



Barriers and Best Practices for Using Telehealth Services in Nebraska

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KEY FINDINGS

Receiving treatment from a mental health professional can be challenging in a rural state like Nebraska, where there are few providers. Telehealth is a promising solution to healthcare workforce shortages that uses videoconferencing technology to deliver services, precluding the need for clients to travel long distances to access mental health services.

This study determined the perceived barriers that keep providers in Nebraska from offering telemental health services. To provide context, we reviewed Nebraska's policies on Medicaid telehealth reimbursement. We then analyzed the mental health workforce availability in Nebraska by region, using the Nebraska Health Profession Tracking Services database. We developed and conducted surveys and semi-structured key informant interviews, collecting information from providers and healthcare administrators on how telehealth is used. The interviews further asked about what resources are needed to increase telehealth services.

We found that there are few legal limitations on telehealth use in Nebraska, and our rural areas match trends of having generally inaccessible mental health services. Despite this, only about 27% of providers have implemented telehealth services for patients and only 33% of providers use telehealth to communicate with other providers since it became a widely accessible option for providers in 2008. Providers and administrators report a number of policy and technology barriers, but these reported barriers were often unfounded because they are based on outmoded information. Our findings indicate that telehealth training could have a considerable influence on implementation in the state by increasing provider comfort with its regulation, use, and application.

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BACKGROUND

Behavioral Health Workforce Shortage in the U.S.

Mental health illness is a persistent cause of morbidity in the United States, where an estimated 17.9% of adults have a mental illness and 4% have a serious mental illness.¹ In rural communities, the delivery of quality behavioral health services is limited by geographic isolation, low socioeconomic status of the population, and cultural and stigmatic barriers.² This is further compounded by the difficulty in recruiting and retaining professionals and staff in these geographically remote environments.³

According to a national study by Bishop et al., the number of practicing psychiatrists declined by 10% between 2003 and 2013.⁴ Another study commissioned by the U.S. Department of Health and Human Services estimated that there is currently a 6.4% shortage in the psychiatry workforce. Based on estimates of retirement and new entries into the workforce, in 2025 the unmet workforce need will increase to a deficit of 12% (i.e., a shortage of 6,090 psychiatrists).⁵ Overall shortages of mental health providers are further exacerbated by disparities in the availability of mental health care providers between communities. A Thomas et al. study showed that rural counties and counties with low per capita income had higher levels of unmet need for mental health providers.⁶

Mental health workforce shortages have a significant impact on the people in rural communities seeking mental health treatment. A national survey of hospital CEOs showed that about 90% of their rural mental health patients had to drive more than 20 miles for a referral, and 50% had to drive over 60 miles.⁷ Findings indicated that more than 50% of mental health patients have to wait more than one hour to be seen in Emergency Departments. Over 90% have difficulty making appointments with psychiatrists and over 50% have difficulty making appointments with other mental health providers because of scheduling conflicts. Further, 90% of rural hospital CEOs report a shortage of mental health providers in their hospitals because of the difficulty of recruiting providers to rural practices. Shortages are also exacerbated by workforce turnover rates that are higher in rural counties.⁷

Behavioral Health Workforce Shortage in Nebraska

Workforce shortage is a serious public health issue in rural states such as Nebraska.⁸ Figure 1 shows Nebraska's population distribution divided into metropolitan, micropolitan, rural and frontier areas. The U.S. Census Bureau defines a metropolitan county as a county that has a city with 50,000 or more residents or is a metropolitan outlying county.⁹ A micropolitan county is defined as a county that has a city

with 10,000 or more residents. A rural county is defined as a county in which the largest city that has less than 10,000 residents. Frontier areas are defined as an area with less than or equal to six people per square mile. In 2014, 18.6% of Nebraska's population lived in a rural area and 17.6% lived in a micropolitan area. In contrast, in the United States as a whole only 4.5% of the population lived in a rural area and 8.7% lived in a micropolitan area. Consistent with national workforce statistics, Nebraska's mental health workforce is underrepresented in rural and frontier parts of the state. For example, 88 of Nebraska's 93 counties are designated as federal mental health profession shortage areas (HPSAs).¹⁰ The stark difference in supply of behavioral health providers between urban and rural areas are shown in Table 1.

Figure 1. Nebraska Macropolitan and Micropolitan Counties

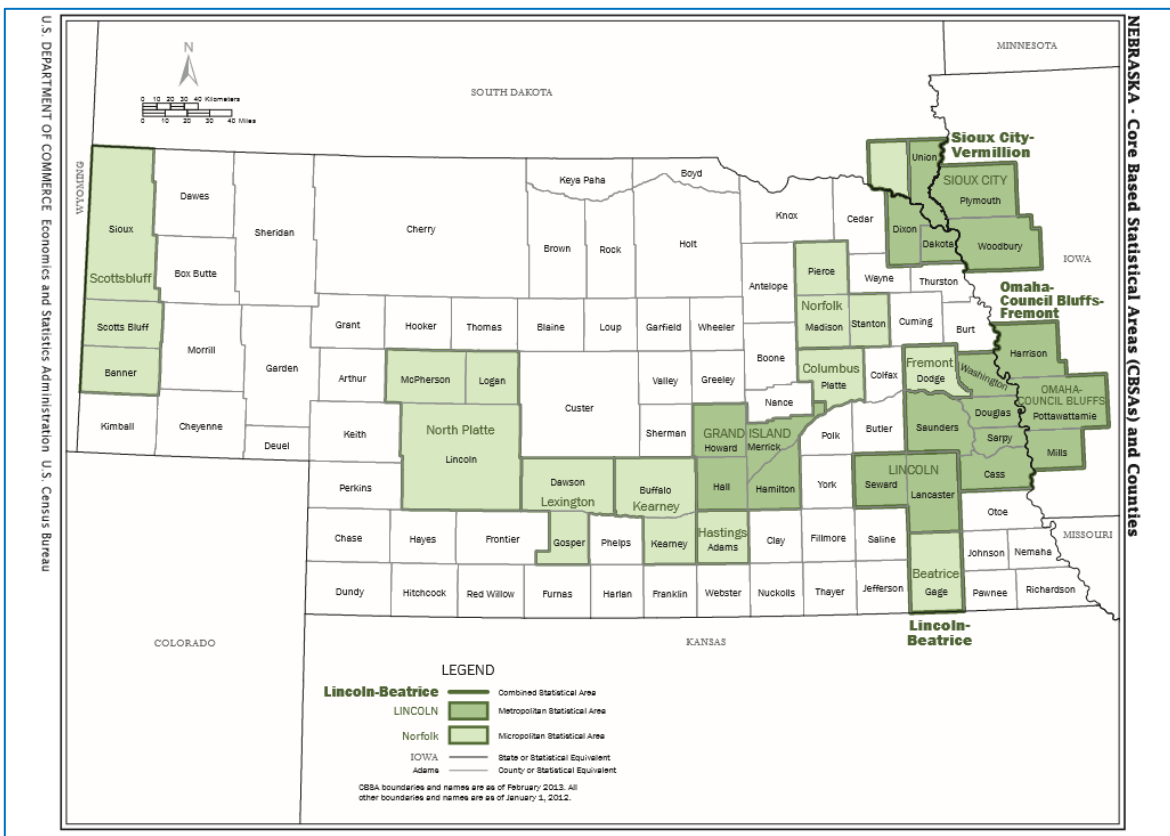


Table 1. Nebraska Behavioral Workforce Supply: Number of Providers per 100,000 Population, 2016^a

Provider type	Rural	Urban
Psychiatrists	2.9	12.7
Psychiatric nurses (APRNs)	4.6	7.0
Psychiatric physician assistants	0.4	1.1
Psychologists	9.7	25.3

^aData represent primary and satellite provider locations

Telehealth to Deliver Behavioral Health Care

An expansion of telehealth services is being promoted nationally to combat disparities in health care availability.³ Telehealth services are used to provide health care and education to patients digitally, to increase access to health care providers for those in communities with provider shortages. Mental health diagnosis, assessment, and treatment have all been shown to be effectively delivered by telehealth services, and work equally well for all age groups and ethnicities.^{11,12} In addition, providing mental health care digitally has proven to have advantages for both providers and patients over traditional face-to-face treatment. Providers can more accurately monitor the care of their patients with stored video and photos, and are more likely to increase their confidence and skills through consultation and academic literature review.¹³ Mental health patients seem willing to substitute telehealth visits for traditional visits with their provider, and benefit from easier access to care, fewer hospital trips and missed appointments, shorter waiting times, less stigma for treatment, and a decreased burden for parents of child and adolescent patients.¹³

Telehealth use has been sparse in Nebraska.¹⁴ This study aims to examine reasons for lack of usage by examining trends in the current uses of telemental health in Nebraska, identifying barriers and benefits to its adoption, and determining the training and educational needs of providers to implement telemental health in their behavioral health practices. Specific aims are the following: 1) investigate the variations in the use of telemedicine by different behavioral health and primary care providers, and by the six Behavioral Health Regions in Nebraska; 2) identify barriers and promoters of telemental health; and 3) identify the training and continuing education needs of mental health providers to prepare for the use of telemental health as a part of optimal integrated care.

METHODS

First, to provide some context, we conducted a literature review to examine Nebraska's state policies regarding telehealth care. Next, we analyzed data from the Nebraska Health Profession Tracking Services to examine the regional variations in the behavioral workforce. We then conducted group and individual interviews with providers regarding usage and finally, sent out surveys to a representative sample of 250 providers and behavioral health service administrators to collect information from about the use of telemental health.

Definitions and Terms

According to the National Center for American Telehealth & Technology, telemental health (TMH) is “a subset of telehealth that uses technology to provide mental health services from a distance” and includes telepsychology, telepsychiatry, and telebehavioral health.¹⁵ In Nebraska, “Telehealth means the use of medical information electronically exchanged from one site to another, whether synchronously or asynchronously, to aid a health care practitioner in the diagnosis or treatment of a patient (NE Rev. Statute, 71-8503, (LB1076)). For reimbursable services under Medicaid, in-person contact is not needed (NE Revised Statutes Sec. 71-8506) but for children’s behavioral health, “a trained staff member must be immediately available to a child receiving telehealth behavioral health services” unless this condition is waived by a legal guardian (Revised Statutes of NE. Sex. 71-8509). Nebraska Medicaid provides coverage for telehealth at the same rate as in-person treatment plus transmission costs and fees to the originating site (NE Admin. Code Title 471, Ch.1 Manual Letter #52-2016). There is no reimbursement for services provided by telephone (NE Admin. Code Title 471, Ch18).

The behavioral health workforce included in this study is: psychiatrists, psychiatric advanced practice registered nurses (APRNs), psychiatric physician assistants (PAs), psychologists, licensed independent mental health providers (LIMHPs), licensed mental health providers (LMHPs), and licensed addiction and drug counselors (LADCs). Psychiatric APRNs and PAs are those who self-identified psychiatry as their practice specialty.

Nebraska’s public behavioral health system is split into six regions of local quasi-governemental units, known as Behavioral Health Regions (BHRs), that partner with the state Division of Behavioral Health to do planning and service implementaiton of behavioral health care.¹⁶ Population size varies across the regions, ranging from about 90,000 in BHR1 to about 800,000 in BHR6. BHRs use funds from various sources including federal, state, and local governments, to manage mental health programs for designated counties. Each BHR operates its programs in a different way. For example, BHR2 directly manages all of its mental health programs and operates a region-wide information system for mental health care. Other BHRs directly contract with individual providers or health care systems to provide care and do not have region-specific service delivery or information systems. However, it is important to note that the Division of Behavioral Health, the state’s mental health authority, has been working with all of the BHRs to establish a unified information system for all mental health care services funded through the Division.

Health Professions Tracking Services (HPTS) Data Analysis

The HPTS is located within the University of Nebraska Medical Center College of Public Health. The HPTS maintains a relational database of all Nebraska licensed healthcare providers including behavioral health professionals. Using the Nebraska licensure database as the sampling frame, HPTS surveys health care facilities and healthcare professionals across Nebraska. The surveys for professionals practicing in Nebraska, pre-populated with previously identified practice information from identifying licensure data, provide professionals the opportunity to update their information. Physicians, advanced practice registered nurses, and physician assistants are surveyed semi-annually. HPTS verifies nonrespondents to the semi-annual practice location surveys by periodically contacting practice locations to verify and document locations of practitioners and contact information. Surveys collect both demographics and practice specialty information. Ad-hoc questions are included based on specific needs or interest in a given year. Telehealth questions were included in the most recent surveys for health care facilities.

Providers may hold more than one license but each provider is counted only once in this study. In case a provider held more than one license, the health professional was categorized under the highest license based on the following hierarchy: psychiatrist, psychologist, APRN, PA, LIMHP, LMHP, and LADC. The HPTS database contains information on the distribution of behavioral health providers by tracking the professionals who have a primary or satellite practice location in Nebraska. Primary practice location is defined as the location where professionals spend the majority of their practice time. Using the primary Nebraska location reported in the survey avoids counting a professional more than once, while not excluding professionals that only have satellite locations in Nebraska. Two choropleth maps were created for a visual exhibition of shortage areas in Nebraska. The data were analyzed using SAS version 9.3 and maps were created with ArcMap 10.4.1.

Group and Individual Interviews

We conducted semi-structured key informant interviews with a sample of providers and agencies across all six BHRs. An interview guide was developed based on interview and survey questions used in previous telehealth studies.^{11,12,17,18} The major themes identified from the literature review were: 1) resources needed to establish the TMH services in the region, 2) types of services provided, 3) barriers to service expansion, and 4) education and training needs. Based on these themes, we developed eight topics and 27 subtopics to cover in the interviews (Appendix A).

In order to assess the regional differences in TMH use, we interviewed providers and administrators from each of the six BHRs. The Division of Behavioral Health introduced the research team to the Behavioral Health Region Administrators. Behavioral health providers who currently provide services via telehealth were identified by the region administrators. Additional providers were identified by contacting the two major health systems in the state, CHI (Catholic Health Initiatives) and Nebraska Medicine that provide behavioral health services. In addition to the region administrators and behavioral health providers, we also interviewed other individuals who are familiar with the history and the current status of the telehealth implementation in the state including representatives from the Nebraska Hospital Association, Nebraska Blue Cross Blue Shield, and Nebraska Medicaid program.

A total of 28 individuals were interviewed either over the phone or in-person during the period between January and July 2017. Interviews were audiotaped to develop transcripts. Transcripts were reviewed independently by two researchers to identify themes. The researchers compared the themes and if there was a disagreement, the transcripts were reviewed together to reconcile differences. The themes were combined into four major topic areas.

Medicaid Provider Survey

We conducted an online survey of Medicaid providers to assess their use of TMH and their training and education needs. A questionnaire was developed based on interview and survey questions used in previous telehealth studies^{11,12,17,18} Topics included in the survey were: 1) TMH use 2) benefits of TMH, and 3) logistic issues related to the implementation of TMH. An anonymous online survey was distributed by the Nebraska Medicaid program to approximately 250 individuals registered as Medicaid providers in Nebraska between May and July 2017. The response rate was 17% (N=43).

RESULTS

Distribution of Behavioral Health Workforce in Nebraska

Figure 2 shows the distribution of Nebraska psychiatrists – of the state’s 93 total counties, 74 have no practicing psychiatrists.¹⁹ Appendix C also includes maps of other behavioral health professionals. Behavioral health providers are concentrated in the east one-third of the state where the population density is the highest, especially in the Omaha (BHR6) and Lincoln (BHR5) metropolitan areas.

Interestingly, the number of psychiatric nurses increased by 45% (from 78 to 113) between 2010 and 2016, which contributed to the overall increase in the number of prescribers in the state.

Figure 2. Primary and Satellite Locations of Psychiatrists in Nebraska, 2016

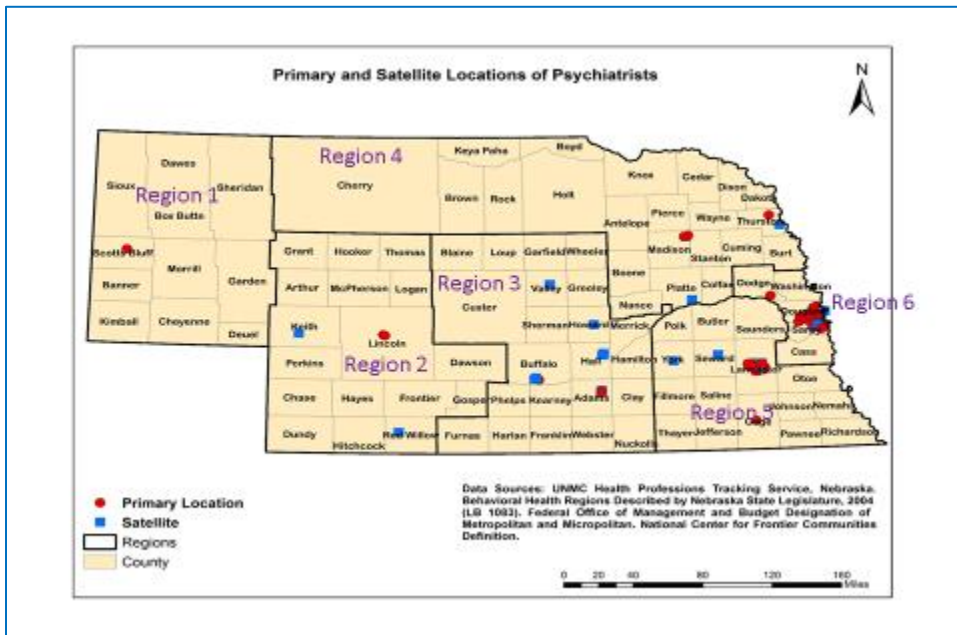
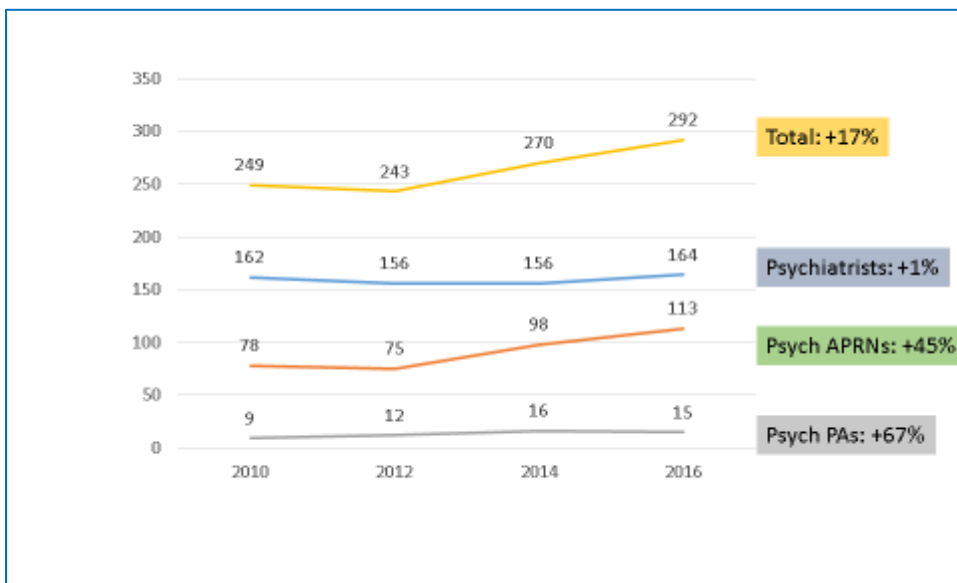


Figure 3. Trends of Psychiatric Prescribers in Nebraska, 2010-2016



Telehealth Implementation by Nebraska Health Care Facilities

A total of 1,644 health care facilities were contacted for the HPTS survey with a response rate of 563 (34.2%). 151 facilities (26.8%) indicated that they implement telehealth between patients and providers and 176 (31.3%) indicated that they use telehealth between providers. Notably, the questions are about any telehealth and not specific to mental health. By BHR region, the percentage of facilities that use some form of telehealth between providers and patients and between providers are shown in Table 2 below.

Table 2. Percentage of Facilities Using Some Form of Telehealth (n=1,644)

BHR	Total number of facilities	# and % of facilities using telehealth between patient and provider	# and % of facilities using telehealth between providers
1	30	4 (13.3%)	8 (26.7%)
2	36	17 (47.2%)	10 (27.8%)
3	71	22 (31.0%)	22 (31.0%)
4	77	24 (31.2%)	24 (31.2%)
5	129	33 (25.6%)	41 (31.8%)
6	220	51 (23.2%)	71 (32.3%)
Total	563	151 (26.8%)	176 (31.3%)

Interviews

Variations in telemental health adoption across regions

TMH has been used widely in Nebraska's rural regions (BHRs 1-4) since 2010. In these regions, TMH has been used for a variety of services including evaluation, medication management, outpatient therapy, and crisis response. One of the rural Regional BH offices contracts with independent behavioral health providers, while the other three rural regions contract with health care systems or behavioral health agencies. Although there is no exhaustive list of TMH providers, according to the interviews conducted for this study, it appears that most TMH services are provided by two major health care systems in the state and several agencies that specialize in TMH services. One such agency interviewed for this study indicated that they expect to see a continuing increase in the demand for TMH in Nebraska and other rural states.

TMH services were introduced more recently (in the past two years) in Nebraska's urban regions (BHRs 5 and 6) with limited scope. Although there are many more behavioral health care providers in urban areas compared to rural areas, access to behavioral health care is still limited among underserved population

groups in inner-city, high poverty urban areas. In particular, a long waiting list for medication evaluation has been reported even in metropolitan areas. The need for increased levels of crisis response has also been indicated across all regions. According to Region 5 and Region 6 administrators, they are currently focusing on more urgent issues (medication management and crisis response) but there is an interest in expanding TMH services if more resources become available.

When and how telemental health began in different regions

Around 2008 Magellan Behavioral Health of Nebraska began promoting TMH services among Medicaid providers. Magellan provided a HIPAA compliant videoconference platform free of charge to their panel of approved behavioral health providers. Around the same time, other pilot funding became available from the Nebraska DHHS and various Nebraska universities which helped BHRs to purchase equipment and software. Based on the interviews of the BHR administrators, it appears that these TMH services were implemented at least in a limited scope by 2010 in all BHRs. One exception is BHR6, where the majority of the individuals live within 30 miles of the providers. TMH services began within the last couple of years in BHR6.

The primary reason for BHRs to implement TMH was to increase access to medication management services for adults. After that, BHRs gradually added more services including therapies and crisis response. BHRs contract with a health care organization or individual providers for TMH services. For example, BHR2 began TMH with one private practice for medication management. Later, the region started directly contracting with individual providers. In BHR3, TMH services began with a psychiatric hospital to serve individuals in a mental health jail diversion program. Instead of transferring them to the hospital for medication management, it was decided that it was better to use telehealth. After that, the services expanded beyond medication management. BHR3 started contracting with a private company that was originally just a clinic base, but later went exclusively to a telehealth model.

One of mental health clinics that contracts with the BHRs stated that they started incorporating TMH mainly because of the expense related to recruiting and employing psychiatrists. For another mental health clinic that contracts with the BHRs, TMH services were implemented to meet their need to increase their efficiency in delivering therapy. Instead of staffing all satellite offices, they use providers from different locations via telehealth, giving them flexibility for scheduling appointments and saving travel time for providers.

...we couldn't afford to have psychiatrists on-site. They were billing us way too high... By having a host site for the Tele-psychiatry has been amazing. We have a lot more availability to our clients because we have the office available five days a week, and we have a care coordinator who sets them up to see their psychiatrist or their nurse practitioner.

Then just the quality of care that they've been able to provide versus an on-site psychiatrist has been awesome as well. They come and we have access to 11 providers, whereas before, we only had two on-site people and so, for a first appointment, it could be months away where now, we can get them in within two weeks. That has been a huge positive, and that they respond to crisis. If we have a crisis, we call and say, "Hey, can you see this person today?" and they'll try to work them in, so those are definitely positives.

Yes. As I mentioned earlier, for me, it seems two needs that...system needs that telehealth within our area. Like, a rural area. I think this is true Nebraska-wide. It is that ease for the patient because of travel time and all of those challenges associate with that. It also helps us address our behavioral health workforce shortage. It just does. We don't have enough practitioners within central Nebraska to be able to serve the entire area, but we can maximize what we have by using telehealth.

The very positives have been that it has given great access to our rural community. If we didn't have Telehealth here in South Sioux or Tele-psychiatry in South Sioux, people would have to drive over an hour and a half to see a psychiatrist. Unfortunately, we're right on the border but nobody in Sioux City will take Nebraska Medicaid. They would have to drive all the way to Norfolk or to Omaha to see a doctor. In that aspect, it's been amazing...

Resources needed to establish the telehealth services in the region

To establish a TMH program for clients, the following resources were reported as necessary: 1) behavioral health specialists to deliver the services, 2) equipment set up and technological resources, 3) HIPAA compliant videoconferencing software, 4) physical set up, and 5) clinical administration.

Each BHR contracts with different behavioral health providers or health care organizations to provide TMH services to its clients. Typically, psychiatrists and APRNs are contracted for medication management. Psychologists and licensed independent mental health practitioners are contracted for evaluation and therapies. Based on the interviews of the BHR administrators and providers, it appears that most of the behavioral health specialists who provide TMH services through BHRs reside in Nebraska and are familiar with the physical and social surroundings of the clients they see. (There are, however, a number of telemental health companies that offer services across state lines.)

Advances in technology and software development have progressed to the point that TMH services do not necessarily require additional high-end hardware or software if an organization or an individual practitioner already has access to a computer with sufficient memory and high-speed internet. HIPAA compliant videoconferencing software costs and service subscription fees vary, but the cost has gone down considerably in the last 10 years; thus none of the BHR administrators interviewed stated that the start-up cost was prohibitively high for their region.

A client who needs a TMH service will set up an appointment, just like they would do for an in-person appointment with a behavioral health provider. The only difference is that the client will go to a nearby clinic where the TMH service is available. The client will check in and be escorted into a private teleconference room. Sometimes BHRs own clinical space. Other times the BHRs will contract with various clinics across their region as an “originating site.” The originating sites are typically behavioral health clinics that operate both in-person and telehealth services. It is also possible for clients to contact their behavioral health provider from home. Nebraska only requires that clients have confidentiality and privacy at the originating site (NE Admin. Code Title 471, Ch1).

Clinical administration (especially referral processing,) is one barrier to setting up TMH services. Many of those interviewed mentioned the need for a policy regarding screening, processing of paperwork, assigning, and following up of cases. Multiple interviewees mentioned that it takes considerable time and resources for an originating site to transition into a system where telehealth services can become part of clinical practice. In fact, providers and administrators alike stated that the perceived burden to change clinical practices and policies is the biggest hurdle to expanding TMH in the state.

“You need clinicians, leadership, and IT support. Leadership to bring staff and money to build programs; physicians who are willing to take on and change their clinical scope of practice, to help build clinical protocols so you can train the staff; and IT to hand technical problems.”

“I would say for both mental health and substance abuse, the thing that makes it work is that I have support staff in the office doing all of the signing up, all the forms people have to sign, all the releases and confidentiality and all those things.”

Types of services provided and population served by regions

TMH services are available for people of all ages and with different types of behavioral health problems. However, most BHRs focus on adults with chronic and serious behavioral health disorders. All BHR administrators stated that one of their biggest needs is medication management. This is even true for BHR6, which has a much larger supply of psychiatrists, APRNs, and primary care providers than the other BHRs. One of the reported motivations for offering TMH services was to shorten the waiting time for a medication management appointment. Other types of services currently provided by TMH include evaluation and therapy. Three regions have implemented TMH services to meet clients in crisis situations (crises response). This is one of the newer services that most regions are working expanding with TMH.

“What we have is, we have on-call crisis response teams, which are like licensed clinicians...If it's a matter of just basically having to dial in and create the room, you're in there and talking to the patient usually within about 15 minutes, 10 minutes. Then, we conduct the clinical interview at that time and the officer usually leaves the room or gives you a little bit of privacy. Then the officer gets back onto the Telehealth and the clinician goes over her results or his results at that time, and then we either set up a plan for diversion or the client's taken into protective custody, or we set up the safety plan. That's all done over Telehealth.”

BHRs mainly focus on adults because there are multiple programs that children with behavioral health issues can use to receive care. CHI and Richard Young Hospital in Kearney have a long history of providing TMH to all age groups, including children. Nebraska Medicine has more recently started offering TMH services to children through primary care providers. UNMC's Munroe-Meyer Institute has a 10 year history of providing TMH services through its extensive network of integrated BH providers in primary care offices, both from the main campus in Omaha as well as in rural clinics. Boys Town has also begun its TMH services for youths in detention centers. One private practice interviewed in this study directly contracts with school systems to work with adolescents who experience crises. Many interviewees commented on the unique challenges when delivering TMH to children.

“I personally... I was just going to say, I personally do, especially as we're starting to work with children. I think as you're working with children, you really need to physically see them, watch their body language, see what's going on...it's really only a six-by-six screen, so you can basically just see their face; you can't see their hands, you can't read body language. It would be my concern as a clinician making an opinion on someone's level of safety over Telehealth.”

There is a critical need for behavioral health services for older adults living in rural areas. This involves an aging population with serious mental illness who need more specialized care, and a population without

serious mental illness who are experiencing complex medical and mental disorders including dementia, depression, and alcohol problems. For the latter group, the psychiatry department at the University of Nebraska is the largest system that has been providing TMH services to nursing home residents, and is present in 70 locations throughout the state. Recent changes allow patients to be seen via TMH in their nursing and assisted living facilities rather than having to travel to a medical practice office.

“Physical presence is needed during critical or severe situations/patients; telehealth probably isn’t ideal for patients with schizophrenia.”

Technical issues

An initial investment to set up TMH is necessary. Depending on the size of the organization, the cost to purchase the software could be a barrier to implementation. One region commented that financial support to purchase software for the providers may be a solution.

“The region we invested basically in the software. We hold the license and we are just getting ready to expand the number of people who can participate...”

“...probably assistance for providers to purchase the software. Maybe the hardware and the software, but it is probably more software than anything.”

“Of course, the cost was really frustrating to us as a small organization, that the three new NCOs would not approve Skype for Business, they were saying that it wasn't HIPAA compliant. We signed a HIPAA compliant thing with them and it was all internal, we have a server and everything. I guess I don't understand all of that but our IT guy just couldn't understand either why that wouldn't work. They said we couldn't do it unless we changed providers, so we had to do that, so that was another cost that we incurred.”

Overall, technological equipment such as the availability of computers and high-speed internet is no longer a problem except in the western end of Nebraska, where the internet connection is sometimes poor. Technical difficulties are not the main barriers to TMH implementation because such problems are rare and often can be fixed in a timely manner. However, when a technical difficulty is present, the experience could be very challenging. Current platforms for TMH have become very affordable and 2 HIPAA compliant software programs (Vidyo and Adobe Connect) can be purchased at very reasonable rates and used for TMH.

“Sometimes, we can see each other but we can't hear each other, or we can hear each other and not see each other, and that gets really frustrating...”

Even among older adults who are seen as technology novices, clients much prefer getting service via telehealth than not getting service at all or waiting for weeks to see a provider in person.

Administrative and regulation issues

Multiple interviewees, both BHRs and providers, mentioned that paperwork can be daunting. This is especially true for the “originating site” or onsite area that hosts TMH services to connect the client in the local area to a specialist in another area. It was indicated that the support staff needed at the originating site and the current (financial) assistance is not adequate to compensate their efforts.

“You're gonna have on the onsite area, you're gonna have a lot of the applications and everything like that, that they have – they help the consumers fill out, so you need that support staff. You need scheduling, you need support staff to help the individuals get all the information that they need for their intake.”

“So it is difficult, I think for the site provider to get paid adequately. I don't think they're really getting paid adequately.”

One private practice stated that they share an office (originating site) to make it more cost effective from an administrative point of view.

“...we've adapted our office to a satellite office 'cause there just isn't that much mental health being accessed. So there's people that try to make it work, but it's really hard to run a full office because there aren't enough referrals, the numbers aren't there to be able to cover the cost to do that. So we're doing an office share right now with Heartland Counseling out in O'Neil, so that both of those can stay active out there and cut down on our expenses.”

It was mentioned that access to behavioral health care is an issue not only affecting rural populations but also urban underserved populations, as well as individuals with mobility restrictions and individuals in the criminal justice system.

In a state like Nebraska that has a severe shortage of psychiatrists, there is an urgent and strong need to identify other types of providers who can do medication management. One potential area of growth is

APRNs trained in psychiatry. One interviewee commented on the need to increase the pool of APRNs who can practice TMH in the state and their region.

“...it isn’t surprising that the states that are full practice for the nurse practitioners are in the middle of the country where we don’t have enough psychiatrists. We don’t have enough general physicians. So these nurse practitioners have full practice in, you know, again, like the states we’re in, Nebraska, Iowa, Colorado, Minnesota, Montana. These are all full practice states. They need to be full practice across the board. We also need to remove this state by state license share for them. There’s a compact for physicians, I think it’s 13 states are part of it now, we need it across the board, all states. You get licensed and you can practice in any state. So those are two big things. Also, we need to be more supportive of nurse practitioners who want to go on and specialize in psychiatric mental healthcare. We need to have more – like I had mentioned earlier, tuition support, scholarship support for them...”

Provider resistance

Across different BHRs and provider types, it appears there is some resistance on the part of providers to participate in TMH. One common comment was about providers’ reluctance to try a different mode of delivery and technology. Two interviewees mentioned that in order to expand their TMH services, there should be a change in culture and expectations in the organization to normalize the use of TMH as part of practice, not as a lesser option.

“Resistance to telehealth is really about change. It’s not about the technology. They all have technology. It needs to be implemented top down, so there is no option to opt out—they will just adapt...”

“I don’t know how many clinics or places that everybody does telehealth, but in this clinic everybody does telehealth. For us it is normal. Exactly. Normalizing it is the way to go. Once you have an option, then they have an opinion. [Laughs] I don’t know what you think.”

Interviewees also suggested that some providers or practices may be afraid of losing clients or patients to TMH or have a fear of losing control of the practice or patients.

“You run into one of the barriers is if I’m seeing a person that’s driving let’s say 75 miles to see me, I’m seeing them in person, and I find out that they can access a service via telehealth, maybe it’s not me but with somebody else, I may not refer them to telehealth just because I don’t want to lose the client. That’s one thing to think about is not just within your own agency, that’s not a problem, because the agency’s not

losing the client. But if somebody else is providing telehealth and I'm providing face-to-face service, I may not make a referral because I don't want to lose the client."

"Practitioners don't want to lose total control of my patient. I need you to communicate back to me what's going on with my patient and if you're gonna change anything, need to make sure that you're aware of the meds that my patient is taking."

It is important, however, to point out that many providers embrace TMH. One of therapists, who used to work for an outpatient clinic but now contracts with a BHR, talked about the benefits of being a TMH provider.

"At this point, I've left the outpatient setting. I'm doing telehealth from home, which is great. Why pay office space? I could be anywhere as long as I have a secure connection and a license to practice anywhere in Nebraska or outside of Nebraska. They got a hold of me about a day after and offered me a job to work from home and see clients. Also, part of my agreement was I get paid for no-shows. If I am here, then they're going to pay for the no-show. I cannot make a living off people who don't have health insurance and have them not show up. With that, I was able to negotiate – basically I know exactly how much money I'm going to make a month. I just submit my hours, and they pay me immediately."

Client satisfaction

According to the interviewees, TMH has been accepted among clients of all age groups and different backgrounds with a few exceptions. A few interviewees mentioned concerns about using TMH with people with hearing problems and individuals with schizophrenia. However, one BHR did conduct a client survey that found TMH to be acceptable.

"For the first several years, we did a separate client satisfaction survey, so that we would know how people were receiving the service, and they were all very positive. ... Folks just don't see it as a different service."

"When you are saving a person from driving four hours to come to see you, they are grateful to you...you already have it even before I start, because they explain in the hospital, "We don't have a Psychiatrist, but there is one on the screen." "Yes!" You want to drive four hours and pay gas and all those things? No. Before I see the patient, they are already kind of grateful for it because of being seen in telehealth."

One provider found that telehealth could be a preferred mode of delivery for some clients who may feel uncomfortable opening up with a therapist.

“...a group of clients that would – that would appreciate that more, I really think the clients who dealt with kind of like persistent and/or complex trauma throughout the course of their life. Some individuals have informed me that they like the fact that like initially I’m not right in the room with them, I’m not sitting right next to them and that, you know, it’s a little more secure and more protected from a proximity standpoint.”

Education and training needs

Providers and administrators interviewed for this study indicated that one of the major barriers to the expansion of TMH is reluctance among providers (both primary care and behavioral health specialists) to use technology or to modify their clinical practice to incorporate TMH. There are still some misunderstandings surrounding TMH. Many physicians have not “bought into” the benefits of TMH and mistakenly believe that it is very costly and time consuming. This misconception persists while many service providers indicate that they self-taught the use of TMH by reading relevant materials on the internet or sought help from their IT department. Interviewees indicated that a brief in-person or e-module on Telemental Health 101 may be beneficial.

“ I think that one would be a training really aimed for the actual doctors. if we have a training on something like this and it’s for the psychiatrist, if it’s done by someone like myself who’s a social worker, or a non-clinician or a non-doc that they don’t quite refund the same way. But I would think if we had one that was – psychiatrist that would go in maybe for a quick hour lunch... ‘Hey, here’s been my experience, I really love it,’ here’s why it works; here’s how it works. I think that kind of setup would be great. I do think a training for the agency, maybe more administratively on what the actual setup would be, what are the costs, what are the startups, so maybe more of a – maybe a half-day training or something.”

Three interviewees, including providers/faculty from Nebraskan universities talked about the need to expose their students or residents to TMH. Another interviewer suggested to pair up a student with a practitioner who is adept at TMH.

“I am the program director for psychiatry at Creighton, UNMC and we have really made a concerted effort to make sure that all of our residents have exposure to telepsychiatry, telemedicine and I think for the most part the trainees have enjoyed doing it. We are also trying to move into the integrated care space. So making residents more comfortable with the consultation model with primary care, sort of what we are working on right now. Yeah, in their third year they do an outpatient clinic all year along and all of them have at least one or two half days of telemedicine with rural sites across the state and then in their fourth year

they can also opt to do elective in telemedicine working with specific populations like geriatrics nursing homes, things like that.”

Survey

A total of 42 providers responded to the survey. Close to half (47.8%) of respondents were practicing in large group settings followed by small group settings (30.4%). About 63% of respondents were practicing behavioral health, followed by 8.7% in primary care. Over half (53.7%) of respondents use TMH in their practice. There are a variety of reasons why TMH is not used: 1) clients have not asked for it, 2) clients currently live in the area, 3) transportation is provided to clients, 4) no training, 5) no lines for clients, 6) too complex to implement at this time, and 7) TMH is not an option provided to us.

Those who indicated using TMH state they have used it between 1 to 30 years. The average number of years used was 5 years. About 90% of respondents who use TMH indicated that they use interactive video and the remaining 10% indicated they use store-and-forward technology. One third (36.4%) of the respondents using TMH indicated they had no technical issues in the past 30 days. About 60% indicated they had a technical problem 1-3 times, and 5% indicated 4-6 times. Two thirds of the respondents who use TMH indicated that they use TMH for assessment and diagnosis (63.6%) and for therapy (63.6%). Other uses of TMH include medication management (36.4%), and education and training for patient caregivers and staff (18.2%). While medication management was emphasized by many of interviewees, TMH has been used for a wide range of purposes beyond medication management. Respondents were mostly satisfied with TMH in terms of quality of care (77.3%) and technology suitability for patients (72.7%). However, there is room for improvement in technical support and training.

Respondents indicated the following as sources for TMH education/training: 1) Host site staff, 2) TMH agency contracted with Medicaid program, 3) online meetings with trainers, 4) presentation on how to use Vidyo by tech department, 5) Telemental Health Resource page on Provider Express, 6) follow on-line or by comment, 7) review of papers and internet information, 8) continuing education, 9) staff training, and 10) IT Department / ITS training. Most respondents stated that TMH is comparable to in-person practice (Table 3).

Table 3. Compatibility of Telemental Health with In-person Practice

Service Delivery Method	% of participants reported somewhat or very comparable
Assessment/Diagnosis of mental illness (36)	23 (63.8%)
Medication management (35)	27 (77.1%)
Therapy (36)	27 (75.0%)
Assessment/Diagnosis of substance use disorder (35)	22 (62.9%)
Therapy for substance use disorder (35)	25 (71.4%)

Table 4 summarizes the benefits and potential problems associated with TMH. A large proportion of respondents stated that TMH reduces their amount of travel and is an effective use of time. Although 37.5% respondents reported that the financial investment for TMH was substantial at the beginning, the current investment for a camera and software can be done at a total cost of less than \$100. Only 12.5% of respondents stated that Medicaid’s reimbursement rate for consultation is adequate for the level of participation it requires. About half of the respondents had some concern about TMH being disruptive of the current office routine (57.1%). Other concerns include loss of patient contact (45.7%).

Table 4. Benefits and Problems with Telemental Health

Benefit or Problem	% of participants agreed or strongly agreed
TMH reduces amount of travel for consultations	91.4%
TMH is an effective use of time	85.7%
The investment is worth the cost	68.8%
TMH facilities are convenient for use	62.9%
TMH is not disruptive and can fit in with current office routine	57.1%
Mental health and substance use disorder services can be easily adapted to interactive video	54.3%
Thorough patient exams using TMH is possible	51.4%
There is a loss of patient contact associated with TMH	45.7%
Credentialing and licensure processes make TMH difficult to use	37.5%
There is a significant financial investment with using TMH	37.5%
Reimbursement is the same for TMH as in-person	25.0%
Have concerns about liability issues related to HIPAA/Security/Privacy	25.0%
TMH would increase risk of malpractice	18.8%
Current Medicaid reimbursement rate for consultations is adequate for my level of participation	12.5%

Other comments included in the survey follow:

- Lack of training for providers is an issue

- Challenges are related to conference rooms, fewer challenges would be met with individual patient rooms.
- Internet speed in rural and frontier areas could be a problem.
-

Current Telehealth “State of the Art”

A number of concerns and recommendations emerged from the interview and survey participants. Many of the concerns related to administrative rules, technical issues, and economic barriers to implementing TMH have been addressed in the past 2-3 years. This indicates the importance of providing up-to-date information on TMH to providers in the state of Nebraska, so that they can make an informed decision about the use of TMH.

- Telemental health training is available through a series of “modules” available online by the Behavioral Health Education Center of Nebraska.²⁰
- Several “platforms” for telehealth are available that are HIPAA compliant. These include Adobe Connect and Vidyo - both of which are entirely interactive.^{21,22}
- Costs for the implementation of telehealth have been greatly minimized and no longer require \$5,000-\$10,000 Polycom units. In fact, a simple video camera, appropriate software, and an Internet connection are all that is needed for conducting telehealth sessions.²³
- Telehealth usage no longer requires a “technician” on both ends of the therapeutic session. Software is relatively “user-friendly”, to the point that basic skills in software management can be developed within one to two hours.²⁴
- There is no longer a requirement that telehealth only be used if a provider is not available within a 30 mile radius of the client. This limitation was withdrawn in 2014 (NE LB 1076).
- Telehealth sessions are no longer need to be conducted for patients at a clinical location to be Medicaid eligible (NE Admin. Code Title 471, Ch.1 Manual Letter #52-2016). Point-to-point usage is available so therapists can see patients from their office, home, or even by using their smart phones. Patients can receive services at their home, as well as at clinical sites, agencies, and even schools.²⁵

Overall, data from this study indicate the need for additional and ongoing training regarding telehealth applications, usage, billing, regulation, and effectiveness. Many of the opinions expressed in this survey reflect historical concerns rather than the current status of telehealth applications and updates. It is incumbent upon behavioral health training programs and provider organizations to implement periodic

educational programs with updated policy and practice guidelines for practitioners and behavioral health administrators across the nation.

CONCLUSIONS AND POLICY IMPLICATIONS

State workforce data shows that the supply of psychiatrists has not increased between 2010 and 2016. Assuming that the behavioral health workforce shortage will continue for some time into the future, it is expected that TMH will be increased to meet the demand for mental healthcare services. There are clear geographic variations in the extent to which TMH has been used in Nebraska – four rural BHRs have been implementing a wide range of services since 2010 while the two urban regions began implementing TMH in limited scope about two years ago. Nevertheless, all regions expect to see more demand for TMH because there are still many people with mental illness who do not have adequate access to necessary care.

Several recommendations to ease the implementation of TMH in Nebraska were made by interviewees and survey respondents. First, some BHR administrators recommended having managers and providers from the clinics that have successfully implemented TMH services share their experiences (i.e., share success stories). These informational and educational sessions can be brief and may be provided as in-person sessions or e-modules. Second, psychiatrists and other behavioral health specialists emphasized the need to “start early.” The competencies surrounding the use of TMH can be incorporated into the curriculum for medical students and other health profession students. It is important to start TMH exposure early in their training, and to be supervised by clinicians with adequate levels of experience to effectively deliver TMH services. Such training can be done in the context of integrated care. In this way, the use of TMH becomes more of a norm among new generations of providers and can help in expanding the use of TMH services in the future.

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Appendix A.

Topics and Subtopics Identified from the Literature Review for the Interviews

Topic	Subtopics
Introduction	Purpose of the study
	How the study findings will be used
	Confidentiality
Background	Title, position, license(s), credential(s)
	Type of organization / practice
	Geographic areas covered
	How long using / implementing TMH
Type of services using TMH	Evaluation, therapy, medication management
	Mental disorder
	SUD
	Children, adults, geriatrics
	Crisis response
	Criminal justice settings / populations
Starting up	Cost re. buying equipment
	Subscribing “rooms”
	Training personnel
Logistics	Technical issues?
	Disrupt clinical flow?
	Additional paperwork?
	No-shows compared to in-person?
Financial	Does TMH save money for the practice?
	Any financial concerns?
Effects on patients	Quality compared to in-person care
	Patient’s satisfaction, response, etc
Recommendations re. logistics, education and training	Incentives to start / expand TMH
	How to overcome logistic or financial hurdles
	Training / education needs

Appendix B.

Medicaid Provider Survey

Section 1: Utilization at your own practice

Answer the following questions about the use of TMH specifically in your own practice

1. Do you use TMH in your practice?
 - o No (answer question 2, then move onto section 2)
 - o Yes (answer questions 3-10)
2. Why do you not use TMH in your practice?

Move on to Section 2, if you answered No to question 1

Answer questions 3-10, if you answer Yes to question 1

3. How long have you been using TMH at your current practice?
4. What is the most common use of TMH in your practice (select 2)
 - o Consultation
 - o Medication Management
 - o Diagnosing
 - o Follow-up
 - o Emergent care
 - o Disease Management
5. What is TMH most useful for? (Select all that apply)
 - o Consultation
 - o Medication Management
 - o Diagnosing
 - o Follow-up
 - o Emergent care
 - o Disease Management
6. What type of TMH modality is used in your practice (Select all that apply)
 - o interactive video
 - o shared computer screens
 - o store and forward
7. How many technical problems related to TMH have you experienced in the last month?
 - None
 - 1-3 technical problems
 - 4-6 technical problems
 - 7 or more technical problems

Please answer the following with the level to which you agree with the statement.

8. You are satisfied with patient quality of care using TMH
Strongly Disagree Disagree Neutral Agree Strongly Agree
9. You believe TMH technology is well suited to your patients population and their needs

Strongly Disagree Disagree Neutral Agree Strongly Agree

10. Technical support is available and easy to use
Strongly Disagree Disagree Neutral Agree Strongly Agree

11. Technical problems do not often interfere with TMH
Strongly Disagree Disagree Neutral Agree Strongly Agree

12. You have been adequately trained to use TMH
Strongly Disagree Disagree Neutral Agree Strongly Agree

13. What was/is the knowledge source(s) for educating yourself on TMH?

Section 2: TMH Beliefs

Answer the following questions about your beliefs about TMH in general, not necessarily at your practice

1. TMH is an effective use of time
Strongly Disagree Disagree Neutral Agree Strongly Agree
2. TMH facilities are convenient for use
Strongly Disagree Disagree Neutral Agree Strongly Agree
3. TMH is not disruptive and can fit in with the current office routine
Strongly Disagree Disagree Neutral Agree Strongly Agree
4. TMH reduces amount of travel for consultations
Strongly Disagree Disagree Neutral Agree Strongly Agree
5. Thorough patient exams using TMH is possible
Strongly Disagree Disagree Neutral Agree Strongly Agree
6. There is a loss of contact associated with TMH
Strongly Disagree Disagree Neutral Agree Strongly Agree
7. Mental health and substance use disorder services can be easily adaptable to interactive video
Strongly Disagree Disagree Neutral Agree Strongly Agree
8. TMH is an effective tool for: (select all that apply)
 - Consultation
 - Medication Management
 - Diagnosing
 - Follow-up
 - Disease management

Section 3: Administrative Issues about TMH

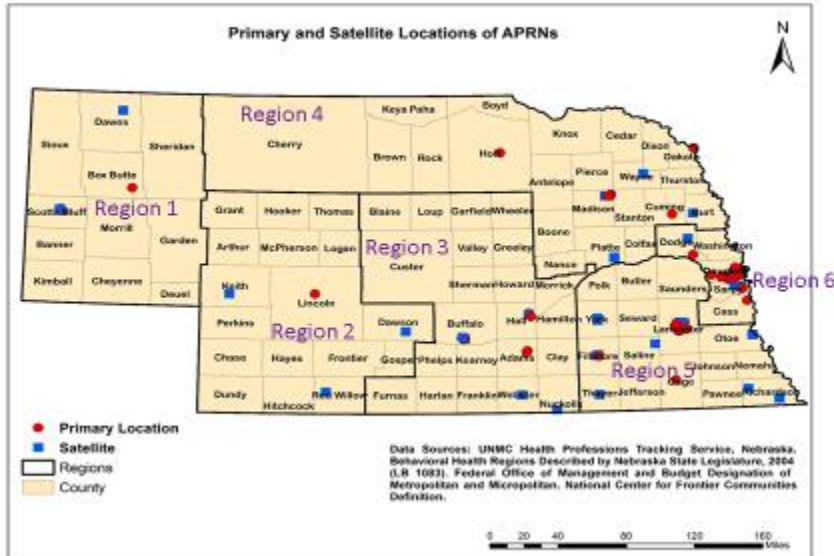
Answer the following questions about your beliefs regarding administrative barriers that may interfere with TMH use. Again, answers should be based on TMH in general, not necessarily at your own practice.

1. You feel there is a significant financial investment with using TMH
Strongly Disagree Disagree Neutral Agree Strongly Agree
2. You believe the investment is worth the cost
Strongly Disagree Disagree Neutral Agree Strongly Agree
3. You are concerned about liability issues including those related to HIPAA /Privacy /Security when using TMH
Strongly Disagree Disagree Neutral Agree Strongly Agree
4. You believe use of TMH would increase risk of malpractice suits
Strongly Disagree Disagree Neutral Agree Strongly Agree
5. Credentialing and licensure processes make the use of TMH difficult
Strongly Disagree Disagree Neutral Agree Strongly Agree
6. Current Medicare reimbursement rate for consultations is adequate for my level of participation
Strongly Disagree Disagree Neutral Agree Strongly Agree
7. Reimbursement is the same for TMH as in-person care
Strongly Disagree Disagree Neutral Agree Strongly Agree
8. Please share any other comments you may have about the use of TMH, especially comments related to the barriers and challenges of using TMH.

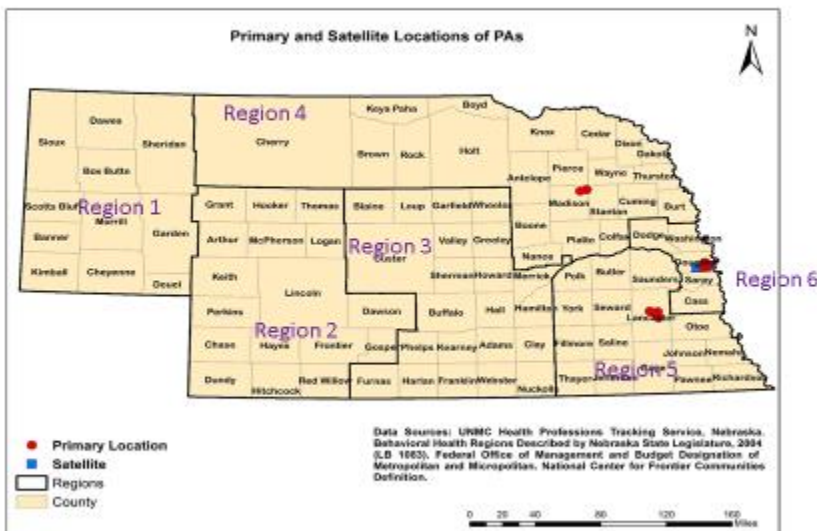
Appendix C.

Distributions of Behavioral Health Workforce in Nebraska, 2016

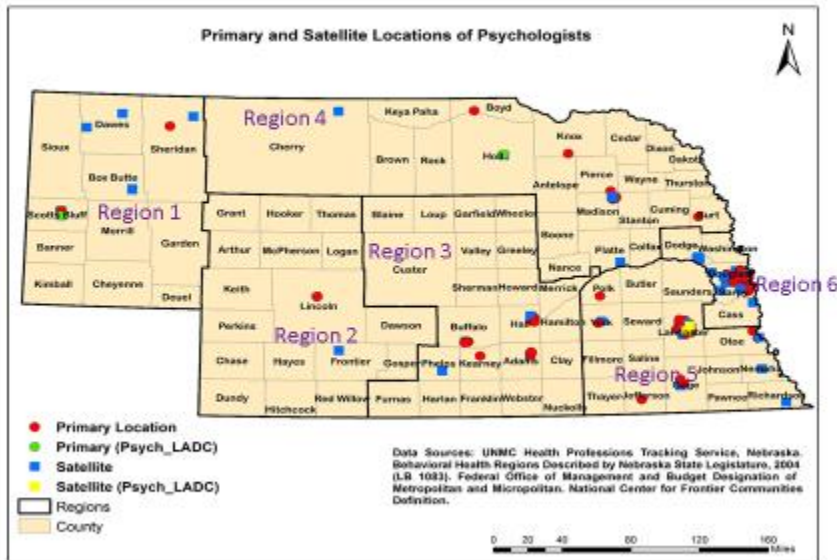
Nebraska Psychiatric APRNs Distribution 2016



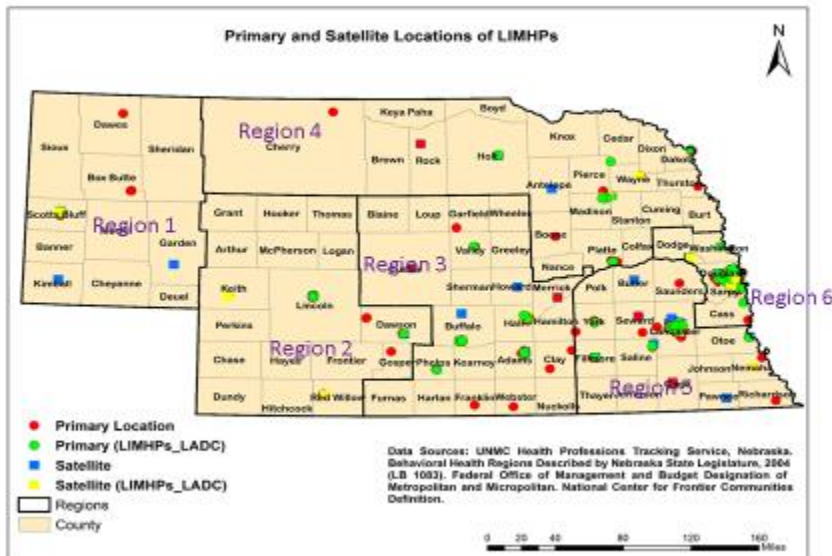
Nebraska Psychiatric PAs Distribution 2016



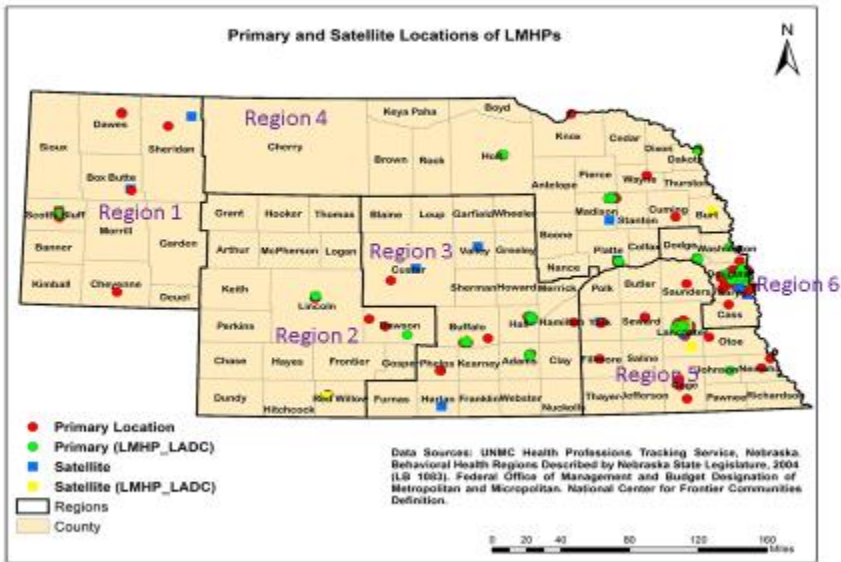
Nebraska Psychologists Distribution 2016



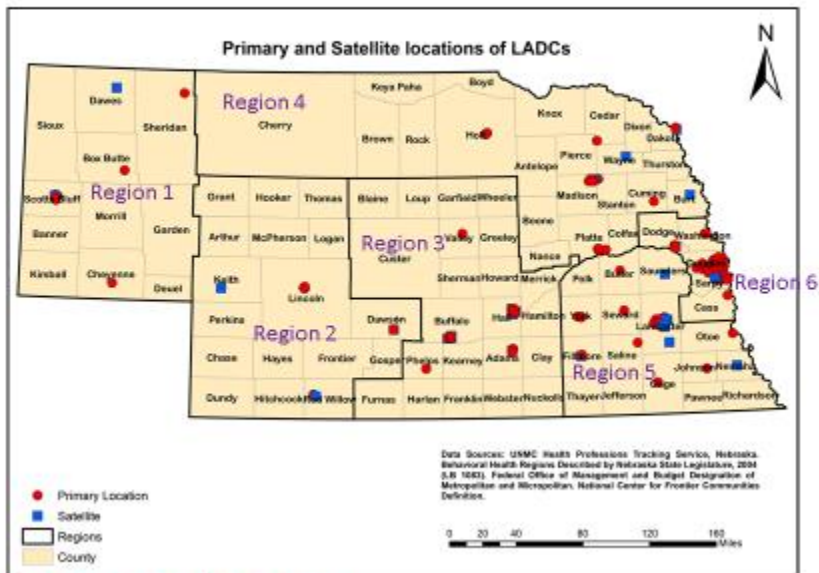
Nebraska LIMHPs Distribution 2016



Nebraska LMHPs Distribution 2016



Nebraska LADCs Distribution 2016



Map shows LADCs with other licenses