

وزارة الصحة  
Ministry Of Health

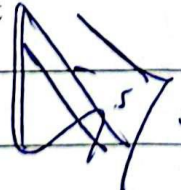
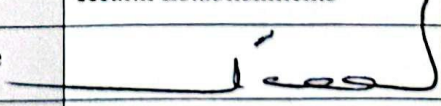


المديرية العامة للمؤسسات الصحية الخاصة  
Directorate General of Private Health Establishments

## **Guideline for Teleradiology Service**

January / 2025

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## Contents

Acknowledgements.....	3
Acronyms:.....	5
Definitions.....	5
Guideline of Teleradiology Service .....	6
1 Introduction.....	6
2 Scope.....	6
3 Purposes .....	6
4 Structure.....	7
4.1 Services statement .....	7
4.2 General requirements.....	7
4.3 Staffing: .....	8
4.4 Equipment and space: .....	8
4.5 Data transfer: .....	8
4.6 Reporting: .....	8
4.7 Communication of the results: .....	8
4.8 Quality assurance:.....	9
4.9 The medico-legal responsibilities: .....	9
5 Responsibilities .....	10
6 Document history and version control table .....	10
7 References.....	11
8 Annexes.....	12

## Acronyms:

<b>ACR</b>	American College of Radiology
<b>MOH</b>	Ministry of Health
<b>DGPHE</b>	Directorate General of Private Health Establishments
<b>PACS</b>	Picture Archiving and Communication System
<b>TRA</b>	telecommunication regulatory authority

## Definitions

- **Teleradiology** : the electronic transmission of diagnostic radiological images in a digital form between locations (Acquisition Site to Reporting Site) for diagnosis and reporting by a clinical radiologist
- **Electronic Record means:** a record generated, communicated, received or stored by electronic, magnetic, optical or other means in an information system or for transmission from one information system to another.
- **Licensed Healthcare Operator means:** a hospital, clinic, diagnostic centre or other Entity providing Healthcare Services in Oman, that holds a Clinical Operating Permit (**a valid license duly**) issued by the Registry of Companies in accordance with the Healthcare Operators Regulation. and the applicable Rules, Standards and Policies.
- **Licensed Healthcare Professional means:** an individual engaged in a Healthcare Profession holding a valid license duly issued by the Licensing Board in accordance with the Healthcare Professionals Regulation and the applicable Rules, Standards and Policies
- **Teleradiology center** is a licensed facility that perform the transmission of patients' radiological images between different locations for primary reporting , seeking second opinion or clinical review. The locations of the teleradiology center can be within the same organization or across different organizations, both domestically and internationally.

# Guideline of Teleradiology Service

## Chapter 1

### 1 Introduction

Teleradiology, a category of telehealth, utilizes technologies to allow healthcare professionals 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.

This policy has been developed by the Radiology committee members for study and evaluate the radiology services of private institutions, Directorate General of Private Health Establishments, Ministry of Health, to provide healthcare operators and healthcare professionals licensed by MOH the requirements in the development and implementation of teleradiology services in accordance with relevant Regulations, Policies, and Standards.

This policy is to be read in conjunction with the MOH Telemedicine Policy issued by Ministerial Qarar No.109/2020

### 2 Scope

This policy applies to all Healthcare Operators and Healthcare Professionals licensed by MOH providing or intending to provide teleradiology services.

### 3 Purposes

To establish guidelines to for licensed center to perform the transmission of patients' radiological images between different locations for the production of a primary report, expert second opinion or clinical review.

## 4 Structure

### 4.1 Services statement

Review and report radiologic studies remotely

### 4.2 General requirements

- 4.2.1 Ownership: The facility should be owned by Omani (As per ministerial Qarar no. 109/2020)
- 4.2.2 Data transfer: there should be a clear and transparent systems in place for a rapid, secured transfer and review of images and, where necessary, storage of patient data. Basic requirements (Data word can be used) of patient Identifiers should be present in the image and the report.
- 4.2.3 Reporting: reporting must be to the same standard independent of where and by whom the data is reported. Reporting communication as per agreed with contacted centers.
- 4.2.4 Reports should be stored in the teleradiology center according to National Records & Archives Authority guidelines.
- 4.2.5 Images and reports retention should be stores as per national records and archiving authority retention policy and it is considered the responsibility of the referring center.
- 4.2.6 Communication of the results should be in a timely manner.
- 4.2.7 Where results are urgent, the teleradiologist should be able to have a discussion with the referrer and/or the responsible clinician.
- 4.2.8 Quality assurance: teleradiology should be part of an integrated radiology service, and clearly documented.
- 4.2.9 All Healthcare Professionals utilizing teleradiology platforms must be licensed by MOH as Radiology Specialists.
- 4.2.10 All Healthcare Operators providing teleradiology services must have Radiology registered as an approved service prior to commencing.
- 4.2.11 Teleradiology scope of service will need to be submitted for approval by the MOH prior to commencement of service. Supporting governance and operational documents should be made available upon request of the MOH.
  - a. Once approved, Licensed Healthcare Operators and Professionals are held accountable to deliver the service based on the approved scope of service and all other applicable policies and regulatory documents as identified by the MOH

#### **4.3 Staffing:**

At least two licensed Omani radiologists by MOH and practice according to privileges

#### **4.4 Equipment and space:**

- 4.4.1. Space equipped with diagnostic reporting and reception.
- 4.4.2. Radiation safety requirements not required to exclusive teleradiology center with no attached physical radiology machines.
- 4.4.3. Adherence to civil defense and municipality safety and fire safety requirements.
- 4.4.4. The server or cloud must be stationed within the Sultanate of Oman in accordance with telecommunication regulatory authority (TRA)
- 4.4.5. Data and disaster recovery policy must be in place.

#### **4.5 Data transfer:**

- 4.5.1 Patient should be verbally informed regarding transfer of data.
- 4.5.2 There should be clear and transparent systems in place for rapid, secure transfer and review of images and, where necessary, storage of patient data.
- 4.5.3 Data transfer must be secure so that patient confidentiality is maintained.
- 4.5.4 Licensed Healthcare Operators providing Teleradiology services must comply with all applicable rules and regulations.

#### **4.6 Reporting:**

- 4.4.6. All reports must be in compliance with the MOH Medical Record Policy requirements for the maintenance and management of a patient's health record.
- 4.4.7. Teleradiologists should be using equipment (hardware and software) of the same standard as would be expected in the base hospital in order to be able to generate quality reports while maintaining patient confidentiality and the integrity of the complete medical record.

#### **4.7 Communication of the results:**

- 4.7.1 The same MOH Licensed Healthcare Professional should interpret the examination and issue the report to the referring clinician and should be clearly identified.
- 4.7.2 All results should be communicated and integrated into the base hospital's radiology information system, and/ or an external system such as picture archiving and communications system (PACS), in addition to the patient's medical record.
- 4.7.3 Where results are especially urgent, best practice dictates that the teleradiologist should have a discussion with the referrer and/or the responsible clinician, known as a teleconsultation.



- 4.7.4 MOH Healthcare Operators and Licensed Radiologists conducting telemedicine as part of the teleradiology service must be compliant with the technical and communication requirements as identified in Minstrial Qarar No.190/2020 Telemedicine Policy.
- 4.7.5 As the reporting radiologist, the MOH Licensed Teleradiologist must be available for ongoing discussions and any clarifications of initial report.
- 4.7.6 Any verbal opinions given during discussions must be documented.

#### **4.8 Quality assurance:**

- 4.8.1 All MOH Licensed Healthcare Operators initiating teleradiology services must ensure that teleradiology is a part of an integrated radiology service with the technology and equipment required to support such service.
- 4.8.2 This service is subject to the same organizational policy framework as the rest of the services, with all participating radiologists working within a clearly documented quality assurance framework in line with MOH Rules and Regulations.

#### **4.9 The medico-legal responsibilities:**

- 4.9.1 The medico-legal's responsibilities of the referring hospital and those of the reporting teleradiology service must be clearly defined as per contract.
- 4.9.2 The individual reporting radiologist has a personal, professional and medico-legal responsibility.
- 4.9.3 Patients should be provided with information regarding the outsourcing of imaging interpretation.
- 4.9.4 Teleradiology service operating documents must be explicit regarding who retains responsibility for the care of the patient for not only organizations contracting out teleradiology services, but also for the patients within the organizations receiving teleradiology services.
- 4.9.5 Licensed Healthcare Operators and Professionals conducting teleradiology services outside of the approved scope of service are subject to violation including suspension or termination of the service by the Authority in MOH.

## **5 Responsibilities**

### **5.1 Licensed Healthcare Professional shall**

5.1.1 Ensure adherence with the contents of this policy.

### **5.2 Referring Healthcare Providers (Hospitals/Clinics) shall**

5.2.1 Ensure adherence with the contents of this policy

5.2.2 Ensure justified request.

5.2.3 Ensure that there is a comprehensive contract defining roles, expectations, and responsibilities, including the scope of services provided by the teleradiology service.

### **5.3 Reporting Radiologists shall**

5.3.1 Ensure adherence with the contents of this policy

5.3.2 Communicate findings in a clear and accurate manner, and promptly respond to inquiries or follow-ups from referring physicians.

## **6 Document history and version control table**

<b>Version</b>	<b>Description</b>	<b>Author</b>	<b>Review date</b>
1	Initial Release	Medical imaging taskforce in DGPHE	January 2024

## 7 References

Title of book/ journal/ articles/ Website	Author	Year of publication	Page
ACR white paper on teleradiology practices	American College of Radiology	2020	
American College of Radiology Council. Resolution 26 (ACR position statement on remote interpretation of radiologic images (resolution 26, 1994)). In: ACR Digest Council Actions. Reston (VA): American College of Radiology; 2004. Am	The Royal Australian and New Zealand College of Radiologists	2018	
Globalization of health care.	Can Assoc Radiol J.	2002; 46:2.	
American College of Radiology. ACR practice guideline for communication: diagnostic radiology (2003). Reston (VA): American College of Radiology.	ACR	2013	
Standards for the provision of teleradiology within the United Kingdom, second edition	RCR	2016	
Teleradiology position statement	RCR	2015	
Picture archiving and communication systems (PACS) and guidelines on diagnostic display devices, Third edition. <a href="https://www.rcr.ac.uk/system/files/publication/field_publication_files/bfcr192_pacs-diagnostic-display.pdf">https://www.rcr.ac.uk/system/files/publication/field_publication_files/bfcr192_pacs-diagnostic-display.pdf</a>	RCR	2019	

## 8 Annexes

### Appendix 1

Item No.	Description	Met	PM	NM	NA	Remarks
1	<ol style="list-style-type: none"> <li>1. As a security precaution, access to reporting room and server room must be restricted to authorized person</li> <li>2. Preferred but not mandated to have security camera operating 24/7</li> </ol>					
2	Teleradiology/PACS system used must approved by FDA/CE or approved by DGIT and support the latest of DICOM standards.					
3	<p>Workstations for teleradiology requirements:</p> <ol style="list-style-type: none"> <li>1. <b>Automated Quality Assurance either local or via web</b></li> <li>2. <b>FDA, CE approval.</b></li> </ol> <ul style="list-style-type: none"> <li>- Workstations used in teleradiology reporting are considered a primary diagnostic workstation.</li> <li>- Dedicated medical display (DMD) are usually equipped with self-calibration and quality control.</li> <li>- If consumer grade off-the-shelf (COTS) are chosen as primary diagnostic workstation, specifications must follow DMD specifications (see below) in addition to a formal hardware calibration <math>\leq 10\%</math> DICOM GSDF. Recommended calibration must be preserved throughout the display lifetime.</li> <li>- For general use (except mammography reporting), a minimum of 3 MP display is required with 0.21 mm maximum pixel pitch, calibration <math>\leq 10\%</math> DICOM GSDF and luminance of <math>1/350 \text{ cd/m}^2</math>. For detailed specification of displays for different modalities, refer to table 1-4.</li> <li>- Breast imaging reporting is considered a special scenario which requires a higher resolution, refer to table 4 for minimum specifications.</li> </ul>					

Item No.	Description	Met	PM	NM	NA	Remarks
	- Minimum requirements of DMD for plain film-ray reporting are recommended as following: (table 1)					
	<b>Minimum resolution</b> <b>3 MP</b>					
	<b>Maximum pixel pitch</b> <b>0.21 mm</b>					
	<b>Calibration</b> <b>DICOM GSDF ≤ 10%</b>					
	<b>Luminance</b> <b>1/350 cd/m<sup>2</sup></b>					
	- Minimum requirements of DMD for CT and MRI reporting are recommended as following: (table 2)					
	<b>Minimum resolution</b> <b>2 MP</b>					
	<b>Maximum pixel pitch</b> <b>0.21 mm</b>					
	<b>Calibration</b> <b>DICOM GSDF ≤ 10%</b>					
	<b>Luminance</b> <b>1/350 cd/m<sup>2</sup></b>					
	- Minimum requirements of DMD for ultrasound, fluoroscopy and nuclear medicine reporting are recommended as following: (table 3)					
	<b>Minimum resolution</b> <b>2 MP</b>					
	<b>Maximum pixel pitch</b> <b>0.25 mm</b>					
	<b>Calibration</b> <b>DICOM GSDF ≤ 20%</b>					
	<b>Luminance</b> <b>0.8/250 cd/m<sup>2</sup></b>					
	- Minimum requirements of DMD for mammography reporting are recommended as following: (table 4)					
	<b>Minimum resolution</b> <b>5 MP</b>					
	<b>Maximum pixel pitch</b> <b>0.17 mm</b>					
	<b>Calibration</b> <b>Strict maintenance of DICOM GSDF ≤ 10%</b>					
	<b>Luminance</b> <b>1/400 cd/m<sup>2</sup></b>					