

Telehealth: Clinical Guidelines and Technical Standards for Telepsychiatry

SUMMARY

Revised Version

AGENCE D'ÉVALUATION DES TECHNOLOGIES
ET DES MODES D'INTERVENTION EN SANTÉ

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Report prepared for AETMIS by Gilles Pineau, Khalil Moqadem,
Carole St-Hilaire, Robert Perreault, Éric Levac and Bruno Hamel,
with the collaboration of Alexandra Obadia and Lorraine Caron

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FOREWORD

TELEHEALTH: CLINICAL GUIDELINES AND TECHNICAL STANDARDS FOR TELEPSYCHIATRY

At a time when access to health care and services for the entire population is a concern, telehealth is an option for delivering and supporting certain services from a distance. From this standpoint, telehealth activities should complement existing services and be supported by information and telecommunications systems that facilitate their delivery when and where needed. Appropriate telehealth use will therefore be able to help improve access to resources throughout Québec. Telehealth will thus play a key role in the major reorganization of the health and social services network that is in line with the direction the Ministry has taken towards local service networks, regional hospitals, and integrated university health networks, which are aimed at promoting the continuity and complementarity of health services.

It was in this context that the Direction générale des services de santé et médecine universitaire (DGSSMU) asked the Agence d'évaluation des technologies et des modes d'intervention en santé (AETMIS) to assess three priority areas of telehealth application for the Ministère de la Santé et des Services sociaux (MSSS), the objective being to establish clinical guidelines and technical standards. The areas in question are telepsychiatry, telerehabilitation and telepathology. At the Ministry's request, three separate assessment reports have been produced, one for each area of application. In accordance with the work plan presented in April 2004 and with the DGSSMU's consent, a number of considerations relating to the economic, organizational, human, ethical and legal aspects of telehealth were added.

The main purpose of this report is, therefore, to propose clinical guidelines and technical standards for telepsychiatry.

In submitting this report, AETMIS hopes to provide the MSSS with information that will permit better decision making for standardizing telepsychiatry throughout the province.

Dr. Luc Deschênes
President and Chief Executive Officer

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None declared.

SUMMARY

INTRODUCTION

Telepsychiatry is one of the oldest applications of telemedicine. Although the first experiences date back to the 1950s, telepsychiatry really began to develop in the 1990s with the implementation of a number of projects. Since these were almost exclusively initiatives in clinical settings, the first concern was to assess this application's feasibility before considering providing a framework with guidelines and technical standards.

With care delivery being reorganized across Québec, telepsychiatry is being called on to play a greater role, since it provides a means of improving continuity and complementarity in psychiatric care throughout the province. However, in order for well-structured programs to be put in place, standardization is necessary.

This involves two areas of equal importance, one dealing with the contents, the other with the container: telepsychiatric clinical practice and the technical conditions for transmitting voice and images over distances. The objective of this report is therefore twofold: to propose clinical guidelines and technical standards that would foster the optimal telepsychiatry use. Although it does not examine them in great detail, this report also looks at the economic, legal and ethical aspects, as well as the human and organizational factors, in order to highlight their importance in implementing programs successfully.

CLINICAL GUIDELINES

This report posits that the quality of telepsychiatric care delivery should be relatively the same as that expected in a conventional face-to-face psychiatric setting. "Relatively the same" is not to be understood as second-class care,

but rather that a realistic view must be taken of the technological medium denoted by the prefix "tele-." This overall objective served as a basis for the proposed clinical guidelines and led to the exclusion of certain clinical conditions and therapeutic interventions from the area of application of telepsychiatry. It should be stressed from the outset that telepsychiatry is not an alternative to creating an infrastructure and establishing clinicians in the regions in order to meet the population's psychiatric services needs.

In the case of adult telepsychiatry, the literature reviewed and the experts consulted confirm that many clinical activities can successfully meet the needs of patients and their families: patient assessment and diagnostic confirmation; medication review for patients who are not in an emergency situation; the development of clinical care plans; treatment follow-up and review; psychological assessment and therapy; psychological and neuropsychological testing; forensic evaluations; and certain psychiatric emergencies. If the costs are justified, this list could be extended to include individual, couple and family therapy, psychiatric or psychological therapy, psychoeducation and pharmacoeducation.

On the other hand, adult telepsychiatry is contraindicated in patients who refuse this treatment modality; in violent, unstable or impulsive patients; those at immediate risk for suicide or who pose an immediate danger; those who require special monitoring that is not available at the primary site; patients with a specific mental symptomatology that could be exacerbated by the use of telecommunications technology; patients with whom news must be shared in person because it could cause significant emotional reactions; and certain individuals who have hearing, visual or

cognitive deficits that limit their ability to communicate via this technology.

The clinical conditions that lend themselves to pediatric telepsychiatry are, among others, depression, anorexia, behaviour disorders, and attention deficit disorder with hyperactivity. The contraindications for adult telepsychiatry apply to pediatric telepsychiatry as well.

In order for telepsychiatry to offer patients quality health-care services, it is essential that the clinical activities involved be supported as follows:

- 1) A central reservation system and a generic consultation tool must be available.
- 2) A medical file is opened at both the primary and secondary sites for each patient treated by telepsychiatry.¹ The information to be entered in these files is determined by agreement with the councils of physicians, dentists and pharmacists (CPDPs) of the institutions concerned.
- 3) To avoid the proliferation of models, standard agreements are drawn up in consultation with the institutions concerned and approved by the Collège des médecins du Québec (CMQ; Québec college of physicians) and possibly by the Association québécoise d'établissements de santé et de services sociaux (AQESSS; Québec association of health and social services institutions).²
- 4) Conditions governing fee-for-service remuneration for physicians need to be established. This could be a significant disincentive to involving physicians in telepsychiatry.

1. **Primary site:** The location of the patient or the health professional who is consulting. This definition is consonant with the concept of primary care. The **secondary site** is the location of the health professional or specialist being consulted.

2. AQESSS is the result of the merging of the Association des hôpitaux du Québec (Québec hospital association) and the Association des CLSC et des CHSLD du Québec (Québec association of CLSCs and CHSLDs), which took place on April 28, 2005.

5) Service providers must have adequate training in telepsychiatry. This is an essential prerequisite for starting up any program.

6) A support structure must be in place. Primary sites require a care coordinator, a site coordinator, and a regional coordinator. Secondary sites require a site coordinator and a regional coordinator or a university coordinator, if the site is at a university hospital.

TECHNICAL STANDARDS

Compliance with the following technical standards is required in order to provide effective telepsychiatry services:

- 1) The teleconsultation room at the primary site should be at least 9 × 12 feet (2.74 × 3.66 m) and optimally 10 × 15 feet (3.05 × 4.57 m). The walls should be painted light gray, pale blue or dark blue and have a flat finish. The lighting should be as close as possible to daylight quality, and its intensity should be between 750 and 1000 lux. The room should be in an area where the noise level will not exceed 50 dB.
- 2) The equipment should include an omnidirectional microphone and a 27- to 36- inch (69- to 91.4-cm) monitor, depending on room's floor space. A 32-inch (81-cm) screen appears to be optimal for the room sizes mentioned above. To keep costs down, a CRT monitor should be used, unless the purchase of a mobile videoconferencing station is truly justified.
- 3) One of the cameras should be able to capture practically the entire width of the room, have tilt and pan movement control, have automatic or manual iris adjustment, and be equipped with remote control. The room should also be equipped with a telephone and a fax machine.
- 4) Videoconferencing requires a high level of data compression, which is governed by standards. Based on the scientific literature, the experts consulted, and the tests carried out, all

the equipment should be gradually upgraded to the new H.264 compression standard. This would double the bandwidth and lead to a significant improvement in image quality at reasonable cost. All new equipment should be compliant with the H.264 compression standard.

5) A 384-Kbps reserved-bandwidth connection provides sound and image quality that is suitable for usual clinical telepsychiatric activities. When used with an H.263 compression standard, this bandwidth is the minimum standard, with the H.264 compression standard, the optimal standard. At the present time, going beyond this standard does not appear to be desirable, for both technical and economic reasons. Indeed, testing enabled experts to determine that this standard permits adequate clinical activity. The testing also confirmed that the entire capture, transmission and reception chain must absolutely meet this standard. A single weak link would significantly diminish the quality. Data-packet losses of more than 0.5% compromise image quality to the point that it hinders clinicians in assessing the patient's clinical condition. This is also true of the latency, which should not exceed 500 ms.

ECONOMIC ASPECTS

Very little has been done to assess the economic aspects of telepsychiatry. Moreover, the quality of the cost data is generally less than optimal. This analysis is aimed only at providing budgetary indications on certain investment and operating costs. It does not include network infrastructure costs or the cost of training professionals involved in telepsychiatry. These major investment costs should be examined in a more in-depth analysis.

The break-even point of this technology is closely tied to the volume of use. Some suggest an estimated minimum of seven consultations per week. This minimum will, however, need to be confirmed by experts in the field. From a societal perspective, the incremental costs of telepsychiatry have been estimated by

assuming (as suggested by experts) that these activities would take up the equivalent of two days per week, which represents a weekly average of about 14 consultations. The room, the equipment, and the lines of the *Réseau de télécommunications sociosanitaire* (RTSS; health and social services telecommunication network) could therefore be used for other purposes, such as tele-expertise and tele-education in other disciplines, which would help offset the required initial investment.

In this context, and based on the assumptions and scenarios used in this assessment, telepsychiatry should yield estimated average annual savings of about CA\$45,000 per telepsychiatric unit. Reduced travel and accommodation costs for visiting psychiatrists account for the major part of the savings. Given the paucity and inconsistent quality of the available information and given the approximateness of the economic outcomes, the implementation of applications such as telepsychiatry should be followed by rigorous assessments. They should examine not only the economic parameters, but also patient and health professional satisfaction, improvement in the quality of care, care distribution and accessibility, and the technical performance of the equipment used.

CONTEXTUAL ELEMENTS

Organizational and human factors

“More often than not, the main obstacles to telepsychiatry have to do with physicians and patients adjusting to the technology, not with the bandwidth used or the equipment required for teleconsultations.” The literature contains many such observations, which underscores the importance of managing and supporting the change by adequately training caregivers and putting appropriate structures and procedures in place.

Legal framework

An adequate legal framework is an essential component of these structures. Telepsychiatry raises a number of legal issues that the traditional practice of psychiatry does not, and the current legislation does not address them adequately. With regard to consent, legislation should stipulate that only legally competent patients may avail themselves of telepsychiatric services. The patient's informed consent should be obtained, in writing. Given the sensitive nature of the information, special care should be taken to protect confidentiality and safeguard doctor-patient privilege.

Clinical and professional standards, which can have an impact on civil liabilities, should also be adopted. Many players are likely to be involved in telepsychiatry: all the caregivers and institutions that prepare and participate in consultations, Québec public authorities, equipment manufacturers and distributors, and telecommunications service providers. Steps should therefore be taken to ensure that each party has insurance coverage. *An Act to Amend the Act respecting Health Services and Social Services and other Legislative Provisions* (Act to amend the AHSSS) provides for patient complaints being made at the primary site. However, the feasibility of this solution in cases where the two sites are far apart needs to be examined. The Act also provides for the conclusion of agreements between the parties concerned, but it says little about the kind of administrative control necessary for verifying such agreements.

The remuneration of caregivers must also be reviewed to put in place mechanisms to cover the payment of telepsychiatric services. Lastly, the law seeks to ensure that the entire population has continuous and appropriate access to health care, regardless of regional geographic specifics. From this standpoint, telehealth could offer better access to care for people living in rural, isolated or remote areas. However, the

implementation of telehealth services throughout Quebec could also result in an unfair distribution of health-care resources in the province. This matter needs to be examined.

Ethical considerations

Two aspects are discussed from an ethical standpoint: 1) the future prospect of increased access to specialized services in remote areas; and 2) the transformation of the traditional therapeutic relationship (face-to-face consultation). It emerges that telepsychiatry alone cannot be viewed as the solution for overcoming the problem of providing good coverage throughout the province. It is advisable to build on the advantages of telepsychiatry in order to increase the number of face-to-face consultations, while continuing to put in place the multidisciplinary infrastructure and plans for attracting physicians to the regions.

Moreover, it seems essential to pay special attention to the elements that characterize the patient-physician relationship, such as communication, the physician's behaviour (degree of empathy, professionalism), medical services (assessment, diagnosis, prescriptions, treatment, etc.), the relationship of trust between the physician and patient, and the measures for ensuring confidentiality and privacy.

The clinical guidelines, technical standards, and legal/ethical guidance proposed in this report help ensure that the quality of care delivered in telepsychiatry is the same as that of face-to-face consultations.

CONCLUSION AND RECOMMENDATIONS

Defining clinical guidelines and technical standards aimed at standardizing telepsychiatric practice will foster its broad implementation. Québec will thus be better able to avail itself of the large-scale projects funded by the Health Infoway. When seen from the standpoint

of the restructuring of primary care and the reorganization of highly specialized medicine overseen by Québec's four integrated university health networks (RUIS: French acronym for *réseaux universitaires intégrés de santé*), this technology could prove to be a valuable asset in ensuring a more equitable distribution of psychiatric expertise throughout the province. This would promote the smooth development of telepsychiatry in Québec.

Given the foregoing considerations, AETMIS recommends that the Ministère de la Santé et des Services sociaux (MSSS) adopt the main guidelines and technical standards proposed in this report, in cooperation with the authorities concerned. AETMIS is firmly convinced that telepsychiatry can help improve the offer of quality health care and proposes procedures that could support clinical activities in this regard. Specifically, a central reservation system and a generic consultation tool should be instituted, as should fee-for-service remuneration for physicians, for the absence of these elements is a significant disincentive to physician involvement in telepsychiatry. In addition, plans should be made to include a certain number of key players to support the implementation and use of telepsychiatric services. All the players should have the appropriate training.

From this standpoint, to permit a quality practice environment, the technical infrastructure should be upgraded to a minimum standard of 384 Kbps of bandwidth together with an H.263 data-compression protocol, then gradually be brought up to an optimal standard of 384 Kbps of bandwidth with an H.264 data-compression protocol. Data-packet loss should not exceed 0.5%. Minimally, latency should be less than 500 ms, optimally, less than 300 ms. These standards should be applied to the entire data capture, transmission and reception chain. Telepsychiatric consultation rooms containing the appropriate equipment and accessories should be set up in the appropriate clinical settings and where the needs are the greatest.

Taking the human and organizational aspects into account helps ensure the success of this type of activity. The legal and ethical aspects should also be considered. As well, a more detailed economic analysis should be carried out prior to any massive investment in telepsychiatry. Lastly, the implementation of telepsychiatry should be subjected to a rigorous downstream assessment in order to improve its management and performance.

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