

# Landscape of Telehealth Adoption and Barriers in Utah

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## EXECUTIVE SUMMARY

Telehealth is a broad application of technology services that support patient care directly or indirectly. As technology improves, so does the adoption of telehealth in clinical settings. While it is clear the COVID-19 pandemic rapidly increased the use of telehealth throughout the United States, including Utah, the full landscape of telehealth adoption and the barriers faced by telehealth users in clinic settings in Utah remains unclear.

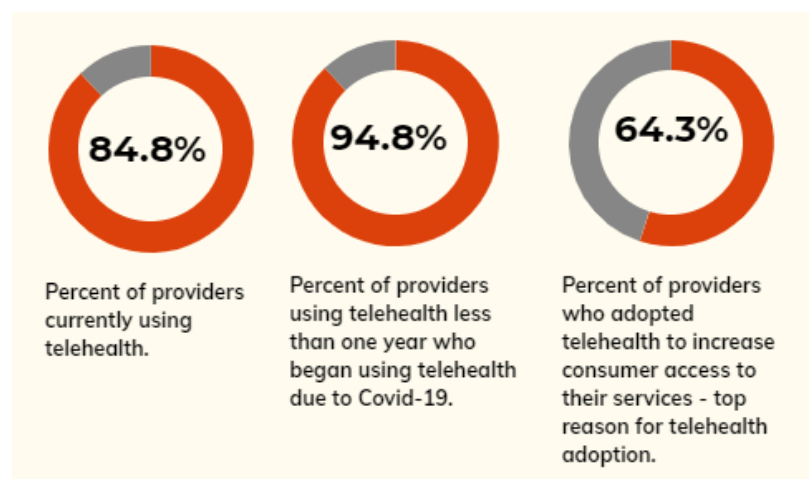
To understand the current landscape of telehealth adoption, and in particular the barriers facing providers and administrative staff when implementing telehealth, the Utah Department of Health (UDOH) conducted an assessment of clinical providers across various clinic settings. The assessment was distributed in November 2020 to physicians, nurse practitioners, physician assistants, psychologists, and substance use disorder counselors, as well as primary care administrators.

The assessment addressed the following topics: telehealth use status (current user, not yet adopted, will never use telehealth), reason(s) for adopting or not adopting telehealth, perceptions of barriers faced by patients for using telehealth, and barriers faced by providers for adopting/using telehealth.

Most Utah providers and administrators currently use telehealth. Of those who use telehealth, more than 68% of providers and 100% of primary care clinic administrators began using telehealth services due to COVID-19. Providers and primary care administrators consistently highlighted the current scope and parameter limitations of telehealth services, reimbursement, internet bandwidth, software issues, and mobile device compatibility as some key barriers to telehealth adoption.

This survey may help inform public health, health systems, nonprofits, health plans, and other partners in strategy development to strengthen telehealth services in Utah.

### Key findings from providers



## BACKGROUND

The use of telehealth in the United States is not a novel concept. As technology changes, so does the delivery of medicine. Some research indicates early adoptions of “telehealth” began no later than the 1950s and 1960s, and perhaps earlier (Chen et al., 2020). It is important to distinguish between “telehealth” and “telemedicine.” While specific definitions can be elusive, telemedicine refers to the clinical use of technology to provide care, and more specifically, “any system in which the doctor and the patient are at different locations.” Telehealth is broader in context and can include telemedicine as well as “a broad range of health-related activities, including patient and provider education, and health services administration - as well as patient care” (Lustig, 2012; Bashur et al., 2000). For the purpose of this paper, telehealth is used to capture the broad array of activities the term incorporates.

According to the American Hospital Association, in 2017, more than 76% of hospitals in the United States connected patients and consulting providers through the use of video and other technology (American Hospital Association, 2017). However, the scope of telehealth use outside hospital settings, and even among specialties and services within hospitals, is unclear. As a result of the COVID-19 pandemic, many health systems, clinics, and outpatient services adopted telehealth, but the scope of the adoption of telehealth has yet to be fully documented in Utah (Moore & Munroe, 2021).

Telehealth has the potential to improve patient outcomes. For example, a systematic review found telehealth has shown improvement in a variety of health conditions including breast feeding, perinatal smoking cessation, and obstetric outcomes (DeNicole et al., 2020). Additionally, studies found telehealth can help improve outcomes for patients with diabetes compared to traditional in-person management activities (Wu et al., 2018). Not only can patients be successfully treated through telehealth, but self-management education can also be successful in telehealth formats, including education for diabetes, chronic obstructive pulmonary disease, irritable bowel syndrome, heart failure, and others (Rush et al., 2018; Totten et al., 2016). Given the rise in chronic disease burden which impacts both morbidity and mortality in the United States as well as in Utah, consideration of telehealth as a long-term option for patients and providers is of growing interest to public health and healthcare experts. Despite these benefits, barriers to telehealth are important factors in the decision of whether a healthcare clinic will adopt telehealth and may also impact the outcomes of telehealth visits. Studies have started identifying barriers which include reimbursement, staff training, and scope of telehealth practice (Brooks et al., 2013; Gajarawala & Pelkowski, 2021). However, a full analysis of barriers faced by telehealth providers remains elusive.

To support statewide organizations in understanding the current adoption of and barriers to telehealth, in November 2020, the Utah Department of Health (UDOH) sent a survey to administrators in primary care clinics and licensed clinical providers, to broadly assess the current adoption of telehealth in Utah. The assessment explored the perspective of all Utah clinical providers regardless of setting, as well as primary care clinic administrators, because the barriers for administrative adoption may be different from those faced by providers who work directly with patients during telehealth visits.

The goal was to identify barriers to the adoption of telehealth and to share those results with external partners to help identify opportunities to reduce barriers to telehealth adoption.

## METHODS

### SURVEY DEVELOPMENT

A team of professionals across various healthcare systems, nonprofits, and public health entities developed survey questions to inform state-specific data gaps.

The survey was designed using skip logic to allow for different tracks as well as sub-tracks to capture the current landscape of telehealth use and barriers faced by users. The skip logic identified the following types of telehealth users:

- Clinical providers currently using telehealth (Current users)
- Clinical providers not currently using telehealth
  - Interested but not yet using (Potential user)
  - No intention to ever use telehealth (Never user)
- Clinic administrators whose clinic uses telehealth (Current users)
- Clinic administrators whose clinic does not use telehealth
  - Interested but not yet using (Potential user)
  - No intention in ever using telehealth (Never user)

To understand barriers, perceptions, and opportunities for interventions, providers and administrators had unique tracks in the survey. This allowed for tailored questions and the opportunity to assess differences in responses between providers and administrators. Providers were asked to respond to questions from their experience as a clinical provider. Administrators, who only represent clinics in primary care settings, were asked to review each question from a clinic-wide perspective, from the perspective as an administrative staff member who helps to support telehealth. For example, when asked about barriers faced with adopting telehealth, they were asked about administrative barriers, whereas providers were asked about their direct application of telehealth with patient care.

Additionally, administrators were asked to consider their clinic as a telehealth user if at least one provider in their clinic utilized telehealth services.

### PARTICIPANTS

There were two intended audiences for this project: health clinic administrators and clinical providers. UDOH partnered with the Utah Division of Occupational and Professional Licensing (DOPL) to obtain a list of providers. DOPL identified the following provider types for this survey:

- Physician and Surgeon (N =11,300)
- Osteopathic Physician and Surgeon (N = 1,300)
- Physician Assistant (N = 1,900)
- Podiatric Physician (N = 231)
- Psychologist (N = 1078)
- Substance Use Disorder - Licensed Advanced SUDC (N = 150)

- Substance Use Disorder - Certified Advanced SUDC (N = 257)
- Advanced Practice Registered Nurse (N = 3,500)

To obtain a list of clinical administrators, the team used a previously existing comprehensive list of primary care administrators. A single administrator and email address were identified for each known primary care clinic in Utah for the purpose of this survey (N=295).

## **DISTRIBUTION**

In November 2020, DOPL, on behalf of UDOH, emailed the survey to 18,529 clinical providers. Additionally, UDOH sent an email to 295 primary care clinic administrators. The email included an invitation to participate with a survey link embedded in the body of the email. As an incentive for participation, a limited number of participants were eligible to receive a gift card, selected by random drawing at the conclusion of the survey. Responses were collected with Qualtrics software. The survey was open for responses for a total of 21 days. To ensure a higher response rate, two weeks after the initial email, UDOH sent a reminder email to encourage participants to take the survey. Recipients were not asked to list the name of their clinic or health system to ensure anonymity.

## **DATA ANALYSIS**

Data analysis was conducted using SAS 9.4 and Microsoft Excel 2019. A comprehensive list of all reference tables are included in Appendix A. Cross tabulations were performed to further understand responses of Users, Non-Users and Never-Users as well as differences between administrators and providers. Many questions in the assessment allowed respondents to “select all that apply.” For these questions, the analysis includes all options selected by each unique user. The percentage breakdown represents the percentage of unique users who answered each question.

## **ETHICAL CONSIDERATIONS**

This study protocol was ruled exempt by the UDOH Institutional Review Board.

## **RESULTS**

### **RESPONSES**

A total of 1,763 recipients, administrators, and providers combined, participated in the survey for an estimated response rate of 9.5%. The exact response rate is unknown, due to the method of email transmission, as many emails bounced or were incorrect, and therefore the true response rate was likely higher.

DOPL’s clinic provider list includes all licensed providers in the state, regardless of where the provider is physically located and irrespective of the provider’s active status as a provider. For the purpose of analysis, only clinic providers and administrators physically located in Utah and only survey respondents who answered questions beyond basic demographic questions

were considered. These criteria resulted in 1,060 clinical providers and 75 primary care administrator responses for analysis. However, responses were not required, so respondents may have skipped questions.

Survey respondents were not asked to name their clinic affiliation(s), which limited the ability to make direct connections to specific health systems or clinics and results. Because Utah's largest two healthcare systems, University of Utah Health and Intermountain Healthcare, also have robust telehealth services, results may be influenced by whether the respondent is affiliated with one of these systems or with other larger systems in the state, but it is difficult to make any conclusions related to specific clinics or systems based on the data.

## **DEMOGRAPHICS (TABLES 1 & 2)**

A total of 1,135 respondents completed the demographics section. Of them, 1,060 identified as providers and 75 identified as clinic administrators. A majority of respondents indicated their physical practice locations were in Salt Lake County (52.9%) followed by Utah County (15.1%), Davis (8.6%), and Weber (5.4%). In total, 26 of 29 Utah counties received at least one response, with Daggett, Piute, and Wayne counties not receiving responses. However, the three unrepresented counties have very small populations with limited healthcare providers. These data combined providers and administrators. Respondents who identified as providers were mostly physicians (52.2%), nurse practitioners (22.1%), and physician assistants (14.4%). Of the 75 respondents who identified as administrators, clinic owners account for 20.0% and executives (director, CEO, CFO, etc.) account for 22.7%. Other professions included office managers (41.3%) and other administrator/manager (16.0%).

Participants represent a variety of clinic types including primary group practice with more than two physicians (24.3%), university-based practice (21.9%), hospital-based practice (19.2%), solo or two-provider practice (18.8%), and community health centers (5.3%). In addition, a majority of providers (60.0%) were between the ages of 30-49 and a majority of administrators (82.7%) were between the ages of 40 and 59.

## **CURRENT ADOPTION OF TELEHEALTH**

A majority of respondents currently use telehealth: 899 providers currently use telehealth (84.8%). Among providers not currently using telehealth (161 providers), 47.2% indicated they are interested in adopting telehealth in the future and 52.8% indicated they will not adopt telehealth.

Meanwhile, 66 (88.0%) administrators work in clinics that adopted telehealth and five (6.7%) administrators work in clinics that are interested in telehealth adoption. An additional four administrators (5.3%) have not considered and/or do not know enough about telehealth to determine if they should adopt telehealth. No administrators indicated they are uninterested non-users.

## **CURRENT USERS—WHY THEY ADOPTED TELEHEALTH (TABLE 3)**

Among those currently using telehealth, respondents were asked to select all the reasons they chose to adopt telehealth. A majority of respondents indicated they adopted telehealth to increase consumer access to their services, with 58.9% of administrators and 64.3% of providers selecting this response. Providers also highlighted enhanced reach of their healthcare services and coverage (47.1%), increased patient satisfaction (36.6%), and improved health outcomes (30.7%) as reasons for telehealth adoption.

Administrators highlighted enhanced reach of healthcare services and coverage (28.57%), improved health outcomes (28.6%) and increased patient satisfaction (26.8%) as top reasons to adopt telehealth.

#### **POTENTIAL USERS—WHY THEY INTENDED TO NOT USE TELEHEALTH (TABLE 4)**

Concerns with technology (43.1%) and reimbursement (43.1%) for telehealth services were both cited as reasons providers did not adopt telehealth. Among administrators, liability concerns (80.0%) and meeting HIPAA compliance (60.0%) were the most frequent response for not adopting telehealth.

#### **NON-USERS—REASONS THEY WILL NOT ADOPT TELEHEALTH (TABLE 5)**

Among providers who indicated they will likely never implement telehealth indicated that the primary reason for this decision is their clinical services were not appropriate for telehealth services (62.9%). Providers who selected this response included ophthalmology, emergency department, psychiatric hospitals, neuropsychology, general surgery, urgent care, podiatric medicine and surgery, and anesthesiology, among others.

#### **BARRIERS FACED WHEN ADOPTING TELEHEALTH**

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This project was particularly interested in identification of barriers to telehealth in various clinical settings. Therefore, multiple cross-tabulations were conducted to understand the barriers faced by providers and administrators.

#### **BARRIERS SUMMARIZED (TABLES 6-9)**

When asked to report all barriers faced in telehealth implementation, providers and administrators across all ages, specialties, and clinic types most frequently indicated the current scope and parameter limitations of telehealth. Reimbursement, mobile device compatibility, internet bandwidth, and software issues were also consistently highlighted as barriers to successful telehealth adoption among both groups.

Among administrators aged 30-39, mobile device compatibility was indicated as a barrier for only 20.0% of respondents, whereas 50.0% of administrators aged 50-59 indicated mobile device compatibility was a barrier.

#### **BARRIERS RELATED TO REIMBURSEMENT**

Administrators identified inconsistent reimbursement among payers as a major challenge. Administrators identified coding for reimbursement (46.0%) and restrictions from insurance are major challenges (64.0%).



These challenges were reinforced by providers: 73.4% indicated inconsistency in reimbursement among payers was a major challenge; 30.4% of providers indicated one or more of the telehealth services they provide to patients are not reimbursable; and 57.4% of providers identified restrictions from patient insurance as barriers related to reimbursement.

### **STAFF PERCEPTION FOR PATIENTS (TABLE 10)**

In addition to barriers faced by providers, patients, too, likely experience barriers when using telehealth. While this survey did not target patients, the questionnaire did attempt to understand patients indirectly by asking providers and administrators. To shed light on patient perceptions, providers and administrators were asked to indicate barriers they thought their patients faced when using telehealth. Respondents indicated difficulty with technology (71.9% and 76.9% of administrators and providers, respectively) was the most common barrier faced by patients. Additionally, lack of patient buy-in/preference for in-person visits was a perceived barrier by 40.4% and 36.8% of administrators and providers, respectively.

### **TYPES OF CARE PROVIDED USING TELEHEALTH (TABLE 11)**

Providers indicated they engage in the following types of patient care: patient follow-up (67.4%), other chronic disease management (55.0%), and mental health treatment (49.4%).

Providers also indicated they provide acute care, COVID-19 related issues, routine care/wellness visits, and substance abuse treatment. Emergency care was the least common type of care reported (8.3%). Meanwhile, mental health was identified by 68.2% of administrators, followed by patient follow-up (62.1%), and “other” chronic disease management (48.5%). Note: “Other” chronic disease management refers to chronic disease management and/or diagnosis other than hypertension and diabetes.

### **HYPERTENSION AND DIABETES**

UDOH was particularly interested in exploring whether telehealth was used for hypertension and diabetes management and education; two primary causes of death and morbidity in Utah.

Respondents indicated telehealth is used to diagnose, manage, and educate patients with regard to hypertension and diabetes. Approximately 30% of providers indicated they provide hypertension diagnosis and management through telehealth, and approximately 27% provide diabetes diagnosis and management.

### **LENGTH OF TIME TELEHEALTH HAS BEEN IN USE (TABLES 12-15)**

A majority of providers (74.0%) have been using telehealth for less than one year. Among those providers, 94.8% indicated they started using telehealth due to COVID-19.

Similarly, a majority of administrators indicated their clinics have been using telehealth for less than one year, and 100% of those implementing within the past year adopted telehealth due to COVID-19.

## CONCLUSION

Not surprisingly, the COVID-19 pandemic significantly increased the number of providers and clinics adopting telehealth; more than 68% of providers and 100% of administrators began using telehealth due to the pandemic. While adoption has increased, barriers remain for those currently using telehealth. Addressing those barriers may enhance the value and outcomes of telehealth appointments. For example, reimbursement remains a barrier for more than 36% of providers. Among those who reported reimbursement challenges, nearly 46% of administrators and more than 64% of providers indicated inconsistency in reimbursement is a major barrier. State laws that enhance reimbursement rates and streamline the types of telehealth services eligible for reimbursement may reduce the burdens reported by users.

Additionally, laws, regulations, and policies to better define the parameter and scope of telehealth services is a key area that needs attention in Utah, reported by more than 50% of administrators and more than 60% of providers. Further, telehealth use for provider and patients would be enhanced with improved internet access (bandwidth).

Among those not using telehealth, education and support to those providers may be meaningful, as a majority of never users indicated they feel telehealth is inappropriate for their patients. Education to increase awareness about the extent to which telehealth can be used for various diagnoses, treatment, and management of a variety of conditions may facilitate a shift toward telehealth.

Other opportunities include improvements in the telehealth process to make it easier for patients. While nearly 60% of administrators and more than 65% of providers initially adopted telehealth to increase access for consumers, patients experience significant barriers when using telehealth technology. More than 70% of providers and administrators indicated technology was a barrier for patients. Additionally, lack of patient buy-in/preference for in-person visits among patients was a perceived barrier by more than 40% of administrators and about 35% of providers. One way to support patients is to assign a team member to help troubleshoot technology issues with the patient prior to the physician, nurse practitioner, or physician assistant meeting with the patient. Clinics may also provide patient education about the value of telehealth, how it is used, how it can help the patient, and how to use the technology. Partnerships with public health, payers, and community health workers are also unique opportunities to improve the patient experience with telehealth.

However, it is important to note the limitations of this survey. The survey did not directly seek patient feedback, and as such, any considerations on patient perspectives must be made carefully. A follow-up survey to further examine patient experiences may be a meaningful exercise for a more complete picture of how to adapt to meet patient needs. Additionally, this survey was conducted in November 2020, nearly a full year prior to publication of this report, and the landscape of current use as well as barriers faced by providers may have changed substantially. Although the survey included a provider perspective and administrators, there are important considerations before comparing the two types of respondents. First, providers included all licensed physicians, nurse practitioners, physician assistants, among others, in the state of Utah—regardless of clinic/practice type, specialty, or hours worked. Administrators

included *only* those who work for a primary care clinic and who have been identified through other public health lists. As such, administrator responses are exclusive to a specific clinic type and setting, whereas providers represent all possible combinations of clinic type and type of care provided to patients. Finally, the survey was limited in its responses and received fewer than 10% of provider feedback. It is possible that those who responded were biased, in that they were either strong supporters or strongly against telehealth and its adoption in their practice, which may skew the results. As a result, any interpretation of these results must consider the limitations with regard to Utah providers and administrators.

APPENDIX: TABLES

**TABLE 1: DEMOGRAPHICS**

Demographics		
<b>Top 8 Counties</b> n=1135	Frequency	Percent
Salt Lake	600	52.86
Utah	171	15.07
Davis	96	8.46
Weber	61	5.37
Washington	55	4.85
Summit	31	2.736
Cache	25	2.2
Other	96	8.45
<b>Primary Role</b> n=1135		
Provider	1060	93.39
Administrator	75	6.61
<b>Provider Primary Role</b> n=1060		
Physician	553	52.17
Physician Assistant	153	14.44
Nurse Practitioner	235	22.17
Registered Nurse	2	0.01
Technician or Nursing Assistant	2	0.01
Other provider	115	10.85
<b>Administrator Primary Role</b> n=75		
Executive (Director, CEO, CFO, CMO, Hospital Administrator, etc.)	17	22.67
Clinic Owner	15	20.00
Office Manager	31	41.33
Other administrator or manager	12	16.00
<b>Clinic Setting</b> n=1135		
Outpatient setting	792	69.78
Both inpatient and outpatient settings	196	17.27

Inpatient setting	101	8.90
Other (please specify)	46	4.05
<b>Clinic Type n=1135</b>		
Primary group practice with more than two physicians	276	24.32
University-based practice	248	21.85
Hospital-based practice	218	19.21
Solo or two-provider private practice	213	18.77
Other (please specify)	120	10.57
Community Health Center (FQHC)	60	5.29

**TABLE 2: AGE OF ALL RESPONDENTS**

Age of Respondents (frequency)		
Age Groups	Admin	Provider
< 30 years	0	35
30-39 years	13	294
40-49 years	18	307
50-59 years	30	224
60 years or older	14	200
Total	75	1060

**TABLE 3: CURRENT TELEHEALTH STATUS FOR PROVIDERS AND ADMINISTRATORS**

Age of Respondents (frequency)		
Age Groups	Admin	Provider
Current User	66	899
Potential User	5	76
Never User	4	85
Total	75	1060

**TABLE 4: REASONS CURRENT USERS INITIALLY ADOPTED TELEHEALTH (SELECT ALL THAT APPLY)**

	Admin	% of admin	Providers	% of providers
Create value for payers, consumers, and providers	13	23.21	189	22.77
Increase consumer access	33	58.93	534	64.34
Reduce disparities of access to specialty care	10	17.86	241	29.04
Enhance reach of healthcare services and coverage	16	28.57	391	47.11
Reduce clinic costs	2	3.57	57	6.87
Increase patient satisfaction	15	26.79	304	36.63
Increase provider satisfaction	6	10.71	119	14.34
Improve patient health outcomes	16	28.57	255	30.72
Reduce patient re-hospitalization and/or ER visits	11	19.64	167	20.12
Competitive advantage	4	7.14	103	12.41
Other (Please Specify)	28	50.00	303	36.51
Total number of respondents	56		830	

**TABLE 5: REASONS POTENTIAL USERS (HAVE NOT YET ADOPTED BUT MAY IN THE FUTURE) HAVE NOT ADOPTED TELEHEALTH (SELECT ALL THAT APPLY)**

Non-adoption justification	Admin	% of admin	Providers	% of providers
Equipment availability	1	20.00	22	33.85
Equipment cost	1	20.00	19	29.23
Unsure what equipment is needed	0	0.00	25	38.46
Lack of provider buy-in	1	20.00	18	27.69
Lack of admin buy-in	1	20.00	22	33.85
Start-up cost	2	20.00	20	30.77
Projected ongoing costs	3	40.00	13	20.00
Staff requirements and/or turnover	2	60.00	14	21.54
Technology	3	40.00	28	43.08
Reimbursement	3	60.00	28	43.08
HIPAA compliance/Privacy concerns	4	60.00	18	27.69
Liability concerns	2	80.00	22	33.85
Licensure and/or credentialing issues	1	40.00	10	15.38
Other (Please Specify)	1	20.00	15	23.08
Total number of respondents	5		69	

**TABLE 6: REASONS NEVER-USERS (NOT USING AND HAVE NO INTENTION TO USE TELEHEALTH) HAVE CHOSEN NOT TO ADOPT TELEHEALTH (SELECT ALL THAT APPLY; FREQUENCY)**

Non-Adoption Justification	Admin	Providers
I still don't feel that I know enough about telehealth to pursue it	No Responses Recorded	4
My clinical services are not telehealth appropriate		34
Lack of administrator or provider "buy-in"		4
My patients would not benefit from telehealth services		8
Unable to find a telehealth vendor (service provider) to meet our needs		2
I am aware of reimbursement issues		10
Staffing requirements/Turn-over		0
My patients would not be interested in telehealth services		7
I am aware of licensing and credentialing issues		4
I do not have the authority to make those decisions in my clinic		10
Start-up cost		6
Ongoing cost		4
Other		14
Total number of respondents		



**TABLE 7: BARRIERS FACED BY CURRENT TELEHEALTH USERS (SELECT ALL THAT APPLY)**

	Admin	% of admin	Providers	% of providers
Staff turnover	2	3.57	65	7.64
Reimbursement	19	33.93	307	36.08
Privacy concerns	10	17.86	89	10.46
Lack of formal training	1	1.79	148	17.39
Provider or admin buy-in	1	1.79	61	7.17
Current telehealth scope or parameter limitations	28	50.00	531	62.40
Other	9	16.07	128	15.04
Bandwidth (Internet)	19	33.93	398	46.77
Mobile device compatibility	23	41.07	340	39.95
Browsers	8	14.29	123	14.45
Software issues	7	12.50	168	19.74
Other technology barriers	12	21.43	193	22.68
Total number of respondents	56		851	

**TABLE 8: BARRIERS FACED BY ADMINISTRATORS WHOSE CLINICS ARE CURRENT TELEHEALTH USERS, BY AGE (SELECT ALL THAT APPLY; FREQUENCY)**

	30-39 years	40-49 years	50-59 years	60 years or older
Staff turnover	1	1	0	0
Reimbursement	5	9	3	2
Privacy concerns	2	3	1	4
Lack of formal training	0	0	1	0
Provider or admin buy-in	0	1	0	0
Current telehealth scope or parameter limitations	7	9	7	5
Other	0	4	1	4
Bandwidth (Internet)	5	4	4	6
Mobile device compatibility	2	10	7	4
Browsers	0	3	2	3
Software issues	0	4	1	2
Other technology barriers	2	5	3	2
Total number of respondents	10	21	14	11

**TABLE 9: BARRIERS FACED BY PROVIDERS WHO CURRENTLY USE TELEHEALTH, BY AGE (SELECT ALL THAT APPLY; FREQUENCY)**

Barriers	< 30 years	30-39 years	40-49 years	50-59 years	60 years or older
Staff turnover	0	27	17	12	9
Reimbursement	10	91	104	53	49
Privacy concerns	5	25	30	20	9
Lack of formal training	7	53	41	28	19
Provider or admin buy-in	2	18	20	15	6
Current telehealth scope or parameter limitations	15	164	155	116	81
Other	2	34	37	27	28
Bandwidth (Internet)	14	126	129	75	54
Mobile device compatibility	13	102	92	69	64
Browsers	4	39	39	20	21
Software issues	5	46	52	35	30
Other technology barriers	7	40	53	54	39
Total number of respondents	26	242	256	180	147

**TABLE 10: BARRIERS FACED BY CURRENT TELEHEALTH USERS, BY PROVIDER TYPE (FREQUENCY)**

Barrier	Nurse Practitioner	Other provider	Physician	Physician Assistant
Staff turnover	8	4	36	17
Reimbursement	56	35	170	45
Privacy concerns	29	19	29	11
Lack of formal training	44	16	65	23
Provider or admin buy-in	20	3	32	6
Current telehealth scope or parameter limitations	142	36	269	83
Other	22	15	70	21
Bandwidth (Internet)	88	60	196	53
Mobile device compatibility	81	23	178	57
Browsers	30	9	6	20
Software issues	29	17	95	27
Other technology barriers	42	19	103	28
Total number of respondents	202	98	423	127

**TABLE 11: PERCEIVED PATIENT BARRIERS REPORTED BY ADMINISTRATOR AND PROVIDERS (SELECT ALL THAT APPLY)**

Barrier	Admin	% of admin	Providers	% of providers
Insufficient insurance coverage	15	26.32	202	23.79
Privacy concerns	7	12.28	78	9.19
Lack of buy-in/Prefer in-person visit	23	40.35	312	36.75
Difficulty with technology	41	71.93	653	76.91
Not sure	4	7.02	74	8.72
Other	5	8.77	70	8.24
Total number of respondents	57		849	

**TABLE 12: TYPES OF TELEHEALTH CARE USED, ACCORDING TO PROVIDERS AND ADMINISTRATORS (SELECT ALL THAT APPLY)**

Area	Admin	% of admin	Providers	% of providers
Hypertension diagnosis/management	21	30.30	263	30.02
Diabetes diagnosis/management	19	28.79	242	27.63
Other chronic disease diagnosis/management (please specify)	34	48.48	482	55.02
Emergency care	4	6.06	73	8.33
Urgent/acute care	28	40.91	324	36.99
Patient follow-up	42	62.12	590	67.35
Routine care/wellness visit	21	31.82	308	35.16
Mental health treatment	46	68.18	433	49.43
Substance abuse treatment	9	13.64	122	13.93
COVID-19	24	36.36	285	32.53
Other (please specify)	8	12.12	104	11.87
Total number of respondents	66		876	

**TABLE 13: LENGTH OF TIME CLINICS HAS BEEN USING TELEHEALTH, ACCORDING TO ADMINISTRATOR**

	Community Health Center (FQHC)	Hospital-based practice	University-based practice	Primary group practice with more than two physicians	Solo or two-provider private practice	Other (please specify)	Total	%
Less than 1 year	2	3	3	18	11	6	43	65.15
1–2 years	0	1	2	3	6	2	14	21.21
3–4 years	2	0	2	2	1	1	8	12.12
5 years or more	0	0	0	1	0	0	1	1.51

**TABLE 14: LENGTH OF TIME PROVIDERS HAVE BEEN USING TELEHEALTH BY CLINIC TYPE**

	Community Health Center (FQHC)	Hospital-based practice	University-based practice	Primary group practice with more than two physicians	Solo or two-provider private practice	Other (please specify)	Total	%
Less than 1 year	41	95	168	184	116	60	664	74.02
1–2 years	4	25	18	26	17	8	98	10.93
3–4 years	2	16	23	8	12	7	68	7.58
5 years or more	3	19	17	4	16	8	67	7.47

**TABLE 15: NUMBER AND PERCENTAGE OF ADMINISTRATORS WHOSE CLINICS BEGAN USING TELEHEALTH DUE TO THE COVID-19 PANDEMIC. NOTE: THIS QUESTION WAS ONLY ASKED TO THOSE WHOSE CLINICS HAVE BEEN USING TELEHEALTH FOR LESS THAN ONE YEAR.**

	Frequency	Percent
Yes	43	100.00
No	0	0.00
Total	43	100.00

**TABLE 16: NUMBER AND PERCENTAGE OF PROVIDERS WHO BEGAN USING TELEHEALTH DUE TO THE COVID-19 PANDEMIC. NOTE: THIS QUESTION WAS ONLY ASKED TO THOSE WHO HAVE BEEN USING TELEHEALTH FOR LESS THAN ONE YEAR.**

	Frequency	Percent
Yes	618	94.79
No	34	5.21
Total	652	100.00



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