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Telehealth Support Services for Students in Maine Schools Before and After the COVID Pandemic

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Overview of the Study

Why was this study conducted?

This study was conducted at the request of the Maine State Legislature's Joint Standing Committee on Education and Cultural Affairs to assess the extent that telehealth is being used to deliver services to Maine students with Individualized Education Plans (IEPs). A secondary goal was to identify if there were underserved geographic areas in Maine that could benefit from expansion of telehealth services. The study also sought to learn what works well with telehealth delivery of therapy services for students with IEPs and the drawbacks to using school-based telehealth services, from participants' perspectives.

What do you need to know to put this study into context?

Telehealth is viewed as a way to bring services to rural areas where there may be limited or no providers of services. The use of telehealth for school-based therapies was believed to have been expanding in Maine, but the extent to which it was being used was not known. The barriers that prevented further expansion of telehealth services in schools were not well known either.

This study was conceived just prior to the COVID-19 pandemic that forced schools into remote learning in March 2020. During the time that the survey was conducted, most schools were not providing five-day per week in-person instruction. This forced most educators and therapists to use video-conferencing for education and therapy for the first time. The resultant exposure allowed more educators, therapists, and the general public to become familiar with telehealth services.

This study focused primarily on three medical services provided to students with IEPs: occupational therapy, physical therapy, and speech-language therapy. Emerging from the survey responses, the educational service adaptive physical education (APE) was also included in some analyses.

What did we learn from the study?

Although the prevalence of telehealth therapy in Maine could not be accurately measured from this study, there is a positive interest in expanding telehealth services among the participants. Many of the participating therapists and directors felt that there are not enough providers in their area, and most therapists and educators felt there are shortages of therapists in rural areas. Based on district data, there appear to be some signs of disparity in services provided to students with IEPs, which could be mitigated with increased use of telehealth.

The initial plan for this study was to use staffing data from the Maine Department of Education and MaineCare billing data to help answer the research questions. However, our inquiry found that these datasets were not useful for that purpose. Many different providers work with students in districts, and many districts do not bill MaineCare for all eligible services provided to students with IEPs. The available data do not consistently indicate enough information to allow useful analysis. Instead, this exploratory study utilized interview and survey

methods to begin to understand how districts utilize telehealth to provide services to their students and their views about the efficacy of that practice.

There was insufficient available data to accurately assess who was providing services to students in each district. The Maine Department of Education (MDOE) staff directory had some names of occupational therapists, physical therapists and speech-language therapists, appeared to be missing some therapists such as those who are contracted service providers rather than employees. Many schools had no corresponding therapists named in their staff listings. The MDOE staff listings can be used to identify special education teachers and special education directors but there is no separate position code to distinguish adaptive physical education teachers from other teachers. There are believed to be fewer APE teachers than needed statewide.

There are indications that disparities may exist in the services districts include in their students' IEPs. A lower percentage of small town and remote rural districts have certain services listed in their student IEPs than do city and suburban districts. Smaller districts are less likely than larger units to offer some services.

In this survey, over half of the therapists felt there was a shortage of their specialty in the region where they practiced. Three-quarters of northern Maine therapists felt there was a shortage of therapists. In a question on barriers to providing telehealth services to students in their districts, only 27% of special education directors felt their district had enough in-person therapists. It was not clear how situations of provider scarcity are being handled. Most special education directors (88%) and therapists (52%) disagreed that certain services might not be included in some student IEPs, or would be included less frequently, when providers are scarce; however, a modest 32% of therapists did feel that these situations were occurring.

Adaptive physical education (APE) is a required educational service under IDEA. Examples of physical education modifications that may be made for students with IEPs include: reducing noise, providing additional skill instruction, modifications for physical differences or having an aide. Less than half of the districts and special education teachers said that APE was in their student IEPs. This is an area of concern on several levels. First, physical education class is one where students can injure themselves or others. Another area of concern is even though directors report services are included in student IEPs when there is a scarcity of providers, this service was not included in 57% of districts' student IEPs. There are APE certified educators that will provide consultations that may be facilitated by video-conferencing.

About two-thirds of therapists and special education directors felt telehealth services were an adequate option when there was a scarcity of therapy providers. In this survey, most therapists' (89%) and educators' (67%) only experience with telehealth was during the COVID pandemic. The majority of therapists (78%) and special education directors (66%) felt telehealth services could be equivalent to in-person services in some circumstances. Therapists want to improve their skills by getting additional training in telehealth especially around software programs and best practices. Maine is well positioned to provide additional training. Maine has been a national leader in providing telehealth training to speech therapists and is building capacity to train occupational therapists in telehealth practices.

Additionally, Maine policy is supporting innovations in telehealth through programs such as the Maine Technology Institute. Expansion of telehealth to additional Maine schools may require changes in reimbursement. While telehealth can decrease the time a therapist spends travelling between schools, if a therapist is not already travelling to a school, the need for visits during the year can be a perceived barrier to expanding their services to a rural area.

Therapists' concerns about doing more school-based telehealth include unreimbursed travel time, and no reimbursement for preparation. Time spent traveling to visits can be significant. To provide optimum therapy services to students, most therapists feel a hybrid approach is needed. The majority of occupational therapists (77%), physical therapists (82%) and speech therapists (62%) responding to the survey felt the ideal approach would be for the therapist to have in-person sessions weekly to monthly with students. Only one-third of speech therapists (33%) felt students did not need in-person visits or only needed an introductory visit. Just eleven percent of occupational therapists and physical therapists felt no in-person visits or just a once per semester introductory visit would allow for adequate telehealth therapy. Therapists also felt some students could benefit from their usual therapist consulting with a more experienced therapist that specializes in the treatment of complex pediatric cases.

What did we conclude overall from the study?

Most occupational therapists, physical therapists, and speech therapists felt telehealth could be equivalent to in-person therapy in some situations. The majority of special education directors felt likewise. Therapists expressed an interest in expanding their telehealth skills.

While we were unable to determine if there are geographic disparities in services provided to students based on the available data through the Maine Department of Education and MaineCare billing data; however, there are indications from the survey we conducted that geographic disparities in access to these services may exist. Expansion of telehealth may decrease these disparities.

What are some potential implications for education policy and/ or practice?

- Data were not available to clearly show who was providing services to Maine students and what services were being provided, how frequently, and if by telehealth. This was true for the medical services of occupational therapy, physical therapy, and speech therapy as well as the direct educational service of adaptive physical education. There was incomplete listing of providers and educators on the MDOE website. The available administrative data had inadequate detail about services provided to help answer these questions. This indicates a need for a better system to collect and track what services are provided to students, how they are provided, and by whom.
- Survey responses suggested there may be a scarcity of providers in all medical therapies and respondents perceived this problem was greater in rural areas and northern Maine. It is not clear how districts are dealing with a scarcity of providers.

- Adaptive physical education, an IDEA-mandated service, was not included in any student IEPs in over half of the responding districts. This raises two concerns: that students are not receiving the physical education instruction that they need, and that other services may not be included in some students' IEPs when providers are not available.
- Therapists indicated they are interested in further developing the knowledge and skills for telehealth. To provide telehealth therapy that is equivalent to in-person therapy, providers feel that a hybrid approach is needed. Therapists noted that they are not being paid for their travel time and expenses to go to outlying schools. They also indicated they are not able to be compensated for the time they spend in preparation to provide materials for telehealth.
- Schools that use telehealth may need to provide a dedicated space, video-conferencing equipment, and an adult helper for some therapy sessions. Similarly, when students receive telehealth services at home, other adults in the home may need to assist with camera placement or other assistance to the student for an optimal therapy session.
- Maine's investments in education and technology can help to support training of therapists in telehealth and development of products that will be useful in telehealth.

What methods were used to conduct this study?

- Six interviews were conducted. Academic professors in occupational therapy, physical therapy and speech therapy and a hospital speech therapist who conducts telehealth training for practicing therapists were interviewed. A university instructor who teaches courses in adaptive physical education was also interviewed. The final interview was with the Chief Technical Officer of a Maine start-up company that produces software that can be used in telehealth.
- Three surveys were conducted using an online platform that contained both fixed-choice or Likert scaled items and open-response items. Five hundred special education teachers that primarily worked in rural areas were surveyed. The response rate was 38%. Two hundred five special education directors and assistant special educators were survey. The response rate was 47%. Using emails and links sent through professional organizations, 39 occupational therapists, 29 physical therapists and 42 speech therapists responded.
- MaineCare data and EPS funding data were reviewed to determine if medical and physical education services provided to students with IEPs could be determined.

How robust are the findings? Multiple data sources were used to conduct this study. There was good agreement between the interview and survey data sources. This study focused on three medical services: occupational therapy, physical therapy, and speech therapy. Adaptive physical education, an educational service, was also considered. There was no attempt to look at behavioral, mental health, dental, or other medical services that may be provided remotely through telehealth.

Introduction

This is a mixed-methods study that was undertaken at the request of the Maine State Legislature's Joint Standing Committee on Education and Cultural Affairs to assess the extent that telehealth is being used to deliver therapy services to Maine students with IEPs. A secondary goal was to identify if there were underserved areas that could benefit from expansion of telehealth services. A survey of occupational therapists, physical therapists, and speech therapists working with Maine schoolchildren was conducted, along with separate surveys of special education directors and special education teachers. University educators in occupational therapy, physical therapy, speech therapy and adaptive physical health were interviewed. This report captures respondents' perceptions of what works well with telehealth delivery of therapy services for students with IEPs and some of the drawbacks to using school-based telehealth services.

Background

Schools are responsible for teaching more than the "three Rs"—reading, writing, and arithmetic. For students with disabilities, the additional services provided by therapists and others are an important part of their education. In addition to special education services, adaptive physical education may be provided. Schools commonly contract or employ three types of therapists to provide services to students with disabilities: occupational therapy, physical therapy and speech-language therapy may be part of a student's Individualized Education Plan (IEP). In remote rural areas, these services may be difficult for schools to provide. When unable to find service providers to come to the schools on a regular basis, some Maine schools have been using telehealth to provide therapy to their students.

Initially, telehealth primarily was seen as a way to deliver healthcare services to remote areas that did not have them. Nationwide there has been growing acceptance of telehealth for additional clinical situations. Some Maine schools use telehealth visits with nearby physician providers to do assessments and referrals of student illness or injuries within the school building or school-based clinic (Fairman, Biddle, & Chien, 2021). The American Medical Association found that the use of telehealth expanded from 14% of physicians in 2016 to 28% physicians in 2019. In this same survey, an additional 11% of physicians said they would begin use of telehealth by 2020 (AMA, 2020). Telehealth may be even more common in Maine, as Maine has been very progressive in requiring insurers to cover telehealth visits. In 2009, the Maine state

legislature passed a bill requiring insurers to cover telehealth visits that are comparable to in-person visits (Towey, 2009). During the COVID-19 pandemic, interest in telehealth dramatically increased.

In Maine, the extent to which school-based telehealth therapy was being used to deliver school based services prior to the COVID-19 pandemic was not known. There has been some literature published on the use of telehealth to deliver educational services to very young children in Maine. Recently, a pilot telehealth program in Maine that provided coaching to parents of young children with autism showed positive results. The children demonstrated a decrease in autism symptoms with a large decrease in the frequency of problematic behaviors during the twelve-week trial. The coaching was done by early interventionists from Maine's IDEA part C sites. The initial coaching visit was in-person at the family's home. The remainder of the weekly sessions were done by video-conferencing (Rooks-Ellis et. al., 2020).

Nationally, as schools and healthcare clinics shutdown or reduced operations in the initial stages of the pandemic, most professional organizations wrote guides on the use of telehealth for their practitioners. In reviewing the professional practices, is clear that there has been a difference in adoption of telehealth by occupational therapists, physical therapists and speech-language therapists.

The website of the American Speech-Language-Hearing Association (ASHA) reflects the use of telehealth by many speech therapists. In 2005, ASHA was early in determining that telehealth was an appropriate way to provide services. There are links to research papers discussing the efficacy of telehealth for speech therapy in a variety of settings including schools (ASHA, 2021). Telehealth speech therapy has been shown to be cost effective by reducing travel costs of therapists and clients. By allowing effective consultations between specialists and therapists, it may produce better outcomes. Studies have shown comparable outcomes between in-person and telehealth delivery of speech services (Grillo, 2019).

The American Occupational Therapy Association (AOTA) wrote a position statement in 2018 delineating ways that telehealth could be used to deliver occupational therapy to those that live in remote areas. Other advantages are improved access to care, fewer delays to accessing care, and facilitating consultations between providers. Several assessments commonly used by occupational therapists have been shown to be reliable and valid when done through telehealth. An adult helper may be needed to assist with positioning and facilitating camera angles. AOTA

also acknowledges that some clients may need a hybrid approach of in-person and telehealth visits (AOTA, 2018).

Most pediatric physical therapists in schools had not used telehealth prior to the pandemic. The Academy of Pediatric Physical Therapy (APTA) provided suggestions to physical therapists on how to do a virtual evaluation and suggested coaching parents or caregivers on how to assist. The recommendations noted the importance of the adult helper. The helper may need to do more than adjust camera angles. In a telehealth session, the helper may be asked to position the child to do an exercise or facilitate the child's performance of motion or skills. Depending on the child's needs, the helper may be asked to move the child's limbs and torso to display joint range of motion. Helpers may be asked to assess strength or response to light touch. APTA cautioned that many standardized physical therapy assessments have not been validated when done virtually. This is a concern, as IDEA requires technically sound instruments to be used. APTA recommendation is for school physical therapists to use a holistic approach when delivering telehealth services (APTA, 2020).

Adaptive physical education is another service that students with a disability may need, but some rural schools may have difficulty providing. Unlike occupational therapy, physical therapy, and speech therapy—which are considered related medical services—adaptive physical education (APE) is considered a specialized education service. Federal and Maine state regulations require that children with a disability must be given an opportunity to participate in physical education available to children without a disability. Examples of adaptive physical therapy are modifications of activities or class groupings for students who are upset by noise and unpredictable events, or modifications for students who have difficulty with certain movements. Federal and state regulations make it clear that occupational therapy or physical therapy is not a substitute for adaptive physical education. The IEP team with an Adaptive Physical Education teacher or regular teacher determines the need for adaptive physical education. If there is a question about the need for adaptive physical education, the Maine Department of Education (MDOE) requires that an evaluation must be done by an adaptive physical education specialist. As with all IEP services, adaptive physical education should be provided in the least restrictive environment. This may be a general physical education class, a separate class or a combination of general and separated class sessions. Per the Maine Department of Education, adaptive physical education is a direct service that must be provided by a certified adaptive physical

education specialist. Teachers of APE are credentialled under the department of education as are special education teachers. The MDOE website notes that individuals certified to teach physical education may teach adaptive physical education in consultation with others (Maine Department of Education, 2016). It is unclear whether telehealth is used by physical education teachers when they are consulting with others for designing programs and teaching adaptive physical education.

This study was undertaken to better understand the potential role of telehealth in Maine schools for provision of services to students with IEPs. Therapist and educator views of the adequacy of telehealth were explored. We looked for areas where students may not be receiving equitable services due to geographic barriers. We sought to learn if there were telehealth policies that could allow increased delivery of services.

Methodology

The initial plan for this study was to use staffing data from the Maine Department of Education and MaineCare billing data to help answer the research questions. However, our inquiry found that these datasets were not useful for that purpose. Many different providers work with students in districts, and many districts do not bill MaineCare for all eligible services provided to students with IEPs. The available data do not consistently indicate enough information to allow useful analysis. Instead, this exploratory study utilized interview and survey methods to begin to understand how districts utilize telehealth to provide services to their students and their views about the efficacy of that practice.

This study used a mixed-methods research design, including interviews with university-based instructors and a telehealth company along with surveys of practicing educators and therapists. The three medical services described are: occupational therapy, physical therapy, and speech-language therapy. The educational service described in this report is adaptive physical education.

Interviews

Four interviews were conducted in fall 2021 through video-conferencing with Maine pediatric therapists that had expressed an interest in telehealth or were actively practicing telehealth in schools prior to the onset of the pandemic. The first interview was with a speech therapist who has provided training to practicing therapists to provided telehealth services to schools. The next interview was an Associate Professor at University of Maine who directs the speech therapy telehealth program that trains graduate speech therapy students in school-based

telehealth. An Assistant Professor of Occupational Therapy at University of Southern Maine who is establishing a telehealth program for graduate occupational therapy students was also interviewed. A school district employed physical therapist and adjunct instructor at University of New England was another therapist interviewed. All four therapists are active in their state professional societies. These interviews provided background information on how therapy services are delivered in Maine concentrating on telehealth and the potential for telehealth expansion, and helped to inform the development of the survey questions.

An interview was also conducted with an instructor of adaptive physical education, at University of Maine. She provided background on the certification of adaptive physical education teachers and the provision of physical education in different types of Maine districts.

An additional interview was conducted with a Maine start-up company, Kinotek, which designs software for video analysis in physical therapy. Through this interview, we hoped to learn how Maine policies and programs could support innovation in technologies for telehealth.

Semi-structured protocols were used to conduct interviews via Zoom or by telephone, according to the interviewee's preference. The Zoom interviews were recorded. The interview questions were customized for each interview. Initial survey questions were shared with interviewed therapists for their feedback to inform development of the surveys. During the data analysis phase of the study, some interviewees were contacted to provide additional insight and clarification on survey responses.

Surveys

Three separate surveys were conducted. The first survey was disseminated to a sample of special education teachers. All special education directors in Maine were surveyed in the second group. The third survey was sent to a sample of occupational therapists, physical therapists and speech-language therapists. All three surveys looked at the delivery of services to students with an IEP via telehealth when the student was physically in the school building and when the student was learning remotely at home. The surveys included fixed-choice items, Likert scaled items and open-ended questions. Self-reported demographic data such as school county, ruralness of school, and district size were used to sort responses into sub-groups. Due to the small sample size, statistical significance testing was not done. Qualitative data from the open-ended comments were analyzed by coding of themes expressed in the comments.

Special Education Teachers

The Maine Department of Education database was used to identify public school special education teachers. School location was identified as "populated" or "rural". Schools that were in central and southern Maine counties (Cumberland, Kennebec, Knox, Lincoln, Sagadahoc, Waldo and York) were classified as in populated counties. Schools that were along the I-95 corridor (Lewiston, Auburn, Hampden, Bangor, Brewer) were also considered to be in a populated area. The other schools in Northern and Western Maine counties were considered to be rural. Teachers at Maine's virtual schools (Maine Connections and Maine Virtual Academy) were considered rural.

In the directory, 1429 special education teachers worked at schools in populated areas. Rural schools employed 625 special education teachers. Since telehealth is more likely to be used in rural schools, an over sampling of rural schools was done. Three hundred rural special education teachers and 200 special education teachers working in populated area schools were sent an email invitation to take a confidential online survey. Non-respondents were sent up to two email reminders to complete the survey during the three-week period it was open. There were 476 teachers with valid email addresses. The response rate was 38% (182 teachers).

Special Education Directors

The Maine Department of Education database was used to obtain contact information for all special education directors (n=145) and assistant special education directors (n= 60). In mid-February, an email invitation to participate in an anonymous survey was sent to all of these educators. The following week, Maine Administrators of Services for Children with Disabilities (MADSEC) emailed the anonymous survey link to members. Reminder emails were sent to special education directors and assistant special education directors. A total of 97 surveys were completed. Based on the MDOE mailing list of 205 contacts, the response rate was 47%.

Therapist Sample

The Maine Department of Education has a listing of occupational therapists, physical therapists and speech-language therapists. However, this list does not have contact information for many of the therapists. There were 183 occupational therapists with emails listed and 86 occupational therapists without contact information. Fifty-six physical therapists had emails listed while 25 lacked emails. Speech and language therapists showed the same pattern; 245 had emails listed and 92 had no contact information. A random sample of 100 occupational therapists and 100 speech therapists with emails was selected. All fifty-six physical therapists with emails

were selected for the sample. This group of 256 therapists was sent an initial survey invitation and two reminder emails during the three-week period this survey was open.

The speech therapist working with us on this project as an interviewee also provided a contact list of 299 therapists. An invitation to take the survey was sent to the 218 therapists on this list with email addresses that were not included in the 100 person random sample. Two reminder emails were sent to therapists that had not completed the survey. The occupational therapist contributing to this project sent a link through Maine Occupational Therapist Association. A physical therapist interviewed for this project, shared the survey link with Maine Physical Therapist pediatric study group. The survey was open for three weeks.

The total number of responses was 39 occupational therapists, 29 physical therapists and 42 speech therapists. The email response rates were 28% (n=28) for occupational therapy, 39% (n=29) for physical therapy and 13% (n=42) for speech therapy. Based on total known pediatric physical therapists in the state, there was a very high response rate of 52% for physical therapists. There are fewer pediatric therapists working in Maine than occupational therapists and speech therapists. The pediatric physical therapists may interact more in their professional organization with each other or feel that their input into this survey mattered more.

On the MDOE list there were no out-of-state therapists listed. Maine licensing lists practicing therapists with a mailing address but no email contact. On the Maine licensing list, there were significantly more therapists listed than on the MDOE list. This is not surprising as adult and geriatric care make-up a large portion of each specialty practice. However, our sample included no out-of-state therapists, who constitute 16%-31% of licensed Maine therapists. The out-of-state therapists may be more involved providing telehealth to rural areas.

Table 1. Number of licensed therapists in Maine

	In-state	Out-of-State	Total
Occupational Therapy	84% (1443)	16% (281)	1724
Physical Therapy	74% (1797)	26% (630)	2427
Speech-Language Therapy	69% (851)	31% (390)	1241

Educator Characteristics

For the responding special education teachers who completed the survey, their schools were located in all counties. Most teachers identified their location as “small town” (49%, n=152). Remote rural (20%, n=63) and suburban (17%, n=53) locations were more common than

city locations (13%, n=40), which may reflect the weighted sampling. No sample weighting was done with special education directors. Most directors also identified their districts' schools primarily being located in a small town (52%, n=41) or remote rural (24%, n=19). A quarter of directors said their districts were in city (16%, n=13) or suburban locations (8%, n=6). About half of the teachers taught elementary students (49%, n=152). Just over a third of special education teachers taught in middle schools (38%, n=117) and high schools (36%, n=110). Twenty percent of the responding teachers (n=61) taught students in more than one grade level. Forty percent (n=136) had been teaching sixteen or more years. Teachers in their first or second year accounted for eleven percent (n=39) of the sample.

Therapist Characteristics

Therapists were asked about their practice arrangement. Therapists could have more than one employer. An academic therapist could also contract with schools. Thus, in table that follows, the percentages may be more than 100% as respondents often checked multiple categories of employment. The primary employer for occupational therapists (77%, n=30) and speech therapists (90%, n=38) responding to the survey were school districts. Equal numbers of physical therapists were employed in school districts (52%, n=15) as in private clinics (self-employed, private clinic or academic setting) (52%, n=15). Most of the therapists employed by a school district reported no other employment (84%, n=70). Since the survey links were distributed within pediatric therapy professional organizations, the distribution of employers indicated on this survey may not be representative for the state as a whole.

Table 2. Employer of therapists by specialty

Employment	School District	CDS	Independent contractor	Private, self, academic, other	Does not do Child Therapy
Occupational therapy n=39	77%	3%	8%	26%	5%
Physical therapy n=29	52%	7%	17%	52%	0
Speech and Language therapy n=42	90%	2%	5%	17%	0

Therapists were asked to select the age ranges of their patients. In addition to school age children, a higher percentage of physical therapists (21%, n=6) saw adult and geriatric patients as

well. Only one speech therapist (2%) and one occupational therapist (5%) responding to the survey indicated they also saw geriatric patients.

Table 3. Age range of patients seen by therapists by specialty

Ages	Birth-2 years	3 - 5 years	6 - 20 years	Adult (21 - 64 years)	Senior (65 years +)
Occupational therapy n=39	10%	51%	97%	8%	5%
Physical therapy n=29	28%	66%	97%	21%	21%
Speech and Language therapy n=42	7%	45%	100%	2%	2%

Data Analysis

The qualitative interview data were analyzed for predominant themes and were used primarily to inform the development of the survey questions. Qualitative data from the written comments respondents provided on the surveys were similarly analyzed thematically to capture respondents' views. Most of the survey questions produced quantitative data that were analyzed within the Qualtrics survey software, producing aggregate and disaggregated response totals and frequencies for each survey item. Given the relatively small number of survey respondents within the different job role categories, statistical tests of significance were not conducted.

Findings

The findings from this study are reported in several sections in this report. Initially, we describe the services that are included in student IEPs at the school and district level. Next, we look at the regional distribution of occupational therapists, physical therapists and speech therapists that provide services to schoolchildren. This is followed by a section discussing what therapists, special education directors and special education teachers said happens when there are not enough therapists to provide the full range or extent of IEP services that would benefit students. The report then describes what respondents said about their prior experience with telehealth, their assessments of the potential effectiveness of telehealth, and their insights on the challenges and benefits of telehealth services. The final section on the findings looks at the future of telehealth in Maine.

Services Included in Student IEPs

Survey data were used to look at some services provided to students with IEPs since there was no available MaineCare data or educational funding formula (EPS) data that allowed us to determine if there were geographic differences or district level differences in the level of services provided to students with IEPs. Similarly, in testimony to the Maine Legislative Joint Standing Committee on Education and Cultural Affairs on May 17, 2021, Michelle Probert stated, "It is important to understand that MaineCare is currently not able to capture all services being provided at this time, due to limitations with our claims system, compliance issues with IEPs as currently written, and provider billing practice inconsistencies."

In the survey response, there was a good correlation between teachers' and directors' reports of services received by their students with an IEP in the five years prior to the pandemic. All teachers and nearly all directors indicated in the surveys that they had a student receiving speech therapy. Physical therapy was not provided in about one in six districts (85%) or schools (83%). The service that appears not to be commonly provided to students is adaptive physical education. Across the state, 34% of all teachers (n=52) who reported they had students receiving physical therapy indicated no students were receiving adaptive physical education. This was similar to the director survey results. Of the directors in districts that had students receiving physical therapy, less than half (47%, n=36) said that some of their students had adaptive physical education included in their IEPs. Medical services such as occupational therapy and physical therapy are not to be substitutes for educational services such as physical education. Adaptive physical education can be indicated for students with behavioral issues as well as physical issues, so this discrepancy in services offered at the school and district level is concerning.

Table 4. Services received by their students with an IEP

	Directors n=89	Teachers n=153
Speech Language Therapy	98%	100%
Occupational Therapy	96%	96%
Physical Therapy	85%	83%
Adaptive Physical Education	43%	47%
Mental Health (Psychologist, Counselor, Social Worker)	83%	85%
Behavioral Health Providers	52%	61%
Interpreter	38%	NA
Health Aide	11%	NA
Nursing services	36%	NA
Care coordination	2%	NA
Other	12%	NA
Total	100%	100%

There was no geographic (i.e., north-south-west-central area) difference in either teacher or director responses to the types of therapy or services provided to students. However, differences were seen when city-suburban schools were compared to small town and remote schools. There were fewer behavioral health providers, interpreters and health aides in small town schools and even fewer in remote rural schools. Health aides were in a third of city-suburban districts (32%) and only in seven percent of small town districts and five percent of remote rural districts. Behavioral health providers were indicated in student IEPs in 68% of city-suburban districts, 46% of small town districts and 37% of remote rural districts. The differences between districts were greater when district enrollment is considered. Health aides are only employed in districts with more than 1,000 students. Only two districts indicated they have care coordination included in any student's IEP, and both of these are larger districts. All other services are less likely to be offered in smaller districts. Physical therapy, adaptive physical education, nursing services and behavioral health providers showed the greatest decrease in the percentage of smaller districts offering these services compared to larger districts. This may reflect fewer student needs, districts sending students with higher needs to larger districts, or a disparity in services provided.

Table 5. Services included in district student IEPs by district size.

	All districts n=87	District 1000 students n=40	District 501-999 students n=12	District 101-500 students n=20	District 100 or fewer students n=8
Speech Language Therapy	100%	100%	100%	100%	88%
Occupational Therapy	98%	100%	100%	90%	88%
Physical Therapy	87%	100%	100%	60%	63%
Adaptive Physical Education	44%	53%	58%	25%	25%
Mental Health (Psychologist, Counselor, Social Worker)	85%	95%	100%	55%	75%
Behavioral Health Providers	53%	63%	42%	35%	38%
Interpreter	39%	63%	33%	5%	0%
Health Aide	11%	25%	0%	0%	0%
Nursing services	37%	55%	42%	25%	13%
Care coordination	2%	5%	0%	0%	0%
Other	13%	15%	17%	10%	13%
Total	100%	100%	100%	100%	100%

Therapist Workforce

To look at the relative distribution of therapists, we first examined the distribution of students in the state. The total number of students by county of attendance was determined from MDOE data. The counties of attendance were then grouped into geographic areas (Table 6). There was a higher percentage of students (37%) enrolled in Southern (Cumberland, York) Maine counties. Maine students were fairly evenly distributed among Central (Kennebec, Knox, Lincoln, Sagadahoc) (19%), Northern (Aroostook, Hancock, Penobscot, Piscataquis, Washington) (24%) and Western (Androscoggin, Franklin, Oxford, Somerset) (20%) Maine counties.

The counties where therapists reported they practice were also grouped into central, northern, southern and western areas. Three occupational therapists, three physical therapists and one speech therapist indicated they worked in more than one area of the state. All seven therapists working in more than one area worked in adjacent areas. None of the seven therapists worked in both southern and northern parts of the state. The areas where therapists practiced were heavily weighted to the southern portion of the state (52%). This area has 37% of Maine students. When distribution of therapists was compared among types of therapists, a few differences were noted. The distribution of physical therapists was close to the distribution of Maine students. However, there were only two occupational therapists responding to the survey from northern Maine. This was not in line with the survey distribution, and may reflect a more active professional group in central, southern and western Maine. Compared to the distribution of students, speech and language therapists were also under-represented in Northern and Western Maine. Based on the interviews, this uneven response across the regions of Maine most likely represents students being served by out-of-state telehealth therapists. Therapists had noted the presence of telehealth therapists in rural Northern and Western Maine.

Table 6. Areas where therapists report practicing and the distribution of Maine students

	Central	Northern	Southern	Western	Total
Occupational therapy n=32	19%	6%	53%	31%	100%
Physical therapy n=27	19%	26%	41%	26%	100%
Speech and Language therapy n=35	17%	11%	60%	14%	100%
Total therapists n=94	18%	14%	52%	23%	100%
Maine students n=180336	19%	24%	37%	20%	100%

Therapists, especially speech therapists and physical therapists, felt that in their practice counties there was a shortage of qualified providers of their therapy specialty. Therapists were asked to assess the supply of the same specialty therapists. For example, an occupational

therapist was asked their opinion on the supply of occupational therapists in their county and in rural Maine. Physical therapists were asked about the supply of physical therapists. Over half of the occupational therapists thought the supply of therapists in their county was about right (55%, 21). About equal numbers thought there were too many (18%, 7) as too few (26%. 10). Speech therapists (71%, 30) and physical therapists (79%, 23) felt there was an under supply of therapists in their county. No physical therapist or speech therapist thought there were more therapists than needed in their county. Statewide, 56% of therapists responding to the survey felt there was a shortage of their therapy specialty in their region. In northern Maine, 77% of therapists felt their specialty was in short supply. By comparison, in the central (47%), southern (53%), and western (48%) Maine, about half of the therapists felt there was a shortage in their specialty.

Table 7. The supply of their type of therapists in their county

	There are far fewer than needed	There are fewer than needed	About right	There are more than needed	There are far more than needed	Total
Occupational therapy n=38	5%	21%	55%	13%	5%	100%
Physical therapy n=29	21%	59%	21%	0%	0%	100%
Speech and Language therapy n=42	29%	43%	29%	0%	0%	100%
Total therapists n=109	18%	39%	36%	5%	2%	100%

All types of therapists felt there was a shortage in their area of specialty in rural Maine. Statewide, 83% of therapists responding to the survey felt that there was a shortage of their specialty in rural Maine. Over ninety percent of physical therapists (93%, n=27) and speech therapists (95%, n=39) said there were fewer than needed. The majority of physical therapists (62%, n=18) and speech therapists (56%, n=23) said there were far fewer therapists than were needed in rural Maine. Occupational therapists felt less strongly about the shortage of occupational therapists in rural Maine. Sixty-three percent (n=24) said there were fewer than

needed. Concerns were also raised by some therapists that the therapists serving remote rural schools are not practicing pediatric therapy on a regular basis so they may not have the same set of skills as a full-time specialty pediatric therapist to treat medically complex children.

Therapists at academic institutions were asked about the limiting factors to training more therapists. Interviews with academic therapists in all specialties indicated that national accreditation standards that required specific student placements limited the number of therapists that they could train. There are not enough sites where students could get the on-site clinical training required for national certification.

Table 8. The supply of their type of therapists in rural Maine

	There are far fewer than needed	There are fewer than needed	About right	There are more than needed	Total
Occupational therapy n=38	18%	45%	29%	8%	100%
Physical therapy n=29	62%	31%	7%	0%	100%
Speech and Language therapy n=41	56%	39%	5%	0%	100%
Total therapists n=108	44%	39%	14%	3%	100%

Special education teachers and special education directors were not directly asked about therapist availability in their area. In a question on barriers to providing telehealth services to students in their districts, directors were given an option to say that there was no need for telehealth therapy since their district had enough in-person therapists. Twenty-three (27%) directors selected that choice. Only ten percent of therapists agreed with this same choice. Directors that felt their therapy was adequately staffed in person also worked in several counties, Aroostook (n=3), Cumberland (n=4), Penobscot (n=5), and York (n=5). Most of the directors who indicated their schools had enough therapists (n=14) reported their schools were in small town settings.

Effect of Provider Shortages

Therapists and directors were given a series of questions on how their schools and districts responded to a shortage of therapists. There were clear differences between the therapists' and special education directors' opinions about how schools handle the student IEPs when there is a shortage of providers. Therapists were more likely than special education directors to feel that students IEPs did not require the optimum amount of therapy.

The special education directors felt very strongly about the statement: "When there is a shortage of service providers, the service is not included in IEPs of some students who would likely benefit." Eighty-eight percent of special education directors disagreed to some extent with the statement, and more than half of the directors (52%) *strongly disagreed* with this statement. However, just over half of the therapists (56%), disagreed to some extent with the same statement, and thirty-two percent of the therapists agreed with the same statement. In comments, therapists mentioned concerns about children starting therapy late. This disconnect between special education director and therapist perceptions merits further exploration.

Table 9. Agreement with the statement "When there is a shortage of service providers, the service is not included in IEPs of some students who would likely benefit"

	Therapists n=97	Special Education Directors n=85
Strongly disagree	25%	52%
Disagree	21%	29%
Somewhat disagree	10%	7%
Neither agree not disagree	11%	4%
Somewhat agree	13%	2%
Agree	13%	2%
Strongly Agree	6%	4%

The same pattern was seen with the statement: "Provider supply impacts the session length or frequency of services that are included in the IEP." Seventy-four percent of directors and 52% of therapists disagreed to some extent with this statement. Almost double the percentage of therapists (39%) than directors (20%) agreed with this statement. In the interviews, one therapist said that they felt some children might benefit from being seen more times in a week but, due to limits on the therapist's time, these children were seen fewer times in a week.

Table 10. Agreement with the statement "Provider supply impacts the session length or frequency of services that are included in the IEP"

	Therapists n=97	Special Education Directors n=85
Strongly disagree	16%	36%
Disagree	19%	28%
Somewhat disagree	16%	9%
Neither agree not disagree	9%	6%
Somewhat agree	18%	9%
Agree	20%	6%
Strongly Agree	2%	5%

Therapists were asked two additional questions about how provider supply affects student IEPs. The majority of therapists (71%) disagreed to some extent with the statement: "Therapies that have a better supply of providers are included in student IEPs even if it is not a good match for the individual's need." About one in six therapists (16%) agreed with the same statement. Just over half of the therapists (53%) disagreed with the statement: "When a student is improving, provider supply impacts how often a service in their IEP is adjusted in frequency or duration." Thirty-one percent of therapists agreed with the same statement.

There was similar level of agreement between therapists (61%) and special education directors (63%) with the statement: "Telehealth is an adequate option for providing access to services when local providers are scarce." About a quarter of therapists (26%) disagreed to some extent with this statement. Physical therapists (42%) were more likely than occupational therapists (18%) or speech therapists (22%) to disagree with this statement.

Table 11. Agreement with "Telehealth is an adequate option for providing access to services when local providers are scarce"

	Therapists n=97	Special Education Directors n=85
Strongly disagree	4%	2%
Disagree	8%	1%
Somewhat disagree	14%	15%
Neither agree not disagree	13%	18%
Somewhat agree	35%	26%
Agree	25%	24%
Strongly Agree	1%	13%

There is an indication that students in areas where therapists are scarce may be less likely to receive some services or receive fewer services. Additional disparity in therapy could occur if students that lived in areas where there are more therapists are more likely to receive therapy outside of school. Therapists were also asked the percentage of their students that received the same therapy outside of the school setting. Ninety-two percent of therapists (n=89) chose the zero to twenty-five percent choice on that question. Due to the small numbers, it is difficult to draw conclusions, but six of the nine counties where therapists said twenty-six percent or more of their students receive additional physical therapy outside of school are in southern Maine (Cumberland, York).

Prior Experience with Telehealth

The prevalence of educators' prior experience with school-based telehealth was difficult to assess because there were discrepancies between therapist, special education teacher and special education director reports on the use of school-based telehealth prior to the pandemic. Many of the written comments on the survey from educators about the challenges of school-based teletherapy focused on home school instruction during the pandemic. The quantitative survey results for physical therapy also show confusion around the use of school-based telehealth prior to the pandemic. In the interviews and therapist survey, participants shared the impression that there were no Maine-based physical therapists practicing school-based telehealth prior to the pandemic. Some therapists were considering trying it. The largest out-of-state telehealth provider, Presence Learning, does not offer physical therapy. Yet, fourteen percent of city and

suburban special education teachers reported that their students received physical therapy via school-based telehealth prior to the pandemic. It appears that there also was some misunderstanding of the survey question by special education directors, as five (6%) thought their school had telehealth physical therapy. While the number of districts indicating they provide telehealth services seems to be inflated, there is an overall regional pattern in the directors' survey responses showing more than half of the western Maine school districts using school-based telehealth services prior to the pandemic, and few southern Maine districts using school-based telehealth services prior to the pandemic.

Table 12. Directors report of services provided by school-based telehealth to students with an IEP in their district

	Total n=89	Central n=15	Northern n=24	Southern n=23	Western n=18
Speech Therapy	28%	40%	21%	4%	61%
Occupational therapy	11%	20%	8%	4%	17%
Physical therapy	6%	7%	8%	0%	6%
Mental Health (psychologist, counselor, social worker)	10%	27%	13%	0%	6%
Interpreter	4%	7%	4%	4%	0%
Other	0%	0%	0%	0%	0%
Total	33%	47%	25%	17%	67%

Most therapists said their initial experience with telehealth came after school closure in March 2020. There were nine therapists that had prior experience with telehealth. Six speech therapists, two occupational therapist and one physical therapist said they had experience with telehealth prior to March 2020. At the time of the survey in fall 2020, only one occupational therapist and two physical therapists had not provided therapy using teleservices. By fall of 2020, most therapists had returned to doing only in-person therapy sessions, and only 29% (n=34) said they were providing home-based therapy remotely to students using telehealth.

Table 13. Experience with providing therapy using teleservices.

	Yes, prior to March 2020	Yes, I experienced telehealth for the first time since March 2020	No, I have never provided therapy using teleservices	Total
Occupational therapy n=36	6%	92%	3%	100%
Physical therapy n=29	3%	90%	7%	100%
Speech and Language therapy n=41	15%	85%	0%	100%
Total therapists n=106	8%	89%	3%	100%

Effectiveness of Teletherapy

When asked if telehealth therapy could be equivalent to in-person therapy in some situations, therapists were very positive about it. Three out of four therapists (78%, n=83) agreed to some extent that teleservices and in-person services could be equivalent in *some* situations. Physical therapists (66%, n=19) were less likely to agree than occupational therapists (86%, n=31) or speech therapists (80%, n=33). When the therapists were asked if telehealth services could be equivalent in *most* situations, therapists had the opposite response. Three of four therapists (74%, n=78) disagreed that teleservices and in-person services could be equivalent in *most* situations. Occupational therapists (28%, n=10) had the most agreement that therapies could be equivalent. Twenty-one percent of speech therapists (n=9) agreed that both in-person and teleservices could be equal in *most* situations. Just three physical therapists (10%) agreed that therapy in-person and using teleservices could be equivalent.

Special education directors were asked the same two questions about the possible equivalence of in-person and telehealth delivery of therapy in *some* and *most* situations. Their reaction differed from the therapists. While 78% of therapists agreed that teletherapy could be equivalent in *some* situations, fewer directors agreed (66%). More special education directors (35%) than therapists (21%) felt teletherapy could be equivalent to in-person therapy in *most* situations.

The special education directors (n=28) who said their districts used teletherapy to deliver services to students prior to the pandemic were more positive about the use of teletherapy. The majority (71%) agree that teletherapy could be equivalent to in-person therapy *some* of the time. Half of these directors (50%) agreed that teletherapy could be equivalent to in-person therapy *most* of the time.

Table 14. Agreement that "Therapy in-person and using teleservices could be equivalent in *some* situations".

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	Total
Occupational therapy n=36	6%	0%	8%	0%	42%	31%	14%	100%
Physical therapy n=29	14%	17%	0%	3%	31%	28%	7%	100%
Speech and Language therapy n=41	2%	10%	7%	0%	32%	39%	10%	100%
Total therapists n=106	7%	8%	6%	1%	35%	33%	10%	100%
Total Directors n=85	2%	7%	16%	11%	25%	25%	14%	100%

Table 15. Agreement "Therapy in-person and using teleservices could be equivalent in *most* situations".

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree	Total
Occupational therapy n=36	11%	39%	19%	3%	22%	6%	0%	100%
Physical therapy n=29	21%	34%	28%	7%	7%	3%	0%	100%
Speech and Language therapy n=41	15%	32%	24%	7%	12%	7%	2%	100%
Total therapists n=106	15%	35%	24%	6%	14%	6%	1%	100%
Total Directors n=85	11%	14%	24%	16%	13%	12%	11%	100%

The therapists and special education directors were asked why there was a difference in delivery of services *some* and *most* of the time. Their answers appeared to be based on their experience of delivering therapy to students in their homes, but are relevant to telehealth therapy in schools. Therapists and directors identified the adult helpers as key in their written comments. Desirable technical skills for adult helpers included maintaining a video-conferencing connection and learning how to use the software platforms, as well as focusing the camera on the whole child and the work area as needed. Therapists felt the adult helpers were useful in motivating students to pay attention. For physical therapy and occupational therapy, the adult helpers had a role in positioning the child, assisting with transferring the child, guiding motion and stretching. In addition to skilled adult helpers, all specialties of therapists mentioned the need for a distraction-free environment that allowed adequate space for a child to do therapeutic exercises during telehealth sessions. Some children required specialized equipment and manipulatives for effective therapy. In interviews with therapists that have provided school-based telehealth services, difficulty with schools maintaining a schedule for students' therapy was noted. When therapists did home therapy, they noted some families had difficulty maintaining scheduled

appointments as well as being challenged in trying to balance multiple therapy sessions with different providers.

During the interviews and in their written survey comments, therapists also felt there were certain medical conditions that made telehealth therapy more challenging and in some cases not equivalent to in-person therapy. Therapists felt that severely impaired students, especially those who are non-verbal, visually or hearing impaired did not do as well as other students with teletherapy. A child with cognitive impairment and intellectual impairment might not fully participate in teletherapy. One therapist mentioned a client who "could not understand the role of someone talking to them from a computer screen." The child's confusion may trigger additional behaviors that interfere with learning. Children with attention deficits, difficulty maintaining alertness or behavioral problems may be better served in-person. One therapist mentioned a child that would shut the computer off during sessions. Younger students (defined as kindergarten, grade one, and grade two) did not do as well as older students.

Therapists felt that they needed to provide some therapy in-person. There are certain treatments that they felt are best done in-person, such as working on group social skills, providing tactile cues, sensory processing therapy, hand-over-hand assistance, and balance movement patterns. Therapists felt assessments such a muscle strength testing, and range of motion should be done in-person.

While 15% of speech therapists felt services could be delivered entirely remotely, only one physical therapist and no occupational therapists felt all services could be delivered remotely. At the other extreme only eight therapists thought services needed to be delivered entirely in-person. The optimum frequency for therapists to see students for occupational therapists (45%) and physical therapists (63%) was every two weeks to monthly. A third of speech therapists (33%) felt students did not need to be seen in person or just needed an introductory visit at the start of the semester. Directors whose districts had used school-based telehealth therapies were asked how often their students had been seen in-person. Half of the directors (52%) said the students were never seen in person, twenty-six percent said once or twice a semester, and twenty-two percent said the students were seen at least monthly. The most common telehealth therapy is speech therapy. There was agreement between the speech therapists' views about the optimum frequency of in-person visits and special education directors' perception of the actual frequency of visits.

Table 16. How frequently should a student be seen in-person during teletherapy?

	Services can adequately be delivered via telehealth with no in-person visits	Once per semester to augment or reinforce telehealth visits	Monthly in-person to augment telehealth visits	Every two weeks to augment telehealth visits	Once per week to augment telehealth visits	Services need to be delivered in-person	Total
Occupational therapy n=31	0%	10%	32%	26%	19%	13%	100%
Physical therapy n=27	4%	7%	22%	41%	19%	7%	100%
Speech and Language therapy n=34	15%	18%	15%	21%	26%	6%	100%
Total therapists n=106	7%	12%	23%	28%	22%	9%	100%

Challenges of School-Based Telehealth Services

When therapists and special education directors were asked about the barriers to providing quality telehealth services in the schools, many of their answers reflected their experience in providing home-based teletherapy during the pandemic. Their answers mirrored the previous answers to why therapy could or could not be equivalent to in-person therapy. The need for adult helpers was listed as a barrier by 71% of therapists and 49% of directors. Both therapists (51%) and directors (22%) listed the need for high speed broadband as a barrier. The next most common barrier was space in schools (therapists 56%, directors 32%). Parental resistance to telehealth was identified as a barrier by 42% of therapists and 32% of directors. Concerns expressed by therapists included that their preparation time for teletherapy was not billable.

Scheduling was listed as a barrier by most therapists. This seemed to be related to home therapy rather than a school-based therapy. Remote home-based therapy during the pandemic was complicated by a high rate of no shows. Seventy-seven therapists indicated student no shows

as a barrier to proving telehealth services. Therapists felt students were tired from too much screen time so scaled back on therapy. They felt that there were multiple therapy demands on some children receiving services from several specialties. Another issue in some schools was that all students had the same schedule with teachers and could not be pulled from academics, so all students needing therapy were only available in a small block of time. During interviews, therapists told us that student absences and changes in school schedules that interfere with scheduled therapy sessions can be a challenge to contract therapists that are paid per session.

Therapists were asked about working with English Language learners. Thirty-three therapists said they had done telehealth with English Language Learners. This may be an over-statement of the number since some of the open-ended answers appeared to reference non-verbal students rather than those speaking another language at home. The therapists who had worked with ELL children emphasized the need for adult helpers. They recommended the use of visual learning aids, physical modeling, and providing translated documents for parents. One therapist noted that interpreters should be used for consent to treatment. Another therapist said they used a "language line" (phone translator service) to assist with therapy when an explanation was needed.

Future of Telehealth in Maine

Maine policies support telehealth. Maine was one of the first states to introduce a telehealth parity law in 2009, An Act to Provide for Insurance Coverage of Telemedicine Services" (Title 24, Sec. 4316). This law requires insurance companies to reimburse providers for services provided via telehealth that were equivalent to in-person services. MaineCare also provides reimbursement for telehealth services but does not cover the cost of a helper (Northeast Telehealth Resource Center, 2015; Towey, 2020).

Maine has a history of training therapists in telehealth. Waldo County General hospital has offered an accredited training program for practicing speech therapists from across the nation and some foreign countries since 2011. The University of Maine has a graduate program in Speech Therapy that offers students a telehealth training course. Occupational therapists have begun to use telehealth in the schools. With the support of the speech therapists, Waldo County General hospital occupational therapists have been doing telehealth for about six years (Towey, 2020). The University of Southern Maine graduate occupational therapy program is setting up a

laboratory to offer a course in telehealth. Maine's professional organization of pediatric physical therapists is looking to begin telehealth training for practicing therapists.

In this survey, due to remote schooling and work necessitated by the pandemic, most therapists have had some training in telehealth. Most said it was self-directed learning (56%) or attending a webinar (43%). Fourteen percent had attended a one to four day seminar. Just two therapists (2%) said they had clinical training in teletherapy during their degree-granting program. Several therapists used the "other" option to note that they went to multiple webinars. When asked how confident they were in their ability to provide telehealth therapy that was equivalent to in-person therapy in *some* situations, 47% said moderately to extremely adequate and another 16% felt slightly adequate. Therapists were asked what additional training that they would like in telehealth. The vast majority wanted additional training. Ten (11%) felt they did not want additional training. These were occupational, physical, or speech therapists who had first tried telehealth after school closure in March 2020. Seventy-two percent wanted training on software programs that were specific to their therapy field. There was strong interest in learning about best practices, best technology, engagement of patients and regulations of telehealth.

Table 17. Additional training in telehealth desired by therapists. n=95

Available software programs for Occupational/Physical/Speech Therapy	72%
Best practices in Occupational/Physical/Speech Therapy	48%
Best technology to deliver telehealth	45%
Engagement of patients	42%
Regulations around telehealth	39%
Use of manipulatives	35%
Artificial intelligence software programs that adjust based on patient's actions	18%
Other	4%
I do not want additional training in telehealth	11%
Total	100%

An area of opportunity for Maine to expand telehealth training or other training may be adaptive physical education. Although adaptive physical education was not one of the services that this study initially focused on, survey answers identified it as an area where student IEP needs may not be equitably met. Over half of the reporting districts (57%) said this IDEA-

mandated educational service was not in their student IEPs. The reason for this is unclear. It seems possible that a shortage of qualified educators for APE may be the reason this educational service is not included in most districts' student IEPs. MDOE requires adaptive physical education to be taught by a credentialed APE teacher or by a physical education teacher in consultation with a credentialed APE teacher, yet the Maine Adaptive Physical Education Task Force believes there are insufficient accredited APE teachers in Maine. The MDOE staff database does not identify adaptive physical educators as a separate school staff position, so it is unclear where they teach or the number of certified APE teachers. Physical education teachers can become credentialed in adaptive physical education (APE) by completing coursework in adapted physical education, assessment in adapted physical education and a supervised practicum in adapted physical education. No undergraduate physical education program in Maine currently meets the credentialing requirements for APE, although some undergraduate programs incorporate either the supervised practicum or adaptive physical education coursework. When there is not a credentialed APE instructor or, in other situations, the Maine Adaptive Physical Education Task Force will provide consultations to teachers, administrators, other therapists and children's families. This is usually done in person. Video-conferencing may facilitate consultations in remote areas allowing more students access to adaptive physical education.

Maine-based stakeholders are actively engaged in innovating in the area of telehealth; our research identified several companies and individuals that are creating products that support its development and use. Michael Towey, speech therapist at Waldo County General Hospital, is on the board of directors of an Israeli company that is making an artificial intelligence software program to be used in speech therapy. Another example of innovation in Maine that supports telehealth is the company Kinotek. The company benefited from several state programs. Kinotek begin in the virtual reality laboratory (VEMI) at the University of Maine. Maine Technology Institute, Libra Future Fund, Start-up Maine and University of Maine Innovate for Maine all were key contributors to Kinotek's start-up. Maine Technology Institute provided guidance at several key stages. Most of Kinotek's key employees are recent graduates of the University of Maine. The chief technology officer, Dan Lesko, graduated from Mt. Blue high school in Farmington. He credits his high school's vocational-technology biotechnology program with introducing him to bioengineering. Kinotek has created a software program that takes images from a single 3D camera and allows therapists to view, measure and record motion in different

planes. This program also lets therapists show patients their motion in different planes. The broadband width necessary to transmit images is similar to that needed for Zoom. Getting the necessary camera angles to allow therapists to view a patient's motion is one of the challenges mentioned by therapists in this survey.

Conclusion and Policy Implications

Almost all of the therapists who responded to the survey for this study have now experienced telehealth to at least some extent, with the vast majority using it for the first time as a result of school closures during the pandemic. The survey was not designed to explore whether these therapists used teleservices extensively for all students, or just for some selected students. Thus, the full extent of telehealth therapy in Maine could not be fully ascertained without the ability to conduct a robust analysis of billing data.

Among the providers surveyed, there is a positive interest in expanding school-based telehealth services. Most therapists and directors feel that there are not enough providers in their area, and almost all therapists feel there are therapist workforce shortages in rural areas. There appear to be some areas of disparity in services provided to students with IEPs, which could be mitigated with increased use of telehealth to ensure access.

There was not an accurate administrative data source to describe who is providing therapy services to students in each district. The Maine DOE staff directory listed some occupational therapists, physical therapists and speech-language therapists, but appeared to be missing some therapists, such as those who are contracted service providers rather than employees. Many districts did not have any corresponding therapists. The MDOE staff listings can be used to identify special education teachers and special education directors, but there is no separate position code to distinguish adaptive physical education teachers from other teachers.

It is also not clear from available data what specific services are being provided, and how often, in each district. Assessing medical services provided is difficult as many districts do not bill MaineCare for all of the eligible services they provide. MaineCare also notes that their data is inadequate to assess for services provided under the school-based Medicaid program. Based on our survey results, a lower percentage of small town and remote rural districts appear to have therapy services in their student IEPs than do city and suburban districts, and smaller districts are less likely to offer therapy services. Although some of these differences may be explained by the

fact that there are fewer students in smaller districts, these are indications that disparities may exist.

In this survey, over half of the therapists overall felt there was a shortage of their specialty in the region where they practiced. Three-quarters of northern Maine therapists felt there was a shortage of therapists. In a question on barriers to providing telehealth services to students in their districts, only 27% of special education directors felt their district had enough in-person therapists.

Adaptive physical education (APE) is a required educational service under IDEA. Less than half of the districts and special education teachers said it was in their student IEPs, although many of these districts did report having students with physical therapy needs. This is an area of potential concern that merits further exploration.

A large majority of special education directors disagreed that services might not be included in some student IEPs, or would be included less frequently, when providers are scarce. Therapists also generally disagreed that this situation was occurring, although not as strongly as the directors.

Telehealth was viewed positively by special education directors and therapists. In this survey, most therapists' (89%) and educators' (67%) only experience with teleservices was during the COVID pandemic. The majority of therapists (78%) and special education directors (66%) felt telehealth services could be equivalent to in-person services in at least some circumstances. About two-thirds of therapists and special education directors felt telehealth services were an adequate option when there was a scarcity of therapy providers. Expansion of telehealth therapy to additional Maine schools may be more attractive with changes in reimbursement policies.

To provide optimum therapy services to students, most therapists feel a hybrid approach is needed. Only a third of speech therapists (33%) felt students did not need any in-person visits or only needed an introductory visit. Eighty-nine percent of occupational therapists and physical therapists felt students required more than just a once per semester introductory visit for adequate telehealth therapy. Therapists also felt some students could benefit from their usual therapist consulting with a more experienced therapist that specializes in the treatment of complex pediatric cases. Therapist concerns about doing more school-based telehealth include unreimbursed travel time, and no reimbursement for preparation.

Maine has been a national leader in providing telehealth training to speech therapists and is building capacity to train occupational therapists in telehealth practices. Therapists responding to this survey want additional training in telehealth, especially around software programs and best practices. Maine policies support innovations in telehealth through programs such as Maine Technology Institute.

While the exact usage and potential for expansion of school-based telehealth cannot be measured from available data, Maine has been very progressive around telehealth and further growth in the use of school-based telehealth could allow students to receive more IEP services.

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Appendices

Additional data tables available on request.