LEADER | **Focus**

▶ # Who shall coordinate the coordinators? Facilitating the work of telemedicine networks which provide humanitarian services

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Summary

Telemedicine networks for humanitarian purposes have evolved over the last decade or so in a largely autonomous way. Communication between them has been informal and relatively limited in scope. This situation could be improved by developing a comprehensive approach to the collection and dissemination of information. We propose the formation of a central 'clearing house' which would allow networks to exchange information and cases where appropriate. In order for a network to belong to the clearing house, it would need to conform to certain guidelines, which would ensure that safe and satisfactory standards would be maintained. We propose that a coordinators' conference should be held to discuss who would operate the clearing house and how it would be resourced. The creation of a central clearing house would facilitate the operation of the networks, particularly during periods of heavy workload, and lead to improved sustainability, thereby benefiting individual patients. We believe that more can be achieved by the networks acting together than by them acting independently.

Introduction

There are several telemedicine networks around the world which deliver humanitarian services, usually by providing second opinions and management advice to doctors working in developing countries (Table 1). Some of these networks have operated for periods of five years or more, thus demonstrating durability, if not sustainability. The limited information which is available suggests that they provide a useful service,[1–5] but there may be ways in which their work could be further enhanced.

In order to function effectively, networks must be able to locate the appropriate expert to answer a consultation. This task is usually performed by a coordinator. Experience suggests that finding the right expert may be difficult during periods of heavy workload, when the chosen person is on holiday or otherwise unavailable, or if a network does not have the necessary expert on its books. For these reasons, a method of sharing expertise and/or cases between networks might be useful. To date however, these networks have tended to function autonomously and there is limited experience of case sharing between them. Creating a formal connection between networks could assist with day-to-day

problems and might ultimately improve their sustainability. What would be the mechanism for network interconnection?

We propose the formation of a central 'clearing house' which would allow networks to exchange information and cases where appropriate. The primary goal of a central clearing house would be to enhance the efficiency of the participating networks, thus permitting them to increase the number of consultations answered while reducing response times. One mechanism for achieving this might entail the networks being able to identify available experts through a searchable database. In other words, network A could identify an expert from network B who could assist with the case in question; the details of the case would remain with network A. Note that a searchable database would not necessarily have to be held in the clearing house itself. It could be a distributed database, with fragments held in each participating network, i.e. the networks would remain in charge of their own information.

A second mechanism for assisting networks would be to use the clearing house to transfer cases between networks. In other words, a case submitted to network A could be transferred to network B for response. The two mechanisms are different, and correspond to the situations in which an expert is transferred from one network to another, and the case itself is transferred.

A clearing house would therefore facilitate interworking between networks – but it would be managed by the

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Table 1 Telemedicine networks for low- and middle-income countries (second opinion teleconsultation networks providing services in the developing world with more than 7 years experience). There are two fundamentally different models of operation. These correspond to the different ways in which an expert is chosen to reply to a query. In the first, a query is directed to a specific expert for reply; this might be called the **targeted** model. In the second, a query is directed to a group of experts, of whom all, some or none may reply; this might be called the **open** or **distributed** model

Network	Countries	Model
Swinfen Charitable Trust	Various	Targeted
Ukraine	Mainly Ukraine	Targeted
Institute of Tropical Medicine	Mainly Africa	Targeted
iPath*	Various	Open
Partners Healthcare, Boston, USA	Cambodia	Targeted
Pacific Island Health Care Project, Honolulu, USA	Mainly Pacific region	Targeted

*iPath is not strictly a network, but open-source software that is used by telemedicine networks

network coordinators, and there would not be direct interaction with referring doctors or specialists.

Database creation

To establish the database, each network would need to identify those of its participating doctors who consented to central registration with the clearing house. These physicians would be recorded in the database with their specialty/subspecialty, and any specific areas of expertise, such as expert knowledge of a particular geographical region. Access to the central database would be allowed for the coordinators of individual networks. If a coordinator was presented with a case for which they needed to identify an expert, they could either search the central database themselves or contact the database coordinator to do it for them. In addition, if a network coordinator was unavailable for a period of time, those cases arriving during that period could be referred to the central clearing house to be managed by the central coordinator, who could pass them on to the most appropriate network. For networks using the discussion group model, the moderator might seek assistance after a case had been unanswered for a period of time.

A central clearing house could also act as a global point of contact for referring clinicians who were seeking specialist advice. The clearing house would receive enquiries from potential new referrers and direct them to appropriate networks for them to register as users; we do not envisage the clearing house registering doctors itself.

Network guidelines

In order for a network to belong to the clearing house, it would need to conform to certain guidelines. These would ensure that:

(1) All patient information was kept confidential and secure;
(2) All referrers were appropriately qualified, registered with their national authority, and had informed their insurer about the work;
(3) Appropriate training was provided for referrers, e.g. in clinical photography;
(4) Background information on the referrer's environment (i.e. details about the hospital treating the patient) was available for the specialist responding to a case;
(5) All specialists were appropriately qualified, registered with their national authority, and had informed their insurer about the work;
(6) Only appropriate specialists answered cases;
(7) Follow-up data was obtained where possible and feedback on cases provided for specialists;
(8) Arrangements were made for holiday and out-of-hours cover for the coordinator(s);
(9) Quality assurance monitoring was performed;
(10) Statistics were provided regularly for centralised monitoring purposes.

In other words, a network which joined the clearing house scheme could be reassured that safe and satisfactory standards would be maintained.

Accreditation

We are not aware of any previous problems concerning the accreditation of telemedicine users in networks for humanitarian purposes. However, as in conventional medicine, there is the potential for abuse. A referrer receiving telemedicine advice needs to know that it has come from an appropriately-qualified expert. Similarly, experts who are donating their time and expertise for free need to know that it is not being sold for personal profit by an unscrupulous referrer.

All networks have mechanisms to ensure that their experts are properly qualified, usually by requiring them to be Board-certified or otherwise registered with their Ministry of Health. All networks have mechanisms to ensure that referrals only emanate from properly-qualified individuals, such as primary care doctors or other health professionals who have the legal right to treat patients in their country. Whether these mechanisms need to be standardized for clearing house membership is a matter for future research.

Legal responsibility, insurance, privacy

In the kind of telemedicine under discussion, consulting physicians are safeguarded against malpractice by the Good Samaritan clause, which provides defence of doctors offering their services *pro bono*. In addition, this protection

is strengthened because the advice is exchanged between two clinicians, rather than clinician to patient, and the burden of responsibility remains with the treating clinician to accept or reject the advice offered.

It is important for doctors to inform their insurers about their participation in humanitarian telemedicine, although the answering of out-of-network consultations does not seem to pose additional legal risks. Retired physicians who do not have current malpractice coverage in their host country should be able to offer their services under the protection of the Good Samaritan clause.

All networks take steps to protect patient information. Many insist that case details are anonymised, although doing so opens up the possibility of mistaken identity if correspondence about a case becomes protracted: can the referrer be sure after several weeks have elapsed who Patient X was? Privacy is an especial concern when cases emanate from war zones. If networks are to interwork through a clearing house, then a mutually acceptable method of guaranteeing patient privacy will be required.

Next steps

Who would operate the clearing house and how it would be resourced? Since a clearing house would be used by the network coordinators, these questions are perhaps best answered by a group composed of coordinators. We propose a meeting to be held to discuss these matters: a coordinators' conference. In view of the geographical dispersion of the network coordinators, we suggest that the meeting should be held virtually.

Finally, there is the ethical question of use of resources. If resources are expended on establishing and operating a clearing house, then those resources are not available for other purposes. How could the operation of a clearing house be shown to be cost-effective? Since measuring the cost-effectiveness of an individual telemedicine network is exceedingly difficult, it is not to be expected that measuring the cost-effectiveness of a clearing house designed to facilitate interworking would be straightforward. In our view, this is a central research question that needs to be addressed at an early stage by a coordinators' conference.

Conclusion

Telemedicine networks for humanitarian purposes have evolved over the last decade or so in a largely autonomous way. Communication between them has been informal and relatively limited in scope. This situation could be improved by developing a comprehensive approach to the collection and dissemination of information. The creation of a central clearing house would allow improved communication between networks, the identification of appropriate experts and cross coverage between networks. This should lead to improved sustainability of the existing telemedicine networks, thereby benefiting individual patients. We believe that more can be achieved by the networks acting together than by them acting independently: the whole is greater than the sum of the parts.

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