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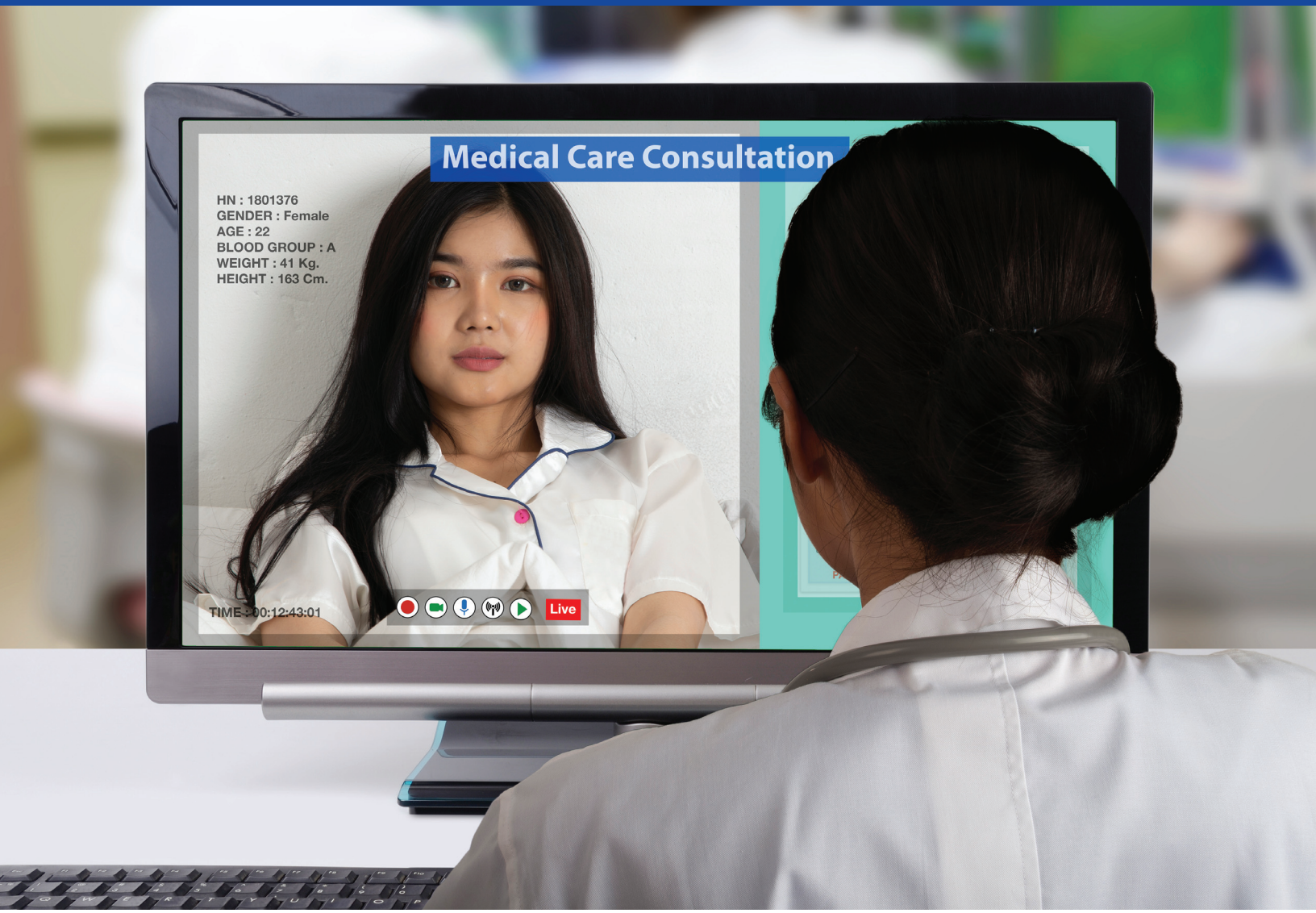

Understanding Technical Assistance Needs for Delivering Telehealth Services in New York State

CHWS
Center for Health Workforce Studies
School of Public Health
University at Albany, State University of New York

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October 2019

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PREFACE

There is growing recognition of the value of innovative strategies, including telehealth, to expand access to health care services for underserved patients. The Center for Health Workforce Studies (CHWS) has conducted 2 previous studies on the use of telehealth in New York State. In the first study, the report identified telehealth strategies used by health care providers in the state and key facilitators and barriers to the use of telehealth in service delivery. While providers generally agreed that telehealth applications can effectively increase access to needed services, that study lacked information on why certain facilitators were successful.[1] The second report outlined a series of case studies that highlighted potential best practices. The purpose of the second study was to better understand how health care providers are integrating telehealth applications in service delivery, its effectiveness in increasing access to needed services, and the barriers and facilitators of its use.[2] Neither study, however, identified the need for technical assistance nor its potential to address implementation barriers.

This report identifies technical assistance needs of current and potential telehealth providers and was prepared by the CHWS staff, including Robert Martiniano, Nubia Goodwin, Dustin Moore, Ashley Krohmal, and Jean Moore, with layout design by Leanne Keough and Matt Allegretti. Funding for this report was provided by the New York State Department of Health (DOH), Charles D. Cook Office of Rural Health.

Established in 1996, CHWS is a not-for-profit research organization, based at the School of Public Health, University at Albany, State University of New York (SUNY). The mission of CHWS is to provide timely, accurate data and conduct policy-relevant research about the health workforce. The research conducted by CHWS supports and promotes health workforce planning and policymaking at local, regional, state, and national levels. Today, CHWS is a national leader in the field of health workforce studies.

The views expressed in this report are those of CHWS and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY, or DOH.

October 2019

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TABLE OF CONTENTS

TABLES AND FIGURES

Executive Summary

BACKGROUND

New York, like many other states, has a health care workforce that is not well distributed, with many more providers located in urban and suburban areas compared to rural areas.[3] This maldistribution negatively affects the ability of rural populations to access health care, especially for specialty care such as cardiology, endocrinology, oral health, and behavioral health. Consequently, there is substantial need for technologically-advanced, high-quality, efficient, and cost-effective innovations in health care delivery strategies that improve access to services for individuals living in rural areas. The practice of telehealth, or telemedicine, is gaining popularity as an innovative approach to overcoming distance barriers to access to care.

Telehealth is defined as "the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health, and health administration."[4] While telehealth has initially proven to be a successful method for connecting patients with providers, more research is needed to understand the process of implementing telehealth, the potential barriers and facilitators to implementation, and the use of currently available technical assistance.

Accordingly, this report seeks to describe the telehealth applications currently being used by rural health care providers in New York State and identify any technical assistance needed to support these providers. The results presented in this report will help inform future efforts at expanding the availability of telehealth services.

METHODS

This project had 3 facets: key informant interviews, a literature review, and a survey of rural health care providers in New York State.

Key Informant Interviews

CHWS staff conducted a number of key informant interviews with medical providers and program facilitators across New York State. Key informants were identified through discussions with staff at the New York State Department of Health, Charles D. Cook Office of Rural Health; the Healthcare Association of New York State (HANYS); and the Community Health Care Association of New York State (CHCANYS). The key informants provided background information on the barriers and facilitators to implementing and using telehealth technology and services. Key informants also identified potential technical assistance needs and issues that served as the basis for developing survey questions. CHWS staff conducted 13 key informant interviews during the spring and summer of 2018.

Literature Review

The purpose of this literature review was to consider the current state of telehealth in modern medical practice, and to evaluate the potential for its future use, by examining perspectives of both healthcare providers and patients. Additionally, the literature review was used to identify previous research efforts on technical assistance around telehealth implementation.

The protocol for this review included searching available research on telehealth using the PubMed search engine. The search included such terms as “telehealth,” “telemedicine,” “telepathology,” “eHealth,” “survey,” and “questionnaire.” In total, 10 documents were selected for relevancy, including 9 peer-reviewed journal articles and one summary report of telehealth usage in pediatrics published by the American Academy of Pediatrics.

Survey of Providers

Based on previous CHWS work, key informant interviews, and the literature review, a survey was developed using Qualtrics survey software. Survey questions included those describing the organization, use of telehealth, knowledge and use of current technical assistance for telehealth, barriers faced in the implementation and expansion of telehealth, and the need for technical assistance. Notification of the availability of the survey was emailed to all hospitals in New York State as well as federally qualified health centers (FQHCs), rural health clinics, nursing homes, certified home healthcare agencies (CHHAs), and

physicians working in the state's rural counties as defined by Ebert's typology.* In total, nearly 900 health care providers were contacted through email. Since only 6 physicians responded to the survey, and none of them were using telehealth applications, physicians were excluded from the analysis. Additionally, a small number of providers answered the first few questions on the organizational characteristics but then never completed the survey. These responses were also excluded. Consequently, the response rate to the survey, excluding physicians and those not fully completing the survey, was 19%.

* New York State Public Health Law, Article 2 Title 2SC, Section 235

KEY FINDINGS

The majority of survey respondents have implemented telehealth services within the past 2 years. Respondents also indicated that they were using telehealth applications for both clinical and non-clinical functions. Major barriers identified included third party reimbursement and the complexity of laws around telehealth services.

The vast majority of survey respondents were unaware of the availability of telehealth technical assistance through Northeast Telehealth Resource Center (NETRC), and thus, did not utlize their services. Respondents identified various technical assistance needs including: increasing knowledge on how to obtain third party reimbursement for telehealth; evaluating telehealth, specifically assessing the return on investment or changes in patient outcomes; and expanding their understanding of legal/regulatory requirements for telehealth. Key findings included:

- The majority of respondents reported that they began using telehealth applications within the past 2 years.
- Slightly more than 70% of organizations that used telehealth had strategic or business plans for future implementation and/or sustainability of telehealth services.
- Seventy percent of organizations that provided telehealth services made their initial purchase or lease of telehealth equipment with grant funding.
- Less than one-fourth of respondents provide orientation and/or training on telehealth to patients.
- Slightly over one-fifth (21%) of organizations currently providing telehealth services or planning to provide telehealth services within the next 2 years were aware of NETRC.
- Inadequate third party reimbursement and the complexity of laws related to telehealth were identified as the 2 greatest barriers to implementing and/or expanding telehealth services.
- Respondents identified “understanding how to obtain third party reimbursement for telehealth services” as the biggest technical assistance need, followed by “evaluating telehealth” (assessing return on investment or changes in patient outcomes) and “understanding legal/regulatory requirements for telehealth.”

LIMITATIONS

The low response rate in total and by facility type may limit the generalizability of the findings. It is unclear if the findings identified truly represent the state of telehealth in New York State or for specific facility types, including hospitals, FQHCs, home health care agencies, and nursing homes/long-term care facilities. Additionally, only 6 physicians responded to the survey which made it impossible to include them in this analysis. Response bias may have also factored into who responded to the survey. For example, providers with problems implementing telehealth may have been more motivated to respond to the survey than those providers with no problems.

DISCUSSION

The majority of respondents have implemented telehealth services only within the past 2 years, and they are using telehealth applications for both clinical and non-clinical functions. Major barriers include third party reimbursement and the complexity of governmental rules around telehealth services.

The vast majority of survey respondents were not aware of the availability of telehealth technical assistance through NETRC, and thus did not utilize their services. Respondents' technical assistance needs included: information on how to obtain third party reimbursement for telehealth; evaluating telehealth programs, specifically assessing the return on investment or changes in patient outcomes; and expanded understanding of legal/regulatory requirements for telehealth.

Slow adoption of telehealth in rural areas may be a result of a number of factors, including poor reimbursement, the lack of startup funding, complex and conflicting governmental rules (such as the state parity laws), a general lack of staff, and the need for technical assistance. Even with supported start-up, sustainability could jeopardize a telehealth project. The fact that a major source of technical assistance for implementing telehealth (NETRC) is unknown to the vast majority of current and potential telehealth providers is problematic. A combination of printed or web-based material, technical assistance or best practices conferences, and publicity around available technical assistance resources are needed to assist providers in overcoming implementation barriers and expanding the use of telehealth services in New York State generally and in rural areas specifically.

Technical Report

BACKGROUND

New York, like many other states, has a health care workforce that is not well distributed, with many more providers located in urban and suburban areas compared to rural areas.[3] This maldistribution negatively affects the ability of rural populations to access health care, especially for specialty care such as cardiology, endocrinology, oral health, and behavioral health. Consequently, there is substantial need for technologically-advanced, high-quality, efficient, and cost-effective innovations in health care delivery strategies that improve access to services for individuals living in rural areas. The practice of telehealth, or telemedicine, is gaining popularity as an innovative approach to overcoming distance barriers to access to care.

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Literature Review

The literature search provided background information on the benefits of telehealth as well as perceived need for technical assistance. Gagnon, et al (2007) found that physicians practicing in rural and remote locations in Canada used telehealth to access health care information, such as labs and prescriptions for their patients.[5] A study by Kelly, et al (2012) on patients with chronic sleep disorders found that barriers such as parking, time away from work/school, and cost of gas prevented patients from traveling to appointments and motivated the patients to use telehealth.[6]

Additional studies found that the keys to implementing successful telehealth programs are centralized coordination and input from decision makers. A study of telehealth at a tertiary hospital in Australia by Martin-Khan, et al (2015) found an increase in telehealth activity when a central coordinating service was used to help with implementation.[7] Similarly, Silva, et al (2012) found that organizational, technical, and educational barriers prevented the expansion of telehealth, and that economic and regulatory factors also played a role in reducing the use of telehealth.[8] Taylor, et al (2015) conducted a concurring study, and found that inconsistent commitment to implementation slowed the adoption of telehealth technology and reduced staff enthusiasm about adoption. The study also found that uncertainty about the goals of implementation led to difficulty in evaluating the effectiveness of telehealth usage.[9] Olson, et al (2018) found collaborative implementation to be the most effective way to encourage use of telehealth within an organization; however, high variance in funding, state regulations, insurance coverage, and healthcare business models throughout the United States have led to high variability in adoption of telehealth throughout the United States.[10]

Beyond the importance of centralized coordination in implementing a successful telehealth program, training has been targeted as another crucial component of success. Papanagou, et al (2015) found that developing appropriate training models for telehealth is essential to increase the quality of use by physicians in a patient-centered care setting.[11] Those findings were further supported by Rutledge, et al (2017), who found in their study that nurse practitioners will be strong and effective leaders in the use of telehealth.

* New York State Public Health Law, Article 2 Title 2SC, Section 235.

within the healthcare industry, as long as nursing schools add components of telehealth to their curriculum.[12] It should be noted that the existence of equipment and infrastructure for telehealth alone is not sufficient, as a survey in the United Kingdom conducted by Dennis, et al (2005) found. Researchers recognized that the equipment and infrastructure was in place, but little to no training among the study group, histopathologists, led to a lack of use and familiarity with telehealth.[13]

Prior research also found that support for the use of telehealth technologies varied greatly. An international study by Eikelboom and De Wet (2016) found that audiologists had a positive attitude toward telehealth usage, although only a small number of audiologists had reported using teleaudiology in clinical settings.[14] The study by Dennis, et al (2005) found resistance to the use of telehealth for clinical diagnosis, but high use of telehealth for videoconferencing or multidisciplinary team meetings.[13] A study by Kelly, et al (2012) found high patient enthusiasm about telehealth usage even with limited exposure to telehealth technology.[6]

Many of the studies included have notable limitations. Low response rates to surveys were reported by Gagnon, et al (2007), Kelly, et al (2012), and Silva et al (2012). The Dennis, et al (2005), Eikelboom and De Wet (2016), Gagnon, et al (2007), and Martin-Khan, et al (2015) studies primarily or entirely collected information from English-speaking countries outside of the United States. These populations may not be representative of the United States population. Finally, Martin-Khan, et al (2015), Taylor et al (2015), and Silva, et al (2012), all reported limitations around survey design and methodology.

Key Informant Interviews

Key informants recognized a number of barriers to telehealth usage for both patients and providers. For example, telehealth systems require a high-speed broadband connection, and the lack thereof presented a problem for patients, especially in rural areas. For some patients, poor broadband connection caused remote biomonitoring equipment to produce inaccurate and non-usable measures. Additionally, certain telehealth providers found that their patients were unknowledgeable or even resistant to using telehealth and biomonitoring equipment in their homes.

Providers also experienced complications with technology. Many key informants noted that the electronic health records and the telehealth video conferencing system were often incompatible. This made it difficult to access patient information quickly.

Key informants also noted the lack of provider and other staff buy-in as a major structural barrier. For example, some staff, particularly home health providers, were hesitant to adopt telehealth practices and in some cases even pushed back against the implementation of these services.

Various challenges affected telehealth program sustainability. For example, it was noted that the cost of implementing and maintaining ever-changing telehealth technology was a strain on financial resources. Respondents recognized that these financial strains were exacerbated by limited grant funding. Key informants also noted that maintaining the business model, particularly finding cost-effective partners and keeping up with the necessary equipment updates and training for staff and patients, was financially difficult and time consuming.

Additionally, issues with reimbursement had a significant impact on telehealth program sustainability. For example, state parity laws in New York State for commercial insurers specified equal coverage; ie, if the office-based visit was reimbursed through insurance, the same type of visit needed to be reimbursed if provided through telehealth. However, the parity law did not indicate the reimbursement needed to be equal. That is, services provided remotely could be reimbursed at a lower rate than identical services provided in office. Key informants recognized another reimbursement issue that telehealth services were reimbursed by Medicare only when they were provided in facilities located outside of metropolitan statistical areas (MSAs) and in a rural health professional shortage area (HPSA). This proved problematic in many areas of New York State. Finally, several informants recalled that reimbursement for non-provider staff was a major hurdle since reimbursement rates were low.

Key informants also noted various issues with program infrastructure, specifically around program evaluation. They acknowledged that once telehealth was established, it was difficult to monitor and assess the success of the program.

Despite numerous challenges, the benefits of telehealth services were notable. Informants reported that telehealth services allowed for remote care when direct care was delayed, thus expanding access to care. Telehealth care services also reduced travel time for both patients and providers, especially those living in underserved rural locations. Finally, informants stated that hospitals across the upstate region had developed stronger relationships as a result of communications between telehealth networks.

FINDINGS

Implementation and Utilization of Telehealth

Slightly over 60% of survey respondents used telehealth applications, including 90% of hospitals.

Of the valid survey responses, 62% reported some level of use of telehealth by their organization (Table 1). Nearly 90% of hospitals reported using telehealth applications, compared to only 50% of FQHCs and FQHC look-alikes.

Table 1. Use of Telehealth, by Organizational Type

Facility Type	Telehealth in use?		
	Yes	No	Total
Community Based Organization or County Agency	10	7	17
Federally Qualified Health Center (FQHC)/FQHC Look-alike	8	8	16
Home Care Agency	7	6	13
Hospital	16	2	18
Nursing Homes/Long-term Care Facilities	13	10	23
Total	54	33	87

In cases where telehealth was not in use, nine organizations were committed to implementing telehealth within the next 2 years, 10 facilities were in the planning stages for developing telehealth services in their community, 10 facilities had no plans to implement the use of telehealth in the next 2 years, and 4 facilities chose "Other." Of those facilities with no plans to implement the use of telehealth services in the next 2 years, 4 had previously attempted implementation of telehealth services at their facilities and had been unsuccessful.

The majority of respondents reported that they began using telehealth applications within the past 2 years.

The majority of respondents reported that they began using telehealth applications within the past 2 years, with nearly one-third of those implementing telehealth within the last year (Table 2).

Table 2. When Organizations Implemented Telehealth, by Facility Type

Facility Type	Within the last year	1-2 years ago	3-5 years ago	6-10 years ago	11+ years ago
Community Based Organization or County Agency	5	2	1	2	0
Federally Qualified Health Center (FQHC)/FQHC Look-a-like	1	5	2	0	0
Home Care Agency	0	2	2	0	3
Hospital	4	3	2	2	1
Nursing Home/Long-term Care Facilities	7	1	3	1	0
Total	**17**	**13**	**10**	**5**	**4**

Both clinical and non-clinical applications were used daily.

Overall use and daily use was most common for clinical consultation and patient monitoring and the least common for social services/case management (Table 3). Respondents noted that telehealth applications were used for non-clinical meetings, with frequency of use spread evenly among daily, weekly, and monthly categories. Telehealth applications were also used for medical education at weekly or monthly frequencies.

Table 3. Frequency of Use of Telehealth Applications

Telehealth Use	Never	Daily	Weekly	Monthly
Administrative, staff, or other type of non-clinical meetings	18	10	10	10
Emergency consultation and triage	27	10	6	5
Medical education	26	1	8	13
Patient clinical consultation/diagnosis/follow up	12	14	14	8
Patient monitoring (blood pressure, glucose level, medication adherence, weight, etc.)	31	11	4	2
Social services/case management	39	2	5	1
Other	25	4	3	4

Two-way interactive video was the most commonly used telehealth modality.

Two-way interactive video and audio (83%) was by far the most commonly used telehealth modality within organizations, followed by clinical diagnostic peripherals (44%) and remote patient monitoring (44%) (Table 4).

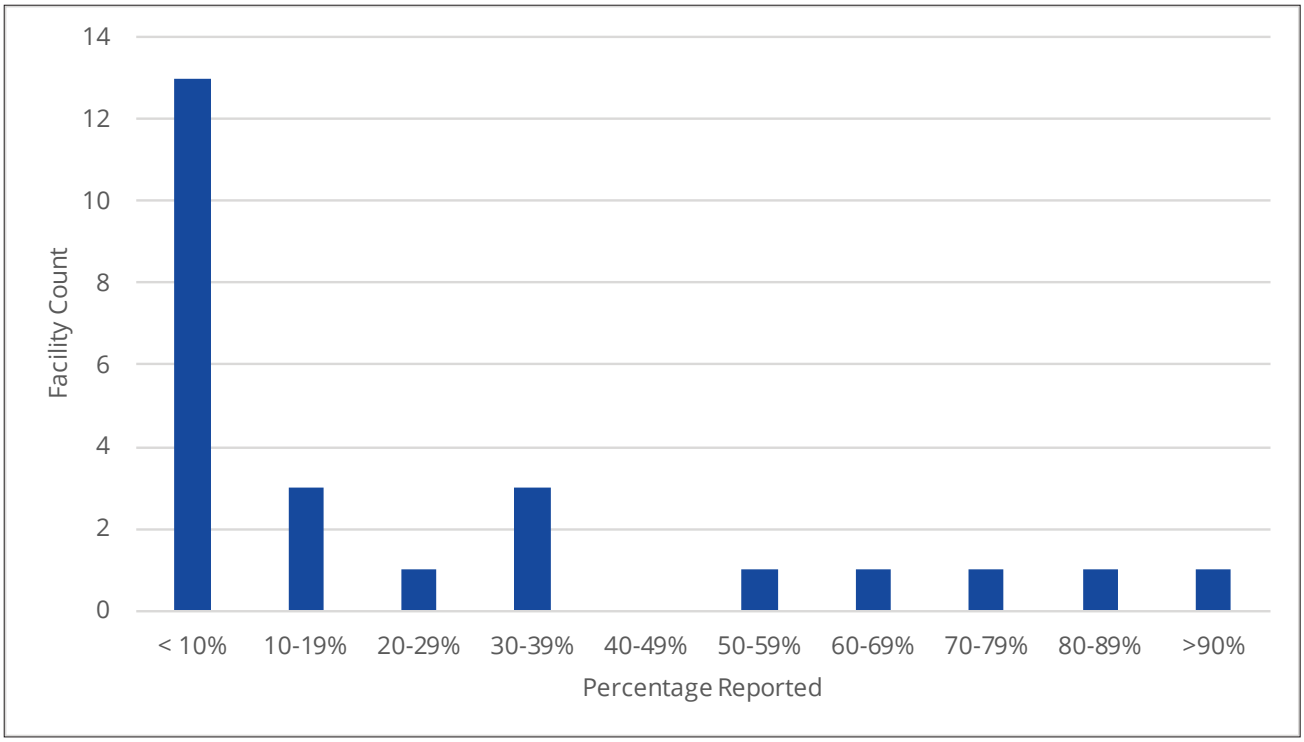
Table 4. Frequency of Use of Telehealth Modalities

Telehealth Usage	Percent
Clinical diagnostic peripherals (digital stethoscope, general exam camera, otoscope, etc.)	44%
Interactive video and audio (2-way)	83%
Mobile health, such as smartphone or tablet applications	33%
Remote patient monitoring (use of digital technologies to collect and transfer patient clinical data from one location to another)	44%
Store and forward (image/text transmission)	34%

One in 5 respondents used at least 50% of their remote patient monitoring or mobile health devices daily.

Only 20% of the respondents that provide remote patient monitoring or mobile health telehealth services use at least 50% of their devices daily (Figure 1). Slightly over 50% of respondents indicated that they use less than 10% of their devices daily.

Figure 1. Percentage of Remote Patient Monitoring or Mobile Health Devices Used Daily for Telehealth Purposes



Slightly more than 70% of organizations that used telehealth had strategic or business plans for the future implementation and/or sustainability of telehealth services.

More than 70% of respondents developed strategic or business plans for the implementation and sustainability of telehealth, including the vast majority of hospitals (Table 5). Only 50% of nursing homes/long-term care facilities that responded to the survey had developed strategic or business plans. Of the respondents that reported not currently using telehealth services, 60% indicated that they had not created or had no plans for creating a strategic or business plan.

Table 5. Development of Strategic or Business Plans by Organizational Type

Facility Type	Strategic or business plan created or planned?	
	Yes	No
Community Based Organization or County Agency	6	4
Federally Qualified Health Center (FQHC)/FQHC Look-a-like	6	2
Home Care Agency	5	2
Hospital	15	1
Nursing Home/Skilled Nursing Facilities/Long-term Care Facility	6	6
Total	38	15

The majority of those planning to implement telehealth in the next 2 years are planning to use it for patient clinical consulting.

Of those that are planning to implement telehealth within the next 2 years, 88% are planning to use it for patient clinical consulting; 50% for administrative, staff or other non-clinical meetings, and 44% for patient monitoring (Table 6). For those planning to use telehealth for clinical care, the primary focus was specialty care followed by behavioral health.

Table 6. Planned Telehealth Applications

Planned Telehealth Use	Percent[a]
Administrative, staff, or other type of non-clinical meetings	50%
Emergency consultation and triage	13%
Medical education	38%
Patient clinical consultation/diagnosis/follow up	88%
Patient monitoring (blood pressure, glucose level, medication adherence, weight, etc.)	44%
Social services/case management	31%
Other	19%

[a] Respondents were asked to select all that apply. Consequently, percentages will sum to more than 100%.

Acquisition and Availability of Broadband Services and Equipment

Nearly 80% of respondents indicated that access to the broadband infrastructure was already available, had been donated, or was purchased/leased through grant funding.

Slightly more than 40% of the organizations that had implemented telehealth indicated that access to the broadband infrastructure was already available, and 37% purchased or leased access through grant funds or donations (Table 7). Nearly one-third of respondents purchased broadband access with general operating funds.

Table 7. How Connection to Broadband Infrastructure was Supported by Telehealth Providers

Development of Broadband	Percent[a]
No support needed (broadband already existed)	43%
Donated by a private organization or purchased/leased with grant funds	37%
Purchased/leased with general operating funds	30%
Other	15%

[a] Respondents were asked to select all that apply. Consequently, percentages will sum to more than 100%.

Seventy percent of organizations that provided telehealth made their initial purchase or lease of telehealth equipment with grant funding.

Slightly more than 70% of organizations that responded to the survey reported having their equipment donated or purchased/leased with grant funding. Forty-one percent of respondents purchased or leased equipment with general operating funds, and 9% used other funding.*

Forty-one percent of those respondents currently using or planning to use telehealth applications were planning to make future investments in telehealth technology.

Of respondents currently using or planning to use telehealth applications, 41% indicated that they would be making future investments in telehealth technology. Another one-third of respondents were unsure, and 25% did not respond to the question. Two-thirds of those who planned to make an investment would be investing in video teleconferencing equipment, 45% in remote patient monitoring equipment, and 42% in new or upgraded equipment.*

* Respondents were asked to select all that apply. Consequently, percentages will sum to more than 100%.

Nearly two-thirds of respondents used general operating funds to support telehealth services within the organizations.

Sixty-three percent of current telehealth users support telehealth services through general operating funds (Table 8). Nearly 60% use grant funding and another 43% use fees and insurance to support telehealth services within the organization.

Table 8. How Organizations are Financially Supporting Telehealth Services

Type of Financial Support by Facility Type	Percent[a]
Fees/insurance reimbursement for clinical services	43%
General operating funds	63%
Grant funding	59%
Other	17%

[a] Respondents were asked to select all that apply. Consequently, percentages will sum to more than 100%.

Training and Orientation for Telehealth Applications

While the majority of respondents currently provide an orientation and/or training around telehealth for staff, less than one-fourth of respondents provide orientation and/or training on telehealth to patients.

Nearly two-thirds of organizations that currently provide telehealth services have a formal training program for staff. Of the organizations that plan to implement telehealth services within the next 2 years, nearly 90% plan to develop formal training for staff. Less than one-quarter of organizations, however, have a formal orientation process (22%) or a formal training program (20%) for patients.

Slightly over two-thirds of current telehealth providers train their staff when equipment is updated.

Sixty-eight percent of organizations that are currently providing telehealth services train their staff as the equipment is updated (Table 9). Thirty-nine percent train their staff at new staff orientation, and 23% train their staff when telehealth equipment is installed.

Table 9. When Staff are Trained On the Use of Telehealth Equipment

When Staff are Trained	Percent
As telehealth equipment is updated	68%
At orientation for new staff	39%
At implementation of telehealth equipment	23%
Periodic Basis (Monthly, Quarterly, Annually)	13%
Other	19%

[a] Respondents were asked to select all that apply. Consequently, percentages will sum to more than 100%.

Technical Assistances and Barriers to Implement or Expanding Telehealth Services

Slightly over one-fifth (20%) of organizations currently providing telehealth services or planning to provide telehealth services within the next 2 years were aware of the Northeast Telehealth Resource Center.

Twenty-one percent of organizations that responded to the survey who were either currently providing telehealth or planning to provide telehealth within the next 2 years were aware of the availability of technical assistance through the Northeast Telehealth Resource Center (NETRC) (Table 10). Of these organizations, 54% were aware that NETRC provides up to 10 hours of free technical assistance annually and 38% were aware that NETRC offers services beyond the initial 10 hours for a fee.

Table 10. Percentage of Organizations Aware of NETRC, by Facility Type

Facility Type	Percent
Community Based Organization or County Agency	27%
Federally Qualified Health Center (FQHC)/FQHC Look-a-like	14%
Home Care Agency	25%
Hospital	38%
Nursing Home/Skilled Nursing Facilities/Long-term Care Facility	6%

Inadequate reimbursement and complexity of governmental rules were identified as the 2 biggest barriers to implementing or expanding telehealth services.

Forty-six percent of all survey respondents indicated that inadequate reimbursement was a major barrier to implementing or expanding telehealth services (Table 11). Additionally, 44% of all survey respondents indicated that the complexity of governmental rules were a major barrier to implementing or expanding telehealth services. Other barriers identified included existing workforce shortages (39%), inadequate funding for ongoing (telehealth) operations (38%), and sporadic broadband connectivity (33%).

Table 11. Barriers Organizations Face In Implementing or Expanding Telehealth

Barriers to Telehealth Implementation or Expansion	Percent[a]
Broadband connectivity does not exist or is unavailable at my location	7%
Broadband connectivity is sporadic	33%
Complexity of government rules regulating telehealth services	44%
Concern about legal issues/malpractice	22%
Concern about patient privacy and HIPAA compliance when using telehealth applications	22%
Concern about scope of practice/state provider licensure restrictions	26%
Concern with effective communication between providers and patients	19%
Credentialing of providers	13%
Existing workforce shortages	39%
Inadequate funding for initial equipment purchases	28%
Inadequate funding for ongoing operations	38%
Inadequate reimbursement of telehealth services	46%
Lack of appropriate level of staff training on the use of equipment/software	22%
Lack of connectivity to the organization's EHR	17%
Lack of patient acceptance	26%
Lack of perceived usefulness/need by the organization	18%
Lack of provider acceptance	31%
Percieved increase in workload	19%
Other	21%

[a] Respondents were asked to select all that apply. Consequently, percentages will sum to more than 100%.

Seventy percent of current telehealth providers experienced insurance or reimbursement issues.

Of respondents who provided telehealth services, 70% indicated they experienced insurance or reimbursement issues. The majority of all organizational types reported insurance or reimbursement issues, other than nursing homes/long-term care facilities (27%).

The greatest reimbursement barriers reported by current telehealth providers included variation in reimbursement rates and lack of reimbursement for sites where the patients were located.

Slightly over 80% of survey respondents who provided telehealth services indicated that variation in reimbursement by insurance carriers was the biggest reimbursement barrier (Table 12). Other major reimbursement barriers included "no reimbursement for the site where the patient is located" and "no reimbursement for provider to provider consultation."

Table 12. Insurance or Reimbursement Barriers That Telehealth Providers Experienced

Reimbursement Barriers	Percent[a]
Reimbursement varies by insurance carrier	81%
There is no reimbursement for the site where the patients are located	68%
There is no reimbursement for provider to provide consultation	52%
There is less reimbursement for telehealth than for face-to-face visits	39%
Insurance limits the number of telehealth visits than can be reimbursed within 1 month	6%
Other	29%

[a] Respondents were asked to select all that apply. Consequently, percentages will sum to more than 100%.

Technical Assistance Needs

Respondents identified "understanding how to obtain third party reimbursement for telehealth services" as the greatest technical assistance need, followed by "evaluating telehealth" and "understanding legal/regulatory requirements for telehealth."

Nearly 60% of survey respondents identified the need for technical assistance on "understanding how to obtain third party reimbursement for telehealth services," followed by "evaluating telehealth" (assessing return on investments or changes in patient outcomes) (50%) and "understanding legal/regulatory requirements for telehealth" (49%) (Table 13). Other technical assistance needs included "securing Medicaid waivers for telehealth" (44%), "developing administrative and clinical telehealth protocols" (40%), and "convening conferences on best practices in implementing and sustaining telehealth" (39%).

Table 13. Technical Assistance Needed To Be Able to Implement or Expand Telehealth Services

Needed Technical Assistance	Percent[a]
Accessing telehealth tool kits (eg, materials on patient monitoring, securing reimbursement, telepsychiatry, etc.)	34%
Convening best practices conferences in implementing and sustaining telehealth	39%
Credentialing of providers for telehealth services	31%
Developing administrative and clinical telehealth protocols	40%
Evaluating telehealth (eg, assessing return on investments or changes in patient outcomes)	50%
Identifying potential telehealth partners	27%
Identifying resources to support broadband connectivity	17%
Identifying resources to support equipment purchases	31%
Linking telehealth technologies to EHRs	31%
Patient training on the use of telehealth equipment	26%
Program development	36%
Securing Medicaid waivers for telehealth	44%
Selecting and using various telehealth technologies	24%
Staff training on the use of telehealth equipment	26%
Strategic/business planning/market analysis	34%
Understanding how to obtain third party reimbursement for telehealth services	59%
Understanding legal/regulatory requirements for telehealth	49%
Understanding patient privacy and HIPAA requirements as they relate to telehealth	24%
Other	9%

[a] Respondents were asked to select all that apply. Consequently, percentages will sum to more than 100%.

LIMITATIONS

The low response rate in total and by facility type may limit the generalizability of the findings. It is unclear if the findings identified truly represent the state of telehealth in New York State or for specific facility types, including hospitals, FQHCs, home health care agencies, and nursing homes/long-term care facilities. Additionally, only 6 physicians responded to the survey which made it impossible to include them in this analysis. Response bias may have also factored into who responded to the survey. For example, providers with problems implementing telehealth may have been more motivated to respond to the survey than those providers with no problems.

DISCUSSION

The majority of respondents have implemented telehealth services only within the past 2 years, and they are using telehealth applications for both clinical and non-clinical functions. Major barriers include third party reimbursement and the complexity of governmental rules around telehealth services.

The vast majority of survey respondents were not aware of the availability of telehealth technical assistance through NETRC, and thus did not utilize their services. Respondents' technical assistance needs included: information on how to obtain third party reimbursement for telehealth; evaluating telehealth programs, specifically assessing the return on investment or changes in patient outcomes; and expanded understanding of legal/regulatory requirements for telehealth.

Slow adoption of telehealth in rural areas may be a result of a number of factors, including poor reimbursement, the lack of startup funding, complex and conflicting governmental rules (such as the state parity laws), a general lack of staff, and the need for technical assistance. Even with supported start-up, sustainability could jeopardize a telehealth project. The fact that a major source of technical assistance for implementing telehealth (NETRC) is unknown to the vast majority of current and potential telehealth providers is problematic. A combination of printed or web-based material, technical assistance or best practices conferences, and publicity around available technical assistance resources are needed to assist providers in overcoming implementation barriers and expanding the use of telehealth services in New York State generally and in rural areas specifically.

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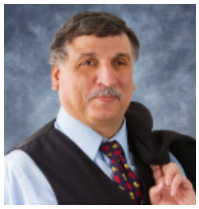

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