



## Center for School Mental Health

University of Maryland, Baltimore

School of Medicine

### *Issue Brief*



# Telemental health in Schools

## Telemental health: The Basics

Telemental health (TMH) is the use of video-conferencing equipment to conduct real-time mental health consultation between a clinician and patient. TMH may provide needed psychological services to a large population of people who otherwise may not have access to mental health care (Brodey, Claypoole, Motto, Arias, and Goss, 2000).

Video teleconferencing technology (VTC) allows for a mental health

clinician in one location to view a patient or group in a different location through a computer or television screen that also provides real-time audio (Surface, 2007). Originally established in health settings, “tele” technology is now increasingly popular with businesses, who take advantage of the ability to conduct meetings globally; the technology is particularly useful with the economic recession and increased gas prices.



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## Telemental health in the Community

Mental health care is not easily accessible to all children and adolescents who need treatment, with psychiatric help often being the most difficult to access. Telemental health (TMH) provides a method in which needed services can reach communities where access to mental health resources is limited (Monnier, Knapp, & Frueh, 2003; Myers, Sulzbacher, & Melzer, 2004). Rural areas are typically the last to receive the newest advances in the mental health care field because funding may be based on the population size of a community (Smith & Allison, 1998). For rural areas, this means that funding may be low or non-existent. Furthermore, psychiatrists are more likely to be located in highly populated areas than in rural communities (1998). For this reason, some argue that telemental health should be limited to rural areas to avoid taking away from the business of providers in more saturated areas.

Telecommunication allows for a decrease in the disparity of psycho-

logical services in less populated areas (Myers et al., 2004; Smith & Allison, 1998). Rural patients can be seen via video conferencing equipment by psychiatrists in urban areas and obtain the same level of care that an urban patient would receive. This service can assist to “redistribute scarce resources to rural communities” and patients can now access needed services from psychiatrists without either a long waiting period or significant travel costs (Myers et al., 2004; Smith & Allison, 1998).

The benefits of telemental health in a rural setting are well documented. However, the benefits can be applied to other settings as well. According to Young and Ireson (2003), TMH services are effective in an urban environment. They found that providing TMH services in urban schools was effective, cost efficient, and was met with high ratings of satisfaction by students (2003). It is important to recognize the versatility of telemental health as many service gaps across the country could be alleviated.

## Terms and Definitions

- *Telemedicine* is “the provision of healthcare at a distance via telecommunication technology” (Mackert & Whitten, 2007).
- *Telehealth* is “the use of telecommunications and information technology to provide access to health assessment, diagnosis, intervention, consultation, supervision, education, and information across distance (Nickelson, 1998).
- *Telemental health* is as “the use of electronic communications technology to eliminate or reduce geographic barriers to receiving psychiatric and other mental health services provided by many mental health providers” (Telemental Health Initiatives for Children and Youth, 2002).

## Telemental health and School Mental Health

Studies have shown that at least one in five children and adolescents have a mental health disorder that causes some impairment in functioning (approximately 5 students in a classroom of 25). Remarkably, only about 20% of these youth receive any mental health services (NAMI, 2006). The provision of mental health services in schools has been one effective strategy for addressing these issues.

Providing mental health services in a school setting has been shown to have many benefits. For example, interventions are more effective when students can be accessed immediately (NASBHC, 2008). Providing services in a school setting helps to ease anxiety and seems less threatening, and since the services are provided at school it may be at a lower cost to families than other community mental health centers (2008). These same advantages are applicable to the use of telemental health in schools.

While accessing mental health services can be challenging, psychiatric services are often the most difficult, particularly for child and adolescent psychiatry. Within the United States there is a great shortage of child and adolescent psychiatrists (Shortage of Child Psychiatrists, 2006). Telemental health offers a strategy for



effectively and efficiently utilizing psychiatry services as well as other forms of mental health services.

Telehealth technology serves to increase the quality and accessibility of mental health services, particularly to underserved populations and in areas with limited mental health resource capacity such as in rural settings (Monnier, Knapp, & Frueh, 2003; Myers, Sulzbacher, & Melzer, 2004).

Telehealth technology also provides the opportunity to offer services that are not available in most school-based mental health programs, including multi-site educational training for mental health providers and students as well as professional development opportunities for school staff. Further, using telehealth can help children and adolescents gain access to culturally and linguistically competent mental health care that serves the needs of racial and ethnic minorities.

*"They (clients) seem to give me more of a story. The television seems to create a safe space and I am not so intimidating to them."*

- Beth Caspian, MD

### Providing an Appropriate Setting

There are several steps that can be taken to make the process of telemental health more comfortable and effective for children and adolescents. A small, private room maintains an appropriate clinical setting for such services (VHA, 2003). Although some recommend placing a small table between the student and the equipment in order to create a "buffer zone" and utilizing a windowless room (2003), these environmental conditions may not be preferable for all providers.

Extraneous noise should be kept at a minimum so that it does not interfere with the audio equipment or communication during the session (2003).

Finally, in order to eliminate visual distortions, the video equipment should be located at face level with the individual (2003). Following these recommendations will increase the probability that the process will be similar to face-to-face interactions and that the student will feel comfortable during the session.

### Benefits of Telemental health

- Patient waiting lists for appointments are eliminated or shortened
- Immediate availability of emergency mental health assessments
- Cost-effectiveness
- Patients experience an improved team treatment model
- Patients have access to a much wider range of experts, in providing quality and choice of care.
- Positive psychosocial and satisfaction outcomes for patients

(Adapted from NARBHA, 2008)

## What is this Technology Anyway?

There are three types of technology that are commonly used for telemental health:

### 1. High Powered Videoconferencing Equipment

*Cost:* Approximately \$4,000 - \$10,000

*Advantages:* They generally can provide a clearer, larger picture and possess multiple site capabilities (VHA, 2003; Young, 2004).

*Disadvantages:* It is the most expensive of the technology options (VHA, 2003; Young, 2004).

### 2. Desktop Video Equipment

*Cost:* Approximately \$400 - \$500 for the camera and software with additional computer costs if not being added to an existing computer.

*Advantages:* These types of units maximize needed features while minimizing cost. They may be attached to a desktop or laptop computer.

*Disadvantages:* Transmission can be less reliable than the High-Powered equipment mentioned above.

### 3. Videophones or Personal Video Stations

*Cost:* Videophones are approximately \$300 - \$500

*Advantages:* These videophones are



an inexpensive easy adjunct when planning other point-to-point services. Videophones can be used with Plain Old Telephone System (POTS) by simply plugging into an existing phone outlet (VHA, 2003; Young, 2004).

*Disadvantages:* Speed of transmission is limited to that of phone lines and that often leads to delay, unreliable connections, and poor transmission.

#### Bandwidth:

Bandwidth is the capacity of a telecommunications channel to carry information (i.e., the size of the pipeline that carries the video and audio signals) used in the telemental health process (Smith & Allison, 1998). Higher bandwidths allow the picture and sound to be transmitted more quickly and with better quality (1998). Lower bandwidth provides less quality video and audio transmission, but the systems are more affordable (1998).

(Adapted from VHA, 2003)

## Is Telemental health Effective?

Research on the effectiveness of telemental health (TMH) is expanding. Several studies have found TMH to be as effective as face-to-face psychiatry:

- O'Reilly et al. (2007) found that psychiatric consultation and follow-up services provided in telemental health produced the same clinical outcomes as face-to-face interactions.
- Hilty, Liu, Marks, and Callahan (2003) also found TMH to be effective when examining factors related to quality of care, such as: diagnosis, outcome, and ability of the users to communicate.
- The diagnoses given to children and adolescents at Telemental health Clinics were comparable to those provided in a typical clinic (Myers et al., 2004). This finding suggests that TMH is an effective way to diagnose school-aged children.
- Ermer (1999) found that children and adolescents in rural communities do benefit from the use of telemental health. Children's symptoms improved with the use of TMH similar to the improvement when in face-to-face treatment (1999).
- Childhood depressive symptoms were found to have decreased with rates similar to that of face-to-face treatment (Nelson, Barnard, & Cain, 2003).

## Privacy Considerations

Privacy policies and considerations are not significantly different when providing telemental health. Many of the steps taken to protect patient information during face-to-face psychiatry applies to telemental health as well. Consent needs to be obtained from the patient (or legal guardian) prior to the start of services. It is also imperative to inform the client of who may have access to their information and what means are being taken to protect patient confidentiality. Access to patient records needs to be password protected and no identifiable information should be left for other users of the technology to view. Additionally, the connection lines need to be encrypted so that non-privileged individuals cannot listen or view the interactions between the patient and the provider. Attention needs to be focused on keeping confidential information private just as it is when providing face-to-face telemental health. Telehealth sessions are not typically recorded, though this would, of course, require additional considerations related to the storage and use of such recordings.

(Adapted from: <http://telemed.org/legal/privacy/>)



## Financial Considerations: Costs vs. Savings



There are costs associated with the set up and maintenance of telemental health (TMH) services. However, the benefits associated with the practice can provide a savings of time and money to families and providers. In addition to the initial start up cost of purchasing the equipment and installing secure lines there are also monthly fees (e.g. internet and phone). As previously mentioned, there are three common methods of telecommunication and the price can range from \$300 to \$10,000 depending on the type and quality of the equipment.

The cost of TMH does appear to be decreasing. Currently, videotelephones cost less than \$500 and existing telephone lines can be used (Miller et al., 2005). However, prices can vary depending on the setting (i.e. rural versus urban). Establishing telecommunication in rural areas greatly exceeds the cost of installing and maintaining the same system in an urban area (Surface, 2007). Although the price may be higher, federal support is also available for rural clinicians who need assistance with funding (2007). Advancements in technology, equipment, speed, and se-

curity, will continue to reduce the costs of TMH services in these areas (Frueh et al., 2000).

In addition to the cost associated with the equipment, there is also the price of the service provided. The list of insurers that cover the cost of telemental health services is growing (Myers, Valentine, & Melzer, 2007). It is likely that the list will continue to grow as research supporting the effectiveness of this service increases.

Telemental health has also been found to save patients, families, and providers, time and money. Providers and patients experience decreased travel time and expenses by utilizing such services (NARBHA, 2008). Psychiatrists are able to see more patients on a monthly basis because they are spending less time traveling to their patients (2008). Travel time is eliminated and the extra time allows for the maximum hours of clinical consultation each month to be used for seeing patients as opposed to traveling (Johnston & Jones, 2001).

Due to travel costs, missed work, and child care expenses that would occur for face-to-face consultation, the use of TMH services saves an average of \$210 per patient consultation (Simpson, Doze, Urness, Hailey, & Jacobs, 2001). Telemental health services, specifically consultation and short-term follow-up, were at least 10 percent less expensive than face-to-face equivalent services (O'Reilly et al., 2007). The savings applies to providing TMH within the school system as well. Young and Ireson (2003) examined the use of telemedicine in urban and rural schools and found that it lowered family expenses by approximately \$101 to \$224 per encounter.

When examining the financial obligations of telemental health, it is important to carefully weight the costs and the potential savings to get an accurate depiction of the total financial considerations of such a program.

## Client and Provider Satisfaction

The satisfaction ratings for telemental health (TMH), telemedicine, and telehealth demonstrate that overall, clients and providers feel that TMH is both effective and efficient as a method for treatment.

Brodey et al. (2000), interviewed inmates with psychiatric disorders, some of whom had received TMH. The inmate patient satisfaction was high for both settings (i.e. in person versus through video) and there was no significant difference in outcome satisfaction between the two groups (2000).

Clients using TMH for consultations and follow-up and patients using the face-to-face method had equivalent levels of satisfaction for their respective services (O'Reilly et al., 2007). Eighty-nine percent of patients who used TMH reported

that they were satisfied with the service and roughly 96 percent were satisfied with the equipment and the room setting (Simpson et al., 2001).

Pediatricians and family physicians that provided TMH services to children and adolescents believe that the TMH makes consultations more available to patients and stated that they would use TMH services again in the future (Myers et al., 2007).

Additionally, high ratings were provided by pediatricians and physicians for comments such as: "the telemedicine equipment worked well", "I was able to identify the real concern(s) of this patient", and "I felt comfortable treating the patient's problems using telemedicine".

### Satisfaction With School Telehealth

(Young & Ireson, 2003)

Parents (N = 60)	97%
Students (N = 76)	93%
School nurses (N = 84 encounters)	94%
Consultants (N = 145 encounters)	99%

### NARBHA Program Satisfaction (1998)

*Clients: (N = 284)*

Were comfortable with the technology	92%
Would use the system again	88%
As good/better than face-to-face	70%

*Staff: (N = 286)*

Were comfortable with the technology	91%
Equipment saved time	83%

## TELEMENTAL HEALTH: Model Programs

*Texas Tech University Health Sciences Center*- In 1998, a weekly telemedicine clinic was added to an already existing school-based clinic in the rural town of Hart, Texas. The program was able to increase student access to health care and double physician coverage at the school. (<http://www.ttuhscc.edu/telemedicine/projects.aspx>)

*South Australia's Rural and Remote Mental Health Service* was established in 1994 and uses telecommunication to provide psychiatric services to community members in a large scale area (Frueh et al., 2000).

*TeleKidcare®*- Is provided through the Kansas University Medical Center and has the goal of bringing the "doctor to the school." Urban students are seen by a doctor in the school nurse's office by using telemedicine technology. (<http://www2.kumc.edu/telemedicine/2008Programs/TKC.htm>)

The following information was provided by the American Psychiatry Association:

*Medical College of Georgia Telemedicine Center*- Provides training in telemental health for students, online distance education for providers, and psychological consultations. More information can be found at: <http://www.mcg.edu/telehealth/>

*Southern Illinois School of Medicine, Department of Psychiatry*- Is developing a telemental health program to provide psychiatric services in rural areas. More information about this program can be found at: <http://www.siumed.edu/psych/>

*Military Psychiatry, Walter Reed Army Medical Center*- Video teleconferencing (VTC) is used for forensic military cases, broad range, general, family and children, and in prison systems from military facilities.

More information can be found at: [http://www.atmeda.org/news/2006\\_presentations/t4e2.ppt#326](http://www.atmeda.org/news/2006_presentations/t4e2.ppt#326)

*The Rural Health Care Program of the Universal Service Fund*- The Rural Health Care Program provides discounts to eligible rural healthcare providers, for telecommunication services and internet fees. The goal is to keep telecommunications affordable in less populated areas. More information can be found at:

<http://www.universalservice.org/rhc/>

## Other Uses for Telemental health Technology

Telemental health (TMH) equipment has various applications that go beyond providing one-on-one therapy. Clinical supervision of trainees and mental health providers can be done using TMH technology (Telemental Health Initiatives for Children and Youth, 2002). Telemental health can help access remote psychiatrists with a particular skill such as fluency in another language, knowledge of a particular culture, or expertise in a subspecialty area (2002).

Classroom teacher consultations are another way that technology can be utilized. Mental health professionals can assist teachers in the development of behavior management skills for the classroom (Young, 2004). The equipment can also be used for continuing education and distance learning for school staff members and for the staff at SBHCs (Telemental Health Initia-

tives for Children and Youth, 2002; Young, 2004).

Telecommunication equipment in schools can be used to advance students' knowledge on relevant topics, as demonstrated by the University of Maryland School of Medicine's school-telemental health project. The goal of this project was to use technology in the school to provide presentations on addictions and other health related topics by off-site specialists to students in Baltimore City schools. In total, there were 23 presentations that reached 505 students in two public schools.

Satisfaction surveys were given to 50 of the students and they were asked to evaluate the TMH presentations shown in school. The feedback was favorable with students reporting that they: were satisfied with the presentations, found them

### Going Green!



In August 2007, the Northern Arizona Regional Behavioral Health Authority telemedicine network program saved 8,000 miles of driving as well as 140 hours of driving time. This savings means that 2.9 tons of CO<sub>2</sub> was not emitted into the environment. Over a one-year period this figure rises to 30.5 tons ([www.rbha.net](http://www.rbha.net)).

interesting and a unique way to learn material, learned information that was new, and the presentations impacted their views about the topic discussed. (**how to cite?**). Further, teachers also responded positively to the experience. Overall, the project demonstrated that telemental health technology can be used in additional ways that are both enjoyable and effective in reaching a student population within schools.

## For More Information on Telemental health:

American Association for Technology in Psychiatry

<http://www.techpsych.org/>

American Telemedicine Association (ATA)

<http://www.americantelemed.org/>

American Telemedicine Association's Guidelines for the Use of Telemedicine

<http://www.atmeda.org/news/guidelines.html>

HIPAA and Telemental health

<http://telemed.org/legal/privacy/>

Northern Arizona Regional Behavioral Health Authority Telemedicine Network

[www.rbha.net](http://www.rbha.net)

Texas Tech University Health Sciences Center- Center for Telemedicine

<http://www.ttuhsc.edu/telemedicine/>

University of Kansas Center for Telemedicine

<http://www2.kumc.edu/telemedicine/>

United States Department of Veterans Affairs

[http://www.va.gov/occ/Telemental/telemental\\_health.asp](http://www.va.gov/occ/Telemental/telemental_health.asp)

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*The mission of the Center for School Mental Health (CSMH) is to strengthen policies and programs in school mental health to improve learning and promote success for America's youth. The CSMH has four over-arching goals:*

1. *Further build a community of practice in school mental health (SMH) to facilitate analyses of successful and innovative policies and programs, to enhance collaboration between diverse stakeholders, and to develop strategies to maximize policy and program impact.*
2. *Enhance understanding of successful and innovative SMH policies and programs across urban, suburban, rural and frontier settings, and across local, state, national, and international levels.*
3. *Further develop a rapid, innovative and widespread communications framework to disseminate to all interested stakeholders findings and recommendations on successful and innovative policies and programs in SMH.*
4. *Promote knowledge utilization and application toward the advancement of successful and innovative policies and programs in SMH.*

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