College of Radiology Position Statement on Teleradiology

Introduction

Teleradiology is the transmission of patients radiological imaging between different locations to produce a preliminary report, expert second opinion or clinical review. The other sites can be within the same organisation or between organisations, within the same country or across international boundaries.

The College of Radiology agrees that the optimum radiology service is provided locally, where radiologists can maintain a regular dialogue with referrers and those acquiring the images. In addition, this model can help patients benefit from integrating imaging into the care pathway. However, considering the current situation of a pandemic with COVID-19 and the presence of teleradiology in some centres in Malaysia for the past nine years, the role of teleradiology requires a redefinition.

Aim of Statement

This statement focuses on the governance issue around teleradiology that the COR believes must be addressed to protect the patient while realising and recognising the benefits of the appropriate use of teleradiology.

We have identified 12 fundamental principles for ensuring a safe, high quality, integrated teleradiology service. This statement considers other international organisations' recent publications, including the American College of Radiology, the Royal College of Radiology UK and the European Society of Radiology.

Background

There are circumstances in which remote transmission of images can be beneficial and enhance patient care - such as when seeking a specialist second opinion when patients are transferred between care settings or in the management of patients with rare conditions. Teleradiology also permits the development of networks of radiological expertise and can support local radiology services by helping to provide cover for temporary, regional capacity gaps.

These beneficial effects of teleradiology such as providing remote access to medical images and clinical history, cost savings, risk reduction, productivity increases, improved after-hours coverage, subspecialty reads and no physical or geographical barriers [1]

The CoR is aware that radiology is playing a vital role in this COVID-19 pandemic, particularly with the use of X-ray and computed tomography to assess lung involvement by COVID-19 [2]. The use of teleradiology and the boost of networking solutions are helping the Radiology department cope with the new paradigm imposed by COVID-19. Radiology is one of the medical specialities with a greater degree of digitalisation, and teleradiology is commonly used in many governments teaching and private hospitals [3,4]

Teleradiology functions include remote access to Radiology Information System (RIS) and Picture Archive and Communication System (PACS), web visualisation of clinical history and prior imaging studies, and reporting capabilities to radiologists. Continuous contact with

clinicians for solving specific questions about radiological exams and reports should be maintained by using telecommunications solutions. Teleradiology allows preserving a small group of radiologists on-site and the rest of the group safely working from home to minimise the risk of cross infections [5].

There is no doubt that this technological innovation has made a significant contribution to the management of patients and, through the years, has proven its reliability and cost-effectiveness. However, as with any healthcare act, the patient needs to be assured of a reliable governance framework to ensure that quality issues are secured. The safety of the patient is the priority.

Patient Safeguards

The CoR strongly supports the ESR statement that "Teleradiology should be explicitly defined as a medical act to ensure the 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 compared to standard medical acts [6].

The CoR strongly supports the ACR statement that "patients are the primary focus. First and foremost, all teleradiology relationships should be patient-centred" [7]. However, we know that teleradiology is not always provided as part of an integrated healthcare system with clear patient pathways. There is evidence of communication errors with a lack of effective integration. These incomplete and non-actionable reports may require re-imaging with the risk of increased patient exposure to radiation. These undesirable events lead to potential harm to patients, increased uncertainty and anxiety, and costs to the healthcare system.

Transparency and Consent

The COR believes that patients should be informed of who will be involved in their medical care. For example, a patient would typically expect the radiologist to be employed by the organisation where the images are acquired. If this is not the case, this information should always be displayed and not only be available on request.

This view is in line with that of the ESR. They state, "informed consent can only be obtained if the patient is informed at the site of imaging that their images may be interpreted through a teleradiology service. In addition, the patient should be informed of all the above provisions, including the reporting radiologist's qualifications, before they agree to accept the service" [6].

CoR's Key Principles for the utilisation and practise of Teleradiology

The following are the 12 fundamental principles, as adapted from RCR, UK (8) with permission from the Royal College of Radiology, UK, that the CoR believes must be followed to ensure a safe, high quality integrated teleradiology service:

1. Teleradiology services should always prioritise the safety and well-being of the patient. Secondary incentives, financial or otherwise, must always be subsidiary.

2. Teleradiology is a medical act governed by the same systems safeguarding patients in all other medical actions. Therefore, each radiologist who practices teleradiology must be credentialled and privileged.

3. Teleradiology must be part of an integrated radiology service and be subject to the same governance framework. In addition, all participating radiologists work within a documented quality assurance framework in line with [CoR guidelines](#).

4. There should be clear and transparent systems for the secure transfer and storage of patient data. In addition, the server must be within the country and securely protected with the necessary firewalls for data protection.

5. There should be required infrastructure in place such as:

    1. encrypted protocols for safe sending and receiving radiological images and patient's data.

    2. Regular home fibre connections

    3. Server-based or cloud-based solutions (VPN) IT support

    4. Remote access to RIS and PACS from the radiologist's PC

    5. Only DICOM grade images are to be used for diagnosis.

    6. Only lossless compression technology are allowed

6. The reporting radiologist should be available for ongoing discussion following the issue of the initial report with effective communication between the referring doctor and the teleradiologist at all times.

7. A radiologist should always have access to previous imaging and the appropriate clinical history when issuing a report.

8. Teleradiologists should work in an appropriate environment that ensures optimal images display.

9. The same standards of care must apply to all Malaysian patients irrespective of where their radiologist is based (6).

10. The same level of regulation and protection must be provided for the patient wherever the reporting service is based.

11. There should be a straightforward process for communicating urgent findings in line with CoR guidance (7).

12. The person interpreting the examination and submitting the report to the referring physician must be the same

Finally, CoR recognises the advantageous role of teleradiology, especially during the pandemic; we believe that this practice should work in tandem with the on-site reporting of local radiologists.

References

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