

**BRIDGING  
THE DIGITAL  
DIVIDE —  
— ADVANCING  
TELEHEALTH  
EQUITY**

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## PRINCIPAL INVESTIGATOR

**Alon Peltz, MD MBA MHS**

Assistant Professor, Department of  
Population Medicine, Harvard Medical School,  
Harvard Pilgrim Health Care Institute

## STUDY TEAM MEMBERS

- Mikaela Batista, MA
- Lauren Cripps, MA
- Elena Faugno, LCSW, MPH
- Amy Han, MPH
- Nathalie McIntosh, PhD
- Georgia Okolita
- Alexander Pomerantz, MD, MPP
- Barbra Rabson, MPH
- Maria Acosta Robayo
- Sarah Stein, PhD

## We acknowledge the contributions of the Advisory Board

- David Auerbach, MS, PhD
- Renee D. Boynton-Jarrett, MD, ScD
- Alison Galbraith, MD, MPH
- Arvin Garg, MD, MPH
- Margaret Samuels-Kalow, MD MPhil, MSHP
- Elizabeth Leahy, Esq.
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- Claire-Cecile Pierre, M.D
- Richard Platt, MD, MSc

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## Department of Population Medicine

The Department of Population Medicine (DPM) is a research and teaching partnership between Harvard Medical School and the Harvard Pilgrim Health Care Institute. As the nation's first medical school appointing department based within a health plan, the DPM is strategically positioned to improve population health and healthcare delivery locally, nationally, and internationally.

## Massachusetts Health Quality Partners

The Massachusetts Health Quality Partners (MHQP) is an independent, non-profit organization that brings together key stakeholder groups (providers, payers, and patients) in Massachusetts healthcare to help provider organizations, health plans and policy makers improve the quality of patient care experiences throughout the state. MHQP worked as a sub-contractor to DPM for this study.

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The views represented in this report are those of the Principal Investigator and are not intended as the official views of the Harvard Pilgrim Health Care Institute, Harvard Medical School, the Massachusetts Association of Health Plans, Massachusetts Health Quality Partners, or any other named entity, affiliate, or individual.

Study Advisory Board members provided high-level guidance and recommendations on the evaluation design, analysis, and interpretation of the study, but did not vote to endorse or approve the results or recommendations. Advisory Board members were representing themselves alone and were not serving as designees of their affiliate institutions.

This study was funded by the Massachusetts Association of Health Plans and conducted independently by the research team. The research team met regularly with participating plan representatives to facilitate data exchange and ensure accurate understanding of the local context, enabling more accurate analyses and conclusions. The funder was not involved in any analysis or report development. The Study Advisory Board which included a representative from the funder was invited to provide comments and clarifications on the draft final report.

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# EXECUTIVE SUMMARY

**T**he COVID-19 pandemic has had devastating impacts on health and contributed to new and unprecedented access to care challenges. At the onset of the pandemic, when safe access to in-person care was very limited, policymakers, health plans, and providers collaborated on a broad expansion of telehealth services to safely provide people with continued healthcare. This coordinated response was crucial for ensuring continued access to timely primary, behavioral health, and chronic disease care for residents of the Commonwealth. However, the shift to virtual care was also accompanied by initial reports of uneven adoption of telehealth across populations. Underlying this is the *digital divide*, the interconnected variations in the population related to who has access to technological devices, who has the digital literacy to use them properly, who has the financial means to afford broadband internet and devices, and who lives in areas with reliable internet infrastructure required to make them functional. Historically, those most adversely impacted by the digital divide include seniors, low-income Black people, people who do not speak English, and people who live in a rural community. The interdependence on digital access, literacy, affordability, and infrastructure makes the digital divide a potent driver of socioeconomic and racial inequities in telehealth access.

Recognizing the need for evidence-informed programs and policies to address inequities in telehealth access, the Massachusetts Association of Health Plans engaged the Department of Population Medicine at Harvard Medical School and Harvard Pilgrim Health Care Institute, who along with Massachusetts Health Quality

Partners, conducted this research study on telehealth use in the Commonwealth since the onset of the COVID-19 pandemic. The goals of this study were to measure differences in telehealth use across populations, investigate the root causes of inequities from the perspectives of patients, providers, and community leaders, and create a series of evidence-informed recommendations, aimed at promoting telehealth equity.

The first section of this report describes the dramatic rise in telehealth use in the Commonwealth since the onset of the pandemic and disparities in use across populations. We analyzed enrollment and claims data from more than 1.8 million enrollees of seven MAHP member health plans. Prior to the pandemic, less than 1% of all outpatient visits were delivered using telehealth. With the onset of the pandemic the use of telehealth immediately increased to nearly 75% of all outpatient physician and behavioral health provider visits. As the initial effects of the pandemic waned, telehealth use persisted at more moderate levels accounting for nearly 30% of all care by late 2021. Patterns of use for telehealth varied by visit type: higher use for behavioral health and chronic disease care, and lower use for adult and pediatric prevention care. Total prevention visits declined significantly since the onset of the pandemic, particularly among those with Medicaid insurance. Although telehealth was crucial for healthcare access during the COVID-19 pandemic access disparities emerged. Seniors, children, and residents of low digital access, rural and low socioeconomic status communities were least likely to use telehealth services. These lower-level socioeconomic communities also had higher

numbers of Black and Hispanic residents and lower rates of household internet access than other areas of the Commonwealth.

The second section of this report thematically summarizes the access, quality, and experience factors associated with telehealth from the perspective of patients, providers, and community leaders. We conducted 50 qualitative interviews focused on key facilitators and barriers to telehealth use. Challenges understanding digital technologies, affording the costs of internet and devices, language barriers, and problems using technology were identified as key barriers

to telehealth use. Identified factors that promoted telehealth use included its convenience, particularly for individuals with financial and functional constraints for in-person care; safety of limiting potential COVID-19 exposure; and ability to access providers more broadly.

The report concludes with recommendations for health plans to advance telehealth equity by addressing the root causes of the digital divide, promoting digital inclusion, removing structural and financial barriers to telehealth access, and supporting higher quality and more inclusive care delivery.

## KEY FINDINGS:

- Telehealth has been crucial for broadly enabling access to primary, behavioral health, and chronic disease care during the COVID-19 pandemic, especially for populations with financial and functional constraints for in-person care
- Patterns of use for telehealth varied by visit type: higher use for behavioral health and chronic disease care, and lower use for adult and pediatric prevention care
- Prevention visits have declined substantially since the onset of the pandemic, most notably among those with Medicaid insurance
- Seniors, children, people with low internet access, and residents of rural communities were least likely to use telehealth
- High-quality experiences with telehealth were related to one's ability to receive communications in their preferred language, have the financial means to afford internet and devices, and have the digital literacy to understand technology
- Audio-only visits had value for specialized populations, such as older adults and homeless populations, where access to video enabled devices was lower. The use of mobile phones for telehealth was common in low-income communities
- Lower community-level socioeconomic status was associated with less telehealth use although the difference was subtle for some types of services
- Individuals dually eligible for both Medicaid and Medicare had higher levels of telehealth use for primary care than all other insurance groups
- Not having a usual source of primary care was a barrier to using any telehealth
- Patients and providers were unclear about current and future coverage for telehealth and how to best realize the clinical potential of telehealth
- There are important gaps in broadband infrastructure, digital affordability, and the usability of technological platforms for telehealth and other patient communications

# RECOMMENDATIONS

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## ADVANCE DIGITAL INCLUSION

- 1 Enhance screening for digital affordability and streamline enrollment in underutilized public benefit programs to make internet and devices more affordable
- 2 Build referral partnerships with community-based organizations with local expertise in providing digital literacy trainings
- 3 Convene public conversations aimed to enhance mobile and broadband infrastructure in rural geographies and low-income communities

## REDUCE BARRIERS TO TELEHEALTH ACCESS

- 4 Support collaborative research on the impacts of telehealth on cost, quality, and access
- 5 Continue providing access to telehealth and adopt simplified and uniform approaches to telehealth coverage

## BUILD CAPACITY FOR EQUITABLE TELEHEALTH DELIVERY

- 6 Support the development of state-wide standards for technological platforms used for delivering telehealth that consider technical, language translation, and inclusivity elements
- 7 Support providers with translating patient portals and other patient communication systems into relevant non-English languages
- 8 Support clinician training in the delivery of private, inclusive, and medically appropriate telehealth services
- 9 Collaborate with employers and policymakers to encourage products and payment models that support increasing engagement with primary care and prevention
- 10 Publish a report every three years on overall progress towards digital health equity in the Commonwealth

# INTRODUCTION

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**T**he COVID-19 pandemic has had devastating health impacts and contributed to new and unprecedented access-to-care challenges. Across the Commonwealth, many healthcare providers were closed to non-essential care, and many people stayed home fearing exposure to the virus.<sup>1</sup> In response to the pandemic, when the ability to safely access in-person care was limited, policymakers, health plans, and clinical providers collaborated on a broad expansion of telehealth services.<sup>2-3</sup> This coordinated response was crucial for ensuring continued access to timely primary, behavioral health, and chronic disease care for residents of the Commonwealth.

To maximize telehealth uptake, health plans enacted outreach to inform members about opportunities to access telehealth services, relaxed prior authorization processes, supported community health centers in building capacity for telehealth, and partnered with community-based organizations to promote accessibility to COVID-19 testing and immunizations (**Table 1**). Providers broadly transformed care delivery by implementing virtual care modalities, adopting new technological platforms, expanding telephonic and virtual language translator services, and revamping clinical and administrative workflows to accommodate both traditional in-person and virtual care.<sup>4</sup>

At the local policy level, the Baker-Polito Administration issued an emergency order to incentivize telehealth care delivery when possible, and MassHealth enacted temporary payment and coverage parity for many telehealth services.<sup>5-6</sup> The Board of Registration in Medicine established new emergency physician licensure authorities to help ensure provider capacity.<sup>7</sup> The 2021 Health Policy Commission Health Care Cost Trends Hearing<sup>8</sup> focused on the intersecting challenges of cost containment, affordability, and health equity in Massachusetts, and the Attorney General's Office issued a Call to Action outlining priorities to promote health equity, to close the digital divide and advance digital inclusion.<sup>9</sup> The Health

Equity Task Force, established by Chapter 93 of the Acts of 2020, issued a Blueprint For Health Equity that included recommendations to advance digital equity and inclusion by strengthening broadband capacity, improving accessibility and affordability of healthcare services, and improving digital access and literacy.<sup>10</sup> At the federal policy level, policies were enacted to temporarily enable healthcare providers to use a broader range of technologies, such as FaceTime, Zoom, and Skype.<sup>11</sup> The federal government also broadly expanded the list of Medicare services eligible for telehealth<sup>12</sup> and encouraged private health plans to expand telehealth coverage.<sup>13</sup> In January 2021, new statewide telehealth legislation went into effect establishing permanent parity for behavioral health services and temporary parity for primary and chronic care services.<sup>14</sup> As the initial effects of the pandemic waned, telehealth has remained an ongoing aspect of healthcare delivery in many settings.

The COVID-19 pandemic has also unequivocally illuminated many longstanding health inequities.<sup>15</sup> The devastating health effects of the pandemic have been disproportionately felt in lower income, predominately Black and Hispanic communities and by people with medically disabling conditions.<sup>16, 17, 18</sup> At the same time, the broad shift to telehealth was also accompanied by initial reports of uneven uptake across populations.<sup>19, 20, 21, 22, 23</sup> Consequently, the ongoing use of telehealth raises important questions about how to structure health plan policies, programs, and investments to ensure equitable access.

**TABLE 1: HEALTH PLAN ACTIVITIES DURING THE COVID-19 PANDEMIC**

<p><b>Coverage Policy</b></p>	<ul style="list-style-type: none"> <li>• Waived co-payments/co-insurance for telehealth services</li> <li>• Relaxed prior authorization rules for services delivered by telehealth</li> <li>• Provided accommodations with premium payment policies for employers</li> </ul>
<p><b>Member Support</b></p>	<ul style="list-style-type: none"> <li>• Provided Mobile Personal Emergency Response Systems devices to members without need for face-to-face contact/installation</li> <li>• Proactive communications to members as well as the broader community utilizing a variety of channels, including text messages and member-facing materials, regarding telehealth</li> <li>• Active outreach to members and support to direct vaccine schedule and transportation</li> <li>• Additional funding for social services (such as groceries and Meals on Wheels)</li> <li>• Provided members with masks during the pandemic</li> </ul>
<p><b>Provider Support</b></p>	<ul style="list-style-type: none"> <li>• Video visit pilot testing with primary care providers to support telehealth check ups</li> <li>• Outreach to providers whenever possible to help support adoption of telehealth efforts across the care continuum</li> <li>• Collaboration with community health centers to bring mobile vaccine clinics to hard hit and underserved areas</li> <li>• Member-facing education about how to be prepared for a virtual visit with your doctor or other provider</li> </ul>
<p><b>Community Support</b></p>	<ul style="list-style-type: none"> <li>• Close collaboration with community-based organizations (e.g., Aging Services Access Points, local non-profits, faith-based organizations) to conduct education and outreach to high-risk members</li> <li>• Grants and funding to address racial inequities, health disparities and support Black and Hispanic communities during the pandemic</li> <li>• Grants and funding to non-profits assisting vulnerable populations, addressing food accessibility, and housing inequities, and supporting local small businesses</li> <li>• Supported the establishment of drive-thru COVID-19 testing and community-based vaccination sites</li> <li>• Provided Personal Protective Equipment (PPE) to community partners for dissemination to members</li> </ul>



## THE DIGITAL DIVIDE

Inequities in access to high-quality healthcare are well-recognized and often shaped by long-standing structural and systemic barriers across many societal spheres.<sup>24</sup> One such barrier is the *digital divide*, the historical gap between populations who have and can use telecommunication tools and information technologies, and those who do not. The digital divide represents interconnected variations in the population related to who has access to technological devices, who has the digital *literacy* to use them properly, who has the financial means to *afford* broadband internet access and connected devices, and who lives in areas with reliable internet *infrastructure* required to make them functional.<sup>25,26,27,28</sup> The interdependence on digital affordability, literacy, and infrastructure makes the digital divide a potent driver of inequity in telehealth access. An estimated 50 million adults do not own a smartphone; over 65 million adults do not own a desktop or laptop computer or know how to properly use one; and between 20–40 million people are without broadband internet access.<sup>29,30</sup> Historically, those most adversely impacted by the digital divide include seniors, low-income Black people, people who do not speak English, and people who live in a rural community.<sup>31,32,33</sup> In the Commonwealth, extensive multi-stakeholder efforts over the past decades have focused on expanding access to fast and reliable internet to all communities. This has included efforts prior to the pandemic, such as the 123 Middle-Mile Network, the Last Mile Initiative, and other initiatives by private cellular and broadband internet service providers to expand access to regions with less infrastructure, including rural areas.<sup>34</sup> Since the pandemic, the MassBroadband Initiative, in partnership with internet service providers, further expanded efforts to improve internet access to low-income families.<sup>35</sup> In addition, two large public benefit programs, the Lifeline Program<sup>36</sup> and the Affordable Connectivity Program,<sup>37</sup> exist to help reduce the costs of internet subscriptions and devices.

While the investments to date towards advancing infrastructure development and accessibility have been considerable, evidence continues to show differences in uptake across geographies and populations. Studies show that household income is strongly correlated with

in-home internet connectivity, with local evidence suggesting that nearly half the homes in lower income cities in the Commonwealth, including Chelsea, Fall River, and Springfield, lack reliable broadband internet access.<sup>38, 39</sup> There also exist differences in rural areas. For example, as outlined by the Health Equity Task Force Final Report, nearly 35% of residents in Gateway cities did not have home internet services or relied on unstable connections such as mobile phones despite data showing that nearly 98% of the Commonwealth live in communities that have sufficient broadband infrastructure.<sup>40</sup> One national study found that although Massachusetts had the third-best level of broadband infrastructure in the country, the Commonwealth ranked only 10<sup>th</sup> when considering affordability and equity, highlighting opportunities for improvement.<sup>41</sup>

## TELEHEALTH

Telehealth often refers to a variety of interchangeably named health-related services, including telemedicine, e-health, digital health, and virtual visits.<sup>42</sup> In this report, we focus on synchronous telehealth defined as the delivery of live or real-time clinical care using audio and/or video technologies, delivered by either a mobile phone or internet enabled device, as a replacement for traditional in-person care. Synchronous telehealth was the primary form of telehealth used during the COVID-19 pandemic. We did not include other forms of digital health, such as e-consults or remote patient monitoring, as these were less prevalent, less standardized, and more challenging to measure.

Although telehealth moved to the forefront of clinical care delivery during the COVID-19 pandemic, the potential for telehealth to replace or supplement in-person care has been long considered. Telehealth has potential for expanding access to high-quality, world-class care in communities with limited access due to geographic or socioeconomic barriers. The telehealth option eliminates long travel journeys and associated costs and reduces work and school absenteeism allowing these patients to benefit from more convenient and affordable care. However, there remains relatively limited local evidence regarding disparities in telehealth access during the pandemic and how to best design programs and policies to ensure equitable accessibility across geographies and populations.

# STUDY METHODS

We conducted a mixed-methods research study combining quantitative distributed analysis of healthcare claims with qualitative stakeholder interviews. We analyzed enrollment and claims data on more than 1.8 million patients and qualitative data from over 35 hours of interviews with patients, providers, and community leaders.

### KEY STUDY QUESTIONS

**Question 1:** How has telehealth use varied across populations and geographies?

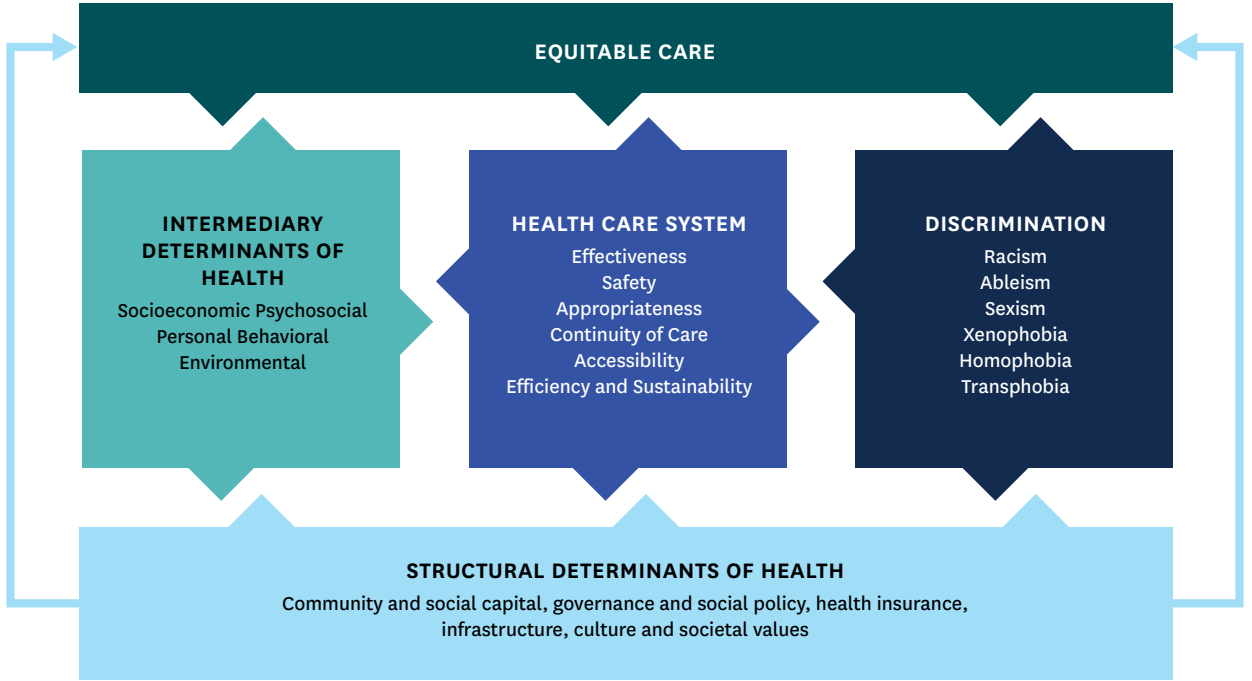
**Question 2:** What are the facilitators and barriers to equitable access to telehealth?

In this research, we specifically focused on investigating drivers of differences in telehealth access, experience, and quality among groups who have historically been denied consistent and systematic fair, just, and impartial healthcare treatment. These include members of populations who are Black, Hispanic, Indigenous and Native American, Asian American, and Pacific Islander; persons who do not speak proficient English; persons identifying as lesbian, gay, bisexual, transgender, and queer; persons with disabilities; persons who live in rural areas; and persons adversely affected by persistent poverty.<sup>43</sup>

**Figure 1** shows the health equity conceptual framework we used to help guide the research study.

We considered multiple approaches for measuring differences in telehealth usage across populations. For the quantitative portion of the study, we primarily used community-level factors for exploring differences in the use of telehealth across populations and geographies because over half of the members were missing data on self-reported race and ancestry and other demographic

FIGURE 1: STUDY CONCEPTUAL MODEL



information. For the stakeholder interview portion of the study, we included questions to explore how one's personal, cultural, and linguistic preferences and identification might influence access and quality of telehealth services.

## MEASURING TELEHEALTH USE

We established a common data model for measuring enrollment and telehealth use consistently across all seven participating health plans. This approach enabled us to aggregate and de-identify results from each site alleviating the need for exchanging sensitive health information. We analyzed enrollment, outpatient, and telehealth visits monthly for 36 months from January 2019 – December 2021. We collected data across five insurance groups: Commercial, Connector, Medicaid, Medicare Advantage and Dual Eligible plans.

The main outcome was the percentage of all outpatient visits delivered by telehealth. We included both audio and video telehealth visits. We measured telehealth for *primary care* (including prevention and problem-based visits), *chronic disease care*, and *behavioral health visits* as these were prioritized for telehealth coverage in Chapter 260 of the Acts of 2020,<sup>44</sup> which established a coverage framework for state-regulated commercial plans and public plans. Problem-based visits, or sick visits, were for acute illness or routine care.<sup>45</sup> Chronic disease care visits were provided by a primary care or specialist provider for care of a diagnosed chronic illness. We identified these visits using a set of chronic illness billing codes developed by the Agency for Healthcare Research and Quality.<sup>46</sup> Behavioral health visits were provided by a behavioral health practitioner for care of a diagnosed behavioral health condition. We limited the inclusion of behavioral health visits to those covered by commercial insurance due to data limitations in other insurance groups. Additionally, given the known prevalence of racial and socioeconomic disparities in pregnancy outcomes,<sup>47</sup> we conducted a special analysis focused on *pregnancy care*, including prenatal, postnatal, and problem-based encounters.

We examined differences in telehealth use across groups at the ZIP code level with specific focus on geographic and socioeconomic differences. We measured rural

and urban differences in telehealth use by applying the Massachusetts Department of Public Health-State Office of Rural Health statewide definition for rural municipalities.<sup>48</sup> We measured socioeconomic differences using the Area Deprivation Index to rank urban and suburban cities and towns by telehealth use.<sup>49</sup> This index is used to rank neighborhoods according to several socioeconomic status factors with information from the U.S. Census including income, education, employment, and housing quality. We described the demographic composition of each ZIP code using information from the American Community Survey (ACS) 5-Year Estimates. We assessed neighborhood digital access using one question from the ACS which calculated the percentage of households with home internet through either a broadband (high speed) internet subscription or a cellular phone data plan for a smartphone or other mobile device.<sup>50</sup> City-level analyses were adjusted using binomial regression to account for differences in insurance composition, population, and service intensity across these geographies. Time-series, geospatial and bivariable comparisons are presented as unadjusted rates.

## STAKEHOLDER INTERVIEWS

We focused our stakeholder interviews with patients, providers, and community leaders from the communities in the Massachusetts Department of Public Health COVID-19 Vaccine Equity Plan. We focused on these areas because they were hardest hit by COVID-19 and had particularly high levels of social hardships, suggesting that they may experience more access to care challenges. The communities were: Boston, Brockton, Chelsea, Everett, Fall River, Fitchburg, Framingham, Haverhill, Holyoke, Lawrence, Leominster, Lowell, Lynn, Malden, Methuen, New Bedford, Randolph, Revere, Springfield, and Worcester. We used a variety of recruitment tools as permissible in each context, including email invitations, direct mailings, personal referrals, patient and provider registries, and news articles (to identify community leaders).

We developed two semi-structured interview guides: one for providers, and one for community leaders and patients. We asked providers about their experiences using telehealth platforms, how telehealth changed how they offered care, its challenges and facilitators of

use, and their perspectives about using telehealth going forward. We asked community leaders about their perspectives regarding telehealth use in their communities as well as their own personal experiences as patients. We asked patients about the process of making telehealth appointments, challenges and facilitators to using telehealth, and their thoughts about using telehealth as a healthcare visit option going forward. In addition, we developed a project information sheet that gave information about the study, a consent script, and invitation letters that gave information about the project and instructions about how to participate.

Community leader interviews (n=5) were conducted in November 2021. Provider interviews (n=14) were conducted between November 2021 and April 2022. Health plan member interviews (n=29) were conducted between May 2022 and August 2022. Three investigators trained in qualitative research methods conducted telephone interviews that lasted between 20 and 45 minutes. Member interviews were conducted in English and Spanish. For Spanish interviews, the member interview guide and member-facing materials were translated into Spanish and then back-translated into English by different translators to ensure accuracy of the Spanish translations. All Spanish interviews were done by a fluently, bilingual qualitative researcher who took notes in Spanish during the interview, supplemented her notes using interview audio-recordings, and then translated her notes into English. English interviews were audio-recorded and transcribed. Two members of the project team created an initial codebook and code definitions based on concepts from the interview guides. These team members then independently coded interview transcripts/notes, discussed differences in coding, reached consensus on coding, and refined codes and code definitions in an iterative process to arrive at a final codebook with definitions. We then analyzed the data using thematic analysis of content to identify concepts and themes related to perceptions and experiences of telehealth. Through this process, we captured exemplar quotes to support each theme. The study protocols were approved by the Harvard Pilgrim Health Care Institute Institutional Review Board.

## LIMITATIONS

There are several limitations to consider when interpreting the results. First, coverage policies for telehealth varied to some minor degree across plans. We worked around this limitation by using a standardized set of qualifying outpatient visits and visit types to reduce the potential for biased results. When directly comparing geographies or insurance groups, we used the most uniform definition, primary care visits, to limit potential unmeasured bias. Second, we included both audio and video visits in our definition of telehealth but did not distinguish between these two modes because of concerns with reliability of the observed result for the audio-only component. There are some reports that indicate use of audio and video visits may vary by social and demographic groups, which is an issue we could not explore. Third, we used data submitted to us by each health plan using standardized specification; however, due to data privacy concerns we did not directly access member-level data. Despite reassuring quality assurance checks there is likely some plan-level variation embedded in the results.

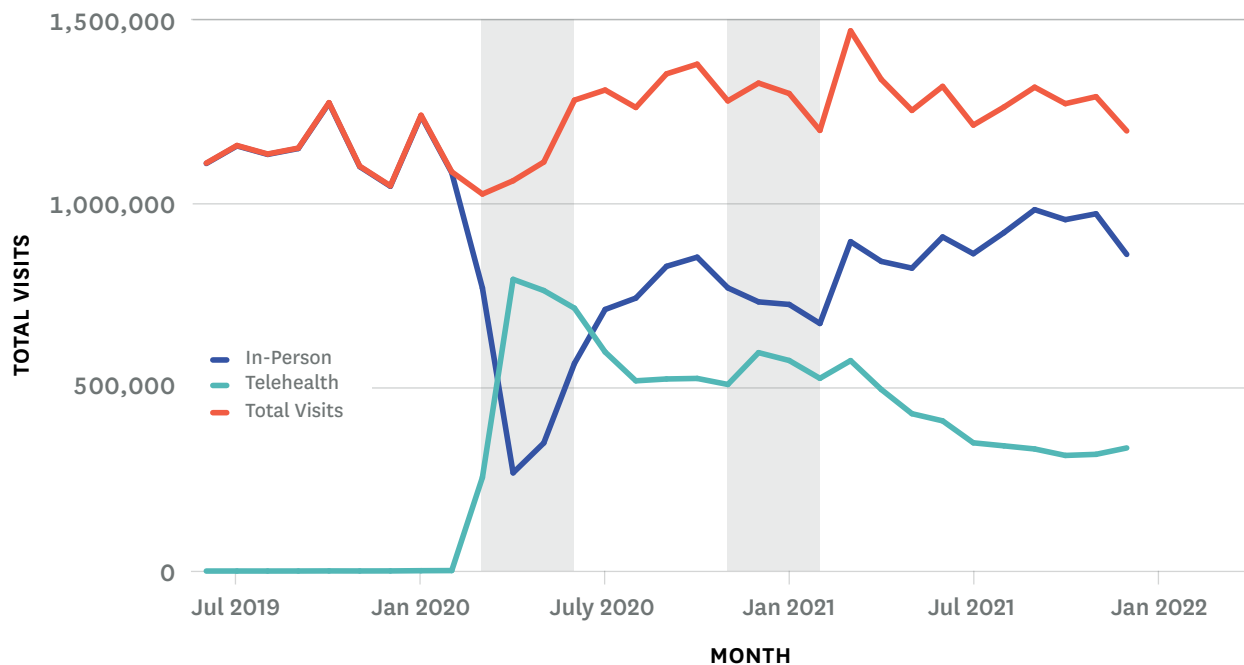
# RESULTS: MEASURING TELEHEALTH USE

The sample included 1.8 million health members who received a total of 35 million in-person and telehealth visits between January 2019 and December 2021. The service area of the plans included every populated ZIP code in the Commonwealth. The most common insurance type was Commercial (45%) followed by Medicaid (31%), Connector (12%), Medicare Advantage (9%) and Dual Eligible plans (4%). The sample consisted of primarily adults (67%) followed by children (27%) and seniors (6%).

## TRENDS IN TELEHEALTH USE FROM 2019 TO 2021

Monthly trends of in-person visits, telehealth visits, and total visits from January 2019 to December 2021 are shown in **Figure 2**. Prior to the pandemic, less than 1% of all outpatient visits were administered using telehealth. With the onset of the pandemic, the use of telehealth increased rapidly to account for nearly 75% of all visits. As the initial effects of the pandemic waned, the use of telehealth persisted at more moderate levels accounting for more than 30% of all visits by late 2021. Increases in telehealth use were correlated with COVID-19 surges illustrating the increased need for virtual care during times when concerns about virus transmissions were increasing. Since the onset of the pandemic around 495,000 visits per month for primary care, behavioral health, and chronic disease services were delivered by telehealth, as compared to only around 1,500 visits per month prior to the onset of the pandemic.

**FIGURE 2: TRENDS IN IN-PERSON AND TELEHEALTH OUTPATIENT VISITS: 2019 TO 2021**



Note: Shading indicates time periods with high COVID-19 prevalence.

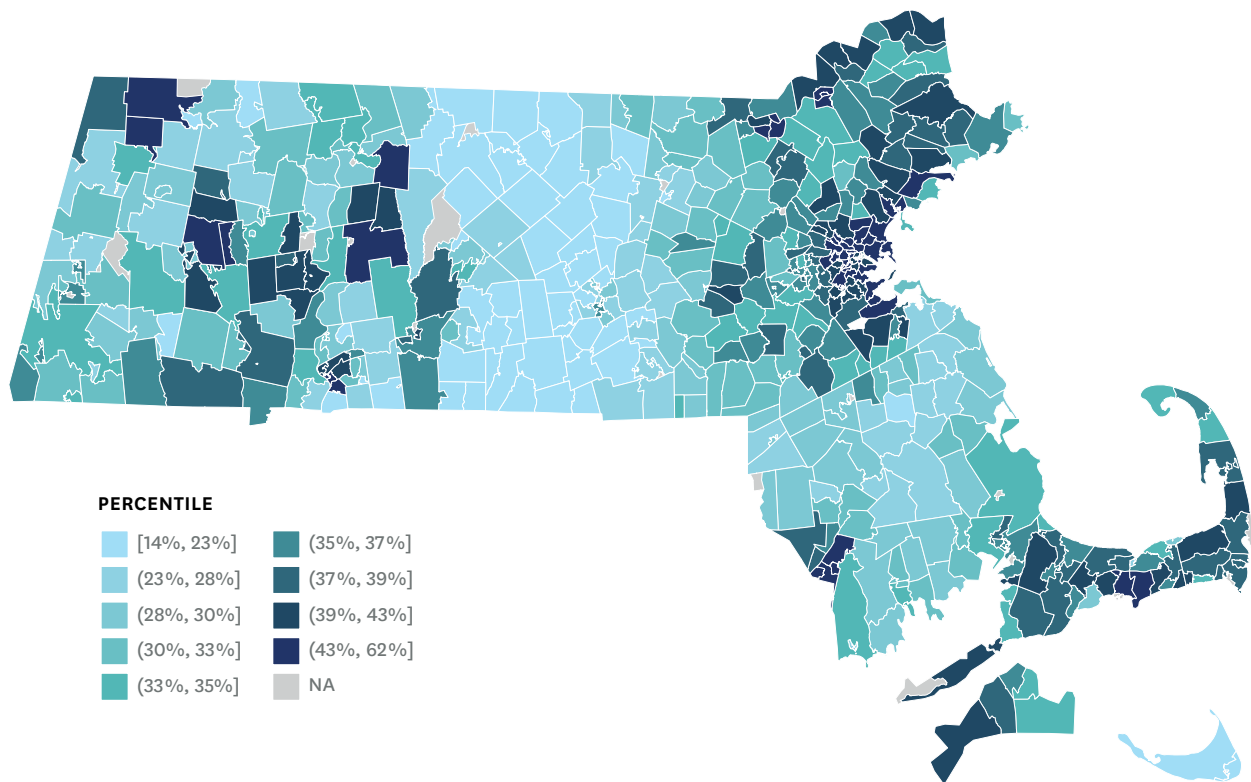
### REGIONAL DIFFERENCES IN TELEHEALTH USE ACROSS THE COMMONWEALTH

The use of telehealth varied across cities and towns in the Commonwealth. **Figure 3** shows the percentage of adult primary care visits in each ZIP code across the Commonwealth. Telehealth uptake was higher in more densely populated areas of Eastern Massachusetts and lower in Central and Western Massachusetts. The supplemental appendix includes telehealth use for primary care in each city.

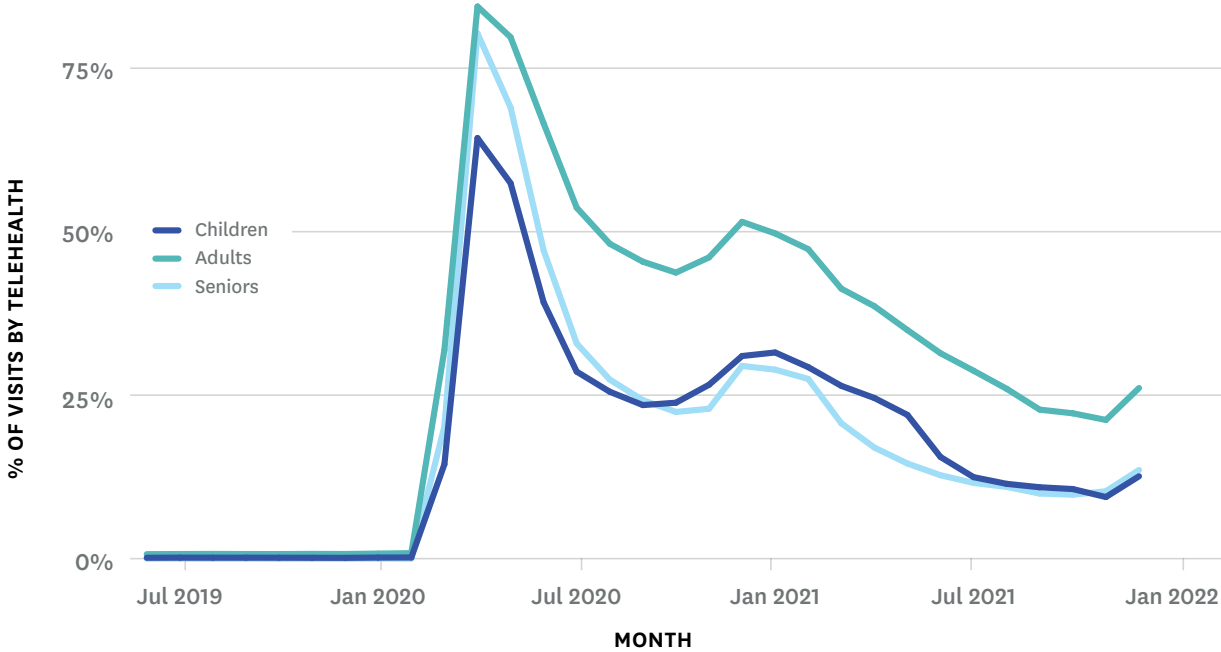
### DIFFERENCES BY AGE

The uptake of telehealth varied across age groups. **Figure 4** shows monthly differences in the percentage of primary care visits by telehealth by age. Seniors (24% of all visits) and children (23% of all visits) received less of their primary care by telehealth as compared to adults.

FIGURE 3: GEOGRAPHIC VARIATION IN TELEHEALTH USE FOR PRIMARY CARE



**FIGURE 4: PERCENT TELEHEALTH USE BY AGE**



**DIFFERENCES BY INSURANCE**

The relative use of telehealth also varied across insurance groups. **Figure 5** shows the in-person and telehealth visits per-100-members for adult primary care by insurance group. Total visits (considering in-person and telehealth) were highest for those enrolled in Dual Eligible and Medicare Advantage plans followed by Medicaid, Connector, and Commercial plan members. However, the patterns of telehealth use were quite different for Dual and non-Dual eligible Medicare members. Dual Eligible members received 41% of their primary care visits by telehealth as compared to 18% for Medicare-only enrollees who continued to receive most of their primary care in-person during the study period.

**DIFFERENCES BY VISIT TYPE**

Telehealth was crucial for broadly ensuring access to care during the COVID-19 pandemic, although patterns of use for telehealth varied by visit type. **Figure 6** shows the percentage of telehealth use across visit categories by month. Following the immediate onset of the

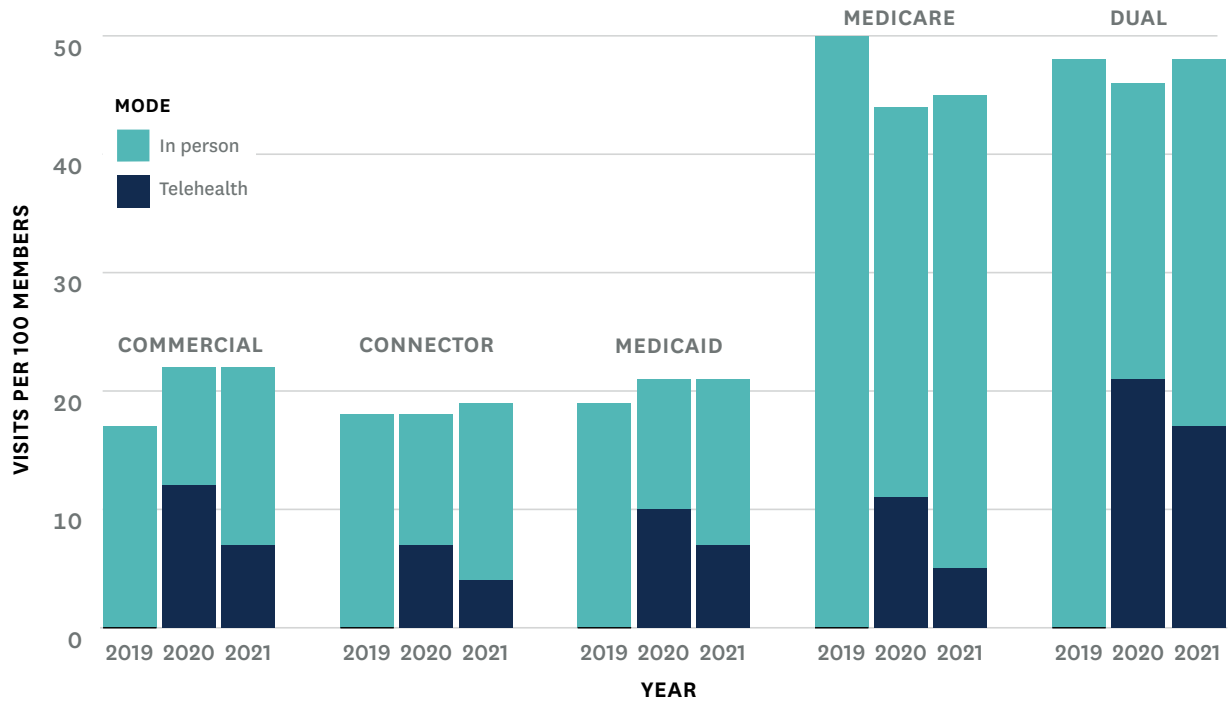
COVID-19 pandemic, there was a significant increase in the use of telehealth broadly across all visit types. In the following months the relative use of telehealth varied by visit type. Telehealth use remained most consistent in the provision of behavioral health services with 75 – 80% of all visits being virtual each month. Prevention visits exhibited a different pattern, with relatively little uptake beyond the immediate pandemic period. Telehealth use for adult prevention (8%) and well child (5%) was relatively infrequent. Rates of telehealth use for problem-based primary care (36%) and chronic disease care (40%) have remained generally stable in 2021.

**TELEHEALTH USE FOR PREGNANCY CARE**

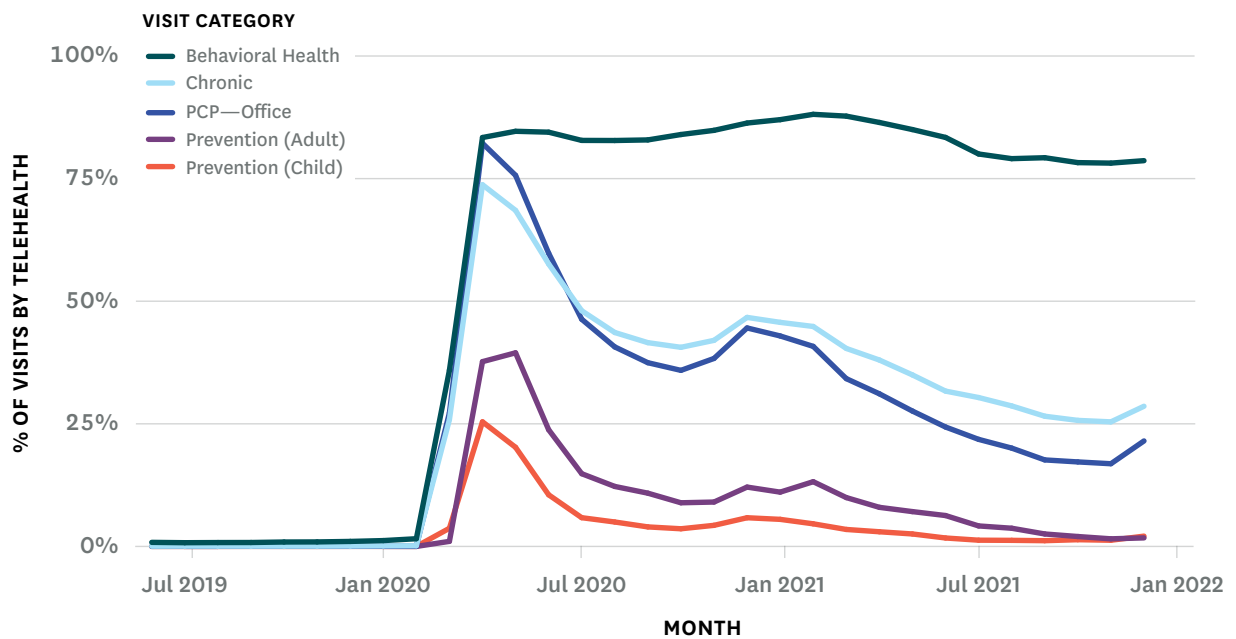
Prior to the onset of the COVID-19 pandemic, less than 0.1% of all pregnancy-related visits were delivered by telehealth. Telehealth increased to 16% for all pregnancy-related visits in 2021 and 13% in 2022, with slightly higher levels of telehealth use among Commercial members (18% of all visits) relative to Medicaid members (15% of all visits).



**FIGURE 5: IN-PERSON AND TELEHEALTH VISITS BY INSURANCE GROUPS**



**FIGURE 6: MONTHLY TRENDS IN TELEHEALTH USE BY VISIT TYPE**





**TELEHEALTH USE IN RURAL COMMUNITIES**

Residents of rural communities less frequently used telehealth for primary care than their counterparts in urban and suburban communities (rural: 23% of all visits vs. urban: 29% of all visits). Use of telehealth for behavioral health care was high in all geographies, although residents of rural communities received proportionately fewer visits by telehealth (78% of all visits) as compared with urban (81% of all visits). There were differences in telehealth use for chronic disease care with considerably higher use in urban areas (41% of all visits) relative to rural areas (30% of all visits) (**Figure 7**).

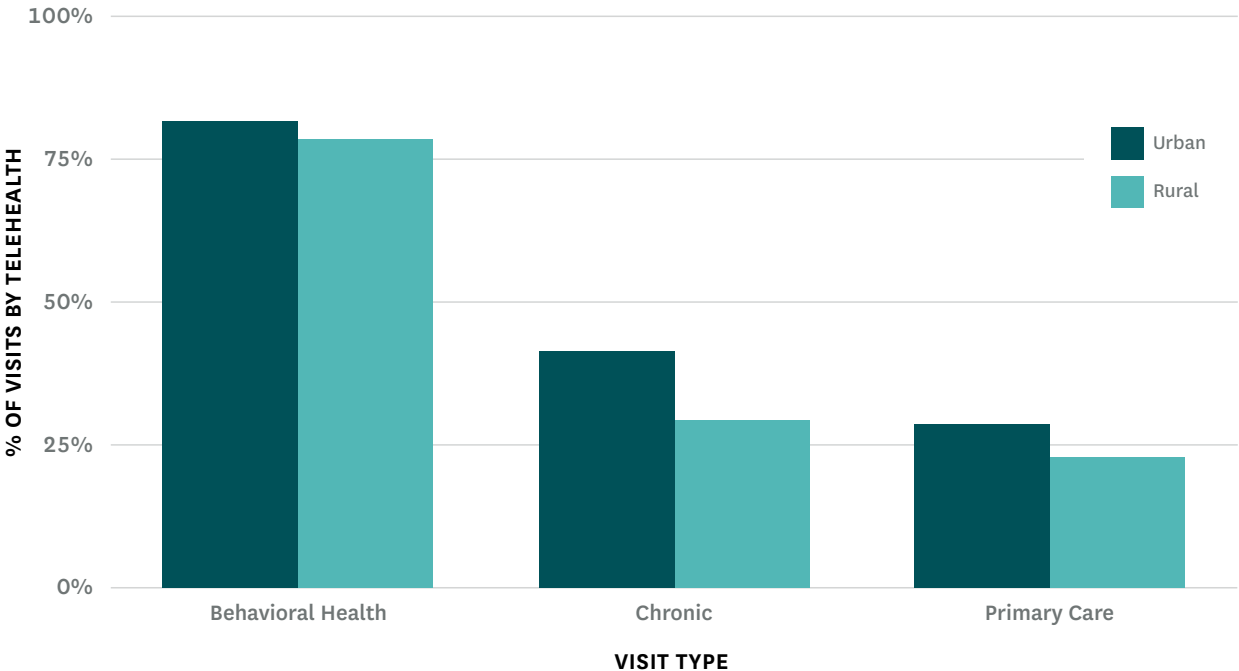
**SOCIOECONOMIC DIFFERENCES IN TELEHEALTH USE**

We compared urban and suburban cities with the lowest SES (bottom quintile) versus those with the highest SES (top quintile) (**Figure 8**). The lowest SES quintile included all cities prioritized by the Department of Public Health COVID-19 Vaccine Health Equity Plan. These lower-level socioeconomic communities also had higher numbers of Black and Hispanic residents than other areas of the Commonwealth. Communities with

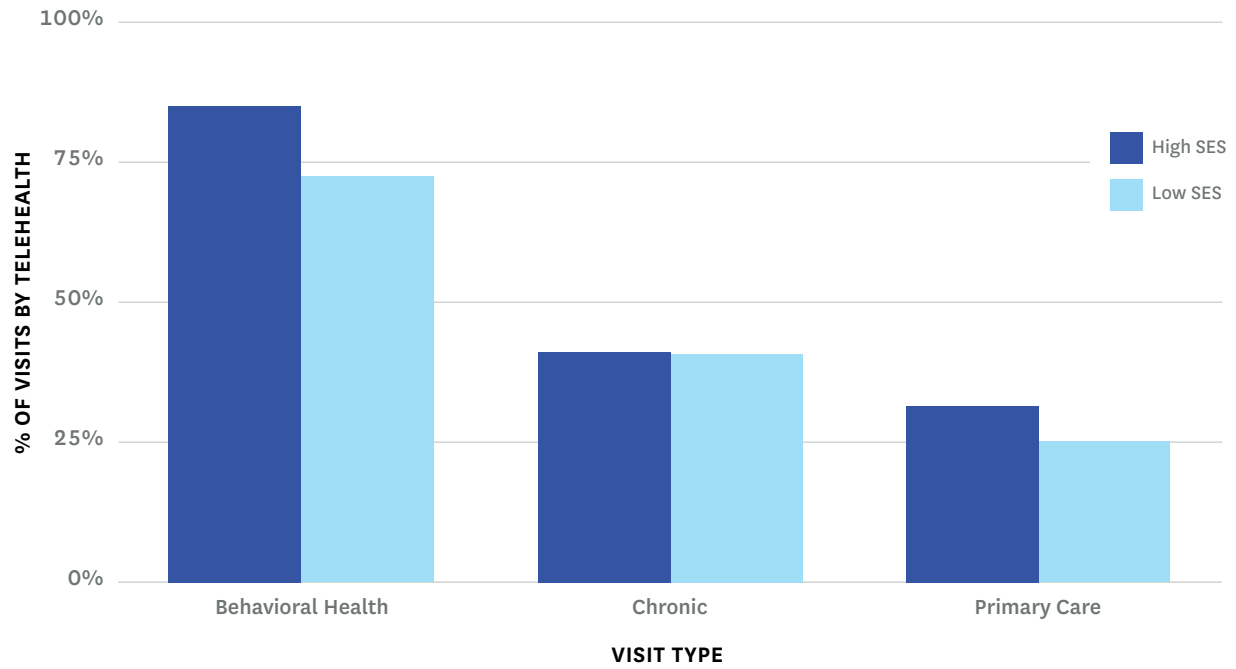
lower socioeconomic status received fewer visits by telehealth as compared with more affluent communities for primary care (low SES: 26% of all visits vs. high SES: 31% of all visits) and behavioral health (low SES: 72% of all visits vs. high SES: 85% of all visits). However, there was no difference between communities in the rates of telehealth use for care of chronic conditions.

Communities with lower socioeconomic status also had fewer households with home internet through either a broadband internet subscription or a cellular phone data plan for a smartphone or other mobile device. **Figure 9** shows the percentage of households without home internet in each city (horizontal axis) relative to the percentage of primary care visits by telehealth visits (vertical axis). The percentages are adjusted for differences in the insurance composition and enrollment in each city. The displayed names represent the 50 largest cities and towns in the Commonwealth. Cities in the lower right quadrant of the figure had both low rates of telehealth use and low digital access. For some cities, a strong relationship was observed between internet access and telehealth use, whereas in other communities there was a less robust relationship.

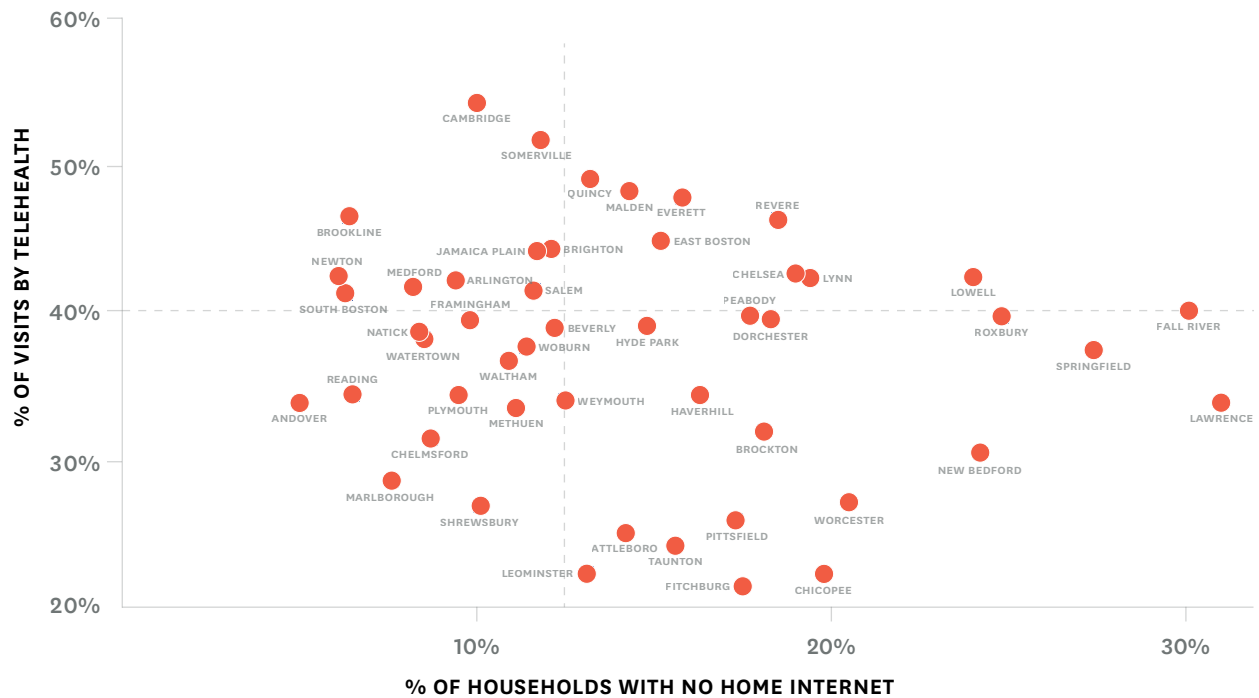
**FIGURE 7: TELEHEALTH USE IN RURAL AND URBAN COMMUNITIES**



**FIGURE 8: DIFFERENCES IN TELEHEALTH BY SOCIOECONOMIC STATUS**



**FIGURE 9: CITY-LEVEL TELEHEALTH USE AND HOME INTERNET ACCESS**

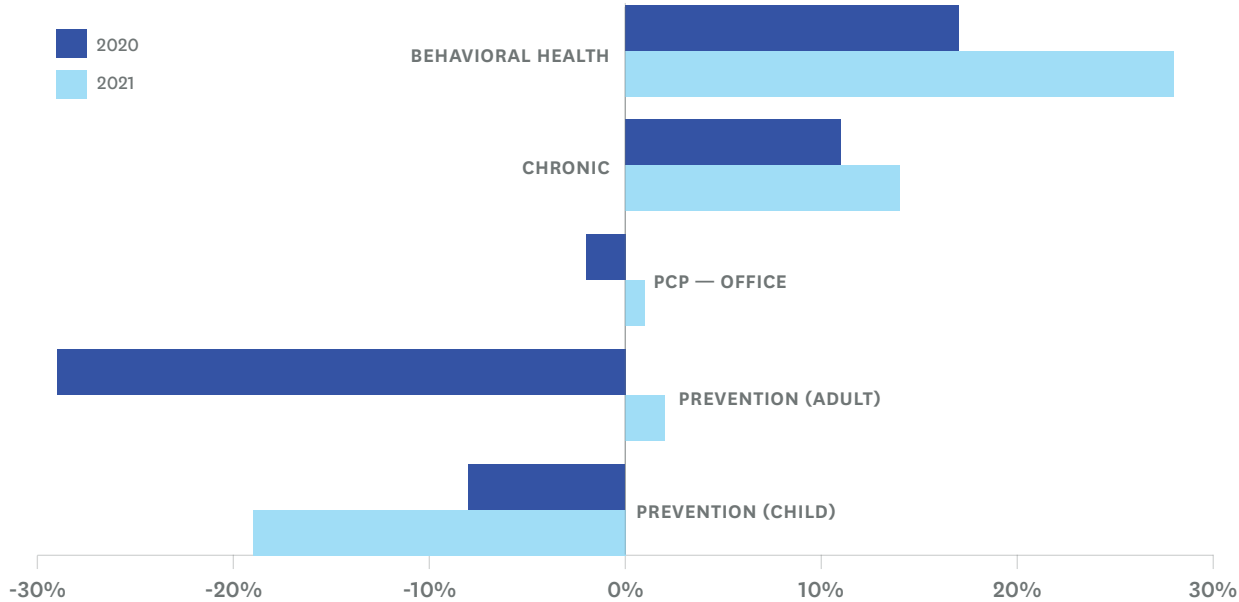


**IMPACTS OF COVID-19 ON PRIMARY CARE, BEHAVIORAL HEALTH, AND CHRONIC DISEASE CARE**

The total number of outpatient visits in the Commonwealth increased by nearly 9% following the onset of the COVID-19 pandemic and increased by around 103,000 visits per month. This trend suggests that the broad telehealth coverage expansions were generally effective at meeting existing and new demands for care during the pandemic, although this varied by visit type. **Figure 10** shows differences in overall service use before and after the onset of the pandemic. Total visits (adjusted for enrollment) increased by 22% for behavioral health care and 12% for chronic disease care when compared to the time before the onset of the pandemic. Primary care and prevention visits exhibited a different pattern. For children, the rates of well-child visits decreased by 13% since the onset of the pandemic. This decline was most pronounced among Medicaid members (19% fewer visits) and less pronounced among Commercial

members (3% fewer visits). This finding suggests that the low uptake of telehealth for pediatric care may have contributed to overall lower access to well child and preventive care, particularly among those with Medicaid insurance. For adults, the rates of prevention visits decreased by 15% since the onset of the pandemic. This decline was most pronounced among Medicaid members (36% fewer visits), Connector members (29% fewer visits) and Medicare members (17% fewer visits). However, among members with both Medicare and Medicaid (Dual Eligible), the rates of adult prevention visits *increased* by 11% above pre-pandemic levels (**Table 2**). This increase appears to have been correlated to a nearly 50% increase in telehealth visits and in-person visits in 2021, which coincided with policy and programming changes intended to promote more comprehensive evaluations and prevention visits while also broadening flexibilities for use of telehealth for these visits. The extent to which this dramatic rise in service use translated into improvements in quality of care for these members is not entirely clear.

**FIGURE 10: COMPARING VISITS FOR 2021 AND 2020 VS. 2019**



**TABLE 2: TOTAL VISITS PER-100 MEMBERS BY INSURANCE AND VISIT TYPE**

		Commercial	Connector	Dual	Medicaid	Medicare
Behavioral Health	2019	10.9				
	2020	12.8				
	2021	14.0				
Chronic	2019	19.4	18.4	111.8	40.1	63.3
	2020	19.0	24.2	131.1	50.9	54.8
	2021	20.9	26.6	134.3	49.1	58.2
PCP — Office	2019	17.9	17.4	48.2	19.0	50.4
	2020	17.7	22.1	46.1	21.5	43.4
	2021	18.9	22.1	47.7	20.8	45.5
Prevention (Adult)	2019	2.9	1.9	2.9	1.6	0.7
	2020	2.1	1.2	2.1	1.2	0.5
	2021	2.6	1.6	4.3	1.0	0.6
Prevention (Child)	2019	11.2	0.8		19.7	
	2020	10.8	0.8		17.8	
	2021	10.7	0.7		14.5	

# RESULTS: STAKEHOLDER INTERVIEWS

We conducted 50 qualitative interviews (31 members, 14 providers, 5 community leaders). The demographic characteristics of the members are shown in **Table 3**. The member sample included representation across age, income, language, race, ethnicity, gender identity, geography, and insurance characteristics. The providers represented four primary care and behavioral health specialties: family medicine (50%), pediatrics (36%), psychiatrists (7%) and internal medicine (7%). Community leaders were recruited from two communities with low overall telehealth use and low SES: Lynn and Worcester. We thematically identified facilitators and barriers that represented factors that made using telehealth easier and harder, respectively. We applied an equity lens to these themes, focusing on how personal, cultural, and linguistic attributes influenced differences in telehealth use. We organized facilitators and barriers into three themes: Access and Utilization, Visit Experience, and Visit Quality.

### ACCESS AND UTILIZATION

Interviewees reported how access and utilization of telehealth were influenced by whether they had a usual source of care, were given choice of visit modes or encountered challenges using or understanding technology. Behavioral health visits were identified as being particularly amenable to telehealth.

### INSIGHT 1: Not having a usual source of primary care was a barrier to using any telehealth

Some participants reported not having telehealth visits because they did not have a primary care provider. They discussed how members of their culture and/or community, and specifically youth, accessed healthcare at the emergency room or urgent clinics for issues when

**TABLE 3: CHARACTERISTICS OF MEMBER INTERVIEW PARTICIPANTS**

Interview Language	
English	71%
Spanish	29%
Age	
Average (range)	52 years (28 to 75)
Gender	
Female	59%
Trans Female	3%
Male	29%
Trans Male	3%
Non-binary	6%
Race	
White	61%
Black	6%
Spanish/Latina	13%
Puerto Rican	6%
Mixed	6%
Beautiful	3%
Declined to answer	3%
Ethnicity, Hispanic	
Yes	39%
No	58%
Declined to answer	3%
Yearly Income	
< \$50,000	55%
Insurance	
Commercial	38%
MassHealth	19%
Medicare	10%
Dual	32%

necessary. One participant reported that while he had insurance, he was unable to find a primary care physician who was accepting new patients. He used urgent care and the emergency room when needs became acute enough to need immediate care and did not do preventive care or have scheduled primary care visits. He had never had a telehealth visit.

“I tried to get a primary care provider, but many don't [take my insurance] which is MassHealth, and then when I do find one, they're not taking any patients. So, it's like, "What can I do?"... just a stop-in [clinic] or emergency room if something's wrong.”

COMMUNITY LEADER, WORCESTER, HISPANIC, MALE, 25

## **INSIGHT 2: Having access to the internet and devices, and understanding how to use technology, facilitated the use of telehealth**

Participants reported that their level of access to the internet or to devices (e.g., smartphone, tablet, computer) and their level of tech-savviness regarding using devices for telehealth visits, or support to use them for telehealth applications, influenced telehealth use.

“Almost every single one of our tenants [of a residential Y] has a cell phone, either — yeah, so, most people have the ability to get online [and do telehealth]. One of the things that we learned during this pandemic is actually how much more digitally adept our tenants are than we had ever anticipated.”

COMMUNITY LEADER, LYNN, NON-HISPANIC WHITE, FEMALE, 43

Whereas those who had no or limited access to the internet or devices, and/or lacked tech-savviness to use them reported these as barriers to telehealth use. For patients, lack of internet or device access and low-tech-savviness were often reported together, particularly in older patient populations or in patients who had contributing social or behavioral factors (e.g., were homeless or had serious mental illness). In addition, some patients reported that their providers had low tech-savviness or were uncomfortable using technology, and as a result limited their use of telehealth.

“Most of our Medicare patients aren't tech-savvy, for one. They may not have the software, or if it's in their house they don't know how to use it.”

PROVIDER, FITCHBURG, NON-HISPANIC, BLACK, MALE, FAMILY MEDICINE MD, 50

“Some of the doctors who I have it [telehealth] with are not proficient with the video, and so end up doing it by phone....”

MEMBER, HINGHAM, NON-HISPANIC, WHITE, MALE, 64

Interviewees reported that technology barriers were mitigated by having patient and provider education about how to use telehealth technology along with technical support while using telehealth. In some cases, support for patients came from providers or from dedicated provider staff but more often came from family and friends.

“I have a large [number of] Vietnamese and Asian patients who are Medicaid, but they like still have computers, or have grandkids or children that have computers that help them.”

PROVIDER, MALDEN, NON-HISPANIC, ASIAN, FEMALE, FAMILY MEDICINE MD, 35

“We have at the clinic, there's somebody who her main job is to help people use the patient gateway and to get onto the Zoom. So, if people don't know how to use it, she'll kind of guide them through it.”

PROVIDER, CHELSEA, NON-HISPANIC, WHITE, FEMALE, FAMILY MEDICINE MD, 36

Having the option of audio-only telehealth mitigated barriers to telehealth use. Audio-only telehealth was accessible to most (i.e., most patients had access to telephones) and had a low bar regarding the need for tech-savviness or tech support for either patients or providers. Audio-only visits had value for specialized populations, such as older adults and homeless populations, where access and/or use of video enabled devices was lower. Many reported that without the option of audio-only telehealth patients would not have had access to care.

“My sense is that our older patients, and then many of our marginalized patients, are really struggling with video, whether it’s technological, which is my sense of the older patients, or Wi-Fi-related, for the marginalized patients. So, there are some patients, I think, many of us [providers] has just seen via phone, because that was all that they really had available, because of connectivity issues with their access to Internet.”

PROVIDER, WORCESTER, NON-HISPANIC, WHITE,  
FEMALE, FAMILY MEDICINE MD, 40

### **INSIGHT 3: Behavioral health visits were particularly amenable to telehealth**

Many participants reported positive experiences using telehealth for behavioral health services, counseling, and therapy. Both patient and providers highlighted how telehealth allowed increased access to available behavioral health appointments, flexibility for patients in attending these appointments, the ability to connect with hard-to-reach populations, convenience in psychiatric medication checks and the ability to have minimal disruptions to ongoing care during COVID-19 surges.

“They’re [patients with acute psychiatric distress are] not always super reliable, and compliant with going to their appointments, so telehealth might be the only way you can get them.”

PROVIDER, BROCKTON, NON-HISPANIC, WHITE,  
FEMALE, FAMILY MEDICINE NP, 54

Some patients reported that telehealth visits offered them better access to preferred providers. This took the form of getting appointments sooner or getting access to providers who were otherwise difficult to access. One participant reported that her friends preferred to see a Black mental health specialist and that since there were none in their area, telehealth offered them this option.

“Especially in mental health areas, accessing therapists of color is really hard. So, telehealth has allowed for some to access a provider that is several towns away that they would never drive to.”

COMMUNITY LEADER, WORCESTER, HISPANIC,  
FEMALE, 37

## **VISIT EXPERIENCE**

Interviewees reported how convenient telehealth was and how it helped them overcome financial challenges to accessing in-person care (e.g., transportation costs, parking, childcare). The convenience of telehealth positively influenced satisfaction as did the quality of the technological platform.

### **INSIGHT 4: Convenience is a primary driver for choosing telehealth particularly for those with financial or functional limitations**

Many interviewees reported that telehealth visits were more convenient than in-person visits. Patients could more easily fit telehealth visits into their daily schedules. They did not have to set aside as much time for a telehealth visit as they did for an in-person visit and did not have to plan for child or elder care. As well, if they had health or mobility issues that made it difficult to travel, telehealth offered easier and more comfortable access to care. In addition, providers reported that telehealth allowed some patients access to care who would otherwise not have any care (e.g., patients with mobility issues, serious pain, etc.).

“I’m really fatigued, and the doctor’s offices are not that close by. So, it takes a lot out of me to go to the doctor’s office and get home. So, I’m really appreciating telehealth right now.”

MEMBER, LOWELL, NON-HISPANIC, WHITE, FEMALE, 71

Lower associated costs (e.g., taking time off from work, cost of gas or transportation), especially for low-income people, made telehealth visits more convenient. Providers reported that telehealth offered access to care for patients who could not easily take time off work.

“Transportation is a very big issue for a lot of our patients...[A] lot of them don’t drive, they don’t have driver’s licenses, they’ve arrived in the country two months ago, they have no way to get anywhere.”

PROVIDER, BROCKTON, NON-HISPANIC, WHITE,  
FEMALE, FAMILY MEDICINE NP, 54

“I did a virtual visit for somebody who couldn't get off of work, so it's more like patient convenience [that is a plus for telehealth] ...”

PROVIDER, CHELSEA, NON-HISPANIC, WHITE,  
FEMALE, INTERNAL MEDICINE MD, 44

### **INSIGHT 5: Patient and providers had broad preferences for telehealth or in-person care**

Some patients reported being initially hesitant to have a telehealth visit because they were unsure if the visit would be as comprehensive as an in-person visit. For these patients, having upfront support from the office staff and having a successful telehealth visit made them more likely to engage in a subsequent telehealth appointment.

“[At] first I was a little bit skeptical about having a telephone visit, or a video call. I felt like it would be different than going into the office. But once I called the doctor's office and they explained whatever I feel comfortable with, they would basically be the same, so then I tried it, and it was the same [as an in person visit], just that I wasn't there.”

MEMBER, WORCESTER, NON-HISPANIC, WHITE,  
FEMALE, 23

Providers stated that they had guaranteed privacy in in-person visits and were better able to engage some patients, especially young patients, in person. Providers differed in their comfort or preference for using telehealth relative to more traditional in-person care. Both patients and providers reported that some patients were “paranoid” about using telehealth because they did not trust that it was secure, and other patients did not like seeing themselves on video or did not like providers seeing their home environments. Access to smartphones, other devices and reliable internet seemed to depend on the population, with new immigrants, older patients and patients with home insecurity having less access across all three areas.

### **INSIGHT 6: Technical, linguistic, and inclusivity attributes of the telehealth platforms influenced patient and provider satisfaction with telehealth**

Having a stable (e.g., sound and video quality was stable and good) and seamless platform (e.g., the platform was integrated into the electronic medical record) that allowed providers and patients to easily share information and include other participants; having instructions about using telehealth in non-English languages; and having easy links to access telehealth facilitated the use of telehealth. In contrast, telehealth platforms that were prone to technical problems (e.g., had poor quality sound or video; or were unstable), that didn't allow access to third parties (particularly interpreters), that were only in English, and were not integrated into the electronic medical record, created barriers to telehealth use.

“It's just also the language barrier because when we send a video request, that's in English and if they don't understand what it says or following the directions, how are they going to be able to open a link and follow a video?”

PROVIDER, BROCTON, HISPANIC, MIXED RACE,  
FEMALE, FAMILY MEDICINE NP, 36

Many reported that in some telehealth platforms, it was very difficult to include interpreters in video telehealth; thus, these telehealth visits were audio-only and used a telephone interpreter service.

### **VISIT QUALITY**

The ability to receive safe and comfortable care during the pandemic was uniformly identified as a positive attribute of telehealth. The presence of an existing patient-provider relationship and the selection of visits that were most amenable to telehealth were identified as telehealth facilitators. However, in other situations, such as need for physical examination, vaccination, or laboratory testing, there was resistance from patients and providers to use telehealth.



**INSIGHT 7: Patient comfort, care setting, and the patient-provider relationship factored strongly into the telehealth visit's perceived success**

Patients and providers reported that some patients were less anxious in telehealth visits compared to in-person visits. The presence of an existing relationship with a provider was helpful and improved comfort. Reasons cited for their greater comfort included patients having control over where they had the visit, being in comfortable surroundings (i.e., at home), and, for pediatric patients, being less anxious knowing that they would not get a shot. Providers reported that, for example, children with autism were more comfortable receiving care in familiar home settings, and that adolescents, in the comfort of their bedrooms, were less anxious and, as a result, more open to discussing concerns.

“I like doing the more of like a recheck for anxiety, depression, I like doing those on telehealth because I think as long as they're able to have privacy in their dorm room or in their room I think it's nice for them and they'll just open up and we can have a good conversation with the teenagers.”

PROVIDER, LONGMEADOW, NON-HISPANIC, WHITE, FEMALE, PEDIATRICIAN, 34

**INSIGHT 8: Visit type influenced satisfaction with telehealth but patients were not always given a choice**

Patients reported that having telehealth visits where their needs were met or where their experiences were like those of in-person visits facilitated the use of telehealth. Both patients and providers reported that if the visit required an exam, vaccinations, or laboratory testing, they would be less likely to use telehealth. Some participants reported that they were unaware of the option of telehealth or not informed about the potential for using telehealth.

“Some people are assumed to be illiterate, and so they're not offered the opportunity to use telehealth, and so they don't even know it's a resource for them.”

COMMUNITY LEADER, WORCESTER, HISPANIC, FEMALE. 37

These patients tended to be infrequent users of medical services and cited barrier to healthcare in general, such as the above issue with finding a provider, as the reason.

**INSIGHT 9: Telehealth allowed patients and providers to continue care in a way that made them feel safe from COVID-19 exposures**

During the initial phases of COVID and in subsequent surges, many reported that telehealth visits were a safer option compared to in-person visits. This was especially true for patients and providers who were at risk for serious COVID (i.e., older individuals, immunocompromised individuals).

“During the COVID surge when we just really didn't know too much about COVID or how it was spreading I was very grateful that telehealth was being offered. And that I could still continue accessing care without putting myself or the medical staff in any further danger.”

MEMBER, MALDEN, NON-HISPANIC, WHITE, TRANSGENDER MALE, 41

# RECOMMENDATIONS

**W**e synthesized insights from the telehealth-use analysis and stakeholder interviews to generate recommendations that health plans, in collaboration with providers, employers, and policymakers, can use to address telehealth equity. We organized the recommendations into three groups. The first group are activities that plans can do to address the root causes of the digital divide, such as digital affordability, literacy, and infrastructure gaps. Promoting digital inclusion across the Commonwealth aims to promote more equal access to telehealth with broader applications towards social and education advancement. The second group are intended to inform how plans can structure coverage to promote equitable access and quality. Health plans are encouraged to continue providing access to telehealth and work towards adopting simplified and standardized approaches to telehealth coverage.<sup>51</sup> The third group of recommendations are activities that health plans can do to help support providers in building capacity in the delivery system to enable more inclusive and higher quality telehealth care delivery. Creating systems of care that are more inclusive to the diverse needs to patients aims to make telehealth more effective across populations.

## ADVANCE DIGITAL INCLUSION

Advancing digital affordability, literacy, and accessibility is essential to achieving digital health equity. Although Massachusetts has considerable broadband infrastructure, there are opportunities to improve digital accessibility, affordability, and equity.<sup>52</sup> Health plans can help support digital inclusion by universally screening members for unmet digital affordability and literacy needs, providing navigation services to enable successful referrals to community-based supports and advocating for enhanced broadband and mobile infrastructure investments. Closing the digital divide can facilitate more equitable telehealth access and support social, educational, and economic advancement.

## RECOMMENDATION 1

### Enhance screening for digital affordability and streamline enrollment in underutilized public benefit programs to make internet and devices more affordable

Challenges in affording the costs of home internet, computers, and mobile phone subscriptions were identified as key telehealth access barriers. Access to smartphones, other devices and reliable internet seems to depend on the population, with new immigrants, older people and people with financial hardship having less access across the board. Two federal programs, the Lifeline Program and the Affordability Connectivity Program, support low-income families with digital affordability, but both are locally underutilized and thus present opportunities for improvement through better screening and referral.<sup>53</sup> Health plans are well-positioned to identify and support members with unmet digital affordability needs.

We recommend that health plans universally screen all members for unmet digital affordability needs and help enroll those with unmet needs in available programs. These efforts can be amplified when coordinated with provider screenings at the point-of-care or when virtual visits are scheduled. We also recommend that plans advocate for policies to enhance real-time and cross-program eligibility processes (such as the Health Connector's Simple Sign-Up program and the shared MassHealth/SNAP application) and to expand programmatic elements (such as improving bandwidth allotments and device capabilities) to ensure optimization for telehealth use.<sup>54</sup>

## RECOMMENDATION 2

### Build referral partnerships with community-based organizations with local expertise in providing digital literacy trainings

Challenges understanding and meaningfully using technology were identified as important barriers to the uptake of telehealth services. This was particularly common among seniors and people who do not speak English well. Comfort with digital modalities increased with social supports from families, friends, and caregivers. Health plans are well-positioned to play a supportive navigation role to identify members with

limited digital literacy and make referrals to community-based organizations such as local public libraries and local not-for-profits who are skilled in providing culturally and linguistically tailored digital literacy trainings.

We recommend that health plans and providers work to expand referrals to community-based organizations skilled at providing digital literacy trainings.

### RECOMMENDATION 3

#### **Convene public conversations aimed to enhance mobile and broadband infrastructure in rural geographies and low-income communities**

Rural and low-income communities stand to benefit most from telehealth. However, paradoxically, uptake has been lowest in some of these areas. Experienced challenges include inconsistent mobile phone and internet coverage, limiting the quality of encounters.<sup>55, 56, 57, 58</sup> Low-income housing may contain outdated equipment and wiring to support fast and reliable internet connections.<sup>59</sup> Further infrastructure is needed to ensure equivalent access to the fast and reliable internet needed to ensure optimization for telehealth use across all geographies. Opportunities at the policy level exist to better subsidize costs of internet subscriptions and installations and enhance the acceptable minimum standards for broadband and mobile coverage.<sup>60</sup> In some geographies, creation of easily accessible local public hotspots and Telehealth Access Spaces that are equipped with sufficient broadband connections may help provide support.

We recommend that health plans convene dialogues with stakeholders across the Commonwealth including mobile phone carriers, internet service providers, policymakers, and community-based organizations, to work towards more equitable digital infrastructure deployment in rural and low-income communities.

## REDUCE BARRIERS TO TELEHEALTH ACCESS

The broad expansion of telehealth has raised important but largely unanswered questions about the effects of telehealth on patient-centered outcomes and costs of care.<sup>61, 62, 63</sup> In our study, we find evidence suggesting both high and low value application of telehealth and recognize that collective effort across the sector will be needed to promote clinically appropriate use of telehealth. We also find evidence of disparities in access, driven in part by the digital divide, during a time with generally relaxed access to telehealth, emphasizing the need to carefully monitor equity impacts of future coverage and reimbursement policy. We recommend that health plans and providers work collaboratively to improve research on clinically appropriate applications of telehealth and to develop easy-to-understand and uniform approaches to telehealth coverage.

### RECOMMENDATION 4

#### **Support collaborative research on the impacts of telehealth on cost, quality, and access**

More research on the comparative effects of audio, video, and in-person outpatient care is needed to inform future coverage policy.<sup>64, 65, 66</sup> Health plans, providers, and policymakers need more information about the impacts of telehealth to ensure that use is clinically appropriate and will lead to better quality and more efficient care. While existing tools such as the All-Payer Claims Database are powerful instruments, there are challenges in comprehensively studying telehealth equity due to sparse self-reported demographic information, delays in availability, and claims limitations. For example, using our study sample constructed from claims, we could not reliably distinguish between audio and video visits, encountered high degrees of missing demographic information, and observed inconsistencies in tele-behavioral health use across insurance groups. We believe these problems can be overcome via the creation of a clinical data repository that integrates claims, enrollment, and electronic health record data, and has global participation from plans and provider organizations.

We recommend that policymakers, plans, and providers collaborate to build the supportive infrastructure needed to enable such data sharing across the sector to allow better real-time surveillance of telehealth use and outcomes. We also recommend that health plans and providers collaborate to monitor, and publicize access differences between telehealth and in-person care to ensure symmetric availability across populations.

## RECOMMENDATION 5

### Continue providing access to telehealth and adopt simplified and uniform approaches to telehealth coverage

The future accessibility of telehealth will be heavily influenced by coverage and reimbursement decisions by plans and providers with potential equity implications. Although related, coverage and reimbursement are distinct elements with different equity considerations, and as such, we provide a separate set of recommendations for each. These recommendations should be revised as more research is conducted on the relative impacts of telehealth on cost, quality, and access.

#### COVERAGE

Coverage relates to which services are available to members and the out-of-pocket costs associated with receiving those services. Our analysis suggests that telehealth has been critical for ensuring access to care, particularly for those with financial and functional constraints for in-person care. We recommend that health plans continue to cover telehealth services including audio-only visits that have value for specialized populations and in some circumstances are the only realistic telehealth option. In addition to ensuring coverage, we recognize that exercising choice and autonomy in healthcare decisions, such as whether to receive one's care virtually or in-person, is not simple, particularly for people who experience discrimination in the healthcare system. Removing potential structural barriers to agency are important. We also recommend that health plans create easy-to-understand educational materials on coverage for members and providers to mitigate or eliminate confusion about coverage and in turn reduce barriers to use of telehealth. We also recommend that health plans adopt uniform co-payment levels (where

applicable) for equivalent telehealth and in-person services. These recommendations will help to promote informed shared decision making between patients and providers while limiting financial and structural influences on choice of modality.

#### REIMBURSEMENT

Reimbursement relates to the amounts of money paid by health plans to providers for administering services. We do not have sufficient evidence from this study to provide a global recommendation on reimbursement parity. We find that patients, particularly those with social barriers to access, find value in telehealth services but have little conclusive data on whether providers should be paid more, less, or the same for telehealth services relative to in-person care. From an equity perspective, we have two general considerations. First, is ensuring that reimbursement decisions avoid unintentionally disincentivizing less well-resourced and safety-net providers from providing telehealth. Second, is ensuring that reimbursement decisions do not create an implicit financial incentive for offering one modality at the expense of another which might undermine efforts to promote consumer choice. Thus, we encourage health plans and providers to work collaboratively to establish reimbursement policies for telehealth that are sensitive to the underlying differences in clinical time and practice expenses for each modality. Broadening adoption of value-based contracts may be a particularly effective mechanism to maintain provider flexibilities for clinically appropriate application for telehealth.

#### BUILD CAPACITY FOR EQUITABLE TELEHEALTH DELIVERY

Advancing telehealth equity is contingent on improving the quality of care so that delivery of telehealth care services is effective, private, and inclusive. Health plans are encouraged to work collaboratively with providers, particularly small practices located in rural and low-income areas, to build capacity for more equitable delivery of telehealth services. This may take the form of grant programs, standard development, and innovative payment models. As provider networks are occasionally shared across multiple health plans, there may be particular value in aligned and collaborated efforts.

## RECOMMENDATION 6

### **Support the development of state-wide standards for technological platforms used for delivering telehealth that consider technical, language translation, and inclusivity elements**

Patients and providers shared that telehealth platforms that were prone to technological problems, didn't allow access to third parties (particularly interpreters), were only in English, and/or were not integrated into the electronic medical record created barriers to telehealth use. Many reported that in some telehealth platforms it was difficult to include interpreters in video telehealth, so occasionally these visits could not be conducted in the modality the patient preferred. The wide range of functionality, language translation, and inclusivity elements of the technological platforms used for delivering synchronous telehealth makes it challenging to achieve equitable service quality.

There is potential utility in statewide standards for technological platforms to ensure that products meet needs of diverse populations. This includes creation of technical, language translation, and inclusivity standards. *Technical standards* will help ensure high reliability of video and sound and interoperability with electronic health records for seamless scheduling and communications. *Language translation standards* revolve around the availability and inclusion of video interpreters for relevant non-English languages and ensuring that visit quality is high for people who do not speak English and people who are deaf or hard of hearing. *Inclusivity standards* will help ensure that the technological infrastructure is available to allow high-quality encounters for people with vision impairment, hearing impairment, speech difficulties, mobility impairments, mental health conditions and psychosocial disabilities, developmental and intellectual disabilities, and dyslexia and other learning disabilities.<sup>67</sup>

We recommend that health plans collaborate with providers at the local and national level to inform the creation of technological, language translation, and inclusivity standards for telehealth platforms.

## RECOMMENDATION 7

### **Support providers with translating patient portals and other patient communication systems into relevant non-English languages**

Patient portals and other systems used by providers to digitally communicate with patients are important tools for expanding access to telehealth. However, providers and patients identified challenges in linguistic accessibility. This included patients receiving scheduling confirmations or provider messages in languages that they could not understand resulting in missed appointments and difficulty understanding instructions. The costs of implementing such solutions may be cost-prohibitive for many practices, particularly small practices in low-income and rural areas. We encourage health plans to create grant programs to support these practices with translation of digital communications such as scheduling, reminders, messaging, and laboratory results into relevant non-English languages to allow more inclusive communication. With the increasing digitalization of healthcare, achieving linguistic equity in patient portals will help ensure more equal access to telehealth, and more broadly to the healthcare system.

We recommend that health plans developed grant programs to assist small provider groups, particularly those located in low-income and rural areas, with translation of electronic communications and portals into relevant non-English languages.

## RECOMMENDATION 8

### **Support clinician training in the delivery of private, inclusive, and medically appropriate telehealth services**

The experience of care for patients with telehealth varied widely by the competency, comfort, and preferences of the provider administering care. Since telehealth was only sparingly used prior to the onset of the COVID-19 pandemic, relatively few providers have received training in best-practices or obtained specific competencies related to care provision using this modality. Provider comfort and willingness to provide care by telehealth varied by personal preference and specialty type. As the immediate effects of the pandemic subside, there exist opportunities to learn best practices for delivering

telehealth care that is safe and private, overcoming barriers that impeded the ability to use telehealth, better enabling participation for people with functional limitations and their caregivers, and how to best set up a home or office-based telehealth portal. We feel this may help improve provider comfort with telehealth and thus increase system access capacity, improve the quality of service, and reduce clinician frustration and burn-out.

We recommend that health plans work with local medical societies to develop competency standards and high-quality and brief instructional materials and trainings on telehealth care delivery. We encourage health plans to include information on provider telehealth competencies in network directories to enable better member navigation.

#### **RECOMMENDATION 9**

##### **Collaborate with employers and policymakers to encourage products and payment models that support increasing engagement with primary care and prevention**

Not having a usual source of primary care was identified by members as a critical driver of telehealth access. The presence of an existing relationship with a primary care provider was associated with more access, a higher comfort level with telehealth, and overall better visit experience. Improving engagement with primary care can help ensure more equal access to telehealth and better quality of service, and broadly achieve population health prevention goals. These results are consistent with other findings suggestive of declines in prevention care in the local population.<sup>68</sup> As our study illustrates, the COVID-19 pandemic significantly disrupted adult and child primary care prevention services, particularly for some lower-income groups. Fewer prevention visits may mean fewer opportunities to provide recommended cancer screenings, vaccinations, and routine blood testing. The decline in prevention visits in lower-income groups is particularly worrisome given the lower baseline levels of access and higher incidence of preventable disease in many of these groups.

We recommend that health plans work with providers and employers to develop new care and financing models that promote home-based and virtual care in the hopes of improving engagement with primary care.<sup>69</sup> We also encourage outreach activities to address the urgent need for re-engaging residents of the Commonwealth in delayed or forgone prevention care.

#### **RECOMMENDATION 10**

##### **Publish a report every three years on overall progress towards digital health equity in the Commonwealth**

Improving public awareness and accountability of activities undertaken by health plans to advance digital health equity is important.

We recommend that plans work collaboratively to issue a report to the public every three years on digital health equity. This report should identify goals and action steps the sector is taking to address differences in telehealth use identified in this report, summarize insights from new research on telehealth applications, and measure progress towards public accountability goals.



# CONCLUSION

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**T**elehealth has been crucial for ensuring access to primary, behavioral health, and chronic disease care during the COVID-19 pandemic, particularly for those with financial or functional constraints for in-person care. However, the adoption of telehealth services and the quality of care has varied across populations. Seniors, children, people with low internet access, and residents of rural communities were least likely to use telehealth.

High-quality experiences with telehealth were related to one's ability to receive communications in their preferred language, having the financial means to afford internet and devices, and having the digital literacy to understand technology. Many of these challenges are complex and interconnected and addressing them requires broad collaboration across the healthcare sector. There are important gaps in broadband infrastructure, digital affordability, and the usability of technological platforms for telehealth and other patient communications. Opportunities exist to advance telehealth equity by addressing the root causes of the digital divide, promoting digital inclusion, removing structural and financial barriers to telehealth access, and supporting higher quality and more inclusive care delivery.

**For additional information:** <https://www.populationmedicine.org/apeltz>

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**SUPPLEMENTAL APPENDIX**

**BRIDGING  
THE DIGITAL  
DIVIDE —  
— ADVANCING  
TELEHEALTH  
EQUITY**

**NOVEMBER 2022**



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# APPENDIX 1: CLAIMS-BASED DEFINITIONS FOR TELEHEALTH VISITS

Type	Code	Description
POS	02	Telehealth: The location where health services and health related services are provided or received, through a telecommunication system
CPT	95	Synchronous telemedicine service rendered via a real-time interactive audio and video telecommunications system.
CPT	GT	Via interactive audio and video telecommunication systems. Use only when directed by your payer in lieu of modifier 95
CPT	GQ	Via an asynchronous (delayed communications) telecommunications system
CPT	G0	Telehealth services for diagnosis, evaluation, or treatment, of symptoms of an acute stroke
UBREV	780	Telemedicine, general

## ABBREVIATIONS:

CPT — Current Procedural Terminology code modifiers

POS — Place of Service

UBREV — Uniform Billing Revenue Codes

# APPENDIX 2: RANKING COMMUNITIES BY LEVELS OF TELEHEALTH USE AND INTERNET ACCESS

This table shows the percentage of telehealth for adult primary care problem-based visits for the 50 largest cities and towns in the Commonwealth. This percentage has been adjusted for differences in the composition and enrollment in each city to allow for more uniform comparisons. The Metro Boston area has been divided into neighborhoods.

City	% Telehealth	% Households with no internet
Andover	33.8%	5.0%
Arlington	42.1%	9.4%
Attleboro	25.0%	14.2%
Beverly	38.9%	12.2%
Brighton	44.2%	12.1%
Brockton	31.9%	18.1%
Brookline	46.4%	6.4%
Cambridge	54.1%	10.0%
Chelmsford	31.4%	8.7%
Chelsea	42.6%	19.0%
Chicopee	22.2%	19.8%
Dorchester	39.5%	18.3%
East Boston	44.8%	15.2%
Everett	47.7%	15.8%
Fall River	40.1%	30.1%
Fitchburg	21.4%	17.5%
Framingham	39.4%	9.8%
Haverhill	34.3%	16.3%
Hyde Park	39.0%	14.8%
Jamaica Plain	44.1%	11.7%

<b>Lawrence</b>	33.8%	31.0%
<b>Leominster</b>	22.3%	13.1%
<b>Lowell</b>	42.3%	24.0%
<b>Lynn</b>	42.3%	19.4%
<b>Malden</b>	48.2%	14.3%
<b>Marlborough</b>	28.6%	7.6%
<b>Medford</b>	41.7%	8.2%
<b>Methuen</b>	33.5%	11.1%
<b>Natick</b>	38.6%	8.4%
<b>New Bedford</b>	30.5%	24.2%
<b>Newton</b>	42.4%	6.1%
<b>Peabody</b>	39.7%	17.7%
<b>Pittsfield</b>	25.9%	17.3%
<b>Plymouth</b>	34.4%	9.5%
<b>Quincy</b>	49.0%	13.2%
<b>Reading</b>	34.4%	6.5%
<b>Revere</b>	46.2%	18.5%
<b>Roxbury</b>	39.7%	24.8%
<b>Salem</b>	41.4%	11.6%
<b>Shrewsbury</b>	26.8%	10.1%
<b>Somerville</b>	51.6%	11.8%
<b>South Boston</b>	41.2%	6.3%
<b>Springfield</b>	37.4%	27.4%
<b>Taunton</b>	24.1%	15.6%
<b>Waltham</b>	36.7%	10.9%
<b>Watertown</b>	38.2%	8.5%
<b>Weymouth</b>	34.0%	12.5%
<b>Woburn</b>	37.6%	11.4%
<b>Worcester</b>	27.1%	20.5%



# APPENDIX 3: INTERVIEW PARTICIPANTS

## COMMUNITY LEADER DEMOGRAPHICS (N=5)

Interview Language	
English	100%
Age, average (range)	
37 years (25 to 44)	
Gender	
Female	80%
Male	20%
Race	
White	40%
Indigenous	10%
Other	10%
Puerto Rican	10%
Ethnicity, Hispanic	
Yes	60%
No	40%
Zip code	
01902 (Lynn)	60%
01604 (Worcester)	40%

## MEMBER DEMOGRAPHICS (N=31)

### Interview Language

English	71%
Spanish	29%

### Age, average (range)

52 years (28 to 75)

### Gender

Female	59%
Trans Female	3%
Male	29%
Trans Male	3%
Non-binary	6%

### Race

White	61%
Black	6%
Spanish/Latina	13%
Puerto Rican	6%
Mixed	6%
Beautiful	3%
Declined to answer	3%

### Ethnicity, Hispanic

Yes	39%
No	58%
Declined to answer	3%

### Yearly Income

< \$30K	32%
\$39-50K	23%
\$50-75K	16%
\$75-100K	6%
>\$100K	10%
Declined to answer	6%
Unsure	6%

### Zip code

01104, 01109 (Springfield)	6%
01247 (North Adams)	3%
01475 (Winchendon)	3%
01602, 01604, 01609, 01610 (Worcester)	35%
01702 (Framingham)	6%
01851, 01852, 01854 (Lowell)	23%
02043 (Hingham)	3%
02148 (Malden)	10%
02301 (Brockton)	3%
02657 (Provincetown)	3%
02740 (New Bedford)	3%

### Insurance

Commercial	38%
MassHealth	19%
Medicare	10%
Dual	32%

## PROVIDER DEMOGRAPHICS (N=14)

Specialty	
Family medicine	50%
Pediatrics	36%
Psychiatry	7%
Internal Medicine	7%
Role	
Nurse Practitioner	29%
Physician	71%
Zip code	
01106 (Longmeadow)	14%
01420 (Fitchburg)	7%
01604 (Worcester)	14%
01701 (Framingham)	7%
02148 (Malden)	7%
02150 (Chelsea)	14%
02301 (Brockton)	14%
02740 (New Bedford)	14%
Other	7%
% Non-English Speaking Patients	
<10%	14%
10-30%	43%
40-50%	14%
>50%	29%

% Medicaid/Medicare Patients	
<30%	21%
30-60%	14%
60-80%	29%
>80%	36%
Age average (range)	
45 (34 to 61)	
Gender	
Female	86%
Male	14%
Race	
White	57%
Asian	21%
African American	7%
Mixed	14%
Ethnicity, Hispanic	
Yes	7%
No	93%

# APPENDIX 4: INTERVIEW GUIDES

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## WIFI STUDY

**Interviewer:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**ID:** \_\_\_\_\_

## PROVIDER INTERVIEW GUIDE

### Introduction

In this study, we want to better understand health care provider use of telehealth services during the COVID-19 pandemic. We are especially interested in access and barriers to providing telehealth services. We are defining telehealth as healthcare visits done by video or phone instead of in-person. In answering the following questions, please think of your experiences since the beginning of the pandemic in March 2019.

1. Tell me what you know about insurance coverage of telehealth? How did you learn this?
2. Tell me what you know about patient cost responsibilities for a telehealth visit?
3. Does your workplace offer telehealth? Explain.
  - a. What support did you get to offer telehealth visits?
    - i. Technical support re platforms?
    - ii. Training on offering telehealth?
    - iii. Other?
  - b. What supports do you wish you had?
  - c. What platforms does your workplace use for telehealth (video, phone)? Explain.
    - i. What do you think of this/these platforms?
  - d. Does your workplace offer telehealth in languages other than English? Explain.
    - i. Using an interpreter? Explain
    - ii. Have providers who speak the language? Explain.
    - iii. What are the challenges in providing telehealth in non-English?

**4. Do you have patients in your practice who do not use telehealth or reluctantly use telehealth? Explain.**

a. What are factors related to no/low patient use of telehealth?

- i. Preference for in-person
- ii. Access to technology issues
- iii. Access to internet issues
- iv. Comfort level with technology
- v. Privacy issues
- vi. Safety issues
- vii. Language/communication issues/barriers
- viii. Cost issues (data, phone minutes)
- ix. Hearing/seeing/functional issues

Would your patients need to buy any new equipment to use telehealth?

- x. Other issues

**5. What can be done to increase patient use of telehealth?**

**6. Have you done any telehealth visits?**

a. Tell me about the process (getting an appointment, preparing patient for the visit, the visit).

- i. What has been challenging? What has worked well?

b. Which patient *visits* work best for telehealth visits? Why?

- i. Which visits are challenging, and why?

c. Which patients are better suited for telehealth visits? Why?

- i. What patient characteristics make telehealth visits challenging?

d. Have any of your patients had safety concerns in a telehealth visit? Explain.

e. Have any of your patients had privacy concerns in a telehealth visit? Explain.

f. Do you have any concerns about your own privacy in holding telehealth visits?

g. How has telehealth affected your ability to provide care?

- i. What are ways that your ability to care for your patients has positively changed due to telehealth?
- ii. What are ways that your ability to care for your patients has negatively changed due to telehealth?

h. How does telehealth compare to in-person visits?

- i. How does the value of care of telehealth visits compare? Explain.
- ii. How has telehealth affected your ability to participate in shared decision making with patients? Explain.
- iii. How has telehealth affected your workload? Explain.

**7. What is the future of telehealth? Explain.**

- a. What are challenges to continuing to offer telehealth?
- b. What types of supports would you need or want to continue providing telehealth visits?

**8. Is there anything else that you would like to tell me or that you think it would be important for me to know?**

---

**1. Do you have a medical specialty?**

- a. IF YES: What is your specialty? \_\_\_\_\_

**2. Do you have patients that are non-English speakers?**

- a. If YES: Could you provide a rough estimate of the percentage of your patients who are non-English speakers? \_\_\_\_\_

**3. Could you provide a rough estimate of the percentage of patients who are on commercial insurance vs. Medicare/Medicaid? \_\_\_\_\_**

**4. What is your age? \_\_\_\_\_**

**5. What is your gender? \_\_\_\_\_**

**6. Are you of Hispanic or Latino origin or descent?**

- Yes, Hispanic or Latino
- No, not Hispanic or Latino
- Don't know
- Refused

**How would you describe your race?**

(\*\*do not read response options; may select >1\*\*)

- White
- Black or African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or other Pacific Islander
- Other \_\_\_\_\_
- Don't Know
- Refused

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**Thank you very much for your time. Your knowledge and insights will be very helpful to this study.**

**\*\*TURN AUDIO RECORDER OFF\*\***

To thank you for participating, we will be sending you a \$50 check in the mail. Can you please confirm your mailing address?

Same as listed in spreadsheet

New:

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Once the study is finished, would you like us to send you information about our findings?

Yes

No

## WIFI STUDY

Interviewer: \_\_\_\_\_

Date: \_\_\_\_\_

ID: \_\_\_\_\_

## HEALTH PLAN MEMBER & COMMUNITY LEADER INTERVIEW GUIDE

### Introduction

In this study, we want to better understand the use of telehealth services during the COVID-19 pandemic. We are especially interested in access and barriers to receiving telehealth services. We are defining telehealth as healthcare visits done by video or phone instead of in-person. In answering the following questions, please think of your experiences since the beginning of the pandemic in March 2019.

1. **What type of health insurance plan do you have? (ESI, Medicaid, Medicare, etc.). Please do not tell us the specific name and provider of your health plan.**
2. **What do you understand about how your insurance plan covers medical visits and telehealth? How did you learn this?**
3. **Are there medical visits you have been putting off? Why?**
  - a. Safety issues re COVID? Explain.
  - b. Cost issues? Explain.
  - c. Waiting for in-person care visit? Explain.
  - d. Other? Explain.
4. **Does your provider or plan offer telehealth visits?**
  - a. What do you think about telehealth?
    - i. Do you have concerns about using telehealth?
      - Concerns about using the technology? Concerns about comfort level with technology?
      - Concerns about costs?
        - Has your health care provider mentioned anything about your cost responsibilities for a telehealth visit?
5. **[ACCESS] Have you had any telehealth visits since the pandemic started? If yes, go through questions in following section, if no, skip to number 7.**



## 6. For those who have had a telehealth visit:

- a. Can you tell me about the telehealth visits that you've had from the time the appointment was made to when the visit was done?
  - i. How was the decision made to make the visit a telehealth visit?  
How did you feel about having the visit as a telehealth visit?
  - ii. Was the visit with your usual provider? Someone else?  
How did that affect your care and/or experiences?
  - iii. How did you access the telehealth visit [video, computer, smartphone]?
    - Were there any problems accessing the visit?
      - Did you have instructions about what to do?
    - Were there costs related to how you accessed the visit (phone/data charges)?
  - iv. Tell me about the visit.
    - Tell me about how private the visit was?
      - Were you comfortable discussing your health concerns during the visit?
    - Tell me about any safety concerns you had during the visit?
    - How was communication in the visit?
      - Were you able to communicate in the language of your choice?  
[if an interpreter was used in the visit] tell me about your experiences using an interpreter in the telehealth visit.
      - Were you able to convey all of your concerns to the provider?
      - Did you feel listened to in your visit?
      - Were your goals met in the visit?
    - Were there any technical problems during the visit (video, sound)?
      - Did you have to make changes in how you did the visit (e.g., video to phone)?
    - How would you summarize your experiences with the visit?
      - What would have made the visit easier or better?
      - Did functional limitation make it harder for you to use telehealth (issues with hearing, seeing, other)?  
Did you need to buy any new equipment because of a functional limitation to use telehealth?
      - How satisfied are you with your telehealth visits overall?
    - How did your telehealth visit(s) compare to in-person visits?
      - Do you feel like you got the same value in a telehealth visit as compared to an in-person visit?

**7. For those who have not had a telehealth visit:**

- a. Did you need any medical care this past year?
  - i. Were you offered the option of having a telehealth visit?
- b. What do you think about telehealth visits?
  - i. What do you think are reasons that patients don't use telehealth visits?
    - Preference for in-person
    - Access to technology issues
    - Access to internet issues
    - Comfort with technology
    - Privacy issues
    - Safety issues
    - Language issues/barriers (use of interpreters in telehealth or access to telehealth providers in language of choice)
    - Cost issues (data, phone minutes)
    - Hearing/seeing/functional issues
      - Would you need to buy any new equipment to use telehealth?
    - Other issues
  - ii. What are reasons that patients use telehealth visits?
    - Convenience, Cost, health safety, preference
  - iii. Are there situations where you would use telehealth? Explain.

**8. [For community leaders]**

- a. How would you describe your community? (race, ethnicity, language, age, culture, SES?)
- b. What do you think your community thinks about telehealth visits?
- c. What do you think are reasons that members of your community don't use telehealth visits?
  - i. What would make them more likely to use telehealth visits?
- d. What do you think are reasons that members of your community do use telehealth visits?
- e. In general, what kind of access do members of your community have to technology? (smart phones, internet)
- f. How comfortable are members of your community with technology?

**[FOR ALL]**

**9. Do you have access to the internet? At home? Somewhere else (work, library)?**

- a. How reliable is your internet service?
- b. How many people share this internet?
- c. Would you feel comfortable using this service for a health care visit?

**10. In general, how would you describe your experiences as a patient receiving health care? Postive/negative/neutral. Can you tell me more?**

11. In this past year, when having a healthcare visit, have you ever had any of the following things happen to you because of your race, ethnicity, disability, or sexual orientation:

- a. Been treated with less courtesy than other people.
- b. Been treated with less respect than other people.
- c. Received poorer service than others.
- d. Had a doctor or nurse act as if he or she thinks you are not smart.
- e. Had a doctor or nurse act as if he or she is afraid of you.
- f. Had a doctor or nurse act as if he or she is better than you.
- g. Felt like a doctor or nurse was not listening to what you were saying.
- h. Had a doctor or nurse not use your correct name or pronouns

12. That brings us to the end of the questions that I had prepared for today. I'd like to wrap up our call by asking a few short answer questions. But, before we move on, is there anything else that you would like to tell me or that you think it would be important for me to know about your thoughts or experiences with telehealth?

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1. What is your age? \_\_\_\_\_

2. What is your gender? \_\_\_\_\_

3. Are you of Hispanic or Latino origin or descent?

- Yes, Hispanic or Latino
- No, not Hispanic or Latino
- Don't know
- Refused

4. How would you describe your race?

(\*\*do not read response options; may select >1\*\*)

- White
- Black or African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or other Pacific Islander
- Other \_\_\_\_\_
- Don't Know
- Refused

**5. This study looks at the costs of health care. While we don't need to know the exact amount, we would like to know your approximate income to be able to interpret your answers accurately. I am going to ask you a few questions to get an idea of your household's total income from all sources before taxes. These data are completely confidential and will only be used to come up with averages for the purpose of this study.**

a. Could you tell me whether your total annual household income last year was under \$40,000 or over \$40,000 before taxes?

- Under \$40,000 (go to 5b)
- Over \$40,000 (go to 5c)
- Don't know (skip to CLOSE)
- Refused (skip to CLOSE)

b. Was it under \$20,000, between \$20,000 and \$30,000, or over \$30,000?

- Under \$20,000 (skip to CLOSE)
- Between \$20,000 and \$30,000 (skip to CLOSE)
- Over \$30,000 (skip to CLOSE)
- Don't know (skip to CLOSE)
- Refused (skip to CLOSE)

c. Was it under \$50,000, between \$50,000 and \$75,000, between \$75,000 and \$100,000, or over \$100,000?

- Under \$50,000
- Between \$50,000 and \$75,000
- Between \$75,000 and \$100,000
- Over \$100,000
- Don't know
- Refused

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**Thank you very much for your time. Your knowledge and insights will be very helpful to this study.**

**\*\*TURN AUDIO RECORDER OFF\*\***

To thank you for participating, we will be sending you a \$50 check in the mail. Can you please confirm your mailing address?

Same as listed in spreadsheet

New:

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Once the study is finished, would you like us to send you information about our findings?

Yes

No

We're interested in talking to people who are leaders in their communities and helps others with access to health care, whether formally or informally (someone like a community health care worker, social service worker, food pantry worker, religious leader, etc.) Do you know of anyone who you would recommend that we interview? Please let them know that we may be in touch to invite them to participate in the study.

Name: \_\_\_\_\_

Email: \_\_\_\_\_

Telephone: \_\_\_\_\_

Address: \_\_\_\_\_