



The Regulation and
Quality Improvement
Authority

An Independent Review of Reporting Arrangements for Radiological Investigations

Phase 1 Report, March 2011

Western Health and Social Care Trust

informing and improving health and social care
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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 investigations across Northern Ireland

The request for the review followed delays in the reporting of plain x-ray investigations 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. The meeting with representatives of the Western Health and Social Care Trust (Western Trust) took place on 11 March 2011.

RQIA is grateful to all trust staff 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 trust.

Section 2: Findings of the Review Team

2.1 Description of the Systems for Handling and Reporting of Plain X-rays in Western Health and Social Care Trust

2.1.1 Within the Western Trust radiology has a single management structure with shared services across the trust including Computed Tomography (CT) and Ultrasound. The Altnagelvin Radiology Department reports on x-rays from Altnagelvin and Roe Valley hospitals and the Erne/Tyrone County Radiology Department reports on x-rays from Erne and Tyrone County hospitals.

2.1.2 The Western Trust has a contract in place for radiology reporting with an independent sector provider in England. The contract was established in 2010 to assist in clearing a plain x-ray delay. At present the contract is on an as and when basis to be called upon as part of agreed trust escalation arrangements to avoid future delays in plain x-ray reporting.

Staffing

2.1.3 The number of consultant radiologists by department at the time of the review visit is set out below:

Radiology Department	Number of consultants in post	Number of vacancies (effective Feb 2011)	Number of locums in post (effective Feb 2011)
Erne/Tyrone County	5 WTE	0	0
Altnagelvin	10.8 WTE	2.7 WTE	3 WTE

(WTE: whole time equivalent)

2.1.4 The Western Trust advised the review team that significant difficulties have been experienced in the recruitment of consultants to the trust in recent years. Recruitment to posts has generally been from outside the Northern Ireland training scheme in radiology with only three of the current 18 consultant radiologists in post having been trained in Northern Ireland. The trust advised that the majority of the radiology trainees who are trained in Northern Ireland choose to apply for consultant posts in hospitals within easier reach of Belfast which makes it difficult for the Western Trust to recruit new consultants.

2.1.5 The Western Trust has 2.8 WTE radiographer posts vacant at Altnagelvin Hospital and no vacancies at Erne/Tyrone County hospitals.

In relation to the establishment of radiography staffing at the time of the review visit the radiography complement at Altnagelvin was 72.4 WTE and 29.0 WTE in the Erne/Tyrone County hospitals.

- 2.1.6 There is consultant on call cover for all radiology departments in the Western Trust available to provide opinion/report on plain x-rays if required. Consultants on call have access to x-rays at home through a web-link to the Radiology Information System (RIS) and the Picture Archiving and Communication System (PACS). Reports can be typed onto the RIS from home but voice recognition software cannot be used from home.

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

- 2.1.7 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.
- 2.1.8 In Northern Ireland a major project has been taking place to establish an integrated RIS/PACS (NIPACS) to enable x-rays and reports to be viewed by appropriate health professionals across the healthcare network.
- 2.1.9 Within the Western Trust, Altnagelvin and Roe Valley hospitals were linked to NIPACS in May 2010. Erne and Tyrone County hospitals linked to NIPACS in June 2010. This enables clinicians to access all x-rays and their reports, if present, across the trust and from all NIPACS enabled hospitals across Northern Ireland. All hospitals within the trust also use the same RIS which is integrated with NIPACS.
- 2.1.10 All consultant radiologists within Western Trust have access to Voice Recognition systems to prepare reports on x-ray examinations. There is still some use of tape based dictation for ultrasound and breast screening reports but this is being phased out.
- 2.1.11 Paper copies of all imaging study reports are still being printed except those examinations requested by GPs which are viewed by them electronically. This is because the non-radiological clinicians state that they prefer having paper reports in the absence of an electronic feedback of results system.

Booking Arrangements

2.1.12 For plain x-rays, there is open access for urgent patients at all hospitals. At Altnagelvin Hospital non-urgent GP referrals are given appointment times usually within 8-12 working days. There is open access at Tyrone County, Erne and Roe Valley hospitals. For all hospital inpatients there is direct access.

Reporting Arrangements for Plain X-rays

2.1.13 The policy on reporting of plain x-rays in the Western Trust is that all x-rays require a radiological report issued by a radiologist or trained radiographer with a limited list of specified exceptions. The list of x-rays where reporting is the responsibility of other clinicians includes:

- x-rays requested from general dental practitioners and orthodontists.
- fracture patients where the patient is attending for the second or subsequent follow up. Initial post injury and first follow up x-rays are reported by radiologists.

2.1.14 The Western Trust advised the review team that the trust policy results in around three per cent of plain x-rays not receiving a report from a radiologist.

2.1.15 Non-radiological clinicians have access to a radiologist for a second opinion at all times if required.

2.1.16 When plain x-rays are evaluated by clinicians other than radiologists the clinical evaluation is not recorded on the trust RIS/PACS but a comment on the IR(ME)R status is recorded on the trust RIS/PACS.

2.1.17 Dental x-rays are given to the patient to bring back to the referrer. Follow up action in relation to the evaluation of these x-rays has not been audited by the radiology department.

2.1.18 Orthodontic x-rays are returned to the referring orthodontist who is required to monitor progress and record an evaluation both electronically and in the patient notes.

2.1.19 Follow up fracture x-rays are recorded on the RIS as an IR(ME)R evaluation and the clinician is expected to review the x-ray at the fracture clinic and document the evaluation in the patient notes. This has not been audited to date.

2.1.20 The Western Trust has subsequently advised the review team that, if all x-rays currently delegated to other clinicians were to be reported by consultant radiologists, the trust would require to fund an additional 250 reporting sessions per annum to report these images outside normal working hours or appoint an additional 0.4 WTE radiologists. The trust policy is that 95-97% of all plain x-rays are reported on by radiologists.

Delays in reporting

- 2.1.21 At the time of the review visit, the Western Trust advised the review team that there were no significant delays in the reporting of plain x-rays at any of the hospitals within the trust. This relates to a standard that 100% of all plain x-rays will be reported within 28 days. The trust has an escalation policy where there is a 14 day trigger for action to avoid a delay building up.
- 2.1.22 The turnaround time for plain x-rays at Altnagelvin and Roe Valley hospitals is significantly longer than it is at Tyrone County and Erne hospitals due in part to the deficit in consultant radiologist staffing levels at Altnagelvin Hospital but also to the high workload associated with urgent admissions to Altnagelvin particularly a large volume of Computed Tomography (CT), Magnetic Resonance (MR) scanning and interventional radiology.
- 2.1.23 During the period 2008 to 2010 a significant delay in plain x-ray reporting occurred at Altnagelvin Hospital. The major factor which has been identified as contributing to the delay was a shortfall in available consultant radiology provision. In December 2009 the position was reached where there were only 7 WTE consultants in post out of an establishment of 13.5 WTE.
- 2.1.24 From 2008, the Western Trust put in place a programme of actions designed to tackle the delay including providing additional capacity through employing retired radiologists on a sessional basis and trust radiologists working extra sessions.
- 2.1.25 During 2009 and 2010, additional resources were sought and provided from other trusts to support the radiologists with the demand for radiological services i.e. interventional radiology, complex Magnetic Resonance Imaging (MRI) and nuclear medicine. Plain x-ray reporting was not supported as this was not technically feasible prior to the installation of NIPACS in May/June 2010.
- 2.1.26 In January 2010, a contract was established with an independent sector provider for outsourcing of imaging reporting.
- 2.1.27 Following the delay situation, the provision of radiology services in the Western Trust was subject to an external review. This was commissioned by the HSC Board in November 2010 and carried out by a team from The Imperial College Healthcare NHS Trust led by Professor Philip Gishen. The review reported that the trust required an additional 3.5 WTE consultants above the current establishment to cope with the current demand for imaging.
- 2.1.28 RQIA's review team will review the circumstances leading to the delay in reporting at Altnagelvin Hospital during Phase 2 of this review to identify any lessons which can be applied to prevent delays arising in the future.

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

- 2.2.1 The Western Trust has established a Trust Governance Committee chaired by the Chairman of the trust. Each director reports to the committee on a quarterly basis using an agreed reporting template. The trust has established clear professional lines of responsibility for radiology services within the overall governance structures.
- 2.2.2 The governance processes within the trust are designed to ensure that issues relating to risks, incidents and complaints are raised locally through the line management structure for radiology. If they cannot be resolved locally they are escalated within the system to the appropriate level.
- 2.2.3 There are two clinical leads for radiology, responsible for the Altnagelvin/Roe Valley and for the Erne/Tyrone County services respectively. The clinical leads are responsible to the Divisional Clinical Lead which was vacant at the time of the review.
- 2.2.4 There are monthly meetings between the Assistant Director for Diagnostics and Clinical Support, the Radiology Services Manager and the clinical leads at which significant issues are discussed. There are also departmental meetings at which risks are discussed and, when required, put on the departmental risk register. If risks cannot be managed locally they are escalated to the divisional clinical meetings for consideration as to inclusion on the divisional risk register.
- 2.2.5 All imaging departments are required to report clinical incidents using the agreed trust system which is web-based. All incidents coded red or amber are reported to the Radiology Services Manager. Managers can log in to the reporting system to view incident details and record actions related to incidents. The Risk Management Department issues monthly reports of outstanding incidents which have not been closed requesting updates on progress. Outstanding red incidents are formally reviewed on a monthly basis.
- 2.2.6 There are discrepancy meetings held in each radiology department for consultant radiologists for consideration of near misses and other issues with regard to reports which have been brought to the attention of radiologists. The review team noted that the radiologists at Altnagelvin and those at Tyrone/Erne do not choose to hold cross site discrepancy meetings using teleconferencing.
- 2.2.7 Radiologists participate in multidisciplinary meetings on a regular (generally weekly) basis. It was noted that the teleconferencing facilities across the trust do not seem to be operating in a technically satisfactory manner, the slow scrolling of multi-image studies (such as CT and MR)

at recipient sites has necessitated a radiologist present at each site during teleconference to manually display, in real time, the imaging study being discussed.

- 2.2.8 The radiology service carries out an ongoing programme of clinical audit on areas such as IR(ME)R, reject analysis, and plain x-rays for example, chest x-rays and hip x-rays in children. Radiology staff participate in regional and national audits as required.
- 2.2.9 The Western Trust has established an active programme of monitoring performance of reporting times. There is daily review of safety lists within NIPACS to establish if there are any examinations which are not being processed in a timely way. All sites monitor work lists daily. At present plain x-rays at Tyrone County and Erne are usually reported within 24 hours. An escalation plan in place at Altnagelvin is triggered if any x-ray reporting is longer than 14 days.
- 2.2.10 Arrangements for the delegation of responsibility for the reporting of plain x-rays by non-radiologists are specified in the employers procedures (Procedure J) for the Western Trust as required by IR(ME)R. There are no written agreements with individual clinicians in relation to these reporting roles.

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

- 2.3.1 Patients are advised by radiography staff as to how and when the results of their x-ray investigation will be available for them. At present the Western Trust does not have a specific leaflet to give to patients although the information is included on some of the patient information leaflets. A specific information leaflet has been proposed by the Medical Director as a reminder for patients to seek their imaging study results if they have not received them.
- 2.3.2 The trust stated that in each department all plain x-ray reports are returned electronically to GPs through the RIS.
- 2.3.3 At present, hard copies of radiological reports are printed and sent to referring clinicians within each hospital. NIPACS enables reports to be accessed electronically at ward level and some clinicians are now accessing their personal work lists of results in this way. The trust is planning to have a series of events to provide clinicians with information as to how to use NIPACS more effectively. The trust wishes to move to paperless reporting.
- 2.3.4 The trust has a system in place to send a message to cancer trackers in each hospital in the event that a radiologist identifies a significant or unexpected finding e.g. a lung cancer on a chest x-ray. A RIS message is sent to a dedicated RIS messaging address which is accessed by the cancer trackers every working day.

- 2.3.5 The trust took forward the NPSA Safer Practice Notice 16, Early Identification of Failure to Act on Radiological Imaging Reports in line with the trust policy for the approval / monitoring process for standards and guidelines. A lead officer was identified and the position across the trust in relation to the notice was assessed.
- 2.3.6 In relation to the Royal College of Radiologists Standards for the Communication of Critical, Urgent and Unexpected Findings (August 2008), the trust advised the review team that a lead officer was identified to take this forward and an assessment of the arrangements in place for compliance with the standard was carried out.

Section 3: Conclusions and Recommendations

3.1 Conclusions

- 3.1.1 The Western Trust advised the RQIA review team that there were no significant delays in plain x-ray reporting at the time of the review visit. The review team found no evidence of issues requiring immediate action to protect patient safety, in the Western Trust at the time of the review.
- 3.1.2 The trust has established an integrated approach to governance with an overall Trust Governance Committee chaired by the Chairman of the Trust Board. The review team found that the clinical governance arrangements for radiology are set within the overall trust governance framework. The trust has systems in place in radiology with respect to incident reporting both internally and externally when required, for example under IR(ME)R. Clinical audit is encouraged and there are arrangements for risk assessment and management.
- 3.1.3 From 2008 to 2010 the Western Trust developed a significant delay in plain x-ray reporting at Altnagelvin Hospital although this did not occur at Erne/Tyrone County Hospital. An independent review in relation to radiology services at the trust has reported that a major factor leading to the delay was a major shortfall in consultant radiology staffing with, at one point, almost 50% of posts not filled on a permanent basis. The RQIA review team was advised that there continues to be difficulty in recruiting consultant radiologists to the Western Trust.
- 3.1.4 The review team found that the trust now has an escalation plan in place with triggers for action to reduce the risk of delays recurring. Given ongoing concerns about the availability of radiology reporting time, the review team recommends that use of the escalation plan is subject to regular review.
- 3.1.5 Radiology within the trust is provided by two departments, one serving Altnagelvin and Roe Valley and one serving Erne and Tyrone County. There is a significant disparity between reporting times on plain x-rays between the two services. The review team recommends that the trust should accelerate implementation of opportunities for greater integration of radiology across the trust area so that plain x-ray reporting is as efficient as possible for all patients across the area covered by the trust. This could include the provision of a single trust wide on call system and the potential introduction of single plain x-ray reporting lists possibly with a common chest x-ray work list.
- 3.1.6 The Western Trust has a clear policy objective to minimise the number of plain x-rays which are not reported by radiologists. This is in line with

best practice guidance from the Royal College of Radiologists¹. There are arrangements in place for the reporting of plain x-rays by non-radiologists in a small number of defined areas and these are specified in the trust's employer procedures under IR(ME)R. There are not written agreements in place with all of the relevant departments or with the individual clinicians in relation to these delegated responsibilities and the review team advises that these should be put in place to meet IR(ME)R requirements. The trust advised the review team that it would require an increase in establishment of 0.4 WTE consultant radiologists if all plain x-rays were to be reported by consultant radiologists.

- 3.1.7 Under IR(ME)R, a written evaluation is required for every x-ray taken. There are no current systems in place within the trust to record the evaluations of x-rays reported by clinicians, other than radiologists or reporting radiographers, on the trust RIS/PACS. The review team recommends that, in the absence of the preferred practice of recording a report on RIS/PACS so that the imaging study and its associated report are stored together, the trust should establish a programme of planned audits of the case notes (patient charts) to provide assurance that requirements under IR(ME)R are being met.
- 3.1.8 The review team recognises the major benefits for imaging services in Northern Ireland from having a regional approach to provision of RIS/PACS and from having a single unique patient identifier. The Western Trust has NIPACS, with speech recognition installed and functioning, available in all radiology departments. The review team recommends that the trust continues to examine how best to fully exploit the benefits of this major investment in technology for example, in exploring the potential for a move to fully paperless reporting (i.e. without printing the reports) and the benefits of a single trust wide plain x-ray reporting work list.
- 3.1.9 At present patients are advised verbally across the trust as to when a report of their x-ray study will be available. The review team recommends that the trust considers the introduction of a trust wide information leaflet which patients could be given.

3.2 Recommendations

1. The Western Trust should continue to accelerate implementation of opportunities for greater integration of radiology across the trust area so that plain x-ray reporting is as efficient as possible for all patients.
2. The Western Trust should put in place written agreements with all departments in which there are arrangements for the reporting of plain x-

¹ 'Standards and Recommendations for the Reporting and Interpretation of Imaging Investigations by Medically Qualified Non-Radiologists and Teleradiologists (Royal College of Radiologists) March 2011' (to be published).

rays by clinicians other than radiologists. There should be signed agreements with each individual clinician in relation to this function.

3. The Western Trust should ensure that the use of the escalation plan to prevent future delays in reporting is subject to regular review.
4. The Western Trust should establish a programme of planned audits on the recording of a written evaluation of x-ray examinations, where these are not available on the trust RIS/PACS to provide assurance that requirements under IR(ME)R are being met.
5. The Western Trust should exploit the full benefits of the provision of RIS/PACS across the trust, as part of an integrated system for Northern Ireland, including the potential for moving to paperless reporting and the provision of a trust wide approach to reporting plain x-ray examinations using communal reporting work lists.
6. The Western Trust should consider the development of a specific leaflet for patients setting out arrangements for how and when the report on their x-ray examination will be made available to them.



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