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**Teleradiology
in the European Union**

White Paper

VII



Teleradiology in the European Union

Teleradiology is the electronic transmission of radiographic images from one geographical location to another for the purposes of interpretation and consultation. Teleradiology services have developed substantially over the last few years from limited use between hospitals and tertiary care centres for second opinions and patient transfer to the international provision of reporting services. There is no doubt that teleradiology provides a valuable service in some circumstances, but it also has a number of inherent limitations regarding the proper provision of imaging services to the patient and therefore may increase risks for the patient. The purpose of this paper is to highlight the problems that have arisen and to reiterate key parts of these guidelines which were developed for the benefit of patient care.

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A recent report issued by the American College of Radiologists (ACR) identified legitimate questions concerning the use of teleradiology across national boundaries with regard to the quality of patient care. In view of these risks to the patient, the European Association of Radiology (EAR) and the UEMS Radiology Section elaborated guidelines for the appropriate use and structure of teleradiology services. These guidelines were not produced to protect radiologists but to ensure that the service to patients by national radiology centres is not jeopardised. It is clear that recent developments in some EU countries and the advertising of teleradiology services from the Far East have demonstrated that these guidelines are not being implemented.

The role of a clinical radiologist in a diagnostic imaging service is considerably wider than simply issuing a report. It includes:

- Evaluating the clinical information produced by the clinicians;
- Deciding whether imaging would be helpful often after discussion;
- Identifying and justifying the most appropriate investigation;
- Monitoring the study to maximise diagnostic yield;
- Evaluating the study and relating it to the clinical findings;
- Reviewing previous examinations and comparing them with the current study;
- Identifying further investigations and discussing these with clinicians;
- Reviewing all studies in multi-disciplinary team meetings;
- Undertaking minimally invasive therapeutic and diagnostic procedures;

- Monitoring management in conjunction with the patient and the clinician;
- Contributing expertise to the management of the service;
- Teaching young radiologists especially on the more straightforward cases;
- Undertaking an audit of the services and diagnostic accuracy;
- Instigating and undertaking research for the development of patient services.

Teleradiology services are unable to provide the majority of these functions; unless they are structured properly, either the quality of service to patients and clinicians will suffer or there will be a duplication of efforts and costs with examinations being re-read at the source hospitals.

There is a potential loss of local control over imaging protocols, linkage of reports with other patient data, face to face clinical communication between those reporting the examination and the patient and those treating the patient.

The importance of clinical feedback and the confidence of clinicians in the advice being given by the radiologist cannot be overemphasised. Experience also suggests that teleradiological reporters may be excessively cautious, being non-committal due to the absence of previous images and recommending further unnecessary investigations.

There are also considerable medico-legal and quality implications when teleradiology services are provided outside the registration jurisdiction of the source country when qualification and continuing medical education requirements may not be enforceable.

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Experience suggests that it is necessary to re-emphasise some of the key EAR/UEMS guidelines:

Clinical teleradiology is an integrated medical service and not only an outsourcing reporting service

- 1. Only fully qualified specialist clinical radiologists should provide the teleradiology service.** They must be properly accredited and registered within the European Community. They should be formally registered in the country in which the teleradiology services are being provided, and should also be registered and subject to quality and revalidation requirements of the EU member state for which they wish to provide teleradiology services.
- 2. The reporting radiologist must have a proper knowledge of the national language of the source country.** This is enshrined in the qualifications directive and should be monitored by the national or regional authorities.
- 3. A definitive report is mandatory with the signature of the reporting radiologist.**

Key management issues

- 1. Teleradiology services must be organised between the source radiologists and the provider in order to guarantee the proper total management of the patient.** This will ensure that:
 - a. The clinical evaluation and data is provided with the request of the examination.
 - b. The requirements of the EURATOM 97/43 Directive including justification, appropriate techniques, optimization and good procedure are fulfilled.
 - c. The report of the teleradiology service can be reviewed with clinicians and in multi-disciplinary team meetings and integrated with the patients' notes and previous studies.
 - d. The reporting radiologist of the teleradiology service is able to communicate directly with the referring radiology department and clinicians in order to discuss the clinical background and unexpected diagnosis, which may be relevant to the timely management of the patient. The contact phone number of the reporting radiologist should be provided on the report.
 - e. Teleradiology services developed for rural areas are linked to the nearest substantive radiology department and the service is managed by that department. The radiologists involved in providing the service should have close communication with the referring clinicians, radiographers and patients and should understand any particular local disease and cultural factors.

Proper resource allocation

- 1. Equipment used for teleradiology of a quality and standard that provide diagnostic quality images at all times.** Technical standards are provided by the ACR and Italian Society of Radiology. There are no EU quality standards for teleradiology equipment.
- 2. Revenue for the total management of the patient at the base hospital not just the reporting.** This should recognize the complete integrated process assumed by the source radiologist's team including subsequent consultations with clinicians and patients.
- 3. Security-privacy of transmitted data.** This should be organised according to EU and national directives and appropriately encrypted.

Quality control of teleradiology services

- 1. Clinical audit of teleradiology service is essential.** Proper audit procedures should be in place in order to check the quality of the teleradiology service, the accuracy of the radiological reports and the overall therapeutic and clinical impact of the service. This must include the users'/clinicians' feed-back.
- 2. Medico-legal and insurance cover must be clear for the service and the patient.** This will be in line with national and EU legislation.

Conclusion

Teleradiology services are being advertised internationally as commercial ventures by companies of varying sizes. There are no controls of these services and international standards have not been addressed. The quality of services being provided to EU citizens may not be adequately monitored. The criteria for a well delivered service are outlined in the accompanying document produced by the EAR /UEMS. The EU Commission and national authorities are urged to consider these issues especially as pan-European health provision increases. It is essential that the provision of teleradiology is primarily developed in the best interest of patient care and not as a solution for the shortage of radiologists or as a cost-cutting measure which may jeopardise patient safety and the standards of health care.

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