



INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION
DEVELOPMENT BUREAU

ITU-D STUDY GROUPS

Document RGQ14-1/2/010-E
30 January 2003
English only

RAPPORTEUR'S GROUP MEETING ON QUESTION 14-1/2 - GENEVA, 24-26 FEBRUARY 2003

Question 14-1/2: Application of telecommunications in health care

STUDY GROUP 2

SOURCE: EUROPEAN TELEMEDICINE INSTITUTE

TITLE: STANDARDIZATION IN TELEMEDICINE/E-HEALTH

There are five main areas of issues to care about:

1. *technical*: it deals with allowing new technologies to be available to all telemedicine actors at any layer implied in this new medical practice: local, regional, national and international. Obviously, each layer will be managed by different decision-makers.

The technologies concerned must include IT services in terms of network bandwidth and availability (national and international network infrastructure), data formatting (to define a common data representation), data communication and transfer, security (integrity, authentication, confidentiality, non-repudiation, developing a PKI infrastructure), data storage (using knowledge base, patient information storage).

Associated with these standards, processes must be written explaining how telemedicine should be practiced; how a doctor will ask for advice to a professor, what information must be transmitted before the telecare...

Standards should be defined taking into account all these concerns and keeping in mind that they will be used in a multicultural, multilingual and cross-discipline context; interoperability between telemedicine systems must be ensured. DICOM is an interesting effort in the area of teleradiology.

Standardization may rely on a best practices collection that may then be used by decision-makers to build the telemedicine infrastructure faster thereby spreading telemedicine in better conditions.

organizational and human factors: improving telemedicine spread requires a real political and decision makers will to develop and promote the corresponding health-care services. The way to global use of telemedicine has different steps.

The first one is needs assessment which should be done by understanding providers point of view, health care professionals practice patterns and requirements, and technical constraints and opportunities; industrials, health care services and medical specialists common work will be necessary. Meanwhile, incentives should be organized for health professionals to participate to

Contact point: Mr. Louis Lareng, European Telemedicine Institute, Toulouse, France,
e-mail: lareng.l@chu-toulouse.fr

telemedicine definition and then to learn, acquire and use this new practice. It is very important that practitioners feel involved in telemedicine development and that solutions meet their requirements.

Then best practices should be collected and distributed so as to allow telemedicine managers to avoid errors already made and to allow faster spread of telemedicine.

Lastly, once solutions are merged into a global service and evaluation show a good value of telemedicine, it should be included in professional education programs in order to make the use of telemedicine as natural as using the phone.

At any case and at any time, governments must recognise the benefits of telemedicine in any aspects of health care management; support must not be broken.

All through the way to global telemedicine, an iterative process must take place by establishing a feedback mechanism to ensure telemedicine evolution using evaluation data.

Finally cooperation between very different economical sectors (manufacturers, operators, industrials, public services, health care professionals) should be developed.

financial: this issue covers the measure of telemedicine costs and benefits for the health care systems. It must also define a reimbursement strategy by recognizing telemedicine as a new service having a cost being reimbursed to providers.

evaluation: the evaluation process is one of the most important as it will be used and available for resource allocation, costs and benefits highlights, reimbursements calculations, showing telemedicine contribution to health care quality improvements. Evaluation should also define what are the main objectives of telemedicine as matching results with objectives has to be done; evaluation should provide the means to achieve that task.

Hence evaluation should provide required data to financial (costs, reimbursements), organizational (feedback, practitioners and patients perceptions, processes, requirements not met, economic impacts), technical (maintenance, reliability, security, technology or standards evolution needs, information processing), medical (appropriateness, health care processes impacts, cares quality), educational (doctors competences, improvements in diagnosis and treatments) issues.

2. *medico-legal*: these issues deal with ethical and legal concerns. Mainly it is closely linked to security matters, patients' rights to keep information about themselves confidential and responsibility delineation (which law applies: that of the patient's country or state, or that of the remote practitioner's country or state?).

A legal and ethical framework should be defined worldwide at national and international levels.

As we can notice a long way still remains until all these aspects are handled. However all the above recommendations have different urgency levels.

In effect, and as one may have noticed, the most urgent concerns are the following:

- needs assessment in terms of medical practice needs, telemedicine contribution, technology needs. Objectives should be made clear.
- Definition of an evaluation framework of telemedicine systems to enable comparisons, to help elaborating the best practices collection and to promote telemedicine within states. Objectives must be clear while designing the evaluation criteria.
- Standardization for well known needs such as patients file creation, change, transmission and storage for general purpose telemedicine acts.
- Technical best practices collection

- Financial and medico-legal issues should not be forgotten and should be considered soon.

As far as technical issues are concerned, the main lack resides in the fact that no telemedicine data file is clearly defined and interoperable with each other while the essence of telemedicine is found in the opportunity to exchange, transmit and understand data coming from a remote site. Network technologies exist and are well known, while no telemedicine-specific data is identified so far. This is true for both telecare and clinical research.

For instance, in telecare, a standard patient file containing patient's health information would allow fast file exchange across official boundaries (state, province, region...) and would make data readable by anyone. Standardization may cover file definition but also storage, change and transmission. Linked with this concern are;

- ✓ how to code diseases, cares, clinical information, treatments and so on with computers ?
- ✓ what protocols, infrastructures or mechanisms should be used for transfer and security ?

We could adapt the same idea to clinical research exchanges.

As a conclusion, I think that telemedicine cannot be considered only as a communication tool but also as a service provided organized through institutions and needing all health care potentials (from public or private sector). With Italy, I created the project of a worldwide telemedicine service to deal with continuous emergency problems 24/24, multilingual and multidisciplinary. This project has been approved by the European Commission and the G8 by December 1996. Its feasibility has been positively tested by the US military hospitals that have various equipment level, speak the same language and can use time lag.
