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**Good Practice Guide  
for European  
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**EUROPEAN SOCIETY OF RADIOLOGY (ESR)**

## Preface

The high quality of the imaging services provided by Radiologists is one of the most important factors in the success of the speciality in comparison to other providers. A high quality of service also reduces the possibilities of error and complications and also controversies with patients and with clinical colleagues. High quality requires a strong commitment from radiologists, but also from managers of the service and from hospitals and governments. This document is designed as a guidance to Radiologists in their day-to-day practice to enable them to avoid potential problems and to generate a high quality of service. It also emphasises the importance of proper support from managers indicating their responsibilities to the Radiologists who work for them.

Without adequate equipment and resources it is difficult for radiologists to provide the optimum service. The European Association of Radiology (EAR) hopes that its member societies will find this advisory guidance of value in discussion with their own members and that individual Radiologists will use it in their practice. The EAR would like to thank the National Representatives of the Professional Organisation Committee of the EAR in conjunction with the Radiological Section of the Union of European Medical Specialists (UEMS) for all their input into the preparation of this document.

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## Introduction

There is increasing demand for public accountability of doctors (1, 2, 3, 4). Some European countries have created public agencies to review hospital standards and national medical regulating bodies have increased their involvement in setting and monitoring the standards of care of doctors (5, 6, 7). The medical profession in Europe is regulated primarily by its own members and this self-regulation is based upon the premise that practice and performance of medicine can only be adequately reviewed by those with expertise in the field. However, patients are increasingly involved in decision-making and patient groups and government bodies in the assessment of performance and thus indirectly in regulation. It is therefore important that radiologists define criteria for good radiological practice in order to emphasise to these outside bodies that clear standards are being set down by the profession and that regulation is being performed against transparent criteria (8).

This paper describes the principles of good radiological practice and of competence, care and conduct expected of a radiologist in all aspects of their professional work. Many of these criteria of good radiological practice are generic to all doctors, but some are relatively specific to the practice of radiology and the document will integrate them. As a guiding principle, all patients are entitled to good standards of practice and care from their radiologists. Essential elements of this are professional competence, good relationships with patients and colleagues and observance of professional and ethical obligations. However, for good radiological practice it is essential that adequate support staff and equipment is provided by the hospital or health care facility management.

### **Providing Good Quality Radiological Practice and Care Includes**

- (1) An adequate assessment of the patient's condition and symptoms and clear understanding as to the nature of the complaint to be investigated based on the information provided by the referring clinician and, where appropriate, discussions with the patient.
- (2) Arranging and providing the appropriate investigations for an individual patient in relation to the clinical diagnosis in such a way as to minimise risk and maximise the efficacy of diagnosis.
- (3) Ensuring that an appropriate assessment of the examination is made and a timely report issued and in particular, taking prompt action where this is clinically necessary.
- (4) Referring the patient to another radiologist or clinician where this is indicated. Radiologists should work within the limits of their professional competence. This is particularly relevant with regard to their experience in individual imaging modalities, their detailed knowledge of particular clinical subspecialties and their personal ability and experience in interventional techniques. The radiologist should be willing to consult with colleagues, where the diagnosis may be difficult or knowledge may be inadequate.
- (5) Radiologists must be competent when making a diagnosis or arranging treatment, particularly, if interventional procedures are being undertaken. They should keep their clinical colleagues well-informed and be prepared to take over clinical responsibility for patients or share that responsibility with fellow clinicians (9).
- (6) They should issue accurate, explicit, and understandable radiological reports, which record the relevant radiological findings and provide clear guidance to the clinician on the likely diagnosis and preferred supplementary investigations. Where uncertainty exists, this should be made clear within the text of the report (10).

- (7) Rapid methods of communication should be used as an adjunct to the written report in situations of clinical emergency. These may include brief entries into the patient's medical notes or telephoning the medical staff who are responsible for the patient's medical care. In such circumstances it is the responsibility of the radiologist to ensure that the information has been received precisely, unambiguously and is fully understood. A record of the communication should be made in the report (11).
- (8) When prescribing drugs or treatment, they must have an adequate knowledge of the patient's medical history, medication and health needs and of the value and complications of particular treatments or drugs.

### **Provision of Facilities**

- (1) Radiologists should use the resources that are available as appropriately and efficiently as possible.
- (2) Radiologists should ensure that there is a clearly defined quality assurance system in place for equipment with special regard to image quality, equipment maintenance, equipment upgrades and radiation dose. The effect on radiation dose should take into account economic and social factors.
- (3) It is important that if the radiologist is concerned about his/her ability to investigate or treat a patient safely, either because of inadequate premises, equipment or other resources, then the radiologist should consider not to undertake the procedures. This may require the radiologist to record his/her concerns and the steps that they have taken to try to resolve them and convey them to management.
- (4) Advances in equipment in clinical radiology are rapid and have increased the diagnostic range and information and improved patient safety and comfort. It is recognised that the majority of departments of radiology or individual radiologists will not be able to provide or utilise the most modern equipment, but radiologists should ensure that the equipment that they use provides an examination, where the diagnostic sensitivity or specificity is not diminished. Where possible, the equipment used should be the most appropriate to evaluate the clinical problem at the lowest risk to the patient.

### **Decisions about Access to Medical Care**

- (1) Investigations or treatment that radiologists provide or arrange should be based on the clinical judgment of the patient's needs and likely effectiveness of the treatment.
- (2) Views with regard to the patient's life-style, culture, beliefs, race, colour, gender, sexuality and disability, age or social or economic status, should not prejudice the treatment provided or arranged.
- (3) Radiologists must not refuse or delay treatment because they believe that patient's actions contributed to their condition. If the radiologist's beliefs might affect the advice or treatment that he/she provides, he/she should arrange for the patient to be investigated and/or treated by another radiologist.
- (4) Radiologists must endeavour to give priority to the investigation and treatment of patients on the basis of clinical need.



## **Radiologists Must Maintain the Level of their Clinical Practice**

Radiologists should be prepared to improve their skills and performance where possible and must take part in regular educational activities, which maintain and further develop their competence and performance. This process of life-long learning is defined in the policy document of the UEMS on continuing professional development (CPD) and specifically for radiologists by the EAR/UEMS radiology section policy document (14). This scheme is based on the acquisition of credits granted when radiologists attend educational courses or scientific meetings or for local and individual educational activities such as reading or writing scientific literature, attending clinico-radiological meetings and grand rounds, audit and self-directed and distance learning.

Developing additional skills may be required due to technical developments, new imaging modalities or new interventional procedures and these should be learned in a well co-ordinated, structured manner, in order to ensure patient safety and clinical effectiveness.

## **Maintaining Radiologists' Performance**

- (1) Radiologists should work with colleagues to monitor and maintain the quality of care that is provided and maintain a high awareness of patient safety.
- (2) Radiologists should take part in regular and systematic audit, recording the data honestly (15). Where necessary as a result of audit or in response to new developments and techniques, radiologists should ensure that they improve and develop their practice, through CME/CPD including, where appropriate, by undertaking further training.
- (3) Radiologists should respond constructively to the outcome of reviews, assessments or audit of their performance and should ensure that adverse radiological events are recognised and reported in order to reduce the risk to patients (16, 17, 18).
- (4) Teaching and training radiologists should be willing to contribute to the education of students and colleagues. Teaching is a significant component of radiological work. The skills and practices of a competent teacher should be developed and trainees should be properly supervised.

## **Relationships with Patients**

- (1) Radiologists should ensure that they respect the rights of patients to be satisfied, that the patient has understood the proposed examination or treatment and any significant risks or side-effects that may be associated with it. It is essential that patients should only give consent when all the appropriate information has been provided and that consent must be clearly and freely given (19).
- (2) Radiologists must treat information about patients as confidential and ensure that patients are informed about how information is shared within teams providing their care. Information should only be shared with a third party without the patient's consent or against the patient's wishes when there are exceptional circumstances and these must be clearly understood (20). They must not disclose information where it is not appropriate, or where the individual to whom it is disclosed is not involved in the direct care of the patient.
- (3) Radiologists must maintain the patient's trust by being polite, considerate and truthful and respecting the patient's privacy and dignity. They must recognise that patients may wish to decline to take part in teaching or research and that this refusal should not adversely affect their relationship with the radiologist.
- (4) Radiologists must respect the rights of patients to seek a second opinion.

**Communication**

- (1) Radiologists should ensure that their communication with patients is good and that they listen to the patients and respect their views and beliefs. Information should be provided that the patients seek or need about their condition, treatment and outcome (21).
- (2) Where patients under radiologists' care have suffered harm through misadventure or any other reason, radiologists should act immediately to put matters right, if that is possible, and explain fully and promptly what has happened.
- (3) Radiologists must also protect patients from risk of harm posed by another doctor or other health care professional's conduct, performance or health (12). The safety of the patient must come first at all times. The appropriate authorities should be informed where serious concerns about a colleague's performance have arisen. If he/she has management responsibilities, he/she should ensure that mechanisms are in place through which colleagues can raise concerns about risks to patients.
- (4) Patients who complain about the care or treatment they have received have a right to expect a prompt, open, constructive and honest response, including an explanation of what has happened and the patient's complaint must not prejudice the care or treatment that you provide.
- (5) Radiologists participating in research, must put the care and safety of the patient first and must ensure that approval has been obtained for research from an independent research ethics committee and that patients have given consent. All research must be conducted with honesty and integrity.

**Working in Teams**

Radiological diagnosis and therapy is provided by multi-disciplinary teams including radiographers, medical physicists, nurses and supported by administrative staff, but this does not change the personal accountability of the radiologist. It is usually the responsibility of radiologists to lead the diagnostic/therapeutic team.

The radiologist working in a team must respect the skills and contribution of colleagues and maintain good communications between members of the team and with colleagues outside the team. Radiologists need to recognise their team as well as their functional role in a department (18, 22).

Radiologists must ensure that all team members understand their personal and collective responsibility for the safety of the patient and the team objectives, tasks and responsibilities.

The radiologist must ensure, where tasks are delegated, either by a radiologist within a team or separately, so that the delegate is providing treatment or care on the radiologists behalf, that the person to whom the task is delegated is competent to carry out the procedure or provide the therapy involved. The radiologist will still be responsible for the overall management of the patient (23).

If the radiologist refers a patient, he/she must be satisfied that the person to whom he/she has referred has the necessary skills and that the continuing management is properly monitored and managed.



## Continuing Patient Care

Radiologists should be satisfied that when they are off duty, suitable arrangements are made for emergency radiological examinations to take place. Arrangements should involve clear communication between doctors.

Radiologists must be capable of undertaking the tasks that may be required in an emergency or in an out of hours service and should not perform tasks on-call that they are not competent to do during the working day (24).

Departments or practices should establish a portfolio of examinations that can safely and reliably be offered out of hours by the radiologist on the on-call rota. The supervision of junior on-call staff must be real and by those who are competent to undertake the examination if required. Only those examinations which will affect immediately patient management should be performed.

## Financial and Commercial Dealings

Radiologists must be honest and open in any financial arrangements with patients and should provide information about fees and charges before obtaining patient consent to treatment wherever possible.

They must not exploit a patient's vulnerability or lack of medical knowledge when making charges for treatment or services.

They must act in the patient's best interests when making referrals or providing arrangements for treatment and care and should not accept inducements, gifts or hospitality which may affect or may be seen to affect their judgment.

Radiologists who have financial or commercial interests in the organisations providing the health care should not allow such interests to affect the way they investigate or treat patients. They should avoid conflicts of interest in financial or commercial enterprises for both themselves or their immediate family and the patient must be aware of their financial interest.

If their health may put a patient at risk, they must seek advice from suitably qualified colleagues and not rely on their own assessment of the risk to patients (12).

## Quality of Radiological Care

Radiologists should try to ensure that the departments in which they work have a high quality of clinical care, images, image interpretation and results of interventions measured by outcome data.

The quality of care in individual departments may be affected by the manpower and equipment resources available (25), but where possible radiologists should try to minimise waiting times and maximise the speed of the issue of a report (15).

The development of standards of diagnostic accuracy and efficacy of most investigations is incomplete. Radiologists should, however, endeavour to identify the standards that are achievable in any particular area and attempt to ensure that they provide a quality of service, accuracy, effectiveness and efficacy, which falls within those standards.

Radiologists should ensure that there are systems in place to justify clinically each image examination based on national and local guidelines, and that the appropriate available imaging modality is used (26, 27). They should ensure that both patients and themselves are properly protected from unnecessary radiation and should be familiar with the implications to their practice of regulations relating to radiation and be fully aware of all the appropriate legislation, both European and national (28). They must understand and enforce the principles of radiological protection for the foetus and, where appropriate, for radionuclide imaging for nursing mothers.

Ideally, all studies should be formally reported by an accredited radiologist or an appropriate delegate or trainee working under supervision to a level appropriate to their training and

expertise. If staffing levels are inadequate, radiologists should ensure that a protocol of non-radiologist reporting in compliance with the EURATOM directive, is agreed with the management of the hospital or health care facility (28).

The timing of the investigations and reports should be such that they will contribute to effective patient management. However, the ability of radiology departments to achieve target response times depends on the availability of adequate resources, equipment and personnel. The department should achieve an effective and timely communication of the report.

Radiation dose should be kept to the minimum, as low as is reasonably practical, and appropriate monitoring of doses should be in place. Protocols should be in place to ensure the quality of examinations for all procedures in departments, with the appropriate indications. Interventional radiologists should keep a record of their practice and of complications. These should be available for periodic external review and should be based and compared with acceptable standards. Such standards exist in terms of complications, but outcome measures should also be developed systematically (8).

Radiologists should endeavour to ensure that systems are in place to enable previous examinations to be reviewed and current examinations to be available to clinicians and to clinico-radiological conferences as appropriate.

## Clinical Audit

Audit is the systematic critical analysis of the quality of radiological care, use of resources and the resulting outcome and quality of life of the patient and is an important part of radiological clinical practice.

Clinical radiology departments should have a properly supported audit structure and audit should be a regular activity. Radiologists should participate in audit activity, but time and financial support for this process is essential.

Audit topics should include structure, process and outcome of radiological interventions. They should also include the appropriateness of the procedure, the complication rates of interventional radiologists and the success of an interventional procedure (15). They should also reflect the concerns, difficulties and potential problems experienced by patients and staff within the hospital and within the department.

Radiologists should endeavour to establish mechanisms whereby discrepancies and errors of practice can be reviewed in a non-confrontational and confidential forum (16, 17).

Maintenance and confidentiality of outcome, incidence, complications, errors and omissions is essential, if local audit is to be beneficial and if national comparisons are to be achieved.

## Conclusion

**Radiologists practice in an environment which makes great demands on their knowledge, skills, ability to respond to change and to work in teams.**

**This Good Practice Guide outlines what should be expected of a radiologist and the facilities and framework required to support that expectation.**



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