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**Clinical
Radiology**

The Royal College of Radiologists

Standards for the provision of teleradiology within the United Kingdom

Second edition

Standards

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RCR standards

The Royal College of Radiologists (RCR), a registered charity, exists to advance the science and practice of radiology and oncology.

It undertakes to produce standards documents to provide guidance to radiologists and others involved in the delivery of radiological services with the aim of defining good practice, advancing the practice of radiology and improving the service for the benefit of patients.

The standards documents cover a wide range of topics. All have undergone an extensive consultation process to ensure a broad consensus, underpinned by published evidence where applicable. Each is subject to review four years after publication or earlier if appropriate.

The standards are not regulations governing practice but attempt to define the aspects of radiological services and care which promote the provision of a high-quality service to patients.

Current standards documents

Standards for the reporting of imaging investigations by non-radiologist medically qualified practitioners

Standards for the communication of radiological reports and fail-safe alert notification

Standards for providing a seven-day acute care diagnostic radiology service

Standards of practice and guidance for trauma radiology in severely injured patients, Second edition

Standards for intravascular contrast administration to adult patients, Third edition

Standards for the provision of an ultrasound service

Standards of practice of computed tomography coronary angiography (CTCA) in adult patients

Cancer multidisciplinary team meetings – standards for clinical radiologists, Second edition

Standards for Learning from Discrepancies meetings

Standards for radiofrequency ablation (RFA), Second edition

Standards for patient confidentiality and PACS and RIS

Standards for patient consent particular to radiology, Second edition

Standards for the NPSA and RCR safety checklist for radiological interventions

Standards for a results acknowledgement system

Standards for providing a 24-hour diagnostic radiology service

Standards for providing a 24-hour interventional radiology service

Standards for Self-assessment of Performance

Standards for the Reporting and Interpretation of Imaging investigations

Standards for Ultrasound Equipment

Foreword

This is an update of previous guidance issued by The Royal College of Radiologists '*Standards for the provision of teleradiology within the United Kingdom 2010*'.

It sets out standards for the sharing of imaging data and for outsourcing reporting of images outside the local healthcare organisation – commonly referred to as teleradiology. It is intended to inform potential commissioners of such services and those involved in any way in their delivery.

The complementary use of teleradiology to support local imaging services requires adherence to standards to assure satisfactory outcomes for patients.

The standards set out in this document are those that the RCR believes best serve the population of the United Kingdom (UK) and should be taken into account by UK healthcare providers and commissioners when considering outsourcing image reporting to teleradiology companies.

This publication incorporates recent RCR guidance on the communication of urgent reports and failsafe notification, recording the identity of those who report imaging, image and report sharing, quality assurance in radiology reporting by peer feedback and candour with patients.¹⁻⁵

It also reflects the outcome of the recent UK referendum on membership of the European Union (EU).

The RCR is grateful to Dr Raman Uberoi and Dr Mark Hamilton, the Clinical Radiology Professional Support and Standards Board and the Clinical Radiology Faculty Board for their contributions to this publication.

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1. Definition of teleradiology

Teleradiology is the transmission of patients' radiological images between different locations for the production of a primary report, expert second opinion or clinical review. The different locations can be within the same organisation or in different organisations, within the same country or across international boundaries.

The RCR has issued a teleradiology position statement and supports the European Society of Radiology (ESR) statement that defines teleradiology as a 'medical act that must have the same level of guarantee, in terms of quality and safety as compared to standard medical acts'.^{6,7}

This document builds on the 13 key principles set out by the RCR 2015 position statement on teleradiology.⁶

2. Recommended standards

Standard 1

Data transfer: there should be clear and transparent systems in place for rapid, secure transfer and review of images and, where necessary, storage of patient data.

Standard 2

Reporting: reporting must be to the same standard independent of where and by whom the data is reported.

Standard 3

Communication of the results: the same person should interpret the examination and issue the report to the referring clinician and should be clearly identified, with the results communicated and integrated into the base hospital's radiology information system (RIS), picture archiving and communications system (PACS) and electronic patient record (EPR) in a timely manner.²

Standard 4

Quality assurance: teleradiology should be part of an integrated radiology service, and be subject to the same governance framework as the rest of the service, with all participating radiologists working within a clearly documented quality assurance framework in line with RCR guidance.^{4,8,9}

3. Introduction

Changing methods of delivering diagnostic imaging services and the increasing commercialisation of aspects of healthcare, including telemedicine and teleradiology, mean that there will be increased fragmentation of service delivery.³ The major shortage of clinical radiologists within the UK and the need to provide a timely 24/7 diagnostic imaging service requires support by teleradiology.

The setting of standards for the sharing of patients' image data and reports via teleradiology is essential to maintain high-quality diagnostic imaging reporting within the UK in an ever more commercially competitive environment.

The setting and acceptance of such standards should be seen as part of the patient safety and quality, innovation, productivity and prevention (QIPP) agenda.¹⁰⁻¹²

Attention to the guidelines and standards outlined in this document will assure high-quality reporting and confidentiality.

Implementation of PACS across the UK has been successfully achieved by national programme initiatives. However, challenges remain with regard to the sharing and exchange of data between healthcare organisations (HCOs), either within a local healthcare community (HCC) – an example might be the sharing of data between a secondary centre and a more specialist referral centre – or on a larger geographical scale, such as the remote reporting of images outside the UK.³

Teleradiology offers the chance to:

1. Share data across several HCOs to make the most of any underused reporting capacity. This was also highlighted in the NHS report, *High quality care for all – NHS next stage review final report*, which focused on provision of the highest quality of care for patients and the public that is locally led, patient-centred and clinically driven.¹²
2. 'Outsource' to an independent reporting service outside the main framework of the NHS and review work performed by such organisations.
3. Share data to obtain a second opinion and/or support a multidisciplinary team meeting (MDTM).

The benefits of teleradiology are only fully realised when clinically useful reports are issued.

This is most likely when the radiologists issuing reports have access to previous imaging and other diagnostic and clinical data, and are available for consultation with referrers.³

4. Standards for the provision of teleradiology

It is the view of the RCR that:

1. Teleradiology should enhance and complement local diagnostic services and there must be no overall detriment to the quality of UK diagnostic imaging services
2. The use of teleradiology should not undermine the normal clinical workflows within the radiology department or of the HCO
3. There should be an uninterrupted flow of data from the point of request for imaging to the acknowledgement of receipt of the imaging report by the requesting clinician.

These standards reflect the RCR's view that the patient should benefit from the same quality of care as in the optimised hospital setting. The safety and wellbeing of the patient should be the first priority and secondary incentives, financial or otherwise, must always be subsidiary. The RCR strongly supports the American College of Radiology (ACR) statement that 'patients are the primary focus. First and foremost, all teleradiology relationships should be patient centred'.¹³ The RCR is aware that teleradiology is not always provided as part of an integrated healthcare system with clear patient pathways. Thus, general framework standards need to be set for the transmission of data, the reporting of that data, the communication of the results and quality assurance of the reports. Patient safety and confidentiality are paramount. There should be regular audit of this by those responsible.

Standard 1

Data transfer: there should be clear and transparent systems in place for rapid, secure transfer and review of images and, where necessary, storage of patient data.

Data transfer must be secure so that patient confidentiality is maintained. Technical standards evolve and data transfer must reflect this. There should be no inappropriate delays in data transfer. There should be clear and transparent systems in place for rapid, secure transfer and review of images and, where necessary, storage of patient data. HCOs should strive to ensure the data is as easy to appropriately view outside as inside their organisation.

Standard 2

Reporting: reporting must be to the same standard independent of where and by whom the data is reported.

Teleradiologists must have access to the same breadth of patient information as they would in the base hospital. This must include patient details, current and previous clinical information, previous examinations (reports and images) and laboratory data. The data must be viewed in an environment using equipment (hardware and software) of at least the same standard as would be expected in the base hospital.¹⁴ Teleradiologists must be subject to the same standard of governance system as the base hospital as well as that required by their company. In this way, patients can be confident that even though their examination is not being reported within the base hospital, it is being done to at least the same standard and with equivalent security.

Standard 3

Communication of the results: the same person should interpret the examination and issue the report to the referring clinician and should be clearly identified, with the results communicated and integrated into the base hospital's radiology information system (RIS), picture archiving and communications system (PACS) and electronic patient record (EPR) in a timely manner.²

Where results are especially urgent, the teleradiologist should be able to have a discussion with the referrer and/or the responsible clinician.^{1,2} The reporting radiologist should be available for ongoing discussions and any clarifications of the initial report. Any verbal opinions given during discussions must be documented.

A lack of effective teleradiology integration may lead to patient harm, for example, through communication errors or where incomplete and non-actionable reports require re-imaging with the risk of increased patient anxiety or exposure to radiation.

Standard 4

Quality assurance: teleradiology should be part of an integrated radiology service, and be subject to the same governance framework as the rest of the service, with all participating radiologists working within a clearly documented quality assurance framework in line with RCR guidance.^{4,8,9}

The RCR strongly supports the ESR statement that 'Teleradiology should be explicitly defined as a medical act in order to ensure quality of care and patient safety ...' and that the same level of guarantee, in terms of quality and safety, must be applied to these services as to standard medical acts.⁷ The same standards of care should be provided for all UK patients irrespective of where their radiologist is based. Teleradiologists reporting imaging of British patients should be registered on the General Medical Council (GMC) Clinical Radiology Specialist Register and indemnified to the same standards as those of the base HCO.¹⁵

If a trust or health board were to identify an issue with the service provided by a teleradiologist, it would be the responsibility of the relevant teleradiology company to address this issue. There should be a comprehensive contractual agreement between the trust and teleradiology provider.

5. Medico-legal considerations and European regulatory requirements

A worldwide consensus on teleradiology regulation and legislation across innumerable jurisdictions is unlikely to occur given that this has not been implemented during the past 20 years.

The standards set out in this document reflect the considered view of the RCR that best supports patient care and safety for patients in the UK.

Patients should be provided with information regarding the outsourcing of imaging interpretation.

The medico-legal responsibilities of the referring hospital and those of the reporting teleradiology service must be clearly defined. The individual reporting radiologist has a personal, professional and medico-legal responsibility.

Liability is also likely to reside with the purchasers of the teleradiology service and/or the employers of the teleradiologist. It must be explicit within the contract between the trust and teleradiology provider who retains responsibility for the care of the patient and, if the patient establishes a legal relationship with the radiologist, how liability will be apportioned as it is unlikely that Crown indemnity will apply.

Teleradiology providers need to comply with any statutory duty of candour to patients.^{5,16}

6. Mandatory professional indemnity/insurance

Currently, there is no legal obligation for doctors providing services for British patients to have individual insurance/indemnity cover. This needs to be rectified and made explicitly applicable to radiologists providing teleradiology services, who report imaging of UK patients, wherever they are located. It is the position of the RCR that radiologists should have adequate individual insurance and indemnity cover for all of their patients. The teleradiology provider should also have adequate medico-legal and insurance cover.

7. Conclusion

The future of diagnostic imaging service provision is increasingly likely to involve data sharing across organisations and some splitting of the image acquisition process from the reporting function. Teleradiology standards are therefore required to inform high-quality and safe patient care, especially when such services are being provided in a more competitive commercial environment.

Attention to the guidelines and standards outlined in this document will ensure the sustainability of local diagnostic imaging services and maintain high-quality standards of reporting for patients.

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