"Beyond Just a Supplement": Administrators’ Visions for the Future of Virtual Primary Care Services

Taressa K. Fraze, PhD, Laura B. Beidler, MPH, Emilia H. De Marchis, MD, MAS, Laura M. Gottlieb, MD, MPH, and Michael B. Potter, MD

Purpose: The COVID-19 pandemic resulted in unprecedented adoption and implementation of virtual primary care services, and little is known about whether and how virtual care services will be provided after the pandemic ends. We aim to identify how administrators at health care organizations perceive the future of virtual primary care services.

Methods: In March-April of 2021, we conducted semistructured qualitative phone interviews with administrators at 17 health care organizations that ranged from multi-state nonfederal delivery systems to single-site primary care practices. Organizations differed in size, structure, ownership, and geography. We explore how health care administrators anticipate their organization will offer virtual primary care services after the COVID-19 pandemic subsides.

Results: All interviewed administrators expected virtual primary care services to persist after the pandemic. We categorize expected impact of future virtual services as limited (n = 4); targeted to a narrow set of clinical encounters (n = 5); and a major shift in primary care delivery (n = 8). The underlying motivation expressed by administrators for providing virtual care services was to remain financially stable and competitive. This motivation can be seen in the 3 main goals described for their anticipated use of virtual services: (1) optimizing medical services; (2) enhancing the patient experience; and (3) increasing loyalty among patients.

Conclusions: Health care organizations are considering how virtual primary care services can be used to improve patient outcomes, access to care, and convenience of care. To implement and sustain virtual primary care services, health care organizations will need long-term support from regulators and payers. (J Am Board Fam Med 2022;35:527–536.)

Keywords: Health Policy, Pandemics, Primary Health Care, Telemedicine

Introduction

The COVID-19 pandemic holds the potential to permanently reshape the delivery and configuration of health care in the US. In March of 2020, many health care organizations rapidly pivoted to providing virtual services, including telephone, video, and asynchronous care.1 By the fall of 2020, nearly 2-thirds (up from 18% in prior years) of Medicare beneficiaries reported that their clinician offered virtual appointments and nearly half of those beneficiaries reported attending a virtual visit in the summer or fall of 2020.2 In the spring of 2021, outpatient visits rebounded to volumes that exceeded levels before the pandemic and patients continued to engage in virtual care with the share...
visits which were virtual remaining elevated (9% in from March to August 2021).³

Before the COVID-19 pandemic, virtual services were often envisioned as ways to extend the reach of specialists and promote patient independence through remote, home-based monitoring, which largely excluded primary care.⁴ Previously, regulators and payers had strict requirements on when and to whom virtual services could be delivered.⁵ To a result, virtual services were rare – only 0.3% of Medicare Part B enrollees had a telehealth service in 2016.⁴ Concerns about the safety of in-person services due to the COVID-19 pandemic forced payers to ease restrictions.⁵,⁶ The combination of relaxed regulations and the hesitancy to offer in-person services spurred innovation in primary care.

Whereas the pandemic drove innovation in virtual service delivery out of necessity, it also provides an opportunity for sustained adoption of new virtual models. Informed by their experiences during the pandemic, which services will health care organizations choose to offer virtually? In this article, we use interviews with administrators from a diverse set of health care organizations to garner insights on their visions for how primary care service delivery might be transformed beyond the pandemic.

Methods

Data Collection

From March–April 2021 we conducted semistructured interviews with administrators at 17 health care organizations. The Institutional Review Board at Dartmouth College approved this study.

We identified organizations by selecting primary care practices and delivery systems that responded to the National Survey of Health Care Organizations and Systems (NSHOS).¹⁰ NSHOS is a suite of nationally representative surveys that were conducted in 2017 to 2018.¹⁰–¹⁷ The NSHOS delivery system level survey (response rate = 57%) included systems with: (1) 1 or more hospitals and 1 or more physician practices; (2) no practices, but 2 or more hospitals; or (3) no hospitals, but 2 or more practices. NSHOS excluded systems owned by the federal government and systems focused on a single specialty (ie, cancer). The NSHOS practice level survey (response rate = 44%) surveyed primary care and multispecialty care physician practices that included 3 or more physicians. Practices were defined based on a single location. We used NSHOS to identify organizations for interviews because NSHOS includes a large, national sample of diverse health care organizations.

We emailed executives and asked them to connect us with the individual(s) at their organization who was best suited to speak about how their organization adapted care delivery during the COVID-19 pandemic. Individuals identified held a range of titles such as Chief Innovation Officer, Program Manager, and Director of Population Health (Online Appendix Table 1). Titles varied by organizational size and structure. Most of organizations (14 of 17) included an executive leader. We refer to interviewees as administrators because these individuals, regardless of title, were responsible for managing how their organization adapted care delivery during the COVID-19 pandemic (Online Appendix Tables 1 and 2). In most organizations (11 of 17), the interviewee was a physician leader. To ensure a diverse sample, we conducted outreach in waves, adjusting each wave as necessary to ensure diversity in size, urbanicity, and geography (Online Appendix Table 3). We continued data collection until we reached a point of saturation and no longer uncovered new themes in interviews.¹⁸

Interviews focused on how organizations adapted care delivery during the COVID-19 pandemic including (1) implementation of virtual services, (2) changes to in-person care, (3) expectations for virtual services postpandemic (Online Appendix Table 4). All interviews were conducted via telephone, lasted approximately 60 minutes, and were re-coded. Trained qualitative interviewers (T.F., a PhD level health services researcher with advanced training in qualitative research and L.B., an MPH-level researcher with expertise in health care delivery and qualitative methods) conducted the interviews and analyses.

Data Analysis

We (T.F. and L.B.) first conducted iterative, unblinded double coding to ensure consistency between coders and to establish a deep understanding of the data.¹⁹ We used an established codebook that aligned with domains in the interview guide (Online Appendix Table 4). All coding was conducted using QSR NVivo.²⁰ Then we analyzed data initially coded as “expectations for use of virtual care services after the COVID-19 pandemic.”
limited categories: (1) Administrators believed that at least some virtual primary care services were necessary to remain competitive in the future were classified into 3 categories: (1) limited to encounters as necessary or requested (n = 4); (2) targeted to a narrow set of clinical encounters (n = 5); and (3) a major shift in primary care delivery (n = 8) (Table 1).

**Table 1. Anticipated Future Use of Virtual Primary Care Services**

<table>
<thead>
<tr>
<th>Limited Use (n = 4)</th>
<th>Targeted Use (n = 5)</th>
<th>Major Shift in Care Delivery (n = 8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual primary care services were not expected to have a significant role in their organization. Administrators noted that they would offer virtual services if a patient requested it, but it would not be their preferred modality for care delivery.</td>
<td>Virtual primary care services were expected to continue in focused, defined areas. Examples included virtual urgent care, behavioral health services, and Annual Wellness visits.</td>
<td>Care delivery was expected to meaningfully transform because of virtual care models. Anticipated having a large share of all services into virtual modalities or developing robust, innovative virtual models to offer options to work in parallel to in-person care options. “I think with proper education, every single specialty has a portion of their work that is suited to telehealth.”</td>
</tr>
</tbody>
</table>

“**I would say it’s strongly preferred to have an in-person visit over telehealth. But it’s a nice tool to have it if you need.”**

“**Of course, we’re still doing some telehealth and we’re looking at trying to see how we might be able to provide an after-hours telehealth and may, maybe a little bit more so to either help supplement urgent care centers or emergency rooms.**

Administrators who anticipated the future of virtual primary care as limited described offering virtual services in specific circumstances or when requested by patients. These administrators did not believe virtual services would offer revolutionary changes within their organizations, nor more broadly within primary care. Others believed that virtual primary care would be integrated into primary care delivery for a targeted, narrow set of clinical encounters. These administrators typically set organization-wide goals for virtual services in the 10 to 15% range of patient interactions. About half of the administrators envisioned that virtual services would meaningfully transform primary care delivery in their organization. One organization expected up to 70% of services to be offered virtually. Others viewed virtual primary care services as a way to significantly expand or optimize service delivery such as by offering virtual urgent care services or e-visits to provide patients with asynchronous care for lower severity visits. One administrator explained, “idea of that is offering a 24/7 care model eventually.”

**Motivation for Virtual Services: Remain Financially Stable and Competitive**

Administrators emphasized that providing virtual services was essential to their organization’s financial sustainability (Table 2). They believed virtual services were necessary to remain competitive not only with other health care delivery systems, but also with technology-based companies, retail clinics, and payers. They also viewed virtual services as an opportunity to generate revenue for activities that may not have been billable in the past.
such as a follow-up call from a physician or a video visit before refilling a prescription. Organizations in value-based contracts noted that virtual services were likely to enable them to better manage costs because they could deliver care more efficiently and simultaneously meet quality metrics.

**Goals for Virtual Primary Care Services**

The underlying financial motivation was seen across 3 goals that health care administrators described for their future use of virtual services: (1) optimizing medical care services; (2) enhancing the patient experience; and (3) increasing loyalty among patients (Table 2).

**Goal 1: Optimize Medical Care Services**

The core areas where administrators thought virtual services would succeed were: (1) treatment of minor acute illnesses; (2) behavioral health; (3) care coordination; and (4) care management; (5) follow-up visits; and (6) annual wellness visits (Table 3). Many services, such as behavioral health visits, were viewed as equally well (or better) suited for virtual versus in-person care were services that did not require physical exams. Administrators emphasized the importance of ensuring that the quality of patient care not be negatively impacted if the service were virtual. Table 3 provides rationale and examples for each area where virtual services were viewed as promising.

**Goal 2: Enhance the Patient Experience**

Administrators emphasized that virtual services should give patients more choice, reduce unnecessary travel time, and allow patients to access care conveniently (Table 4).

First, administrators described enhancing the patient experience by reducing the number of in-person visits. Follow-up appointments, including postoperative and chronic conditions management, were often described as appropriate for virtual settings. Administrators thought this could be especially useful for patients in rural areas or patients:

> In a rural community, patients really, you know, they like that not having to drive in and wait and make up ground and do this, it’s a much too much shorter quick a visit for them, so I think they enjoy that part and you know I think they really it’s worked out very well.

Second, administrators described how virtual platforms might increase patients’ access to services, especially outside of traditional business hours. For example, e-visits allowed patients to describe their symptoms and receive asynchronous care. In addition, virtual clinics could extend hours to make care more accessible.

> In fact, it’s a matter of well how do we meet the patients where they are? The 20 something year old who’s really healthy. How do we provide that virtual urgent care in the most simplest fashion possible? How do we make it as convenient 24 hours a day when that night shift worker gets off work, or when that day shift gets off work. We need to be able to provide convenient and accessible care and meet the patients where they are, which is on their mobile devices, which is on the go, which is synchronous as well as asynchronous.

**Goal 3: Increase Patient Loyalty**

Administrators viewed virtual services as an opportunity to strengthen relationships with patients and ensure patients would choose their organization for...
future care (Table 5). First, administrators aimed to engage with younger patients who have infrequent health care interactions because these patients may be more likely to seek future care with their care delivery system if they had prior experience with virtual services. Second, they wanted to compete with external virtual only services by highlighting the value of having both virtual and in-person services available within the same organization. Administrators highlighted the limits (and potential added costs to patients) for first seeking care with virtual-only services and then needing an in-person visit.

**Barriers**

Although most administrators were optimistic about the future of virtual services, they also expressed 2 key concerns. First, nearly all administrators noted that continued payment parity between virtual and in-person visits was a key concern. Several administrators noted

<table>
<thead>
<tr>
<th>Rationale for virtual approach</th>
<th>Quote</th>
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</thead>
<tbody>
<tr>
<td><strong>Treatment of Minor Acute Illnesses</strong></td>
<td>“so for pink eye it’s a structured questionnaire that kind of you know, describe your eye, describe the discharge, and it gives you options. You know any other symptoms and so you fill out this questionnaire, you can take a picture of your eyes and then send it [. . .] then goes to the nurse practitioner who reviews it [. . .] is able to then determine what the treatment would be so in the case of pink eye, if it’s clearly pink eye, then you know, being able to just provide that antibiotic prescription through e-prescribing and then close the loop with the patient to go pick up the medication at the pharmacy always kind of the purpose that that patient did not have to talk to anybody to get their care taken care of.”</td>
</tr>
<tr>
<td><strong>Behavioral Health</strong></td>
<td>“Our [behavioral health] therapists are doing 100% virtual care, right now, still now and they report that it’s a very successful, you know, tool for them.”</td>
</tr>
<tr>
<td><strong>Care Coordination</strong></td>
<td>“On a zoom call with the consultant, and the patient in the room and, you know, often the patient will go to the [specialist] visit and they’ll tell you something and then you know you might get a note and you might have questions, and you know being on the call and getting paid to be on the call for what you’re doing. You know, encourages you to do that stuff and you know you get much better patient care when you’re actually collaborating together rather than through letters or emails or things like that.”</td>
</tr>
<tr>
<td><strong>Care Management</strong></td>
<td>“I also think that some of our support and ancillary services will use telehealth also as another way to connect with their patients in care coordination”</td>
</tr>
<tr>
<td><strong>Follow-up Visits</strong></td>
<td>“My plan in the future is to do, alternating telehealth and in person visits, so that that yeah and because of the distance to travel and things like that in a rural community patients really they know they like that not having to drive in and wait and make up ground and do this it’s a much too much shorter quick a visit for them.”</td>
</tr>
<tr>
<td><strong>Annual Wellness Visits</strong></td>
<td>“they [Medicare wellness visits] really lend themselves to telehealth because one they can be done with a nurse practitioner, and that allows the nurse practitioner […] because they can’t lay hands on the patient into because it’s really focused on preventive. And wellness questions to ensure that their visit does not convert to a diagnostic visit, which is so easy to do when you’re talking to patients with comorbidities.”</td>
</tr>
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Abbreviations: EHR, Electronic health record.

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Administrators described efforts to improve patients’ access to care through:

- Virtual urgent care services to allow patients increased access to care for acute needs.
- Asynchronous e-visits where patients complete symptom-specific questionnaires and then receive a diagnosis and appropriate treatment.
- Blending follow-up schedules (e.g., mix of in-person and virtual).

“We have an urgent care telehealth service. It dominated, 3:1 ratio, female to male. It is dominated by 20, 30, and 40-year-old women. That’s who is using it. It makes complete sense. The hours that they want it are completely different hours than what traditional services are. They want the service at 6:00 or 7:00 in the morning because they need to know first thing in the morning, not waiting until 9:00. It’s everything Starbucks has always known.”

“Well, this patient is due for an A1C, but we haven’t actually seen them in two years. So let’s make sure that we outreach to them. And then that conversation’s a lot easier because we can say, ‘Hey, well, we do have telehealth available.’”

Administrators aimed to make care more convenient via:

- Video appointments to reduce travel burden (which may be particularly useful in rural areas).
- Expanded hours through virtual care (e.g., allowing patients to seek care on their schedule).

“How do we provide that virtual urgent care in the most simplest fashion possible? How do we make it as convenient 24 hours a day when that night shift worker gets off work, or when that day shift gets off work. We need to be able to provide convenient and accessible care and meet the patients where they are, which is on their mobile devices, which is on the go, which is synchronous as well as asynchronous.”

“However, we need to be thinking about it as a tool to truly be able to deliver on that 24/7 care so one of the things that we have been working with our teams for is to say your traditional clinic is open from 8 to 5 and the majority of individuals are working at those same hours, so how do we meet consumer demand as more of a 24 seven approach, because you know when you are seeking care.”

<table>
<thead>
<tr>
<th>Increase Access to Care</th>
<th>Improve Convenience of Care</th>
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<tbody>
<tr>
<td>Administrators described efforts to improve patients’ access to care through:</td>
<td>Administrators aimed to make care more convenient via:</td>
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<td>• Asynchronous e-visits where patients complete symptom-specific questionnaires and then receive a diagnosis and appropriate treatment.</td>
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</tr>
<tr>
<td>• Blending follow-up schedules (e.g., mix of in-person and virtual).</td>
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Abbreviations: A1C test, also known as the hemoglobin A1C or HbA1c test is a simple blood test that measures your average blood sugar levels over the past 3 months.

that if the current reimbursement rates were to decrease, they may not be able to provide virtual visits. As 1 administrator explained:

“We need coverage and payment parity. If they cover it in the office, they should cover it at home. Whatever they pay for that service, they should pay the same at home. [... ] The challenge is there’s a misconception that telehealth is cheaper for the health system to provide than in-person care, when it’s actually the opposite, and it will be for some years.”

Administrators emphasized that offering virtual services often required upfront costs (purchasing new software and equipment, providing technical assistance, and training staff) and that the costs per visit often remained the same as most organizations were still using staff members, such as nurses and medical assistants, during the visit.

Second, administrators were concerned that the currently relaxed regulations around virtual services would be tightened. The perceived instability in requirements and the variability between payers made administrators nervous about investing in new and innovative programs. One administrator explained this concern when discussing a proposed policy change:

“We have a payment parity bill that’s going [...] through our state senate. They just threw in an amendment, which I’m very much hoping that gets thrown out because it’s ludicrous, saying, ‘If you’re doing telehealth, you must offer the patient the option of... if they see a nurse practitioner, you must give them the option of seeing a physician.” I’m like, “Are you kidding me? I mean, we don’t even do that in person.”

Discussion

The health care industry has a long-held reputation as being hard to disrupt, slow to change, and difficult to transform. Innovations that require adapting care delivery workflows within care teams are particularly challenging to implement. But the COVID-19 pandemic illustrated that rapid health care transformation is possible. Although initial changes were implemented out of necessity, sustained adoption and further innovation within health care delivery will be a choice. Our interviewees offer a glimpse into the roles administrators at health care organizations anticipate for virtual services. No administrators thought that health care delivery would completely return to pre-pandemic patterns. Roughly half of administrators predicted that virtual services will contribute to major shifts in the future of care delivery across settings.

So, what might the future hold? Administrators emphasized that unlike pre-COVID virtual services that were mostly tethered to specialists, such as tele-stroke services, some primary care visits could be especially well-suited for virtual formats.
Virtual care services could mitigate well-known care delivery challenges such as labor shortages and uneven labor distribution across geographies, coordinating care across care settings, and expanding access to behavioral health. For example, even before the pandemic, behavioral health was thought to be potentially well-suited for virtual formats. Virtual behavioral health services could reduce disparities in patient access to care due to the uneven distribution of clinicians. As a second example, care coordination is considered a foundational pillar of high-quality primary care yet has been challenging to achieve. When a primary care team member can virtually attend a specialist visit with their patient, this shared experience can ensure that everyone – primary care, specialists, and the patient – is included in comprehensive care planning. Whereas primary care teams often communicated with patients via telephone before the pandemic (eg, providing test results), virtual care regulations could enable providers to bill for these interactions.

Inspired by patient feedback during the pandemic, administrators considered how to make primary care services more attractive to patients. This pushed health care to be more like other service industries, where patients have greater control over how they interact with and access care. A recent survey found that 97% of American adults own a cellphone and 85% own a smartphone, suggesting that most patients could access virtual services, if that was their preference. Not only were administrators aligning service options with patients’ preferences, but they aimed to improve the experiences of care team members (eg, increasing patient access while reducing clinician on-call hours). Administrators wanted to build a health care delivery system that was all-inclusive and incentivized patients to receive all their care within that delivery system. The result then would be to improve the financial viability of the delivery system through increased market share, reduced patient churn, and enhanced competitiveness with nontraditional health care organizations. Further, administrators felt that this tightening of their connections with patients, across the lifespan, would improve outcomes.

As health care organizations explore the future of virtual care services, they need support from regulators and payers that incentivizes them to both implement and strengthen innovations. Regulatory barriers have been well-documented by others, including rules against practicing across state lines, poor reimbursement for care coordination, lack of payment
parity for virtual services,52 and inconsistency across payers.52,53 As states return to prepandemic licensing rules, for instance, some patients are driving across state lines for virtual visits.54 A National Academies of Sciences, Engineering, and Medicine report recently advocated permanently adopting the changes made during the pandemic.55 Until final regulatory decisions are made, health care delivery systems are in a holding pattern. Administrators are not confident enough about payment to make significant investments in virtual services, but they simultaneously worry they will lose the ability to compete in the growing virtual care market that is filled by non-traditional players, including organizations like Teladoc,56 Amazon Care,57 and others.58 One risk is that the virtual models that are easiest to implement (eg, have the fewest regulatory barriers) will be sustained, even if those services are relatively low-value. This may exacerbate disparities in access to care59-62 – for example, some patients may not be able to access all care options due to regulation (eg, requiring use of specific encrypted platforms rather than phones) and may need to access care via ways that are not aligned with their preferences and perhaps not as high-value. Whereas administrators emphasized that they would only offer virtual services when of comparable quality to in-person services, policy makers should facilitate monitoring outcomes by modality to ensure quality is maintained.

Our study has several key limitations. First, as a qualitative study, these findings are not meant to be generalized to all health care organizations. Rather, findings provide context to help guide payers, policy makers, and others as they consider the future of virtual care. Further, our qualitative sample is limited. For example, we excluded federally owned health care organizations (such as Veterans Affairs or Indian Health Services). Our sample did not include many independent practices. Although our study included several organizations with a safety net component (ie, FQHCs), we likely did not capture the specific issues faced by safety net organizations. Our study, with 17 participating organizations, was not designed to facilitate comparisons between different types of organizational characteristics. In addition, our interviews were conducted with health care administrators. Administrators have significant influence over the development and direction of organizational policies and were best positioned to discuss the organizational approach to virtual care as well as the business challenges. More practice-oriented stakeholders, such as physicians or other care team members, may have differing views on the future of virtual services. In addition all participating organizations had adopted some level of new virtual care services, though research shows that adoption of virtual services has not been universal.1,63 These organizations may fundamentally differ from organizations that did not adopt virtual care services during the pandemic. Finally, interviews were conducted during the spring of 2021, when many individuals were getting vaccinated and before later waves of the COVID-19 pandemic, which may impact how administrators viewed the potential of virtual primary care services.

Virtual care services hold the potential for a win-win-win for patients, care teams, and delivery systems. Yet without regulatory and reimbursement decisions that advance virtual services, high quality, sustainable virtual service models may not come to fruition. Although rife with challenges, virtual care offers an opportunity for regulators, policy makers, and payers to invest in technological advancements that can strengthen primary care service delivery.

To see this article online, please go to: http://jabfm.org/content/35/3/527.full.

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Appendix

Appendix Table 1. Interviewee Types

<table>
<thead>
<tr>
<th>Interviewee Categories</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Leader*</td>
<td>Individuals primarily responsible for overseeing the operations</td>
<td>Chief Executive Officer,</td>
</tr>
<tr>
<td></td>
<td>of the entire organization</td>
<td>Chief Clinical Officer,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chief Innovation Officer</td>
</tr>
<tr>
<td>Program Management Staff</td>
<td>Individuals who oversee specific departments or services</td>
<td>Program Manager, Program Director</td>
</tr>
<tr>
<td>Practicing Clinician</td>
<td>Individuals whose primary role was the provision of medical care</td>
<td>Physician</td>
</tr>
</tbody>
</table>

*Many executive leaders were also trained clinicians. If they had a clinical degree, but spoke primarily about the administrative role, we denoted this by adding their degree type after executive leader.
<table>
<thead>
<tr>
<th>Organization</th>
<th>Interviewee 1 Role(s)</th>
<th>Interviewee 2 Role(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Executive Leader and Practicing Physician</td>
<td>n/a</td>
</tr>
<tr>
<td>2</td>
<td>Executive Leader and Practicing Physician</td>
<td>n/a</td>
</tr>
<tr>
<td>3</td>
<td>Executive Physician Leader</td>
<td>Program Management Staff</td>
</tr>
<tr>
<td>4</td>
<td>Executive Physician Leader</td>
<td>Program Management Staff (PharmD)</td>
</tr>
<tr>
<td>5</td>
<td>Executive Leader</td>
<td>Practicing Physician</td>
</tr>
<tr>
<td>6</td>
<td>Executive Physician Leader</td>
<td>n/a</td>
</tr>
<tr>
<td>7</td>
<td>Practicing Physician</td>
<td>n/a</td>
</tr>
<tr>
<td>8</td>
<td>Program Management Staff</td>
<td>n/a</td>
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<tr>
<td>9</td>
<td>Executive Leader</td>
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<tr>
<td>10</td>
<td>Executive Leader</td>
<td>Program Management Staff (RN)</td>
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<tr>
<td>11</td>
<td>Executive Physician Leader</td>
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<tr>
<td>12</td>
<td>Program Management Staff</td>
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<td>13</td>
<td>Executive Leader</td>
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<tr>
<td>14</td>
<td>Executive Leader</td>
<td>n/a</td>
</tr>
<tr>
<td>15</td>
<td>Executive Leader and Practicing Physician</td>
<td>n/a</td>
</tr>
<tr>
<td>16</td>
<td>Executive Physician Leader</td>
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</tr>
<tr>
<td>17</td>
<td>Executive Physician Leader</td>
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### Appendix Table 3. Organizational Characteristics

<table>
<thead>
<tr>
<th>Number</th>
<th>Region</th>
<th>Organization Type*</th>
<th>Composition</th>
<th>Ownership**</th>
<th>Rurality***</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>West</td>
<td>Practice (Fed. qual. health center (FQHC))</td>
<td>1 practice</td>
<td>Independent</td>
<td>Rural</td>
</tr>
<tr>
<td>2</td>
<td>West</td>
<td>Multi-practice physician organization, including FQHCs</td>
<td>&lt;10 practices</td>
<td>Independent</td>
<td>Rural</td>
</tr>
<tr>
<td>3</td>
<td>West</td>
<td>System, includes FQHCs</td>
<td>&lt;10 practices</td>
<td>Not applicable</td>
<td>Urban</td>
</tr>
<tr>
<td>4</td>
<td>Northeast</td>
<td>System</td>
<td>10 to 50 practices</td>
<td>Not applicable</td>
<td>Urban, suburban</td>
</tr>
<tr>
<td>5</td>
<td>West</td>
<td>System</td>
<td>&lt;10 hospitals, &gt;100 practices</td>
<td>Not applicable</td>
<td>Mix</td>
</tr>
<tr>
<td>6</td>
<td>South</td>
<td>System</td>
<td>10 to 50 practices</td>
<td>Not applicable</td>
<td>Mix, largely rural</td>
</tr>
<tr>
<td>7</td>
<td>Northeast</td>
<td>Practice</td>
<td>1 practice</td>
<td>System</td>
<td>Rural</td>
</tr>
<tr>
<td>8</td>
<td>Northeast</td>
<td>System including critical access hospitals (CAHs)</td>
<td>&gt;10 hospitals, &gt;100 practices</td>
<td>Not applicable</td>
<td>Mix</td>
</tr>
<tr>
<td>9</td>
<td>South</td>
<td>System, includes CAHs and FQHCs</td>
<td>&gt;10 hospitals, &gt;100 practices</td>
<td>Not applicable</td>
<td>Mix</td>
</tr>
<tr>
<td>10</td>
<td>Northeast</td>
<td>Multi-practice physician organization, including FQHC</td>
<td>&lt;10 practices</td>
<td>Independent</td>
<td>Rural</td>
</tr>
<tr>
<td>11</td>
<td>West</td>
<td>System</td>
<td>&lt;10 hospitals, 10 to 50 practices</td>
<td>Not applicable</td>
<td>Mix</td>
</tr>
<tr>
<td>12</td>
<td>West</td>
<td>System</td>
<td>&lt;10 hospitals, 10 to 50 practices</td>
<td>Not applicable</td>
<td>Urban</td>
</tr>
<tr>
<td>13</td>
<td>South</td>
<td>System</td>
<td>&lt;10 hospitals, &gt;10 practices</td>
<td>Not applicable</td>
<td>Mix</td>
</tr>
<tr>
<td>14</td>
<td>Midwest</td>
<td>Multi-practice physician organization</td>
<td>&lt;10 practices</td>
<td>Independent</td>
<td>Suburban</td>
</tr>
<tr>
<td>15</td>
<td>Northeast</td>
<td>System, includes FQHC</td>
<td>&lt;10 hospitals, 50 to 100 practices</td>
<td>Not applicable</td>
<td>Urban</td>
</tr>
<tr>
<td>16</td>
<td>Midwest</td>
<td>System, includes a CAH</td>
<td>&lt;10 hospitals, 50 to 100 practices</td>
<td>Not applicable</td>
<td>Mix</td>
</tr>
<tr>
<td>17</td>
<td>Northeast</td>
<td>System</td>
<td>&lt;10 hospitals, &gt;100 practices</td>
<td>Not applicable</td>
<td>Urban, suburban</td>
</tr>
</tbody>
</table>

*For practices and multi-site physician organizations, we noted if they were an FQHC. For systems, we noted if the system included FQHCs or CAHs, but this was not a focus area of our interviews.

**We only included ownership for practices. None of the included systems were federally owned.

***Many systems covered large geographic areas and includes practices in a mix of rural, suburban, and urban areas.
## Appendix Table 4. Interview Guide Domains and Probes

**Organizational Structure**
- Overview of organization (size, leadership)
- Overview of patient population
- Community approach to COVID-19 pandemic

**Virtual Care Implementation**
- Prior programming?
- Modality (phone, video)
- Role of care teams

**Patient Reaction and Engagement**
- Uptake
- Patient challenges with use
- Concerns from patients

**Financial impacts**
- Reimbursement
- Provider productivity

**Questions for leaders**
- Strategy
- Achieve and maintain clinician buy in
- Changes to approach during pandemic

**Questions for clinicians**
- Experience and views of virtual care
- Relationships with patients

**Patients without access**
- Internet connectivity
- Hearing or vision impairment
- Privacy

**Patients with social needs**
- Seeing into homes

**Care management**

**Clinic transformation**
- Lessons we can learn from virtual care

**Other changes due to COVID?**
- What will stay/go?

**Next steps?**
- Plans to keep any virtual care services?
- Support needed from policymakers
- Process of returning to in-person
- Will virtual care be part of healthcare forever now?
- What role will virtual care have in 2023? (post-pandemic)