Summary

Diagnostic radiographers are well placed to support development of clinical imaging services through their acknowledged responsiveness and ability. With appropriate skills development, they are able to make first line interpretation of images in support of patient management and, following College of Radiographers approved postgraduate training, to provide definitive reports for a wide range of examinations. This document provides policy and practice guidance to support the implementation and further growth of clinical reporting and to support the transition from abnormality signalling systems (such as ‘red dot’ systems) to written preliminary clinical evaluation systems.

Foreword

The health and social care landscape is changing across the UK and with it the priorities for the delivery of healthcare services. Health policy decisions by current and previous governments and the significant fiscal challenge faced by services mean that resources expended on the provision of healthcare must be used effectively and in a manner that is justifiable in terms of improved patient outcomes. Changes to service commissioning arrangements in much of the UK, the transfer of elements of service delivery to the primary care sector and the increased involvement of the independent sector in delivery all mean significant scope for change to the roles of healthcare practitioners, including radiographers.

In the context of these changes, clinical imaging services are under increasing pressure year on year to enhance quality, capacity and productivity while staffing levels remain static or decrease. Radiographers recognise that too many diagnostic imaging examinations still do not receive a timely clinical report and many images are assessed for the purposes of immediate patient management by staff not always equipped to make the best judgements.

Diagnostic radiographers are well placed to support development of clinical imaging services through their acknowledged responsiveness and ability. With appropriate skills development, they are able to make first line interpretation of images in support of patient management (preliminary clinical evaluations); and, following College of Radiographers approved postgraduate training, to provide definitive reports for a wide range of examinations.

This document provides policy and practice guidance to support the implementation and further growth of clinical reporting and to support the transition from abnormality signalling systems (such as ‘red dot’ systems) to written preliminary clinical evaluation systems.
1.0 Introduction

The College of Radiographers first developed its views on radiographer reporting in 1997 stating that it was not an option for the future but a requirement. In 2006 it reiterated this and set out the role of radiographers in diagnostic image interpretation in more detail. Two specific roles were identified:

- clinical reporting by radiographers who have successfully completed postgraduate education and training approved by the College, and
- initial image interpretation as a development of abnormality signalling systems, generally referred to as ‘red dot’ systems.

Throughout the 1990s and 2000s, radiographers’ contributions to diagnostic image interpretation continued to develop and grow, as shown by successive surveys of role development in radiography. The evidence base also grew and confirmed that radiographers were able to contribute effectively at the appropriate standards in their defined fields of clinical reporting practice and that structured initial image interpretation by radiographers has expanded with tangible benefits to service quality. Other studies, too, confirm the benefits of reporting radiographers, including cost effectiveness benefits.

A major survey in 2008 showed that musculo-skeletal reporting by radiographers was taking place in 53% of responding sites, with 83% undertaking ultrasound reporting. Extensive implementation of the profession’s career progression framework, including significant numbers of consultant practitioners and the establishment of a number of trainee consultant posts was also identified. These developments and continuing emergence of both assistant and advanced practice roles in wide ranging fields of practice in radiography show that the profession is responsive and adaptable, well able to meet the demands of new ways of working and increased responsibilities.

Evolving healthcare policy is also impacting on the radiography workforce, especially the drive to deliver more services in the primary care sector and to improve the early diagnosis of cancer and other diseases. Both of these policies have the potential to change the shape of clinical imaging services significantly. These services, coupled with continuing long term fiscal restraint, need to maximise the contributions of the entire workforce, be innovative in designing new ways of delivering services and enhance the quality, efficiency and effectiveness of services.

The joint publication of the Royal College of Radiologists and the College of Radiographers ‘Team Working in Clinical Imaging’ sets out that clinical imaging services need to deliver the right test at the right time with the report available in time to support and influence patient management. In 2013 and beyond, radiographers must play their full part in delivering this goal across the spectrum of image acquisition, image interpretation and integration of these roles into patient care pathways. In this publication, the College of Radiographers sets out the role of radiographers in relation to clinical reporting and initial image interpretation.

2.0 The College of Radiographers’ position in 2012

The College of Radiographers’ position in 2012 is clear:
Clinical imaging examinations undertaken by radiographers should receive an immediate preliminary clinical evaluation as part of the examination to assist in on-going patient management. Preliminary clinical evaluations generated by the radiographer undertaking or supervising the examination should be followed by a definitive clinical report provided by a radiologist, an appropriately qualified clinical reporting radiographer, or another registered healthcare professional able to report to the same standard as radiologists and clinical reporting radiographers.

The College confirms that both preliminary clinical evaluations and clinical reporting are core parts of the radiography profession’s scope of practice, subject to those undertaking these roles having appropriate and relevant post graduate education and training.

Those undertaking clinical reporting must have attained a relevant postgraduate qualification approved by the College of Radiographers. They should also seek and maintain accreditation by the College at advanced practice level as a minimum.

The College acknowledges that there is a lack of consistency in the terms used by the profession to describe its contributions to reporting. It now defines the two distinct roles in reporting as follows:

**Preliminary clinical evaluation:** This term is used to describe the practice of radiographers whereby they assess imaging appearances, make informed clinical judgements and decisions and communicate these in unambiguous written forms to referrers. Importantly, where a radiographer is unable to provide a preliminary clinical evaluation, this fact must be communicated to the referrer in written form.

**Clinical reporting:** This term is used to describe the practice of radiographers who have successfully completed postgraduate education and training approved by the College of Radiographers to enable them to produce diagnostic reports in defined fields of practice. The quality of the reports produced by radiographers must at least be at the same standard as reports produced by other recognised reporting practitioners, medical or non-medical.

The College believes that implementation of integrated and properly supported and governed systems of preliminary clinical evaluation and clinical reporting, in the context of multi-disciplinary team working, will assist clinical imaging services to meet the needs of patients and referrers for rapid access to the right imaging examinations and the ensuing outcomes and reports.

The College expects those services operating abnormality signalling (‘red dot’) systems to phase them out in favour of preliminary clinical evaluation (PCE) systems. While abnormality signalling systems have enabled radiographers to make significant contributions to diagnosis in accident and emergency services for many years, such systems are ambiguous and no longer sit comfortably in current clinical governance processes. The relatively informal nature of such systems and the often optional approach are inconsistent with delivering reliable outcomes for patients and referrers and for attributing accountability for errors.

The College’s record on advocating and supporting the development of radiographers’ roles is consistent and long standing. With regard to radiographers’ roles in preliminary clinical evaluation (initial image interpretation) and in clinical reporting, it has been, and remains, unequivocal. The benefits of deploying radiographers in these ways are clear and supported by evidence. Nonetheless, it remains important to ensure that changes to systems and practice are approached strategically and within an appropriate governance framework in line with the joint publication of the Royal College of Radiologists and the College of Radiographers.

### 3.0 Radiographers and preliminary clinical evaluation

For at least twenty five years, radiographers have been involved in abnormality detection, often referred to as the ‘red dot’ system. Usually, the system operates in accident and emergency

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imaging with radiographers signalling the presence of suspected or identified abnormalities by the addition of a red dot (or similar) to the relevant images to support emergency staff managing the patient. In 2008, a UK wide survey of emergency departments and minor injuries units found that 284 (92.8%) of responding departments operated a radiographer abnormality detection system. Of these, 221 operated a ‘red dot’ signalling system and 61 operated a radiographer comment system, often in conjunction with the signalling system. Two further sites provided radiographer abnormality detection but by systems other than ‘red dot’ signalling or comments.18

This aligns with the College’s view expressed in 2006 that making informed clinical comments on examinations / image interpretation (now referred to as preliminary clinical evaluation) and clinical reporting should become core competences of the profession. At that time, the College set out the expectation that radiography education providers include the principles of image assessment and reporting in pre-qualifying education programmes and ensure that at qualification radiographers are competent to provide written preliminary comments on imaging examinations.

Newly qualified radiographers at the point of registration with the Health and Care Professions Council now have the underpinning education and training to begin to participate in preliminary clinical evaluation, although it is essential that this be further developed and assessed during their preceptorship periods.

The majority of experienced radiographers have participated in abnormality detection systems and some in written preliminary clinical evaluation systems. These skills may need further development and assessment and should be a major focus of their continuing professional development. It was for this purpose that the College of Radiographers and the Department of Health through e-Learning for Healthcare (eLfH) have produced the e-learning resource known as ‘Interpretation of Radiological Images’ (IRI), often shortened to ‘Image Interpretation’ (II).20

Current evidence demonstrates the achievement of appropriate standards and effectiveness of appropriately trained radiographers engaged in initial image interpretation.2 It has also been shown that where radiographers are involved in written commenting systems, overall error rates are reduced leading to a reduction in mismanagement and patient recalls.41 The College’s requirement that ‘red dot’ signalling systems be replaced by written preliminary clinical evaluation systems is therefore appropriate, and will improve yet further radiographers’ contributions to the effective management of patients following imaging.

4.0 Clinical reporting by radiographers

The College’s 2006 guidance document, Medical Image Interpretation and Clinical Reporting by Non-Radiologists: The Role of the Radiographer provided comprehensive justification of the scope of radiographer reporting as carried out by radiographers with appropriate postgraduate training. The guidance included extensive reference to the associated evidence base, confirming the standards and achievements of radiographers in defined fields of reporting practice. At that time, 2006, there was evidence of radiographers contributing to the clinical reporting workload in accident and emergency,5 examinations of the large bowel,22 ultrasound,23 nuclear medicine,24 mammography25 and chest radiography.24 In the subsequent period, clinical reporting by radiographers has continued to expand, both in the extent of implementation and in the scope of practice, with radiographers now undertaking reporting of, for example, computed tomography (CT) head scans and certain magnetic resonance imaging (MRI) examinations.6,7

Evidence continues to confirm that properly trained radiographers reporting in defined areas of practice comply with standards equivalent to those of their radiologist colleagues. Accordingly, clinical reporting radiographers are able to make valuable contributions to delivering safely and effectively the reporting element of clinical imaging services. In addition cost benefits are becoming apparent; for example, radiographer led immediate reporting for emergency departments.14
5.0 A framework to support preliminary clinical evaluation and clinical reporting by radiographers

The College believes it is timely to set out a supporting framework for the profession and for those responsible for delivering safe, high quality clinical imaging services. The framework provides guidance on the College’s expectations of members of the radiography profession whose scope of practice includes preliminary clinical evaluation or clinical reporting.

5.1 Education, training and continuing professional development

Initial education and training, and ongoing continuing professional development (CPD) are integral to radiographic practice. In areas of role development or advancing scope of practice, it is essential that these activities and the standards required are defined.

Preliminary clinical evaluation

In terms of developing the radiography profession relative to preliminary clinical evaluation, the College requires this to be a core competence for radiographers and be embedded in pre-registration undergraduate programmes. It is expected that newly qualified radiographers, following preceptorship, should be able to undertake preliminary clinical evaluation, including the written communication of these, for standard plain imaging and contrast agent examinations.

Experienced radiographers should, similarly, be able to undertake preliminary clinical evaluation of standard plain imaging and contrast agent examinations, evidencing the development and enhancement of the necessary skills and competences in their CPD records.

Of particular importance in developing and maintaining preliminary clinical evaluation skills is the web based e-Learning for Healthcare Interpretation of Radiological Images programme (developed in partnership with the College of Radiographers). This provides easy access to over 200 learning units and is available to all NHS employed staff free of charge. Its primary purpose is to facilitate knowledge and skills development to enable radiographers (and other healthcare professionals) to undertake clinical evaluation of imaging examinations. Clinical imaging service managers are encouraged to embed the use of this learning tool in radiographers’ personal development reviews and radiographers are encouraged to make use of the programme independently.

Clinical reporting

Radiographers engaged in clinical reporting must have acquired, without exception, a College of Radiographers approved postgraduate qualification(s) in the relevant field or fields of clinical reporting. The qualification(s) must include clinical reporting skills development and competence assessment. Approval of clinical reporting education and training programmes by the College of Radiographers ensures proper external scrutiny, gives national recognition to and transferability of the awards, and provides assurance that programmes’ outcomes meet professional body standards at advanced practice level.

Radiographers are expected to build on their postgraduate qualifications and continuing professional development to seek and maintain accreditation as an advanced practitioner by the College.

5.2 Standards of practice

The performance standards to be achieved by radiographers undertaking preliminary clinical evaluation and clinical reporting are difficult to define in quantitative terms. Essentially, radiographers who have been trained must be demonstrably competent, with the appropriate knowledge base and a record of audit of their practice. They must also undertake regular continuing professional development related to their clinical role.
Both preliminary clinical evaluation and clinical reporting must be undertaken within a clear clinical governance framework to include structured departmental training, audit and performance review, personal development review and clinical supervision as a minimum.

Appendix 1 provides the College of Radiographers’ current standards; these will be reviewed periodically.

### 5.3 Limitations on practice

The College’s Scope of Practice makes it clear that the scope of practice for radiographers is ‘that which the radiographer is educated and competent to perform’. Limits, therefore, are set only by legislation, the extent of available education and development, and opportunity.

In the context of preliminary clinical evaluation and clinical reporting, radiographers’ scope of practice is bounded by the extent of their knowledge, skills and competences. It is essential that radiographers understand and practice within their capabilities, seeking assistance from others whenever necessary.

### 6.0 Implementing preliminary clinical evaluation and clinical reporting

#### 6.1 Education and training

All radiographers who are engaged in preliminary clinical evaluation and clinical reporting must have undergone education and training that will enable them to function effectively in these roles (see section 5.1).

Clinical imaging service managers seeking to implement or extend preliminary clinical evaluation and/or clinical reporting systems are advised to carry out a detailed training needs analysis and to establish a strategic framework for their radiographer and associated workforce development, to include an overview of projected human and financial resource requirements.

#### 6.2 Clinical governance

Clinical imaging service managers and clinical directors are jointly responsible for establishing and maintaining robust mechanisms for the safety and protection of patients and delivering effective service and clinical outcomes. Both preliminary clinical evaluation and clinical reporting must be included in the scope of the governance arrangements for the clinical imaging service.

Scenario-based protocols and schemes of work should be drawn up. This should normally include radiological involvement and should comply with professional body and regulatory guidance. Lines of accountability and a mentoring/ supervisory framework should be established. Radiographers must practice within an agreed and defined scope of practice which should be set out clearly within the protocols and radiographers should understand the limits of their practice.

Processes for consultation, discussion, agreement, and review of protocols and schemes of work should be defined.

Radiographers must be enabled (through allocated time and the provision of appropriate learning resources) to undertake CPD to develop, maintain and enhance their skills. These must be agreed at the planning stage of these services. Self-directed CPD has a role to play in supporting the introduction of these services but is insufficient on its own. There needs to be full ownership of the process by all relevant stakeholders to ensure success and highly motivated staff. Stakeholders will, at least, include radiographers and radiologists and should also include referrers and patients.
A process of periodic audit of preliminary clinical evaluation and clinical reporting should be established which enables ongoing scrutiny of these services and action planning and follow up of issues that emerge. Multi-disciplinary team meetings and establishment of discrepancy review meetings should be established, with learning rather than blame being the underlying principle.

6.3 Professional accountability and indemnity

Radiographers are independently regulated, autonomous healthcare practitioners, individually and fully accountable for all of their actions and practice,\textsuperscript{30-32} including all opinions expressed and all judgements and decisions made. Radiographers must, therefore, ensure that they are properly trained for all roles and responsibilities they agree to undertake and they must maintain their skills through continuing professional development. This applies to the whole of their practice including when that practice encompasses preliminary clinical evaluation or clinical reporting.

Radiographers in membership of the Society of Radiographers benefit from personal professional indemnity cover\textsuperscript{33} subject to them working in accordance with the Scope of Practice\textsuperscript{28} and the Code of Conduct and Ethics\textsuperscript{34} of the Society and College of Radiographers.

Employers’ vicarious liability expects employees to work in accordance with their authority and within their policies. Radiographers undertaking new or enhanced roles should ensure that their employer is aware of significant changes to their personal scope of practice, for example, clinical reporting.

6.4 Employment

Clinical reporting is an advanced practice skill.\textsuperscript{27} Radiographers undertaking clinical reporting may well have clearly defined roles and responsibilities with regard to the training, development and supervision of staff undertaking preliminary clinical evaluation. These posts will normally be at NHS pay bands 7 or 8a or their equivalents.

In the case of preliminary clinical evaluation, the associated knowledge, skills and responsibilities are consistent with NHS pay band 6 or its equivalent.

References


Appendix 1

Standards for preliminary clinical evaluation systems by radiographers

The standards outline the College of Radiographers’ view of best practice in implementing and maintaining a consistent, reliable and well governed preliminary clinical evaluation system.

A1.0 Education and professional development

Radiographers must have undertaken defined training or development, either through an appropriately structured pre-registration programme followed by a period of preceptorship, or through documented professional development that may include formal learning.

- Newly qualified radiographers, in relation to standard radiographic images, must:
  - have demonstrated competence in the assessment of image appearances to identify abnormalities, and describe them in written form
  - be competent in identifying normal image appearances, including normal anomalies
  - be able to advise on further radiographic projections based on their clinical findings.
- Experienced radiographers must demonstrate competence in undertaking and producing written preliminary clinical evaluations.
A2.0 Preceptorship

Newly qualified radiographers should, within the context of a structured preceptorship programme, receive developmental support over an extended period on initial employment to enable them to demonstrate competence in undertaking and producing written preliminary clinical evaluations.

A3.0 Clinical governance

Preliminary clinical evaluation systems need to be set within a proper clinical governance framework and deliver consistent, high quality outcomes. Clinical governance processes should include:

- a clearly defined clinical supervision framework;
- agreed schemes of work and protocols that guide the anticipated range of circumstances;
- a continuing education and development plan;
- regular audits and review of audit outcomes at multi-disciplinary team meetings and/or discrepancy review meetings in which a constructive ‘no blame’ culture exists;
- periodic review of outcome standards (eg true and false positives and negatives, accuracy of written evaluations, satisfaction of referrers, satisfaction of patients) and subsequent revision of schemes of work and protocols, and ongoing education and training plans;
- clear lines of responsibility and accountability for delivering the service effectively.

A4.0 Procedures

Preliminary clinical evaluation must have recorded reports. A proforma system is recommended, either electronic or paper-based or both, and should be developed in accordance with identified clinical need locally.

It is expected that locally developed proformas should facilitate communication of one of the following:

- the imaging appearances are normal / normal for age or known condition/ normal with an anatomical variant at ....;
- an abnormality is evident at .... (the nature and location of the abnormality using standard anatomical, physiological and pathological terminology);
- the imaging appearances are complex and require a consultant radiologist’s (or, where appropriate, consultant radiographer’s) opinion. If this option is used, it is expected that the examination be fast tracked for a full clinical report, and to indicate this on the proforma;
- a preliminary evaluation has not been provided. This option is necessary to avoid ambiguity but its use is best avoided as it is unhelpful to both referrers and patients.

In addition, proformas should state:

- the initial projections undertaken, and any additional projections carried out when clinically indicated;
- artefacts evident on any images;
- relevant clinical details;
- patient identification details;
- the name and status of the person providing the preliminary clinical evaluation;
- the date and time at which the evaluation was completed.

Informal and verbal systems of communication are best avoided but, if used, carry the same status as written comments, in terms of radiographers’ personal and professional responsibilities.

A5.0 Individual choice
The College of Radiographers is unequivocal in its view that individual decisions to ‘opt out’ of a preliminary clinical evaluation system are unacceptable. Where a clinical imaging service provides such a system, participation in it should be determined at local level and be mandatory for those providing the service.

The College recognises that there may be occasions where the participating radiographer may find it impossible to provide a preliminary clinical evaluation (e.g. in such a situation where a considered judgement cannot be made). There may also be times when staff and skills shortages mean that there are no radiographers available with preliminary clinical evaluation skills and competences, or that the radiographer available has not yet acquired such skills for a particular examination or range of examinations. A well designed proforma (see 4.0 above) should enable these situations to be dealt with effectively, with appropriate communication to the referrer.

A6.0 Knowledge, skills and scope of practice

Radiographers participating in preliminary clinical evaluation systems must:

- be able to provide written evaluations of standard plain imaging and contrast agent examinations;
- have in-depth knowledge of anatomy, physiology and pathology and use this to distinguish trauma or pathology from normal and anomalous appearances on standard imaging and contrast agent examinations;
- have some understanding of common mechanisms of injury and origins of pathology;
- understand fully the effects on image appearances of radiographic projections, and be able to convey this to referrers to assist them in understanding imaging appearances;
- undertake further radiographic projections or recommend other imaging procedures as indicated by the imaging appearances and in accordance with the Royal College of Radiologists referral guidelines, I-Refer;
- know and comply with the scope of the scheme and its governance arrangements;
- recognise the extent and limits of their personal competence and scope of practice, taking appropriate action when necessary to deliver a safe service at all times.