
# An Independent Review of Reporting Arrangements for Radiological Investigations

## Phase 1 Overview Report, March 2011

informing and improving health and social care
www.rqia.org.uk

# Table of Contents

## Section 1: Introduction

### 1.1 The Regulation and Quality Improvement Authority (RQIA)

RQIA is a non departmental public body responsible for monitoring and inspecting the quality, safety and availability of health and social care services across Northern Ireland. It also has the responsibility of encouraging improvements in those services. The functions of RQIA are derived from The Health and Personal Social Services (Quality, Improvement and Regulation) (Northern Ireland) Order 2003.

RQIA operates within a value system that supports the belief that learning is at the heart of improvement. To ensure a clear focus on improvement, organisations need to have effective systems which can identify performance standards and support the learning necessary for improvement.

RQIA's main functions are:

- To inspect the quality of services provided by Health and Social Care (HSC) bodies in Northern Ireland through reviews of clinical and social care governance arrangements within these bodies.
- To regulate (register and inspect) a wide range of services delivered by HSC bodies and by the independent sector. The regulation of services is based on minimum care standards to ensure that service users know what quality of services they can expect to receive, and service providers have a benchmark against which to measure their quality.
- To undertake a range of responsibilities for people with mental ill health and those with a learning disability, following the transfer of duties of the Mental Health Commission to RQIA under the Health and Social Care (Reform) Act (NI) 2009.
- To carry out monitoring, inspection and enforcement of legislative measures for the protection of individuals against dangers of ionising radiation in relation to medical exposure set out in The Ionising Radiation (Medical Exposure) Regulations (Northern Ireland) 2000 (IR(ME)R). RQIA became responsible for functions in relation to IR(ME)R on 15 March 2010.

### 1.2 Context for the Review

On 15 February 2011, Michael McGimpsey, MLA, Minister for Health, Social Services and Public Safety, commissioned RQIA to undertake an independent review of the handling and reporting arrangements for plain x-ray radiological investigations across Northern Ireland.

The request for the review followed delays in the reporting of plain x-ray radiological examinations at Altnagelvin Hospital, Londonderry (Western Health and Social Care Trust) and Craigavon Hospital, Craigavon (Southern Health and Social Care Trust).

On 18 February 2011, RQIA agreed to undertake this commissioned review in two phases, as set out in the terms of reference, taking into account the following framework documents and advice issued from the Department of Health, Social Services and Public Safety (DHSSPS) in respect of their application to the service in Northern Ireland:

- Standards for the Reporting and Interpretation of Imaging Investigations (Royal College of Radiologists), January 2006
- National Patient Safety Agency (NPSA) Safer Practice Notice 16; Early identification of failure to act on radiological imaging reports, February 2007
- Standards for the Communication of Critical, Urgent and Unexpected Significant Radiological Findings (Royal College of Radiologists), 2008
- Priorities for Action (PfA) 2010

### 1.3 Terms of Reference

**Phase 1**

1. To describe the systems in place for handling and reporting on plain x-rays across the five HSC trusts.

2. To examine the governance arrangements in place across the five HSC trusts to assure patient safety and protection with regard to handling and reporting on radiological investigations.

3. To examine the arrangements for communication of the reports of x-rays to patients and practitioners.

4. To make recommendations for action to manage any identified current issues in relation to the handling and reporting of x-rays.

**Phase 2**

Following publication of the report of Phase 1 of the review, the terms of reference for Phase 2 will be reviewed in the light of the findings of Phase 1.

5. To describe the circumstances leading to any significant delays in the handling and reporting of radiological investigations in the last two years and how those delays have been managed by the five HSC trusts and the HSC Board.
6. To identify any factors which contributed to delays in handling and reporting radiological investigations across Northern Ireland during the past two years and make recommendations to avoid these happening in the future.

7. To consider the impact of identified delays on service users.

8. To examine any other relevant matters emerging during the course of the review.

### 1.4 The Review Team

The team includes the following membership for Phase 1 of the review:

- Dr Nicola Strickland, Registrar of the College and Registrar of the Faculty of Clinical Radiology, Royal College of Radiologists (RCR)
- Sally MacLachlan, Senior Clinical Officer, Medical Exposure Department, Health Protection Agency (HPA)
- Jon Billings, Director of Healthcare Quality, Health Information and Quality Authority (HIQA)
- Dr David Stewart, Director of Service Improvement and Medical Director, RQIA
- Hall Graham, Head of Primary Care and Clinical and Social Care Governance Review and Independent Health Care Regulation, RQIA

supported by:

- Helen Hamilton, Project Manager, RQIA

### 1.5 Methodology Used to Collect Evidence in Phase 1

a. RQIA asked all HSC trusts to provide the following written material in relation to radiology services within the trust:

- completion of a questionnaire at trust level on radiology services and systems
- completion of a short questionnaire in relation to each radiology department within the trust
- provision of a specified list of supplementary information and documentation

b. The members of the review team met with representatives of managerial and clinical staff responsible for the provision of radiology services in each trust, to gain further clarification in relation to the written material provided. These meetings took place between 10 and 14 March 2011.

RQIA is grateful to the staff across all trusts who were involved in the provision of written material, at short notice, to inform the review process and who met with the review team to provide clarification on the delivery of radiology services within the trusts.

## 1.6 Reporting of Findings

The RQIA review team has prepared individual Phase 1 reports for each trust. These reports describe the arrangements for the provision of plain x-ray imaging and the findings and conclusions of the review team after visits to each trust. The trust reports include recommendations for actions at trust level.

This report presents an overview of the findings of the review team across Northern Ireland. The recommendations included in this report relate to actions to be taken at Northern Ireland level.

## 1.7 Standards and Guidelines

### A. Standards for the Reporting and Interpretation of Imaging Investigations (Royal College of Radiologists), January 2006

The Royal College of Radiologists (RCR) standards for the reporting and interpretation of imaging were established to define the aspects of radiological services and care which promote the provision of a high quality service to patients. The standards define what is required in an imaging report, whoever issues that report. 14 standards are defined.

- Robust clinical governance procedures must be in place and be applied to imaging investigations and reports, wherever they may originate.
- Non-radiologists who interpret imaging should work in teams with ready access to radiologists for advice.
- The type of investigation most likely to be suitable for interpretation by those without medical training is that which involves a single organ, with a single suspected pathology and a yes/no answer.
- Radiologists and Trusts have a duty of care to the patient to ensure that no individual who reports imaging investigations is expected to work beyond their level of knowledge and competence.
- An individual who reports an investigation must understand the explicit and implied information on the request form.
- An individual who reports an investigation must have sufficient technical knowledge to assess image quality and know the limitations of the investigation in a particular patient.
- An individual who reports an investigation must have been trained in radiological observation and analytical skills.
- Medical training is required when imaging findings are correlated with clinical details and the results of laboratory tests to make a clinical diagnosis.
- Further investigations should only be suggested if they are medically indicated and will contribute to patient management.
- The professional status of an individual who reports an investigation should be clear on all written reports.

- The wording of the report should be clear and take into account the professional background of the referrer.
- There must be a reliable method for the referrer to discuss difficult cases in more detail with the individual who reports the investigation.
- An individual who reports an investigation must recognise when the findings constitute a medical emergency and comply with local mechanisms to alert referrers in urgent cases.
- All communications with the patient must adhere to professional guidance.

## B. National Patient Safety Agency (NPSA) Safer Practice Notice 16; Early Identification of Failure to Act on Radiological Imaging Reports, February 2007

On 5 February 2007, NPSA published a safer practice notice to advise health care organisations to review their systems to ensure that radiology imaging results are communicated and acted on appropriately. NPSA had received 22 reports from across the United Kingdom between November 2003 and May 2006 where failure to follow up radiological imaging reports led to patient safety incidents, most of which involved fatalities or significant long-term harm. The NPSA safer practice notice recommended that all health care organisations providing or commissioning radiological imaging services should:

- ensure that the radiological imaging reports of all patients are communicated to, and received by, the appropriate registered health professional and, where necessary, action is taken in a manner appropriate to their clinical urgency;
- ensure registered heath professionals design "safety net" procedures for their specialty;
- make it clear to patients how and when they should expect to receive the results of a diagnostic test;
- review relevant policies and procedures in line with the safer practice recommendations outlined in the safer practice notice.

On 16 July 2007, the Director of Safety Quality and Standards at DHSSPS wrote to all HSC organisations to ask them to work towards compliance with the safer practice notice and to bring the notice to the attention of staff.

## C. Standards for the Communication of Critical, Urgent and Unexpected Significant Radiological Findings (Royal College of Radiologists), 2008

In 2008, RCR developed and issued standards in relation to the communication of critical, urgent and unexpected significant radiological findings following the publication of NPSA Safer Practice Notice 16.

The standards were set in the context of a changing working environment for radiology services. With the roll-out of picture archiving and communication systems (PACS) and digital reporting systems, previous paper based alert systems were becoming obsolete. The standards provide outline definitions of three categories of findings requiring action.

- **Critical findings**. Where emergency action is required as soon as possible
- **Urgent findings**. Where medical evaluation is required within 24 hours.
- **Significant unexpected findings**. Cases where the reporting radiologist has concerns that the findings are significant for the patient and will be unexpected.

Standards for the communication of urgent reports are described:

- Every department should define and develop policies for the communication of critical, urgent and unexpected significant findings as outlined by Safer Practice Notice 16, unless they are confident that their processes are sufficiently robust to make this unnecessary. This will not replace the essential requirement for each referrer to be responsible for reading the result of every investigation they generate but should be aimed at providing a safety net for the highlighting of significant findings.
- The processes involved should be auditable, transparent and represent a clear trust policy agreed between the radiology department and requesting clinicians.
- Trusts should develop and provide the appropriate IT support and resource required to achieve compliance with Safer Practice Notice 16 by reliable electronic means. This is most effectively achieved with a system of automatic electronic feedback of results to the referring clinician with availability to other designated members of the relevant clinical team.
- As IT links and communication within trusts and the NHS as a whole continue to develop, systems will require regular review and updating.

In November 2008, the Chief Medical Officer of Northern Ireland wrote to HSC organisations and relevant independent sector establishments strongly commending the guidance set out by the RCR in the standards publication.

## D. Priorities for Action

Priorities for Action (PfA) sets out minimum standards of performance for trusts in Northern Ireland. These standards are subject to monitoring by the HSC Board.

In PfA 2008-09, a target was introduced for diagnostic services for the first time. The target was that, from April 2009, no patient should wait longer than nine weeks for a diagnostic test. This was applied to a specified list of 16 diagnostic tests. Within radiology services the target was applied to magnetic resonance imaging (MRI), computed tomography (CT), ultrasound investigations, barium studies, DEXA scans and radio-nuclide imaging. The list did not include plain x-

ray imaging as it was not possible to monitor waiting times centrally for plain x-rays until the introduction of RIS/PACS across Northern Ireland.

PfA target definition guidance issued by the HSC Board in April 2009 advised trusts that extension of monitoring to include plain x-ray imaging would be commenced on implementation of PACS. This is planned to start formally in April 2011. A period of testing reporting arrangements with trusts has been taking place in 2010-11.

**E. Standards and Recommendations for the Reporting and Interpretation of Imaging Investigations by Medically Qualified Non-Radiologists and Teleradiologists (Royal College of Radiologists) March 2011 (Appendix A)**

RCR has recently developed a new publication, for application across the United Kingdom, which defines standards for radiologists, regulatory authorities, hospital managers and individual doctors regarding medically qualified non radiologists who wish to interpret imaging investigations. The publication also provides standards for consideration when imaging investigations are outsourced to teleradiologists employed by off-site teleradiology companies.

The RQIA review team recognises that these standards have not yet been formally issued across Northern Ireland but considers that they are helpful in informing the recommendations of this review. The standards are intended as supplementary to the 2006 standards described above which still apply. Eleven standards are defined within the document.

1. Every imaging investigation must be reported within an agreed time by an individual qualified to interpret that particular investigation.

2. All imaging investigations must be accompanied by a formal permanently recorded written report.

3. All imaging investigations are best reported by a radiologist.

4. Health boards, commissioners of health care and hospital trusts must provide the resource, in terms of numbers of radiologists, IT provision and infrastructure to achieve the above standards.

RCR recognises that, with the current level of consultant radiology staffing, many organisations in the UK will not be able to achieve the best practice standards at present. In this context standards have been defined for medically qualified non radiologists as follows.

5. When image interpretation is delegated to non-radiologist medically qualified practitioners, hospitals, their medical directors and clinical radiology directors are responsible for ensuring the expertise of the practitioner and obtaining their agreement that they will provide a written record of the result of each investigation they interpret.

6. All practitioners who interpret imaging investigations must identify their name, status and position when making a written record of an imaging investigation.

7. There should be regular audit (at least once a year) of unreported imaging investigations.

8. Radiologists must be available to provide definitive reports on urgent imaging at all times. Similarly consultant radiologists should be available to provide their expert opinion on imaging investigations at all times.

Standards on the use of teleradiology are defined as:

9. Where reporting of imaging investigations is outsourced to off-site radiologists not working in the health care facility where the imaging investigations are performed, the health care facility management, medical director and radiologists must ensure that the previously published RCR standards on teleradiology[1] are met.

10. Patients or their carers/advocates must be aware when imaging investigations are to be interpreted off-site by an outsourced provider and assurances obtained that this is acceptable. The use of teleradiology services should be clearly signposted by notices in the department, with leaflets providing further information, especially in waiting areas, so patients, carers and advocates can query the reason, or voice any concerns to the radiographic staff at the time of the investigation.

11. Where reporting of imaging investigations is outsourced to off-site radiologists not working in the health care facility where the imaging investigations are performed, the health care facility management, medical director and radiologists must ensure the reporting teleradiologists fulfil the GMC requirements to practice medicine in the UK.

The RCR document makes two recommendations for consideration by providers and commissioners of radiology services.

1. The RCR recommends that future commissioners of health care promote the development and use of local imaging networks which involve local hospital clusters and integrated IT and teleradiology solutions.

1. The Royal College of Radiologists. *Standards for the provision of teleradiology within the United Kingdom*. London: The Royal College of Radiologists, 2010. http://www.rcr.ac.uk/docs/radiology/pdf/BFCR(10)7_Stand_telerad.pdf

2. All future PACS procurements should ensure functionality is provided for efficient inter-hospital transfer of x-rays and reports- fully utilising common data sharing protocols and standards such as XDSi (cross platform document for sharing imaging, as defined by Integrating the Healthcare Enterprise) and DICOM (digital image and communications in medicine standard).

### 1.8 Requirements under the Ionising Radiation (Medical Exposure) Regulations (IR(ME)R)

The responsibility for assessing compliance with and enforcing The Ionising Radiation (Medical Exposure) Regulations (Northern Ireland) 2000 known as IR(ME)R transferred from the DHSSPS to the Regulation and Quality Improvement Authority (RQIA) on 15 March 2010 under The Ionising Radiation (Medical Exposure) (Amendment) Regulations (Northern Ireland) 2010.

The regulations are intended to:

- Protect patients from unintended excessive or incorrect exposure to radiation and ensure that, in each case, the risk from exposure is assessed against the clinical benefit
- Ensure that patients receive no more exposure than is necessary to achieve the desired benefit within the limits of current technology
- Protect volunteers in medical or biomedical, diagnostic or therapeutic research programmes and those undergoing medico-legal exposures
- Ensure that all medical exposures have a documented clinical evaluation

## Section 2: Findings of the Review Team

### 2.1 Description of the Systems for Handling and Reporting of Plain X-rays in Northern Ireland

2.1.1 The organisation of radiology services across Northern Ireland varies by trust and reflects local patterns of hospital provision and trust policies on service design.

- The Belfast Health and Social Care Trust (Belfast Trust) has four radiology departments These include radiology departments at the Royal Hospitals (Royal Victoria Hospital, Royal Belfast Hospital for Sick Children, Royal Jubilee Maternity Hospital and the School of Dentistry), Belfast City Hospital, Mater Hospital and Musgrave Park Hospital.
- The Northern Health and Social Care Trust (Northern Trust) has a single integrated trust wide radiology service with shared plain x-ray reporting lists.
- The South Eastern Health and Social Care Trust (South Eastern Trust) has three radiology departments. Ulster Hospital reports on plain x-rays from Ulster, Ards and Bangor hospitals and there are also departments at Lagan Valley and Downe hospitals.
- The Southern Health and Social Care Trust (Southern Trust) has four radiology departments based at Craigavon, Daisy Hill, South Tyrone and Armagh Community hospitals
- The Western Health and Social Care Trust (Western Trust) has two radiology departments reporting on plain x-rays based at Altnagelvin Hospital (which also reports on Roe Valley Hospital) and at Erne/Tyrone County hospitals.

2.1.2 The review team were advised of two contracts in place with independent sector providers in Great Britain for the reporting of plain x-rays.

2.1.3 The Western Trust established a contract in 2010 for radiology reporting as part of an action plan to tackle a delay in reporting. The contract is still in place and can be called upon as part of the trust escalation arrangements to prevent future delays.

2.1.4 In 2011, the Southern Trust agreed a contract with an independent sector provider to report on 4,000 to 5,000 plain x-rays to eliminate a delay in reporting. The trust has assessed that it has a capacity gap on reporting of just fewer than 2,700 plain x-rays per month, based on the current reporting policy. A short-term contract for around 1000 x-rays per month is being secured with the independent sector provider to take effect from the end of April 2011. The remaining shortfall will be met

through the use of additional programmed activities and waiting list initiative sessions.

**Staffing**

2.1.5 Trusts advised the review team of a total of 13.8 whole time equivalent (WTE) consultant radiologist vacancies across Northern Ireland out of their funded establishments. There were 106.3 WTE consultants and 4.6 WTE locum consultants in post at the time of the review.

2.1.6 Trusts described different experiences in relation to recruitment to vacant consultant posts. The Southern and Western Trusts have experienced considerable difficulty in recruiting consultants. The Belfast Trust has experienced difficulty in recruiting consultants with specific areas of expertise, in particular neuro-radiology. The South Eastern Trust advised that it had had several applicants for an advertised post and the Northern Trust had all funded posts filled at the time of the review visit.

2.1.7 All trusts described capacity gaps, within their funded establishment, in their ability to report on plain x-rays in relation to the current volumes of plain x-rays. Different trusts were addressing this shortfall in a combination of different ways. Some trusts contract for additional reporting sessions from their own consultants in seeking to close this gap; others have implemented protocols for plain x-rays to be reported by other clinicians; and some trusts are contracting with the private sector.

2.1.8 In 2008, a review of consultant radiologist staffing carried out by DHSSPS projected a requirement of 180 WTE consultant posts by 2018 across Northern Ireland. It was estimated that 108 consultant vacancies would occur during the 10 year period taking account of 10 vacancies in 2008, 24 likely retirements and a projected growth of 88 posts.

2.1.9 All trusts have on-call arrangements in place for consultant radiologists to provide opinions and report on urgent x-rays. The Northern Trust has a trust wide on-call rota and the Belfast Trust is considering implementing an across site on-call system.

**Picture Archiving and Communication System (PACS) and Radiology Information System (RIS)**

2.1.10 PACS, in conjunction with RIS, is an electronic system which enables radiology departments to store, rapidly retrieve and share digital x-rays, and their reports, within and between hospitals. Development of PACS has revolutionised the way in which radiology departments work. PACS enables the electronic storage and organisation of x-rays, removing the

need to retain large numbers of hard copy plain x-ray films. PACS can enable new systems of reporting to be put in place and new arrangements to monitor the timeliness of reporting.

2.1.11 In Northern Ireland the implementation of an integrated solution to the provision of RIS/PACS has been taking place (NIPACS) to enable x-rays and reports to be viewed by appropriate health professionals across the health care network. NIPACS has been designed to integrate the functions of reporting, archiving and communicating x-rays (PACS) with radiology information systems (RIS) and inputting reports through voice recognition software (VR).

2.1.12 NIPACS has been rolled out across trusts in a planned programme of implementation.

- South Eastern Trust went live in October 2009
- Northern Trust went live in December 2009
- Southern Trust went live in March 2010
- Western Trust went live in May 2010
- Belfast Trust went live at Mater, Musgrave Park and Royal Belfast Sick Children's hospitals in December 2010

2.1.13 Belfast City Hospital and Royal Victoria Hospital Imaging Centre in Belfast Trust each have a different and separate PACS in place. It is planned that they will be integrated with NIPACS later in 2011. All HSC hospitals in Northern Ireland will then be part of an integrated PACS network with the ability to share and read x-rays across the system.

2.1.14 Reporting of x-rays into NIPACS and the PACS at the Belfast City and Royal hospitals can be carried out using voice recognition software. The review team were advised that in all trusts voice recognition is now the only or most common method of inputting radiology reports into RIS at radiology reporting workstations in hospitals.

2.1.15 Consultants using NIPACS can have access to x-rays using web technology from home when on call. At present there is no facility to use voice recognition in this situation but reports can be typed and uploaded onto RIS.

**Booking Arrangements**

2.1.16 Across all trusts, there is good access for patients referred by GPs or in hospital to plain x-ray imaging. Many hospitals operate on an open access basis for plain x-rays. An appointment system is in place at some hospitals for non-urgent referrals.

**Reporting Arrangements for Plain X-rays**

2.1.17 The review team found that the trust arrangements where some plain x-rays are not routinely reported by radiologists but are devolved for reporting by other clinicians have been locally determined. There are some differences between trusts as to reporting policy in relation to chest x-rays and x-ray referrals from orthopaedics and fractures.

2.1.18 In all trusts there are arrangements in place for a radiologist to provide a second opinion on request on any x-ray where these are routinely reported by other clinicians.

2.1.19 There are arrangements in place in some trusts for defined lists of x-rays to be reported by trained reporting radiographers and these are subject to audit.

2.1.20 In relation to chest x-rays:

- In Belfast Trust all chest x-rays are reported by radiologists, apart from portable x-rays taken in intensive care, cardiology and cardio-thoracic surgery where x-rays are evaluated by consultants or specialist registrars in the relevant specialty. There are weekly meetings held between radiologists and consultants in intensive care to discuss x-rays.
- In the Northern, Southern and Western Trusts all chest x-rays are reported by radiologists.
- In South Eastern Trust all chest x-rays are reported by radiologists except for the second (or subsequent) portable chest x-rays taken on patients in coronary care at Ulster Hospital.

2.1.21 In relation to orthopaedic and fracture x-rays:

- In Belfast Trust, orthopaedic and fracture plain x-rays are evaluated by consultants or senior registrars in orthopaedics and fractures, and are not reported by radiologists except on request.
- In Northern Trust, orthopaedic plain x-rays are evaluated by clinicians from the Musgrave Park Regional Orthopaedic Service (MPROS) who provide a visiting outpatient service at clinics in the trust. Initial x-rays of fractures are reported by consultant radiologists. Follow up fracture x-rays are evaluated by clinicians at fracture clinics.
- In Southern Trust, all orthopaedic plain x-rays (including MPROS clinic x-rays at Daisy Hill Hospital) are reported by radiologists apart from post operative inpatients. A&E x-rays are not reported by radiologists apart from chest x-rays and under 16 year olds. Reporting radiographers working in A&E and Minor Injury Units report on skeletal x-rays.
- In South Eastern Trust, inpatient orthopaedic x-rays are reported by radiologists. MPROS clinic x-rays are evaluated by consultants or

specialist registrars in orthopaedics. Initial A&E fracture x-rays are always reported by radiologists. Follow up fracture x-rays are evaluated by clinicians at the fracture clinics.

- In Western Trust, all orthopaedic x-ray are reported by radiologists. For fracture x-rays, initial x-rays and first follow up x-rays are always reported by radiologists. Second or subsequent x-rays are evaluated by clinicians at the fracture clinic.

2.1.22 In relation to x-rays requested from general dental practitioners and orthodontists, all trusts advised the review team that these are not routinely reported by radiologists and are evaluated by dentists and orthodontists.

2.1.23 When x-rays are reported by clinicians, other than radiologists or reporting radiographers, all trusts advised the review team that it is not normal practice for a report to be placed on the trust RIS/PACS. The written evaluation of these x-rays is expected to be recorded in the patients' clinical records.

2.1.24 Belfast Trust has recently carried out audits of recording of plain x-rays evaluations in orthopaedics and fractures and reported high compliance with a record of the x-ray in the notes. Southern Trust has carried out checks that there are written records of x-ray evaluations in patient records in A&E. There have been no formal audits in other trusts as to whether there is compliance with recording in notes.

**Delays in reporting**

2.1.25 The review team asked all trusts to provide information on any significant delays in the reporting of plain x-rays which occurred over the period from 1 January 2009 until the time of the review.

2.1.26 Belfast Trust advised that there had been no significant reporting delays at Belfast City or Royal hospitals. At the Mater Hospital there had been some delay in the typing (but not reporting) of radiological reports prior to NIPACS going live in December 2010 and actions had been taken to mitigate any risk. Reporting times had increased at Musgrave Park Hospital as the new arrangements were established for NIPACS. The trust advised that there were no current delays at the time of the review visit.

2.1.27 Northern Trust advised that, prior to the introduction of NIPACS in November 2009, there was a delay of up to six weeks in the reporting of plain x-rays. Actions to address this included additional sessions of reporting time and a new arrangement for a Northern Trust Radiologist of the Day. There have been no significant delays since the implementation of NIPACS.

2.1.28 South Eastern Trust informed the review team that no significant reporting delays occurred in 2009 or 2010. There was no delay at the time of the review visit.

2.1.29 Southern Trust advised the review team that a delay had arisen in 2010 in plain x-ray reporting. A major factor leading to the delay was a shortfall in the amount of consultant radiology time available. In April 2010, the trust took a decision, based on clinical concerns, to report on all chest-rays at the time of implementation of NIPACS. This, together with a decision to report on all orthopaedic x-rays at clinics in Daisy Hill, increased the number of x-rays to be reported. To address the delay, the trust employed additional sessions of consultant reporting time and, in 2011, contracted with an independent sector provider to report on x-rays. At the time of the review visit the trust advised that the delay had been addressed but that the reporting capacity gap remains. The trust has a short term contract for 1,000 x-rays per month to be reported by the independent sector provider until there is sufficient internal reporting capacity.

2.1.30 Western Trust advised the review team that a significant delay in plain x-ray reporting took place at Altnagelvin Hospital during the period from 2008 to 2010. The major factor contributing to the delay had been a shortfall in consultant radiologists. In December 2009, there were 7 WTE consultants in post out of an establishment of 13.5 WTE. The trust put in place a programme of actions to tackle the delay, including additional reporting time of trust radiologists and a contract with an independent sector provider. The trust informed the review team that there were no delays in reporting at the time of the visit and an escalation plan is in place to take action to avoid the risk of any future delay occurring.

## 2.2 Governance Arrangements to Assure Patient Safety and Protection with Regard to Handling and Reporting on Radiological Investigations

2.2.1 The review team found that all trusts have established governance structures for radiological services within their overall trust governance frameworks. There are clear professional lines of responsibility.

2.2.2 There are arrangements in place for reporting incidents relating to radiological services both internally, in line with trusts' systems and externally, in line with statutory and non-statutory reporting arrangements including IR(ME)R to RQIA and Serious Adverse Incident (SAI) reporting to HSC Board.

2.2.3 There are risk management processes in place including local radiological department (or division) and corporate risk registers.

2.2.4 In each trust there are local arrangements for meetings at which risks and incidents relating to radiological services are discussed.

2.2.5 All radiology services hold meetings to discuss discrepancies in reporting in line with RCR guidance. These are usually held on an anonymous basis. The invitation list to meetings varies between trusts with regard to specialist registrars and reporting radiographers. Meetings are minuted and attendance recorded.

2.2.6 All trusts described processes for monitoring of reporting times for plain x-rays. Trusts advised that the introduction of NIPACS has greatly enhanced monitoring processes as it is now possible to see, on a daily basis, work lists of all x-rays for which reports are outstanding.

2.2.7 In all trusts radiologists participate in multidisciplinary meetings on a regular basis sometimes using video-conferencing facilities, depending on location.

2.2.8 Trusts described arrangements for involvement in clinical audit. Examples of recent audits include:

- Belfast Trust has carried out audits of the roles of radiographers in reporting x-rays and on compliance with documentation in orthopaedics and fractures.
- Northern Trust has audited reporting turnaround times, red flag reporting for cancer patients and radiographer reporting.
- South Eastern Trust clinical audits include x-ray quality in paediatric chest x-rays and an audit of justification for X-ray requests.
- Southern Trust, through a trust wide Radiology Clinical Network, has carried out an audit of the appropriateness of classification of urgency status by GPs on referral forms.
- Western Trust has carried out audits of chest x-rays and hip x-rays in children.

2.2.9 All trusts have set out their arrangements for the delegation of responsibility for the evaluation of plain x-rays by non-radiologists within their employers' procedures (Procedure J) as required by IR(ME)R.

2.2.10 The review team asked for details as to whether there were written agreements with clinical departments, or with individual clinicians other than radiologists, for them undertaking the role of evaluation of, and providing a written report on, plain x-rays. Trusts advised that there had been agreements in the past but recent written agreements were not in place.

## 2.3 Arrangements for Communication of the Reports of X-rays to Patients and Practitioners

2.3.1 Trusts advised the review team that patients are informed verbally when attending radiology departments as to how and when they will receive the results of their x-ray examination. The Northern Trust has developed a leaflet “Waiting on the results of an X-ray scan?” to give to patients, explaining the process. The South Eastern Trust is standardising appointment letters to contain information as to how patients should access test results. The Southern Trust has developed written guidelines for radiology staff on informing patients about results. Posters are displayed in Southern Trust departments which are updated weekly as to the current timeframe for receiving results.

2.3.2 For all radiology departments linked to NIPACS there is the capacity to send results electronically to GPs and this is now the main method of distribution of results. In the Belfast Trust GPs are currently being contacted to confirm agreement to electronic only reporting. At the Belfast City Hospital reports are only sent in paper form but the trust is working with the Business Services Organisation (BSO) to introduce electronic reporting.

2.3.3 Trusts advised the review team that, although the results of radiological investigations can now be accessed on PACS at ward level across all hospitals, the most common method of distributing routine results is still to print paper copies and to send them through the internal mail to the referring clinician.

2.3.4 A number of clinicians, in some hospitals, now access their results on-line by local agreement. They can have their own individual work lists set up to facilitate this approach.

2.3.5 Trusts described their local systems for taking action if a radiologist identifies a suspected cancer or other unexpected finding when reporting on a plain x-ray. There are some variations in these systems and in how the facilities on NIPACS are being utilised to support them. Suspected cancers are subject to red flag systems with local arrangements for follow up including sending messages electronically, or by fax or telephone, to cancer trackers.

2.3.6 All trusts put steps in place to take forward the implementation of NPSA Safer Practice Notice 16 on Early Identification of Failure to Act on Radiology Reports. The notice was circulated and actioned in advance of the roll out of NIPACS which has created the potential to build in further safeguarding mechanisms.

2.3.7 Trusts advised the review team that in relation to the RCR publication Standards for the Communication of Critical, Urgent and Unexpected Findings (August 2008), there are arrangements in place for the

reporting radiologists to inform the referrer. This can include direct contact by telephone or email. At present NIPACS does not receive a feedback record that such reports have been read by an appropriate clinician. South Eastern Trust drew attention to the need to implement a results acknowledgement system to enhance assurance that reports have been read and to facilitate audit of this process.

# Section 3: Conclusions and Recommendations

## 3.1 Conclusions

3.1.1 The focus of Phase 1 of this review, in keeping with the terms of reference, has been on the current systems and arrangements in trusts for the handling and reporting of plain x-rays. At the time of the review visits, the RQIA review team was advised by trusts that there were no significant delays in the reporting of plain x-rays. The review team found no evidence of issues requiring immediate action to protect patient safety.

3.1.2 Having considered the information provided by all trusts, the review team recommends that the focus of Phase 2 of this review should include an assessment of the circumstances leading to delays in the reporting of x-rays in the Southern Trust and Western Trust and the actions taken to address those delays.

3.1.3 The review team found that all trusts have established governance systems for radiology services within their corporate governance frameworks. There are arrangements in place for incident reporting, risk management, clinical audit and consideration of discrepancies in x-ray reporting.

3.1.4 The review team has been advised by trusts that there is a capacity gap in available radiological consultant staffing to report on all plain x-rays in keeping with RCR best practice guidance. Trusts are taking a range of actions to address this gap, including funding additional sessions of trust radiology staff and using independent sector providers. Some trusts have experienced great difficulty in recruitment to vacant consultant radiologist posts. Against this background, the review team recommends that a new workforce strategy for radiology should be developed for Northern Ireland.

3.1.5 All trusts have arrangements in place for the reporting of plain x-rays by non-radiologists in defined areas. The nature and level of this reporting does differ between trusts. The RCR has recently developed a set of standards which apply to this situation (Appendix A). The review team recommends that the DHSSPS review these standards to consider adopting them for application across Northern Ireland.

3.1.6 The review team has been advised by trusts that there are no recent written agreements with non-radiological clinical departments or individual clinicians in relation to the delegation of responsibility for reporting on plain x-rays. The review team recommends that these should be put in place and that audit programmes are established to

provide assurance that there are written records of evaluations of these x-rays, which is a requirement under IR(ME)R.

3.1.7 The review team was informed of differences in reporting arrangements for orthopaedic and fracture services across Northern Ireland. The reporting arrangements in relation to the MPROS service were based on the previous model of radiology provision through which x-rays were taken at peripheral hospitals and then the hard copy films were physically taken back by clinicians from MPROS to Musgrave Park. With the development of NIPACS, all MPROS x-rays are now available electronically at all sites. As this service involves several trusts, the review team recommends that a regional agreement is put in place as to reporting arrangements. Possible options for recording a report on these x-rays on NIPACS should be explored.

3.1.8 During visits to trusts it was clear to the review team that the implementation of NIPACS is having a major positive impact on the provision of radiological services across Northern Ireland. Following the full integration of the PACS at Belfast City and Royal Victoria hospitals with NIPACS, all clinicians will be able to access x-rays and reports from across Northern Ireland in a seamless way. The review team recommends that a firm date is set for the integration of PACS at the Belfast City and Royal Victoria hospitals with NIPACS.

3.1.9 The development of NIPACS provides the opportunity to develop new approaches to radiology provision. The Northern Trust has already moved to having a single integrated radiology service with shared reporting of plain x-rays across the trust. The Southern Trust has also introduced communal reporting lists for plain x-rays. The review team recommends that other trusts should consider moving to communal working lists for plain x-rays across their trusts.

3.1.10 The review team considers that there would be additional benefits in moving to Northern Ireland wide (across trust) reporting lists for plain x-rays. This approach would utilise the major advantages in Northern Ireland of having both NIPACS and a single Unique Patient and Client Identifier. The arguments in favour of introducing communal work lists for unreported x-rays include:

- optimal utilisation of available radiologist reporting time across hospitals in the current situation where there have been identified capacity gaps
- ensuring equity in plain x-ray reporting times across hospitals and trusts

3.1.11 When considering the introduction of trust-wide or Northern Ireland-wide communal reporting lists for plain x-rays the review team suggests that three lists on RIS/PACS are created for unreported x-rays to enhance

prioritisation arrangements for reporting by radiologists or reporting radiographers:

- unreported chest x-rays which should be prioritised for urgent timely reporting
- trauma (A & E) x-rays of the appendicular skeleton[2] which can be reported by radiographers trained to do so – as agreed and audited within their local hospital or by radiologists
- all other unreported x-rays of those which have been designated to receive a report by a radiologist

3.1.12 The review team considers that further benefits of NIPACS could be achieved by taking a Northern Ireland-wide approach to areas such as shared escalation arrangements to avoid delays, provision of specialist opinion and having common approaches to red flagging of urgent reports. The review team recommends that all relevant HSC organisations should consider the establishment of a Northern Ireland-wide Managed Clinical Network for Radiology to agree how to maximise the benefits of an integrated system for radiology.

3.1.13 To realise the full benefits of NIPACS it will be necessary to engage clinicians effectively across different specialities. For example the introduction of paperless reporting is a significant change from current working practices. Implementation will require engagement from clinicians across hospitals to ensure they have confidence in any new arrangements. Clinicians will require training and assistance from PACS administrators on using NIPACS. The review team recommends that all trusts should review their arrangements for engaging and training clinicians across hospitals in taking forward NIPACS.

3.1.14 The review team were advised that, at present there are not arrangements in place to have an electronic feedback of results system within hospitals in Northern Ireland. Such systems can provide a robust, auditable user-friendly means of clinicians receiving the results on the imaging examinations they have requested on their patients. They can have a built-in alert system for the presence of any results to be read, an alert to presence of urgent results, and a means of segregating out, and retaining electronically, the result on patients which need further action. This can remove the need to print any paper reports. The review team understands that it is possible to implement such a system without having a full Electronic Patient Record in place. The review team recommends that the potential for implement electronic feedback of results systems is explored to enhance the functionality of NIPACS across hospitals in Northern Ireland and to facilitate the introduction of paperless reporting.

[2] The appendicular skeleton includes the limbs, collar bones, shoulder blades and the pelvis. The rest of the bones of the body are called the axial skeleton which includes the skull, spinal column, sternum and ribs.

3.1.15 This review is focusing on the handling and reporting of plain x-rays. The overall provision of radiology services is continuing to develop at a rapid pace with new types of complex imaging emerging (which is time-consuming to report) and overall demand for imaging rising. The review team considers that it would be an opportune time for a new strategy for imaging services to be developed for Northern Ireland to ensure a planned approach to service development in a situation where there are major opportunities to capitalise on previous investments made in PACS technology.

3.1.16 The review team found differences in the approaches across trusts to advising patients as to how and when they will receive the results of their x-ray examination. The review team recommends that a common leaflet across Northern Ireland setting out these arrangements would be useful as patients do travel to hospitals outside their home trust for imaging investigations.

### 3.2 Recommendations

1. DHSSPS should develop a strategy for the future provision of imaging services in Northern Ireland which incorporates a new workforce plan for radiology.

2. All relevant HSC organisations should consider the establishment of a Northern Ireland Managed Clinical Network for radiology.

3. DHSSPS should review, and consider for adoption in Northern Ireland, the new standards from the Royal College of Radiologists for the reporting and interpretation of imaging investigations by medically qualified non-radiologists and teleradiologists (Appendix A).

4. There should be a common framework for evaluating and recording reports on plain x-rays within orthopaedic services across Northern Ireland.

5. All relevant HSC organisations should exploit the full potential of the integrated provision of RIS/PACS across Northern Ireland, including trust-wide (or Northern-Ireland wide) reporting lists for plain x-rays where these are not already in place.

6. A firm date should be agreed for the integration of PACS at the Belfast City and Royal Victoria hospitals with NIPACS.

7. The review team recommends that all trusts should review their arrangements for engaging and training clinicians across hospitals in taking forward NIPACS.

8. All trusts should put in place written agreements with clinical departments in which there are arrangements for the reporting of plain x-rays by non-radiologists or reporting radiographers. There should be signed agreements with each individual clinician in relation to this function.

9. All trusts should establish a programme of planned audits to provide assurance that there are written evaluations of any x-ray examinations, which do not have a report recorded on the trust RIS/PACS.

10. Trusts should establish written escalation procedures (where these are not in place) to reduce the risk of delays in plain x-ray reporting, setting out triggers and actions to be taken at clinician, departmental and organisational level.

11. A common leaflet should be available across Northern Ireland for patients setting out arrangements as to how and when they will receive the results of their x-ray examinations.

12. The review team recommends that the focus of Phase 2 of this review should include an assessment of the circumstances leading to delays in the reporting of x-rays in the Southern Trust during the period from 2010 to early 2011, and in the Western Trust from 2008 to 2010 and the actions taken to address those delays.

**Appendix A**

# Standards and recommendations for the reporting and interpretation of imaging investigations by non-radiologist medically qualified practitioners and teleradiologists

Board of the Faculty of Clinical Radiology
The Royal College of Radiologists

**Foreword**

Previous standards for the reporting and interpretation of imaging investigations published by The Royal College of Radiologists (RCR) have provided standards for medically qualified doctors who are trained and accredited in radiology and for non-medically qualified role extended practitioners to whom the reporting of specified imaging investigations has been delegated by a radiologist.[1,2]

This publication defines standards and best practice for radiologists, regulatory authorities, hospital managers and individual doctors regarding medically qualified non-radiologists who wish to interpret imaging investigations or who consider 'working impressions' of the same in acute situations. The publication also provides standards that should be considered when imaging investigations are outsourced to teleradiologists employed by off-site teleradiology companies.

The RCR would like to thank its Faculty Board and Patients' Liaison Group for considering these Standards, its Professional Support and Standards Board for developing them and Drs Mark Callaway, Rob Manns, Clive Kay, Paul Allan and Jane Adam for their energy, good advice and major contributions to the project.

These standards apply to all UK countries.

Dr Tony Nicholson
Dean of the Faculty of Clinical Radiology
The Royal College of Radiologists

**Introduction**

In 2006, The Royal College of Radiologists (RCR) published *Standards for the Reporting and Interpretation of Imaging Investigations*.[1] This provides a useful background and explanation of the relevant issues and should be read in conjunction with this document. The standards set in that publication still apply and though subject to periodic review are likely to do so for many years.

In 2010, the RCR published *Medical image interpretation by radiographers: Guidance for radiologists and healthcare providers*,[2] which explained further the principles of image interpretation and the role of non-medically qualified role extended practitioners in the reporting of imaging investigations.

Neither of these documents dealt specifically with medically qualified doctors who have not trained as radiologists and their role in image interpretation. Communications between the RCR, other disciplines, professional organisations, hospital trusts, regulatory authorities and health departments in all four UK countries, strongly suggests that this lack of clarity must be addressed.

Where imaging investigations require the use of ionising radiation, these standards are informed by *The Ionising Radiation (Medical Exposure) Regulations 2000* (IR(ME)R).[3] The principles underpinning these standards also apply to non-ionising radiation-based imaging investigations.

The General Medical Council's (GMC) position is clear about doctors who wish to practise medicine in the UK.[4] When outsourcing to remote teleradiologists, these standards draw on such GMC statements, and the previous RCR teleradiology publication.[5]

**Standards**

***Standard 1. Every imaging investigation must be reported within an agreed time by an individual qualified to interpret that particular investigation.***

When imaging investigations are requested, they are justified on the basis that the result will aid diagnosis and influence patient management. It follows that in all cases the resulting image is reviewed by an individual qualified to do so in a timely manner so that appropriate medical management is undertaken and delayed diagnosis and treatment avoided. The English National Imaging Board has set best practice guidelines for reporting times[6] to which the RCR has given qualified support.[7]

***Standard 2. All imaging investigations must be accompanied by a formal permanently recorded written report.***

The report forms the permanent record of the interpretation of that imaging investigation on which management decisions are made and must be available as part of the permanent medical record of the relevant individual. It is best practice that this written report is displayed alongside the relevant image on a picture archiving and communications system (PACS) rather than being stored or recorded separately elsewhere. The content of this report should adhere to the standards laid out in *Standards for the Reporting and Interpretation of Imaging Investigations*.[1]

***Standard 3. All imaging investigations are best reported by a radiologist.***

Radiologists are medically qualified, have undergone a two-year minimum period in postgraduate medicine and surgery and have undergone a further minimum period of five years' postgraduate training in imaging science, theory and interpretation. They are, therefore, the best qualified to provide clinically relevant radiological reports. Other professional groups do not share this depth and breadth of experience and training in clinical imaging. The National Patient Safety Agency has highlighted the need for an integrated system of reporting, centred on radiology and not a fragmented unstructured system relying on variable individual competencies and diligence.[8]

***Standard 4. Health boards, commissioners of healthcare and hospital trusts must provide the resource, in terms of numbers of radiologists, IT provision and infrastructure to achieve the above standards.***

This follows logically from Standards 1,2 and 3.

**The role of medically qualified non-radiologists in image interpretation**

UK radiology departments should strive to achieve the above standards. However, while the number of UK radiologists per head of population has increased since 2001, it is recognised that currently there are still fewer UK consultant radiologists than in many other comparable European nations.[9,10] The actual figure varies from centre to centre and from nation to nation but averages 43 per million. As a result, in many healthcare organisations, these standards cannot be achieved at present.

In this setting, the RCR considers that the most appropriate solution is the provision of additional resources or service improvement measures to provide patients with timely reporting or reporting supervision of all imaging investigations by radiologists.

In the interim, IR(MER) 2000[3] provides for medically qualified non-radiologists to interpret imaging investigations relating to their field of expertise, as long as the training of these individuals has included relevant image interpretation, and as long as such individuals agree to make a written record of each investigation which contains their name and status. Such practitioners must work in an environment where

they have access to high-quality image display monitors that allow accurate reporting as per the radiology department reporting environment

The responsibility for ensuring such individuals are sufficiently expert to interpret imaging investigations and agree to record the results of their interpretation rests with the hospital's management and radiology leadership.

***Standard 5. Where image interpretation is delegated to non-radiologist medically qualified practitioners, hospitals (through their medical directors) and clinical radiology directors are jointly responsible for ensuring the expertise of the practitioner and obtaining their agreement that they will provide a written record of the result of each investigation they interpret.***

***Standard 6: All practitioners who interpret imaging investigations must identify their name, status and position when making a written record of an imaging investigation.***

In most UK healthcare organisations, PACS is not linked to radiology information systems (RIS) outside radiology departments. Therefore, Standard 2 cannot be complied with where medically qualified non-radiologists have agreed to undertake the task of image interpretation. The recording of results in clinical notes or letters is acceptable under IR(ME)R 2000[3] and is an alternative to RIS–PACS reporting. However, this option makes auditing compliance and discrepancy very expensive and labour intensive. If no audits are carried out, experience has shown that situations develop within organisations where non-radiologists fail to provide a written report**. It** may appear therefore that an imaging investigation has not been viewed if there is no record. Furthermore, when such imaging investigations contain significant findings, there may be very expensive and damaging medico-legal and patient care consequences.

Recommendation 1
To achieve Standard 2, where image interpretation has been delegated to medically qualified non-radiologists, information systems used for report recording outside radiology departments must interface with the hospital's RIS to allow linking of the report and image(s) to support patient care and audit.

***Standard 7. There should be regular audit (at least once a year) of unreported imaging investigations.***

This must form part of best practice within all radiology departments as an element of a patient safety programme. Such audit will determine whose responsibility it was to record a report for each unreported image and institute appropriate action to minimise the number of unreported examinations. Similarly, if there are delays in reporting of images, this must be remedied.

**Interim reports by doctors in training and other non-radiologist consultants**

When a patient is seen in outpatients or acutely on the ward or in the emergency department, imaging investigations are often initially seen and interpreted by non-radiologist doctors in training or consultants whose interpretive expertise does not lie specifically in the imaging they have requested. Although radiologists must always be available to give an urgent opinion when required clinically, there will be occasions when others will provide interim reports and a definitive radiologist report may be issued after an interval.[6]

Specialist trainee doctors undergo examination and assessment of skills at regular intervals in their training. This will include elementary but escalating training in relevant image interpretation. It is for the relevant medical Royal Colleges to accredit their trainees and for their employing healthcare organisations to agree their right to consider diagnoses in emergency situations based on imaging and to what level. Such considerations do not constitute the final or authorised report but are a 'working impression' of the examination, which will subsequently be reviewed by a suitably qualified individual who will provide a formal report.

It is for the same healthcare organisations to make sure there are enough consultant radiologists to provide a timely expert written report and for radiology departments to make sure that this can be delivered at all times.

***Standard 8. Radiologists must be available to provide definitive reports on urgent imaging at all times. Similarly consultant radiologists should be available to provide their expert opinion on imaging investigations at all times.***

Previous RCR standards publications[1,2] have explained the role of non-medically qualified role extended practitioners in this regard. Where radiologists have delegated image interpretation to this group, the same radiologists are responsible for the supervision and regular independent audit of reporting and recording.

**Use of teleradiology**

To comply with Standards 1 to 3, healthcare organisations may choose to send imaging investigations to an outside facility for interpretation by radiologists off-site and employed by private teleradiology companies. The RCR does not consider this best practice but understands the pressures many UK radiology departments are working under in delivering a timely reporting service.

Where training departments outsource imaging in this way, the impact that outsourcing will have on training and teaching of trainee radiologists must be considered and assessed. If there is any doubt about the impact on training, they should contact the RCR Department of Specialty Training (Clinical Radiology) for advice.

The RCR has previously published *Standards for the provision of teleradiology within the United Kingdom*.[5] It cannot be overemphasised that in the interests of patient care and safety, when such decisions to outsource are made, hospitals, their medical directors and radiologists must ensure that the hospital employs reporting teleradiologists who have medico-legal responsibility for their image interpretations and written reports and can be held to account in the UK for the quality of their work. Specifically, the RCR considers that such teleradiologists must be individually identifiable, licensed and revalidated by the GMC. The GMC Medical Register states that, 'Doctors must be registered with a licence to practise with the General Medical Council (GMC) to practise medicine in the UK' **(sic)** and 'Doctors work in many different environments. Those who treat patients must be registered with a licence to practise. This applies to all doctors irrespective of whether they practise full time, part time, as a locum, privately or in the NHS, or whether they are employed or self-employed.'[4]

Furthermore, if teleradiologists are not on the GMC Specialist Register, the outsourcing trust will effectively employ doctors who practise medicine on patients in their hospital who cannot be regulated by the Responsible Officer unlike every other doctor employed by the hospital.

***Standard 9. Where reporting of imaging investigations is outsourced to off-site radiologists not working in the healthcare facility where the imaging investigations are performed, the healthcare facility management, medical director and radiologists must ensure that the previously published RCR standards[5] are met.***

***Standard 10. Where reporting of imaging investigations is outsourced to off-site radiologists not working in the healthcare facility where the imaging investigations are performed, the healthcare facility management, medical director and radiologists must ensure the reporting teleradiologists fulfil the GMC requirements to practise medicine in the UK.***

In addition, outsourcing radiology departments should make sure that patients know who their imaging investigation will be interpreted by and obtain their agreement that their image can be outsourced. The use of teleradiology services must also be clearly signposted by notices in the department, with leaflets providing further information, especially in waiting areas, so that patients, carers and advocates can query the reason, or voice any concerns to the radiographic staff at the time of the investigation.

***Standard 11. Patients or their carers/advocates must be made aware when images are to be interpreted off-site by an outsourced provider and assurances obtained that this is acceptable***

**Further recommendations**

The RCR recommends that future commissioners of healthcare promote the development and use of local imaging networks which involve local hospital clusters and integrated IT and teleradiology solutions. This may involve partnership with teleradiology companies. In this way, larger groups of specialist radiologists with established effective working relationships with their local hospitals can be created and utilised to provide improved and sustainable specialist radiology reporting services across several hospitals. Education and training of future specialist radiologists would be best served in this way.

*Recommendation 2*
All future PACS procurements should ensure functionality is provided for efficient interhospital transfer of images and reports – fully utilising common data sharing protocols and standards such as XDSi and DICOM.

**References**


1. The Royal College of Radiologists. *Standards for the Reporting and Interpretation of Imaging Investigations.* London: The Royal College of Radiologists, 2006. http://www.rcr.ac.uk/docs/radiology/pdf/StandardsforReportingandInetrpwebvers.pdf

2. The Royal College of Radiologists. *Medical image interpretation by radiographers: Guidance for radiologists and healthcare providers*. London: The Royal College of Radiologists, 2010. http://www.rcr.ac.uk/docs/radiology/pdf/BFCR(10)3_Medical_interpretation.pdf

3. *The Ionising Radiation (Medical Exposure) Regulations 2000*. http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_064707.pdf

4. General Medical Council. *Regulating Doctors, Ensuring Good Medical Practice.* http://www.gmc-uk.org/doctors/medical_register.asp

5. The Royal College of Radiologists. *Standards for the provision of teleradiology within the United Kingdom*. London: The Royal College of Radiologists, 2010. http://www.rcr.ac.uk/docs/radiology/pdf/BFCR(10)7_Stand_telerad.pdf

6. National Imaging Board. *Radiology Reporting Times: Best Practice Guidance*. London: NIB, 2008. http://www.improvement.nhs.uk/documents/radiology_reporting_times_best_practice_guidance.pdf

7. New guidance on report turnaround times from National Imaging Board http://www.rcr.ac.uk/content.aspx?PageID=1561

8. National Patient Safety Agency. Early identification of failure to act on a radiological reporting system. London: NPSA, 2007. http://www.nrls.npsa.nhs.uk/resources/?EntryId45=598

9. The Royal College of Radiologists. *Clinical Radiology UK Workforce Census 2009: Executive summary.* London: The Royal College of Radiologists, 2010. http://www.rcr.ac.uk/docs/radiology/pdf/BFCR(10)20_census_2009.pdf

10. Centre for Workforce Intelligence: *Medical Specialty Workforce Factsheet. Clinical Radiology.* London: CfWI, 2010. http://www.cfwi.org.uk/intelligence/cfwi-medical-factsheets/recommendation-for-clinical-radiology-training-2011


The Regulation and Quality Improvement Authority
9th Floor
Riverside Tower
5 Lanyon Place
BELFAST
BT1 3BT

Tel: (028) 9051 7500
Fax: (028) 9051 7501
Email: info@rqia.org.uk
Web: www.rqia.org.uk