, for those two outcomes we conducted separate analyses for ABD and non-ABD members and delineated whether the initial visit was telehealth or telephonic. For the analysis looking at subsequent primary care visits, we conducted separate analyses for those initial visits related to influenza-like symptoms.

Overall, there were interesting but not significant impacts on subsequent cost and utilization among those who received primary care via telemedicine. A lower proportion of beneficiaries had a second primary care claim within 14 days after a primary care claim when the initial modality was telemedicine (14.4% compared to 16.3% for in-person services). Moreover, there tended to be more time between the initial visit and the second claim when the initial modality was telemedicine (Figure 1). At first glance, this finding seems to support the effectiveness of telemedicine. Further analyses indicate that a second visit was more likely and happened more quickly when the initial modality was telemedicine in cases where the beneficiary had influenza-like illness or COVID-19-like symptoms (21.3% compared to 19.6% for in-person services) (internal data, NC Medicaid). NC Medicaid has partnered with the Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill to survey providers to understand the triage processes they use to determine which patients receive telemedicine and which are asked to come for an in-person visit (Figure 1). As of May 2021, survey findings show that 56.4%

of practices are providing in-person, telehealth, and audio visits. Of those providing all three forms of care, 73.8% say they determine who is seen using telehealth based on symptoms, 68.9% based on patient preference, 66.5% based on provider case reviews, and only 5.5% based on the patient's insurance coverage.

Among non-ABD beneficiaries, there was no discernable impact on the total cost of care for those who received telehealth or telephonic care when compared to those who received in-person care exclusively. However, costs were approximately 25% higher for ABD beneficiaries who received telehealth care when compared to ABD beneficiaries who received either telephonic or in-person care exclusively (Figure 2). This may suggest a possible negative effect on ABD beneficiaries receiving telehealth support. However, further risk-adjusted analyses would be needed to ascertain the true impact on total cost of care. The difference of cost between telehealth care and telephonic care may partly be due to North Carolina choosing to reimburse telehealth at a rate 20% higher than telephonic (Figure 2).

Two-point-six percent of patients (19,433 out of 757,519) who saw a primary care physician subsequently went to the hospital (for an emergency department or inpatient admission) within 14 days of that primary care service. Rates were consistently higher among ABD beneficiaries, but lowest across both ABD and non-ABD populations when beneficiaries received primary care through telehealth (Figure 3). As was true for the total cost of care, further risk-adjusted analyses are needed to control for the selection biases in choosing one modality over the other for a specific patient. While this finding may be mitigated by practices' approach to triage and other risk-related variables, it suggests that there is merit in continuing to track cost of care, utilization, and health outcomes to determine the value of telehealth and telephonic care (Figure 3). In the interim, NC Medicaid is working with partners to make telehealth more accessible to beneficiaries and providers. These efforts include increas-



ing broadband access in rural areas, making investments that support access to devices and internet service for low-income beneficiaries, implementing provider trainings to optimize billing and coding, and moving toward value-based care to eliminate fee-for-service barriers and allow for broader approaches. **NCMJ**

Shannon Dowler, MD, FAAFP, CPE chief medical officer, NC Medicaid, North Carolina Department of Health and Human Services, Raleigh, North Carolina.

Kelly Crosbie, MSW, LCSW director, Quality and Population Health, NC Medicaid, North Carolina Department of Health and Human Services, Raleigh, North Carolina.

Sam Thompson, MSW associate director of evaluation, NC Medicaid, North Carolina Department of Health and Human Services, Raleigh, North Carolina.

Erin Drucker, MA, MSPH data science senior manager, Accenture, Charlotte, North Carolina.

Carlos Jackson, PhD executive vice president and chief data and analytics officer, Community Care of North Carolina, Cary, North Carolina.

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