Telemedicine in Emergency Psychiatry

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The discovery of new tools adds to the human experience. Newfound abilities to communicate and to share knowledge can result in a factorial increase in the collective wisdom of a community. The expansion of computer networks into every corner of the globe has the potential to affect many aspects of society, including medical, legal, and ethical frames of reference.

This column presents a brief overview of telemedicine and discusses some of the clinical and technical issues that need to be addressed if telemedicine—or, more specifically, telepsychiatry—is to become a resource for providing emergency mental health services to communities that are otherwise underserved. In this discussion the term "telemedicine" refers to two-way, interactive video systems over which medical consultations take place.

Telemedicine, a relatively new technology, is the application to clinical practice of rapidly developing audiovisual techniques in conjunction with growing capabilities for data transfer. Telemedicine was first successfully applied to specialties that relied heavily on the interpretation of still pictures, such as radiology. With adequate resolution, computer tomographic images, for example, could be interpreted by a diagnostic radiologist looking at the image on a monitor hundreds of miles away from the clinical site where the image had been generated.

The clinical examination of live patients by telemedicine is currently attracting heightened attention. Advances in the synchronization of auditory and visual signals have provided the technological basis to make such an application possible (1). The greater interest in efficient use of limited resources, spurred by the managed care movement, has added an economic incentive. The advantages of the telemedicine concept as well as emerging problems are summarized in Table 1.

In psychiatric practice, the author has had positive experience interviewing patients via a telemedicine set-up. After overcoming initial reluctance to "talking to the TV," patients rapidly reconciled themselves to the situation, and a regular mental status examination was possible. Over time, as the synchronization of speech and visual images improved, an even greater emulation of the traditional clinical interview situation became possible. Control of camera functions at both ends by the clinician allowed a focus on nonverbal cues from the patient. The interviewer could also control the degree of closeness that the patient experienced by zooming his own presence in or out of the monitor.

Because so much of emergency psychiatric work consists of assessment and triage, it lends itself to the techniques of telemedicine. Interview and inspection via telemedicine permit the emergency psychiatrist to recommend immediate interventions to care providers in the patient's vicinity. The recipients of such recommendations may be nurses, physician assistants, or, occasionally, law enforcement personnel. Nurses and physician assistants also provide input to the telepsychiatric examiner on matters not easily conveyed by the new technology, such as readings of vital signs or notations in the medical record.

The emergency psychiatrist thus takes on the role of a consultant via telemedicine, reaching a constituency of health care professionals and patients who would otherwise not have access to psychiatric advice. In a large state this ability may obviate the need for transporting a patient hundreds of miles to the nearest emergency department—where there may not even be a psychiatrist on duty to perform an on-site examination. Although we have found a high level of acceptance of telepsychiatric intervention by both patients and caregivers, and although we have found it quite possible to conduct clinical psychiatric examinations via telemedicine, the problems should not be underestimated.

Medical liability is a major risk. How can we ensure a clear identification of the medical liabilities involved in cases where damage occurs? Legally, dilution of clinical responsibility and liability is not allowed (2). Telediagnosis must ensure that the practitioner who is clinically responsible is fully identified.

Billing for services rendered via telemedicine is not fully developed. Conceivably, CPT evaluation and monitoring codes 99241 through 99245 (outpatient consultation) could be used. An alternative is the provision of such services through a contract with a health care facility, similar to the contract between a laboratory and a physician. Charges are ultimately submitted to the insurer as part of the technical charge. Liability is born by the practitioner who has received the sample or provided the telepsychiatric service, respectively.

In general, medical practice without clinical examination of the patient is contrary to medical ethics (3). This potential problem for telepsychiatry develops only if we confine ourselves to the idea that "medical examination" presupposes physical contact. But psychiatry, more than most other clinical specialties, should be able to make a case that the combination of visual and auditory connections between patient and examiner is adequate for an as-

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Table 1

Advantages of telemedicine and problems in implementing telemedicine systems

Advantages
Savings in transportation costs
Improved quality of care by providing access to high-caliber medical experts
Access to continuing medical education for geographically isolated health care professionals
Accelerated access to specialist health care for patients in underserved areas
Problems
Resolution of long-distance imaging not as good as direct contact visualization
High investment cost of hardware creates a barrier to entry
Absence of technical protocols and standards
Unclear reimbursement situation

sessment and the formulation of an immediate treatment plan. Obviously, implementation of the plan is not within the purview of the psychiatrist, but delegation is frequently implied in the conventional practice of emergency psychiatry as well.

Research is necessary to allow fuller development of telemedicine in general and telepsychiatry in particular. The reliability of diagnostic assessments between raters on site and via monitor should be no less than the traditional interrater reliability established for psychiatric diagnoses in conventional settings. For the psychiatric emergency application, investigations should not be confined to diagnostic reliability. More important are evaluations of the validity of risk assessment. It should be possible to evaluate the risk a patient presents to himself or herself or to others and then to develop a suitable triage and disposition plan by long-distance consultation. However, this assertion awaits empirical validation.

Efforts are under way to measure the quality of telemedicine arrangements. For example, several network prototypes have been constructed to determine the technical problems and to assess the effectiveness of telemedicine in wide-area health care networks. A large-scale health care network consisting of 1,553 doctors, 26 hospitals, four medical laboratories, and one insurer is testing the hypothesis that functional health status of a geriatric population can be accurately determined remotely. The investigators are monitoring straightforward parameters, such as mobility and self-care. Thus they can identify changes in functional health status and prompt appropriate and timely intervention (4,5). Similar designs need to be introduced into the evaluation of telemedicine in emergency psychiatry.

Some of the excitement about telemedicine is based on dreams about the solutions it might provide to current health care problems. Several existing demonstration projects serve as more practical, down-to-earth examples of the current telemedicine systems (6,7). Psychiatric interventions are a likely field in which telemedicine can prove its value in spreading specialist expertise to areas where it would otherwise not be available. If in the coming decades primary care physicians are indeed becoming more numerous and specialist physicians a shrinking minority, the importance of telemedicine will probably grow even more. And nowhere is the role going to be so crucial as where rapid access to expertise counts the most, in provision of emergency care, including emergency psychiatry. ♦

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