

THE NEED FOR TELEPSYCHIATRY AND E-MENTAL HEALTH IN PUBLICLY-FUNDED MENTAL HEALTH SYSTEMS

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INTRODUCTION

Many states have extreme disparities in population density and resource distribution, with substantial health and human service resources in urban centers and relative scarcity in many rural areas. Such disparities are particularly evident in the area of mental health, developmental disabilities, and substance abuse (MH/DD/SA) services (New Freedom Commission on Mental Health, Subcommittee on Rural Issues; 2004). The scarcity of MH/DD/SA service resources has been further amplified as a result of the ongoing "reforms" in these publicly-funded service systems in many of these states. For example, the North Carolina system has been undergoing a major transformation since 2001. Among multiple substantial changes, this system reform has included:

- reduction and eventual elimination of service delivery from the function of the Area MH/DD/SA Authority, and the corresponding divestment of clinical staff from employment with those agencies;
- provision of services by a range of private providers, under the management of newly transformed Area Authorities, which are referred to as Local Management Entities (LMEs);
- a concomitant need for state-wide training of LMEs and service providers on a host of new requirements and practices related to the reform.

Many states have employed telehealth to improve mental health services' cost, quality, and access. The use of telehealth to provide psychiatric services (especially consultation) is often referred to as *telepsychiatry*, and other telehealth applications in mental health are often referred to as *e-mental health*. Regardless of how these applications are defined, telepsychiatry and e-mental health comprise one of the largest uses of telehealth nationwide (Krupinski, 2002; Grigsby, *et al.*, 2002).

The President's New Freedom Commission on Mental Health recognized the critical role of telehealth in reforming the nation's mental health systems (New Freedom Commission; 2003), stating that "*telehealth and*

e-health technologies hold great promise for improving access to mental health care in many rural, remote, and other underserved areas (p. 81)". The commission also addressed telehealth in its series of recommendations:

Recommendation 6.1 Use health technology and telehealth to improve access and coordination of mental health care, especially for Americans in remote areas or in underserved populations (p. 79)

Telehealth can be crucial to enhancement of MH/DD/SA systems. This paper will identify the applications and benefits of telepsychiatry and e-mental health, address potential barriers to its use, and recommend steps for moving forward.

TECHNOLOGY BASICS

Telepsychiatry and e-mental health services primarily involve videoconferencing over high speed (broadband) networks to enable natural interactions between patients and providers. Traditionally, this has required leasing specialized high speed telephone circuits (either T-1 or ISDN) that were dedicated for videoconferencing. However, the rapid growth of Internet and Worldwide Web (WWW) applications and corporate local- and wide-area (i.e. Ethernet) networks has catalyzed the development of Internet Protocol (IP) videoconferencing systems. IP networks offered the advantage of serving multiple concurrent applications, such as printing, e-mail, WWW browsing, and medical records in addition to videoconferencing.

Since videoconferencing is quite bandwidth-intensive, audio and video compression methods must be employed. This is accomplished via a coder-decoder, or codec, which can be implemented in hardware and/or software. In telehealth videoconferencing applications, a codec is usually a standalone device, or appliance, that performs all of the requisite compression, decompression, and synchronization of audio and video signals. However, continued developments in signal processing, microprocessors and compression algorithms, coupled with

increasing penetration of affordable broadband network services, will soon enable high-quality videoconferencing from personal computers and consumer-priced devices. This will likely result in increased availability and use of videoconferencing and concomitantly enable the diffusion of telepsychiatry and e-mental health applications.

THE PROMISE OF TELEPSYCHIATRY AND E-MENTAL HEALTH

Telehealth use is growing annually in the U.S. The diffusion of telehealth in clinical practice is further evidenced by professional organizations' development of policies, standards, and guidelines for telehealth — the American Psychiatric Association (1998) has developed guidelines for using videoconferencing technologies for telepsychiatry. The evidence suggests telehealth's efficacy in many clinical applications, including mental health. Generally, consumer satisfaction with telehealth is high (Gustke, *et al.*, 2000; Brown-Connolly, 2002). Telehealth can make a significant impact on the delivery of health care services to those who have usually received less than adequate care. The following benefits have been demonstrated or could be expected to result from implementing telepsychiatry and e-mental health services:

- Reduction of stigma associated with receiving mental health services, including individual (self) stigma and stigma by others (Farrell and McKinnon, 2003).
- Reduction in professional isolation and concomitant improvement in recruiting and retaining mental health professionals to live and work in underserved or rural areas (Haythornthwaite, 2002; Redford and Parkins, 1997; Stamm, 1998; D'Souza, 2000).
- Reduction in geographic and socioeconomic health disparities, by improving access to mental health services.
- Improved consumer convenience by reducing the time and expenses associated with travel.
- Improved consumer compliance.
- Improved education of mental health professionals.
- Improved coordination of care across mental health system.

TELEPSYCHIATRY AND E-MENTAL HEALTH APPLICATIONS

There are a myriad of potential applications of telepsychiatry and e-Mental Health:

Training and education – Telehealth technologies can streamline the implementation of training efforts, allowing the learning activity to originate from a variety of possible locations inside or outside the state. Designated trainers would not have to travel to multiple sites in order to deliver the desired training to multiple audiences. The provision of telehealth-facilitated training would also allow broader access to the training by the myriad of staff from mental health centers, hospitals, and private providers and minimize training related travel. Furthermore, telehealth-facilitated training will ensure that the subject matter is conveyed consistently from site to site, and questions and comments of the participants and their responses will be communicated simultaneously to multiple audiences at the different training sites.

Support of State mental health, developmental disabilities, and substance abuse facilities with other clinical needs – The MH/DD/SA primary service needs of inpatients in these facilities are usually met by facility staff. However, these patients often have co-morbidities or other health conditions that become manifest during their inpatient stay. It is often problematic, costly, and inefficient to provide other clinical services in a timely manner, either on site or by offsite transport. Many specialty consultation services are possible by telehealth/telemedicine. For example, the East Carolina University (ECU) Brody School of Medicine (BSOM) currently provides these types of services for two state-operated facilities in North Carolina. ECU psychiatrists use the link with these Hospitals to consult with inpatient treatment teams regarding selected patients at these hospitals.

E-Mental Health/telepsychiatry and other clinical telehealth services for other state institutions – Other state institutions, such as correctional facilities or special needs schools, require mental health and other health services. Telepsychiatry can be quite helpful in providing such services. For example, the ECU BSOM has provided this type of service for the Eastern North Carolina School for the Deaf for nearly five years, allowing consultation and primary care delivery via a telehealth connection to the school's infirmary during normal office hours. Other clinical services have included child and adolescent psychiatry and dermatology. This has been proven to be cost effective and educationally beneficial, as it has resulted in students remaining at the school and spending more time in the classroom, as they would have otherwise returned home. Although geared toward a special

population, this type of service could be extended to many other institutions.

Mental Health Centers and private providers – Consumer access to MH/DD/SAS professionals in rural areas has typically been much more limited than in urban areas. Mental Health Centers and private providers could improve access to their services in their rural catchment areas by utilizing telepsychiatry/e-mental health as a vehicle to extend the professional MH/DD/SA services to locales that have few or no such professionals. Telehealth networks could also provide coverage or oversight by psychiatrists from the major academic medical centers or other sites.

Assessment/committal for law enforcement/emergency departments – For the current system to work properly and efficiently there is a requirement for a seamless interface between the mental health professional, law enforcement and the judicial system. Commonly, law enforcement officials are responsible for the safety, care and sustenance of consumers in crisis, who often must be transported over great distances to facilities with receiving clinicians who have little or no information on the consumer in route. Other variables such as the changing mental status of the consumer, attitudes and cultural beliefs of the care givers and drugs and/or alcohol consumed prior to the crisis further complicate the situation. Similar complications arise when law enforcement must interface with rural emergency departments when accompanying those recently apprehended or otherwise in custody that might have significant mental illness. Telepsychiatry and e-mental health systems could greatly improve the efficiency of these situations and improve public safety.

Educational facilities – Students in K-12 schools, community colleges, colleges and universities could also benefit from telepsychiatry and e-mental health services. Fortunately, much of the high-speed networking and videoconferencing infrastructure is already in place in many states to support education. However, most of these capabilities use public (i.e. Internet) connectivity, and additional security measures would need to be implemented.

Nursing homes/extended care facilities – There is a great need to improve the quality of and access to mental health services in nursing homes and other extended care facilities. Residents' mental health conditions are often

misdiagnosed (or underdiagnosed) and nursing staff are increasingly overburdened and inadequately trained to deal with mental health issues. Telepsychiatry and e-mental health services could improve the quality and efficiency of mental health services delivery. Furthermore, other clinical needs could be addressed by telehealth using the same infrastructure.

Primary care and community health settings – The primary care physician is the principal gatekeeper for accessing the health care system. Many of the patients seen in the primary care setting have mental disorders, psychiatric co-morbidities, or psychogenic symptoms. Further confounding the problem are the primary care physician's limited mental health training and difficulty in referring patients for mental health services (Trude and Stoddard, 2003). Therefore, primary care physicians often under diagnose mental health conditions, are unaware of developments in and protocols for pharmacotherapy, and struggle to appropriately refer their patients for external mental health services. There are several primary care applications for telepsychiatry and e-mental health, including training, tele-mentoring, teleconsultation, and care coordination.

POTENTIAL BARRIERS

There can be several potential barriers to the diffusion of telepsychiatry and e-mental health. Some of these are concomitant with the adoption of any new technologies and practices in health care. Natural impediments include inherent personal or organizational resistance to change, technological illiteracy, and cost. Several legal, regulatory, and technical factors complicate the telehealth landscape. Over the last several years, some legislative and regulatory improvements have been made, but these issues still are a barrier to more widespread diffusion of telehealth.

Reimbursement

Medicare reimbursement for telemedicine started in 1999, and the payment model has evolved to address some initial limitations (Coleman, 2002; Puskin, 2001). To be reimbursed, telemedicine encounters must be interactive (i.e. bi-directional videoconferencing), with both the (consulting) provider and the patient present. Generally, reimbursement in mental telehealth is provided for diagnostic interview (CPT code 90801), individual psychotherapy (CPT codes 90804-90809), and

pharmacologic management (90862) that is provided by psychiatrists and clinical psychologists (American Telemedicine Association, 2003). Services provided by other mental health providers are not currently covered.

In addition, nearly half of State Medicaid programs, and many third-party payors, provide reimbursement for telehealth services, with similar caveats as Medicare. All payment is based on a “fee-for-service” approach that reimburses the consulting physician or other health professional for their time. However, technology and personnel infrastructure costs are not reimbursed.

Licensure

Currently, physicians are required to possess a medical license in each state in which they practice medicine. Therefore, for a physician to conduct a telemedicine consultation with a facility in another state, that physician must be licensed by both states’ licensing boards. Nursing and other allied health professions are subject to similar state licensing constraints. Sanders (1993) suggests three potential solutions to the licensure problem: (1) establishing a national licensing system, (2) assigning the responsibility of care to the referring physician, with the consulting physician’s opinions as “recommendations only,” or (3) determining that the patient is being “electronically transmitted” to the consultant’s state.

Privacy, security, and HIPAA

The Health Insurance Portability and Accountability Act of 1996 (HIPAA) has raised the awareness of the need to protect patient privacy and secure individually identifiable patient data, i.e. protected health information (PHI). Certainly, HIPAA’s impact is not unique to telehealth as the entire clinical enterprise has been affected. Kumekawa (2001) identifies privacy considerations that are unique to telehealth, including the potential for non-clinical technical and administrative personnel to view telehealth transactions and the off-camera presence of other clinical personnel (i.e. not seen by patient). Telehealth transactions have traditionally occurred over private circuits; however, the increased use of IP videoconferencing over public networks creates the potential for unauthorized access to PHI. Therefore, technology solutions, such as in-codec encryption and virtual private networks, will need to be implemented.

Infrastructure

The cost of telehealth network connections can be reduced via the U.S. Federal Communications Commission’s (FCC) Universal Service Fund (USF) subsidies, which resulted from the Telecommunications Act of 1996. The USF was set up to increase the diffusion of high bandwidth telecommunications to rural schools, libraries, and health care providers. The fund comes from fees paid by telecommunications providers, and is supposed to make telecommunications services available at the same price in rural areas as charged in urban areas. Actually, the fund pays the price difference to the eligible telecommunications provider. However, the USF mechanism is not being widely used for several reasons, including an overly cumbersome application process, limitations on eligible facilities and locations, and the formula used for calculating the discount rate, which can actually be higher than the rates otherwise available (Puskin, 1999).

Several states have developed other mechanisms to support telemedicine. Texas has one of the largest programs and uses funds obtained from telecommunications companies, in lieu of taxes. Kentucky has appropriated state funds to cover telemedicine. Georgia has used funds returned to the state after telecommunications companies overcharged their customers. California has established an organization to distribute funds for telemedicine that come from a foundation established after the state’s Blue Cross/Blue Shield plan was privatized. Long-term, alternative support appears to have enabled these states to develop sound statewide telemedicine systems.

OPPORTUNITIES FOR PUBLIC MENTAL HEALTH SYSTEMS

Telepsychiatry and e-mental health offers several opportunities for public mental health systems. Although these opportunities can be of interest in any organized public mental health systems, several could be of benefit to states’ mental health authorities. State Government Mental Health Agencies (SGMHAs) should actively engage in diffusing telepsychiatry and e-mental health principles, practices, and technologies across their states in collaboration with their academic medical centers, mental health centers, and private providers. SGMHAs should also take the leadership role, to ensure consistency,

foster collaboration, minimize duplication of effort, and coordinate with other health and human service agencies within state governments. The following recommendations are under consideration by North Carolina's system and should be contemplated for other SGMHAs:

1.) Aggressively pursue tele-training, leveraging existing resources to the greatest practical extent. As previously described, extensive high-speed networking and videoconferencing resources may already be in place. Additional videoconferencing resources may be available through public and private higher education institutions, Area Health Education Center (AHEC) offices, and Public Health systems. These existing resources could be quickly brought to bear for MH/DD/SA training and reach a large portion of the population that needs such training. The SGMHAs should seek out other options for areas not adequately covered by existing resources.

2.) Foster pilot projects in mental telehealth. The SGMHAs should foster pilot projects that demonstrate different aspects of telepsychiatry and e-mental health, e.g. innovative service delivery, cost, efficiency, efficacy and effectiveness, or new technology. The SGMHAs should establish key objectives, performance metrics, and exit criteria to ensure that these projects produce tangible results that can be used to advance the use of mental telehealth.

3.) Work to remove barriers to mental telehealth utilization. The SGMHAs should develop a plan to mitigate the barriers to the use of telepsychiatry and e-mental health, starting with those that have been identified earlier in the paper. Additionally, the SGMHAs should look to professional societies, and other states mental telehealth programs to develop guidelines and best practices for telepsychiatry and e-mental health.

4.) Promote collaborative mental telehealth research. In today's increasingly competitive research funding environment, grant applications that have multi-site or multi-institutional collaboration have a distinct advantage. The SGMHAs should promote research projects that include such collaboration between research institutions, through bringing together researchers from different institutions, providing letters of support (and/or SGMHA

co-investigators) for collaborative applications, and identifying key research needs in mental telehealth. The SGMHAs should also consider developing a set of key data elements that might be included in mental telehealth research that could be used to develop a registry or large data set for subsequent evaluation.

5.) Identify technology infrastructure needs. The SGMHAs should look across the MH/DD/SA system to identify technology infrastructure needs, and then implement a plan for meeting these needs. There are many Federal programs that can assist with infrastructure, including the previously described FCC Universal Services Fund (communications subsidies) and the U.S. Department of Agriculture/Rural Utility Service's Telemedicine and Distance Learning grant and loan program (equipment purchases). Furthermore, many private foundations will fund infrastructure purchases. The SGMHAs could play an important role in coordinating grant applications and technical compatibility.

6.) Improve awareness of telepsychiatry and e-mental health. Awareness of, and attitudes about telehealth are influential factors in the success of telehealth programs. The SGMHAs should reach out to potential constituencies, including users and consumers, to promote mental telehealth concepts, technologies, and practices. Potential mechanisms to accomplish this goal include meetings/forums, lectures, printed promotional materials, and Web resources.

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