The Regulation and Quality Improvement Authority

An Independent Review of Reporting Arrangements for Radiological Investigations

Phase 1 Report, March 2011

Belfast 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 Belfast Health and Social Care Trust (Belfast Trust) took place on 10 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 the Belfast Health and Social Care Trust

2.1.1 There are four radiology departments reporting on plain x-rays within the Belfast Trust. 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.

2.1.2 The Belfast Trust does provide a reporting service on x-rays for other trusts in relation to the regional service development dysplasia of the hips. There are no arrangements where Belfast Trust radiologists provide plain x-ray reporting for the private or independent sector.

2.1.3 No plain x-ray reporting is currently being outsourced by the Belfast Trust to other trusts or to the independent sector.

Staffing

2.1.4 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	Number of locums in post
Royal Hospitals	17.13 WTE	4.5 WTE	0
Belfast City	18.4 WTE	0	0
Mater	4.93 WTE	0.5 WTE	0.5 WTE Included in 4.93 WTE in post
Musgrave Park	3.95 WTE	0	0

(WTE: whole time equivalent)

2.1.5 The trust advised the review team that there are difficulties in the recruitment of consultants in some specialist areas. At the time of the review visit there were two consultant posts vacant in neuroradiology. There was also a 1.0 WTE vacancy at the RBHSC/Mater hospitals

2.1.6 At the time of the review visit, the trust had no vacancies in relation to radiography staffing in any of the four departments.

2.1.7 There is consultant on-call cover for all radiology departments in the Belfast Trust, available to provide opinion/report on plain x-rays if required. In the light of the developments in PACS the trust is currently considering implementing an across site on-call system.

2.1.8 All radiologists across the trust report on plain x-rays with the exception of consultant neuroradiologists due to the pressures on their service.

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

2.1.9 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.

2.1.10 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 health care network.

2.1.11 Within the Belfast Trust, the current arrangements for PACS are:

- all types of imaging including plain x-rays at the Royal Victoria Hospital (including the School of Dentistry) are connected to Philips PACS and the radiology department uses a Philips Radiology Information System (RIS).
- all types of imaging including plain x-rays at Belfast City Hospital are connected to GE Centricity PACS and the radiology department uses a GE RIS.
- the other Belfast Trust hospitals (Mater Hospital, Musgrave Park Hospital and Royal Belfast Hospital for Sick Children) use NIPACS (Sectra PACS and Sectra RIS). This service was introduced to the RBHSC in November 2010 and to the Mater and Musgrave Park Hospitals in December 2010 as part of the regional roll out of NIPACS.
- to facilitate full transfer of x-rays, it is planned to integrate the PACS services at all Belfast Trust Hospitals in 2011. The integration of the Royal Victoria Hospital and Belfast City Hospital legacy RIS/PACS depends on the implementation of the IHE (Integrating the Healthcare Enterprise) standard XDSi (cross platform document sharing for imaging). The review team were

advised by the trust that there is as yet no confirmed date for this integration to take place.

2.1.12 All reports by consultant radiologists within Belfast Trust are generated using Voice Recognition software.

Booking Arrangements

2.1.13 For plain x-rays, Royal Hospitals, Belfast City Hospital and Mater Hospital operate a walk-in service. Examination waiting times are monitored within each department. At Musgrave Park Hospital, outpatients are scheduled for appointments and have direct access to radiology for any required plain x-ray imaging. Patients attend for the x-rays examination immediately prior to their outpatient appointment.

Reporting Arrangements for Plain X-rays

2.1.14 In the Belfast Trust, with the exception of a defined list of x-rays, plain x-rays are reported by radiologists. The list of x-rays where reporting is the responsibility of other clinicians includes:

- Orthopaedic and fracture x-rays at Royal Victoria Hospital, Mater Hospital and Musgrave Park Hospital are evaluated by consultants or senior registrars in orthopaedics/fractures
- At Royal Victoria Hospital:
  - In intensive care, portable chest x-rays are evaluated by consultants in intensive care medicine
  - Inpatient cardiology including coronary care unit portable chest x-rays are evaluated by consultants or specialist registrars in coronary care
  - In inpatient cardiothoracic surgery, chest x-rays are evaluated by consultants or specialist registrars in cardio-thoracic surgery
- At the School of Dentistry, dental practitioners report dental radiographs
- Reporting radiographers report some plain x-rays in line with locally agreed arrangements

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

2.1.16 When x-rays are evaluated by clinicians other than radiologists or reporting radiographers, a report is not recorded on the RIS/PACS.

2.1.17 The Belfast Trust has carried out two recent audits of the recording of evaluations of plain x-rays by non-radiologists in orthopaedics and fractures. In orthopaedics, 120 case records were examined and there was reference to x-ray findings in all cases. In fractures, 50 case records

were examined and there was reference to x-ray findings in 48 of these. Orthopaedic surgeons dictate their clinical findings, including their evaluations, of any x-rays performed on inpatients or outpatients onto cassette tape. These dictations are subsequently typed by secretaries and inserted into the patients paper chart (case notes). Audit of such documented interpretations of x-rays within case notes is a labour intensive process. These records are divorced from the x-rays which reside in PACS. The review team was advised that other non-radiological clinicians do not dictate their clinical findings but write them by hand into the case notes. To date audits have not been carried out as to whether evaluations have been recorded in case notes for specialities other than orthopaedics.

2.1.18 The trust 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 an additional establishment of 4.35 WTE radiologists.

Delays in Reporting

2.1.19 At the time of the review visit, the Belfast 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 as defined by urgent x-rays to be reported within 48 hours and all x-rays within 28 days.

2.1.20 During the period since January 2009 there have been no significant reporting delays of plain x-rays at the Royal Hospitals or at Belfast City Hospital.

2.1.21 At the Mater Hospital there were some delays in the typing of reports (but not in radiologist reporting) prior to the go live of NIPACS with speech recognition in December 2010. Actions taken to mitigate risk included utilising secretarial staff from other sites and consultant radiologists informing referrers of any significant findings as they were reporting.

2.1.22 At Musgrave Park Hospital the reporting time was elongated for a period during the go live of NIPACS as new systems were being established and technical implementation problems addressed. Radiology advised clinics of delays in formal reporting.

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

2.2.1 The Belfast Trust has a corporate assurance framework. There is a trust wide Radiation Protection Committee and a Patient Safety Committee. There is a Senior Management Team for radiology which meets regularly which considers incidents and reporting performance.

2.2.2 The trust is establishing an Imaging Safety and Quality Assurance Group which will meet for the first time in April 2011. This will be chaired by a consultant radiologist, with membership from each hospital site. The terms of reference for the group have been agreed and the responsibilities of the group will include:

- To provide a process for reporting key patient safety information to the Senior Management Team and relevant trust groups on a regular basis.
- To provide a forum to link and differentiate between
    - Principal risks and mitigating actions required to minimise risk to the organisation.
    - Key controls required by internal and external regulatory bodies and departments

2.2.3 All imaging departments are required to report clinical incidents, including near misses, using incident report forms. At present electronic reporting of incidents is being introduced.

2.2.4 There are discrepancy meetings held in each radiology department for consultant radiologists, with consideration of cases on an anonymous basis.

2.2.5 Radiologists participate in multidisciplinary meetings on a regular basis. There are weekly meetings between consultant radiologists and intensive care clinicians to discuss x-ray examinations.

2.2.6 On each hospital site there is a medical audit coordinator, responsible for organising a regular programme of audit. Audits have been carried out on the role of radiographers in plain x-ray reporting as well as audits carried out on orthopaedic and fracture x-ray reporting.

2.2.7 The trust has a corporate risk register and there is a service risk register for radiology.

2.2.8 Until 11 March 2011, monitoring of performance of reporting imaging against targets did not include plain x-rays, as they were not included in regional targets. The trust advised the review team that monitoring did take place at several levels within the organisation to identify if any delays were developing. Plain x-ray reporting work lists have been established on all sites and are monitored by the clinical site lead or a nominated consultant. Monitoring has been facilitated by the introduction of PACS to all trust sites.

2.2.9 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 Belfast Trust as required by IR(ME)R. The trust advised the review team that there is a written agreement with

fracture services for delegation of this responsibility but not with other specialties at present. This is currently under review. There are no written agreements with individual clinicians in relation to this reporting role.

2.2.10 The trust has established a formal mechanism for the dissemination of, and tracking of progress on, alerts and guidance such as NPSA Safety Notices and NICE guidelines.

2.3 Arrangements for communication of the reports of x-rays to patients and practitioners

2.3.1 Patients are advised verbally when attending for x-ray procedures as to who the report of the x-ray will go back to and when it will be available. The trust does have information leaflets for a range of imaging procedures but there is not at present a specific leaflet in relation to how patients will receive the results of plain x-rays. There is information on radiological procedures on the trust website.

2.3.2 The trust advised that both electronic and paper copies of reports on plain x-rays are returned to GPs at present on all sites except the Belfast City Hospital which is still paper only. There are plans to implement electronic reports only to GPs through the RIS in each department. GPs are currently being contacted to confirm their agreement to move to the electronic only system. The trust is working with the Business Services Organisation (BSO) to introduce a similar system for Belfast City Hospital.

2.3.3 Within each hospital, paper copies of reports are still printed and sent to the referring clinician.

2.3.4 The trust has a red flag protocol system in place to send a message to cancer trackers in each hospital, in the event that a radiologist identifies a lung cancer on a chest x-ray. An electronic message or email is sent to a dedicated address depending upon the specific PACS/RIS in place at the hospital.

2.3.5 The trust advised that meetings were held within the imaging service to take forward action on the NPSA Safer Practice Notice 16 on Early Identification of Failure to Act on Radiology Imaging Reports. Imaging used existing PACS to ensure reports were returned to referring clinicians. The trust advised the review team that it is planned that in 2011 there be a rollout of an order communications system within imaging which will facilitate electronic communication with refers. It will inform them that examinations have been performed and reports are available to view.

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 the arrangements in place are for the reporting radiologist to contact the referring consultant or GP directly by email or telephone. The RIS on each site has been configured to facilitate and record this action.

Section 3: Conclusions and recommendations

3.1 Conclusions

3.1.1 The Belfast 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 Belfast Trust at the time of the review.

3.1.2 The trust has established a framework of corporate governance with governance structures forimaging services integrated within the overall structures. The review team welcomes the establishment of a specific group on Imaging Assurance.

3.1.3 The trust has arrangements in place for the reporting of plain x-rays by non-radiologists in a number of defined areas and these are specified in the trust's employers procedures under IR(ME)R. There are no 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 4.53 WTE consultant radiologists if all plain x-rays were to be reported by consultant radiologists in line with best practice as established by the Royal College of Radiologists[1].

3.1.4 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 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.

3.1.5 The review team recognises the major benefits for imaging services in Northern Ireland from having a regional approach to provision of PACS and from having a single unique patient identifier. The Belfast Trust now has PACS available at all reporting hospitals for imaging. There are three different systems in place with planned integration to take place later this year. These systems have only recently been established at three sites. The review team recommends that the trust continues to examine how best to fully exploit the benefits of this major investment in

[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).

technology for example, in taking forward ongoing discussions about moving to trust wide on-call arrangements, exploring the potential for a move to paperless reporting and the creation of cross-trust approaches to plain x-ray reporting.

3.1.6 The trust does have systems in place to identify at an early stage the potential that a delay could emerge in plain x-ray reporting. The review team recommends that the trust establishes a written escalation procedure to reduce the risk of delays emerging which sets out triggers for intervention and actions to be taken at clinician, departmental and organisational level as required.

3.1.7 At present patients are advised verbally across the trust as to when and how the report of their plain x-rays 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

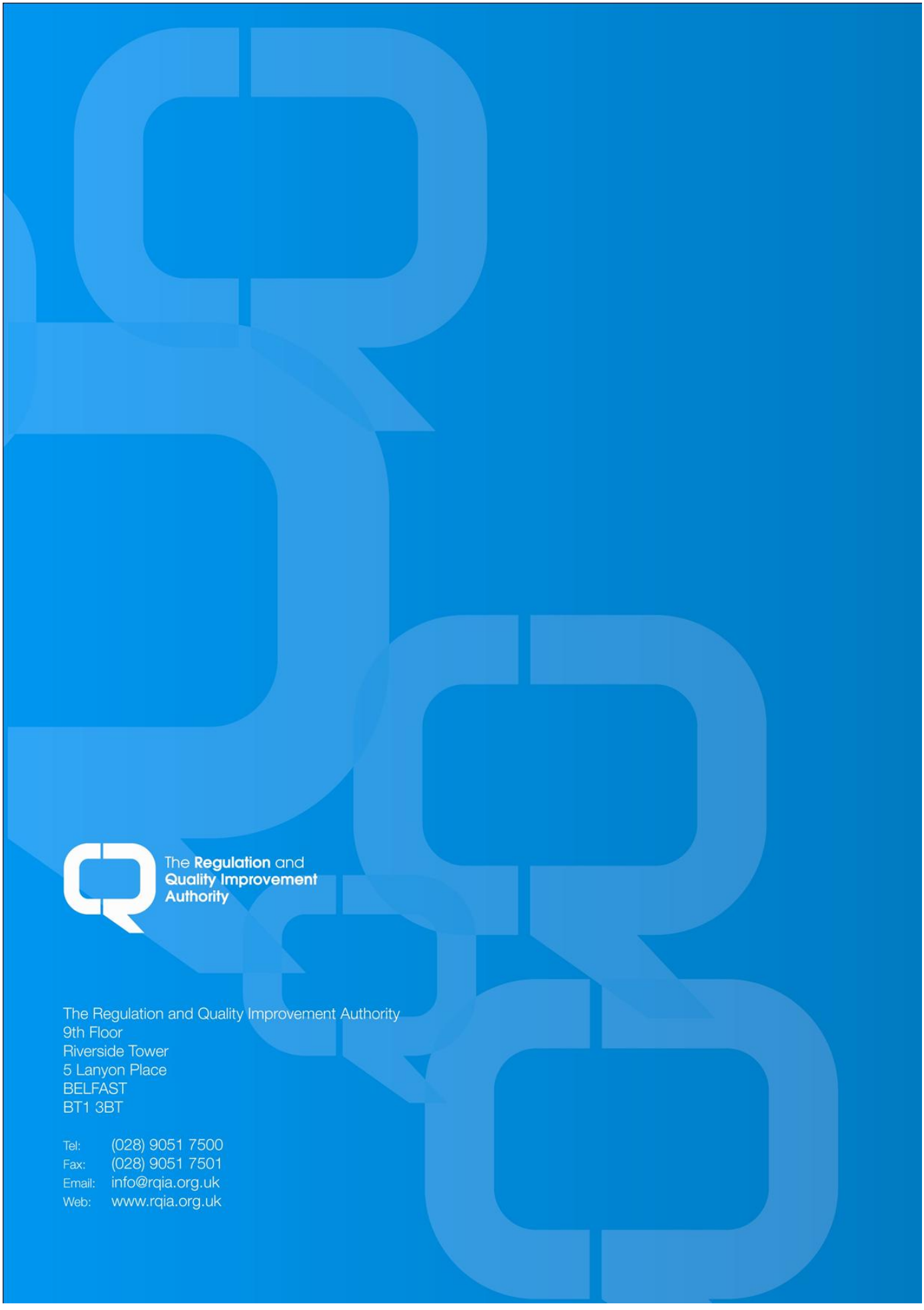
1. The Belfast Trust should put in place written agreements with all departments in which there are arrangements for the reporting of plain x-rays by clinicians other than radiologists. There should be individually signed agreements with each individual clinician in relation to this function.

2. The Belfast 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.

3. The Belfast 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.

4. The Belfast Trust should establish a written escalation procedure 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, as required.

5. The Belfast 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 available to them.



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