Inspection Report of Compliance with the Ionising Radiation (Medical Exposure) Regulations (Northern Ireland) 2018

19 September 2019

Daisy Hill Hospital, Diagnostic Radiology Department

Address: Hospital Road, Newry, Co. Down, BT35 8DR
Inspectors: Winifred Maguire & Norma Munn
Public Health England (PHE) Advisor: Yvonne Sullivan

www.rqia.org.uk

Assurance, Challenge and Improvement in Health and Social Care

It should be noted that this inspection report should not be regarded as a comprehensive review of all strengths and areas for improvement that exist in the service. The findings reported on are those which came to the attention of RQIA during the course of this inspection. The findings contained within this report do not exempt the service from their responsibility for maintaining compliance with legislation, standards and best practice.

1.0 What we look for

RQIA has employed refreshed inspection methodology in relation to compliance of radiology services with The Ionising Radiation (Medical Exposure) Regulations (Northern Ireland) 2018, known as the IR(ME)R regulations. The regulations came into force on 6 February 2018.

The inspection had a particular focus on the key changes to the regulations including:

- Communication of benefits and risks
- Diagnostic reference levels (DRL's)
- Accidental and unintended exposures
- Equipment
- Carers and comforters
- Medical physics expert advice
- Non-medical imaging using medical radiological equipment

IR(ME)R is intended to protect individuals undergoing exposure to ionising radiation as:

-Medical exposures

- Patients as part of their own medical diagnosis or treatment
- Individuals as part of health screening programmes
- Patients or other persons voluntarily participating in medical or biomedical, diagnostic or therapeutic research programmes
- To carers and comforters
- To asymptomatic individuals
- Non-medical exposures using medical radiological equipment

2.0 Service details

Name of Establishment: Daisy Hill Hospital	**Department Inspected:** Diagnostic and Interventional Radiology Department
Name of Employer: Mr Shane Devlin, Chief Executive Southern Health and Social Care Trust (SHSCT)	**Head of Diagnostic Services:** Ms Jeanette Robinson
Clinical Director of Radiology: Dr Imran Yousuf	**Medical Physics Expert:** Ms Julie Smyth

3.0 Profile of services

The self-assessment form submitted prior to the inspection confirmed that each year, Daisy Hill Hospital diagnostic and interventional radiology department carries out approximately:

58,586	General radiology (plain film)
527	General fluoroscopy
3	Interventional radiology
11,726	Computed tomography (CT) scanning
334	Dental
8,619	Ultrasound scan (US)
2,101	Antenatal US
4	CT (Bowel Cancer Screening programme)

US services were not inspected, as these services do not involve the use of ionising radiation and therefore are not subject to the IR(ME)R regulations.

Daisy Hill Hospital radiology department employs:

2	Consultant Radiologists (1 whole time equivalent (WTE) Consultant Radiologist vacant post)
1	Specialist Registrar
2	Plain film reporting radiographers
1	CT reporting radiographer
2	Fluoroscopy reporting radiographers
33.83	Radiographers (1 WTE radiographer vacant post)
2	Assistant practitioners
1	Diagnostic Radiology Lead Medical Physics Expert (MPE) under contract from the Belfast Health and Social Care Trust

4.0 Methodology

On 19 September 2019, warranted IR(ME)R inspectors from RQIA, with advice being provided by Public Health England (PHE) staff, visited Daisy Hill Hospital, diagnostic and interventional radiology department, as part of RQIA's IR(ME)R inspection programme.

Prior to the inspection, the service was requested to complete a self-assessment form and provide RQIA with all relevant policies and procedures. This information was shared with PHE prior to the inspection visit, and was used to direct discussions with key members of staff working within the radiology department, and provide guidance for the inspection process.

SHSCT staff and Medical Physics Expert (MPE) staff in attendance for part or all of the inspection:

Mr Shane Devlin	Chief Executive Officer
Dr Shahid Tariq	Associate Medical Director
Dr Imran Yousef	Clinical Director of Radiology
Dr Enda Conlon	Consultant Radiologist/Site Lead
Mr Barry Conway	Assistant Director of Acute Services
Ms Jeanette Robinson	Head of Diagnostics Services
Ms Denise Newell	PACS Manager
Mr Richard Gould	Lead Radiographer Daisy Hill Hospital
Ms Grainne Forsythe	Lead reporting Radiographer
Ms Tracey Glendinning	CT Lead Radiographer
Ms Jacintha Feehan	Radiographer/Radiation Protection Supervisor
Ms Louise O'Hanlon	Radiographer/Radiation Protection Supervisor
Ms Rose McEvoy	Radiographer (Equipment Controller)
Ms Julie Smyth	Diagnostic Radiology Lead MPE

The inspection team reviewed relevant documentation and patient records. A tour of some areas of the diagnostic and interventional radiology department was undertaken and the inspectors took the opportunity to speak with three members of staff; two general radiology radiographers and one CT radiographer.

5.0 Inspection outcome

	Regulations
Total number of areas for improvement	13

Details of the Quality Improvement Plan (QIP) were discussed with senior management as part of the inspection process. The timescales for completion commence from the date of inspection.

6.0 The inspection - key findings

6.1 Duties of the employer

Employer's procedures

Daisy Hill Hospital, SHSCT had the required Employer's Procedures in place which had been reviewed and updated in accordance with IR(ME)R 2018 and ratified in February 2019. The Employer's Procedures are reviewed every two years or more frequently if change is necessary.

An Ionising Radiation Safety Policy had been issued in January 2019 and confirmed that the Employer has been clearly identified in line with IR(ME)R legislation. It was established that the overall responsibility for IR(ME)R lies with Mr Shane Devlin, Chief Executive Officer, SHSCT and his subsequent responsibilities are clearly set out.

Flow charts, included in the Ionising Radiation Safety Policy outlined governance and reporting structures in relation to the use of ionising radiation. The policy checklist highlighted that the policy had not yet been approved by the Policy Scrutiny Committee. Senior management confirmed that this committee is at Trust level and oversees all Trust policies. The committee meets twice a year and the Head of Diagnostic Services confirmed it was her responsibility to ensure the policy is forwarded to this committee. An area of improvement was identified in relation to ensuring the final approval process is completed for the Ionising Radiation Safety Policy in accordance with the Trust's procedures.

It was noted that the Ionising Radiation Safety Policy referred in several instances to the delegation of responsibility under IR(ME)R regulations. The Employer retains the legal responsibility under IR(ME)R and that responsibility cannot be delegated. However, the tasks associated with the responsibility may be delegated. It was advised to amend the Ionising Radiation Safety Policy to reflect this position. Senior management were receptive to this advice.

The structures outlined in the Ionising Radiation Safety Policy were discussed with senior management together with roles and responsibilities. The Chief Executive Officer (CEO), through the Executive team nominates the Chair of the Radiation Safety Committee with the tasks associated with the responsibility to ensure compliance with the requirements set out in the Ionising Radiation Safety Policy and the IR(ME)R regulations.

Review of the submitted documentation and discussion with the management team outlined that systems are in place to ensure that Employer's Procedures are complied with by referrers, practitioners and operators, through audit, induction and training. It was confirmed that the Employer, the CEO of SHSCT, receives reports on the level of compliance. There are clear lines of accountability demonstrated through the work of the Radiation Safety Committee who report to the Governance Committee; who in turn then reports to the Trust Board and therefore to the CEO.

Senior Management and staff demonstrated a good understanding of the roles and responsibilities as set out in the Ionising Radiation Safety Policy.

Document and version control are clearly noted on the Employer's Procedures and inspectors were informed that all relevant policies and procedures can be found on SHSCT intranet.

Quality Assurance programme for written policies and procedures

The Trust's radiology services have embarked on the journey of attaining accreditation from Quality Standard of Imaging (QSI). The QSI is designed to be applied within an imaging service for the purposes of quality improvement.

Review of the documentation provided to the inspection team, confirmed that a quality assurance system of documentation is in place and that Daisy Hill Hospital is currently updating and uploading all documentation on to Q Pulse. Once this is completed the system will alert the relevant staff when review dates are due.

'Employer's Procedure F', outlines the quality assurance programmes in respect of written procedures, written protocols, and equipment. It was suggested adding equipment to the title of 'Employer's Procedure F' for clarity.

Equipment Quality Assurance (QA) is further discussed in section 5.5 of this report.

Diagnostic Reference Levels (DRLs)

The process for establishing, reviewing, and checking compliance with DRLs has been developed in the collaboration with the MPEs and is set out in 'Employer's Procedure H'. Dose audits are both site specific and compared across sites. The Radiation Safety Committee endorses existing national DRLs and ratifies any changes to the DRLs proposed by Image Optimization Teams (IOTs). The IOTs are tasked with reviewing DRLs' audits and ensuring any changes needed are actioned.

The work of the IOT provides information and assurances to the Radiation Safety Committee in line with governance systems. Reports will be made available on Q Pulse.

On inspection it became clear the IOTs had been co-ordinating dose audits and the collection of data for the establishment of Local DRLs for a number of examinations and modalities. The establishment of Local DRL's had been raised as an area of improvement on previous IR(ME)R inspections and it is acknowledged some progress has been made. Members of the IOTs outlined some of the difficulties they have experienced in obtaining data to allow the establishment of Local DRLs. The methodology was explained at length and the particular issue of obtaining adequate numbers of patients in certain categories to allow meaningful analysis. It was confirmed that there are four Local DRLs in draft, three for CT and one for plain film. These had not yet been ratified by the Radiation Safety Committee. Work was also ongoing on other DRLs. Whilst the work already undertaken is acknowledged, there was no overall action plan with timescales in relation to the establishment of Local DRLs, leading to potential slippage in their establishment and implementation.

Discussions took place on the provision of paediatric DRLs. There are national paediatric DRLs in place for CT head examination which were noted to be displayed in the CT suite. The establishment of Local Paediatric DRLs should be prioritised with the support of regional paediatric departments.

An area of improvement has been identified in relation to the establishment of Local DRLs:-

- ensure the four draft Local DRLs are fully ratified and implemented
- develop an overall action plan with timescales for the establishment of Local DRLs
- prioritise the establishment of paediatric Local DRLs

Dose audits are carried out; a comparison of mean doses for each type of examination with the relevant DRL is undertaken and a report written on the dose survey results that will identify whether any of the dose levels measured either approach or exceed national DRLs.

'Employer's Procedure G' outlines the procedure for assessment of patient dose.

Staff spoken with demonstrated a clear understanding on the use of DRL's and what action to take in the event of DRL's being consistently exceeded.

Clinical audit

It was evident that the imaging service has an underpinning culture of quality improvement. Management and staff demonstrated an inclusive, enthusiastic and proactive approach to patient centred service improvement.

A planned audit programme is in place and evidence of audits was provided. These were found to be multi-professional and included areas of compliance under IR(ME)R. Some clarification was sought on the "Approval" audit, as outlined in submitted documentation. The management team confirmed that it related to the justification process and it was advised to reflect this in the title of the audit thus ensuring it is aligned to IR(ME)R regulation compliance. Inspectors were informed and staff confirmed that audit findings are shared with staff through monthly meetings and also through team briefings in their departments. The consultant radiologist confirmed that clinical audits are presented at planned divisional meetings. However, from discussion and review of audits it was noted that there was no clear action plan post audit. There was a lack of evidence of how the audits influenced practice, when the audit was to be reviewed again or how the findings and learning are to be formally shared.

An area of improvement was identified in relation to ensuring that an audit action plan is developed and implemented as necessary, formalising the re-audit process and the sharing of audit findings with the relevant stakeholders.

The Trust has entered into third party contracts with Alliance Medical, Fourways and Everlight to provide radiological services. On discussion it was confirmed that formal auditing arrangements in relation to these services has been developed.

'Employer's Procedure Q', Clinical Audit, was found to be very brief and did not adequately reflect the range and strength of clinical audit ongoing in the radiology department. An area of improvement was identified to further develop 'Employer's Procedure Q' to fully reflect current practice in relation to clinical audit.

Accidental and unintended exposures

Following examination of policies and discussion with staff it was clear that there are good systems in place to identify, report, record, manage, and learn from incidents and near misses.

Management and staff explained the process for reporting internally and then to the appropriate enforcing authority. A Radiation Incident Pathway has been introduced. All radiation incidents are recorded on DATIX either as a near miss or radiation incident with an action plan. Near miss forms are forwarded to the Head of Diagnostics Services' administrative assistant for recording. Radiation incidents forms are forwarded to the modality lead radiographer who then informs the Radiography Site Lead, MPE, Head of Diagnostics Services and the Chair of the Radiation Safety Committee. Staff clearly understood their roles involving incidents and that the Head of Diagnostics is responsible for reporting incidents to RQIA.

'Employer's procedure I', for radiation incident investigation and reporting was reviewed. Whilst overall it provides clear direction on the management of incidents, it requires updating and further developing.

An area of improvement was identified to amend 'Employer's Procedure I', as follows:

- include reference to the guidance 'Significant accidental and unintended exposures under IR(ME)R' June 2019 (SAUE)
- develop the list of the report content to RQIA, in line with SAUE guidance
- reference the Ionising Radiation Safety Policy appendix 1 which sets out timescales for reporting

A trend analysis on accidental or unintended medical exposures was provided. It was found to largely be the collation of data; and there was no meaningful analysis of the data and therefore no evidence of trend analysis. Management acknowledged this was the first step of the trend analysis process.

An area of improvement was identified in relation to devising and implementing meaningful trend analysis of accidental and unintended exposures ensuring the findings and learning is shared with relevant stakeholders.

All radiation incidents are collated and sent to the Radiation Safety Committee and through the governance framework as previously described.

Incidents have been appropriately reported to RQIA under IR(ME)R that have occurred within the last year.

Training, competence and entitlement

There was evidence of induction, training and continuing professional development for all grades of staff. Systems are in place to check the professional qualifications and registration of all employees with their appropriate professional bodies.

It was confirmed there are comprehensive systems in place to provide annual appraisals for all grades of staff. It was further confirmed that training and development needs are identified for individual staff as part of the appraisal process. Consultant radiologists have their appraisals undertaken by an approved medical appraiser.

All grades of staff are responsible for maintaining their own portfolio of evidence to maintain their individual professional accreditation.

The inspection team reviewed a number of completed induction programmes for radiographers and competency and entitlement forms. It was noted the competency forms did not reflect assessment of competency of tasks associated with the duty holder's role and responsibility. An area of improvement was identified to further develop the competence form to include tasks associated with the duty holder's role and responsibility.

Staff confirmed that they had received update training from the MPE on the IR(ME)R regulations.

'Employer's Procedure C' contains clear information on the entitlement process. It was confirmed that staff are provided with information of their duties under IR(ME)R during induction; including junior doctors.

The senior team reported that radiographers and radiologists had been appropriately entitled according to their training, competencies and individual scope of practice. Entitlement is reviewed at annual appraisal and adjusted accordingly if a staff member's scope of practice had changed. The entitlement process for radiologists was discussed and a radiologist's entitlement documentation was reviewed.

It was confirmed that there was a process of entitlement for non-medical referrers. They complete an application form with training and competency confirmed by a consultant or professional manager. The Clinical Director of Radiology and Head of Diagnostic Services entitle non-medical referrers. The training and competency records for non- medical referrers were not available for review and it was confirmed that they are not reviewed as part of the entitlement process. An area of improvement has been identified to ensure robust review and scrutiny of training and competency records for non-medical referrers as part of the entitlement process and these records should be available for inspection.

A letter of entitlement is sent to the non-medical referrer. The name of the non-medical referrer is sent to the PACs Manager who creates their PACs permissions. An electronic database of non-medical referrers is accessible in the radiology department.

It was confirmed that third party radiology staff are subject to the entitlement process. The Clinical Radiology Director outlined the entitlement process for third party radiologists who provide radiology services under third party agreements with the Trust. At present there is a temporary mobile CT scanner which is jointly staffed by the Trust and a third party provider. It was confirmed that the radiation service provided by the mobile CT scanner is carried out in accordance to Trust's policies, procedures and protocols. The third party radiographers have undertaken an induction programme and have been entitled in accordance to the Trust's entitlement process as set out in 'Employer's Procedure C'.

The MPE confirmed that the entitlement of MPEs was currently under review to ensure complete and clear Employer lines of accountability in the process. An area of improvement has been identified to ensure the entitlement of MPEs is in line with the trust's entitlement procedures as set out in 'Employer's Procedure C'.

Advice was provided on the entitlement process in relation to ensuring there is evidence of robust adherence to the trust's procedures and legislation, management were receptive to this advice.

Referrals

The referral guidelines currently being used are the Royal College of Radiologists i-Refer Guidelines Making the Best Use of Clinical Radiology 8th edition. Referral guidelines are available on the SHSCT intranet.

Staff described how diagnostic referrals are made to the department, including prioritising referrals and specifically timed future examinations.

A clear process was evidenced for returning/rejecting referrals which are incomplete, inappropriate or unjustified. Cancelling referrals was discussed including how referrers are made aware of the process to cancel a referral they have made.

'Employer's Procedure A', accepting a referral for a medical exposure, was reviewed and a minor amendment was advised in relation to justification terminology. Management were receptive to this advice and agreed to make the amendment.

6.2 Justification and Authorisation of individual medical exposures

Justification and authorisation was discussed with staff, who demonstrated an understanding of the process and described how justification and authorisation is recorded electronically on the radiology information system (RIS). This was evidenced in a randomly selected number of patient records.

It was confirmed that radiographers act as operators and authorise under guidelines in general radiology and CT. The justification process during out of hours was discussed with staff who demonstrated a clear understanding on the matters relating to CT imaging.

Authorisation guidelines were in place for general radiology and CT examinations which identified the practitioner for these medical exposures.

It was confirmed that the justification of carers and comforters has been implemented into practice. Evidence in the entitlement forms provided prior to inspection confirmed that radiographers are entitled as practitioners to justify individual exposures to carers and comforters. Staff confirmed that they verbally outline the benefits and risks of the exposure to the carer or comforter. They complete an x-ray patient support form which includes written information on the benefits and risks, a pregnancy enquiry form if relevant is signed by the carer or comforter and the radiographer.

'Employer's Procedure R' (carers and comforters) was reviewed and clarification was sought on the wording in relation to staff who accompany and provide support to patients during medical exposures. It was advised to review the wording to avoid confusing this group as carers and comforters as defined by the IR(ME)R regulations. Management agreed to change the wording.

Non- medical exposures using medical radiology equipment

Staff confirmed that non-medical imaging are clearly identified on the request form and must be clinically justified by an entitled practitioner. 'Employer's Procedure D', which outlines the arrangements in place for non-medical imaging, was reviewed and found to be satisfactory.

6.3 Optimisation

There are good arrangements in place to ensure that medical exposures are kept as low as reasonably practicable. 'Employer's Procedure K' outlines the arrangements in place, these include:

- Applications training
- Radiographic protocols
- Standard operating protocols
- Routine equipment maintenance
- Appropriate exposure charts
- Patient dose surveys
- Daily quality assurance

The range of optimisation measures taken in the radiology department was not fully reflected in the 'Employer's Procedure K' and an area of improvement was identified in relation to further developing 'Employer's Procedure K' to include radiology incident and near miss management, trend analysis of near misses and incidents, pregnancy enquiry, Image Optimisation Teams (IOT), establishing Local DRLs and peer review.

As stated previously, IOTs are established and terms of reference were provided to the inspection team. Staff were aware of the work of the IOTs and displayed an understanding of their role in the optimisation of exposures.

The MPE described their involvement on the IOT and confirmed that they are involved in dose audits; the establishment of Local DRLs; setting up of protocols and risk assessment.

Communication of benefits and risks of having an exposure to ionising radiation

Staff displayed clear understanding in relation to the process of providing the individual (or their representative) to be exposed with adequate information on the benefits of having the exposure and the risks associated with the radiation dose. It was confirmed that staff had training from the MPE in relation to providing benefits and risks information.

It was good to note information posters prominently displayed in the waiting areas of the imaging department. Inspectors reviewed written patient information and preparation leaflets which had been developed and found them to be well written.

Paediatrics

Paediatric imaging is provided by the radiology department. It was noted that special attention is paid to optimisation when undertaking exposures of children. This includes:

- paediatric exposure charts
- modified views
- alternative techniques not involving ionising radiation where appropriate
- use of national paediatric DRLs for head CT imaging
- use of lead protection, where justified and appropriate

As stated previously an area of improvement has been made in relation to Local Paediatric DRL's which should be established as a priority to ensure doses are optimised in accordance with Regulation 12(8).

Clinical Evaluation

'Employer's Procedure O' is in place for the clinical evaluation for medical exposures and it outlines that a documented clinical evaluation is produced for all medical exposures. Discussions with management and staff confirmed a clear understanding of the clinical evaluation for medical exposures.

There is an audit trail in the Radiology Information System (RIS) which identifies which exposures have not yet been reported on. An audit is carried out on a sample of medical exposures to ensure a clinical evaluation has taken place.

6.4 Expert Advice

The SHSCT retains the services of a MPE on a contractual basis. The MPE was present for the duration of the inspection. It was confirmed the appointed MPEs are currently recognised by Department of Health and Social Care (DHSC) and are entitled as operators who are competent and appropriately trained for their scope of practice. As stated previously an area of improvement has been made on the entitlement of MPEs.

The MPE provides ongoing advice and support to the management team on a range of issues including dosimetry and evaluation of dose, QA matters relating to radiation protection, and radiological equipment.

The MPE is involved in high dose CT services. The MPEs contribute to radiation protection of patients and others, DRLs analysis, QA of the equipment, acceptance testing of equipment, installation design and technical specification of equipment, analysis of accidental or unintended exposures, selection of equipment for radiation protection measurements, training of practitioners and other staff on radiation protection and compliance with regulations. It was confirmed the lead MPE had provided training to staff on IR(ME)R regulations 2018.

The MPE described her involvement in the procurement of new CT equipment. It was confirmed that she would be involved in commissioning the new CT scanner, in applications training and protocol optimisation from the start.

6.5 Equipment

An inventory of radiological equipment was submitted to RQIA which did not contain all of the legislative information. However, during the inspection an updated radiological equipment inventory was provided which was found to be largely in line with legislation. It was noted that ancillary radiology equipment had not been included on the inventory. An area of improvement was identified with regards to ensuring ancillary radiology equipment is included on the equipment inventory.

Management and staff confirmed there is an appropriate amount of equipment available for the workload of the radiology department.

As stated previously 'Employer's Procedure F' includes information on QA of equipment.

Two documents were provided to the inspection team during the inspection, which were procedures for equipment QA completed by radiographers on a daily, weekly, monthly basis and QA on equipment performed by MPEs.

During discussion with regards to the frequency of MPE QA of equipment, it was confirmed that at present the QA equipment programme, as agreed in the service level agreement between the Trust and Regional Medical Physics, was behind schedule. Whilst there was an awareness of this matter by some senior management it was unclear if the matter had been formally escalated. An area of improvement was identified to develop an action plan to facilitate compliance with MPE QA programme for radiology equipment.

There was a clear understanding from staff as to how communication of defective equipment from the MPE to the Radiography Site Lead and modality leads was completed. The process for flagging potential and unplanned equipment issues which may impact on the service delivery or may require capital replacement sooner than expected was clearly communicated verbally to the inspection team.

6.6 Patient identification

'Employer's Procedure B' is in place to correctly identify individuals to be exposed to ionising radiation. The procedure references the three point patient identification process. It clearly outlines that it is the responsibility of the operator who carries out the medical exposure to ensure that the correct patient receives the correct medical exposure according to the referral.

Staff outlined the patient identification procedure and that the operator responsible must sign their name beside the identity (ID) check on the referral form or sign electronically in RIS as appropriate. Review of a sample of patient records confirmed an ID check had been recorded.

6.7 Pregnancy Enquiries

'Employer's Procedure E' for making enquiries of individuals of childbearing potential to establish whether the individual is or may be pregnant or breast feeding was in place and found to be adequate. It was noted that the procedure did not outline an age range for making enquiries. However, supporting pregnancy documentation did have an age range in place. Staff were clear of the age range they would use to make enquiries. Consideration should be given to ensuring consistency in relation to the age range for pregnancy enquiries by outlining it in the Employer's Procedure.

Staff interviewed demonstrated a very good understanding of making pregnancy enquiries, describing clearly what they would do in a range situations and where to record details of these enquiries.

Pregnancy enquiry forms for different clinical situations were made available and are in use. It was noted that initials only are recorded for the operator. An area of improvement was identified to complete full operator's signature on pregnancy forms.

"Inform the radiographer if you are pregnant" posters were displayed in the changing areas in the department.

6.8 Research

The management team confirmed that no research is currently being conducted in Daisy Hill diagnostic and interventional radiology department.

'Employer's Procedure L' was in place for research exposures.

6.9 Review of environment

The inspection team reviewed the facilities available in relation to diagnostic and interventional imaging. The department was found to be clean, tidy and well organised. There were posters to provide patients with information regarding the benefit and risk of the exposure and pregnancy posters were displayed. There was a well-appointed waiting area for inpatients and changing cubicles for outpatients.

6.10 Staff discussion and review of patient records

The inspection team met with radiographers and discussed: the application of the Employer's Procedures; the role and responsibilities of duty holders; patient identification; the use of authorisation guidelines; induction; continued professional development; the use of DRLs as a reference tool; and the action to be taken if they thought a patient had received an accidental or unintended exposure. Staff demonstrated a good working knowledge of the Employer's Procedures and the other areas discussed. Review of patient records indicated that the correct procedures are being followed.

6.11 Conclusion

Radiological practice in Daisy Hill diagnostic and interventional radiology department was found to be safe, effective and in line with the principles of IR(ME)R and good practice guidelines.

The staff were found to be knowledgeable and professional. It is acknowledged the work that has been undertaken to ensure compliance with the IR(ME)R regulations 2018 including: updating the Ionising Radiation Safety Policy and the Employers Procedures; the MPE providing training on the new regulations to management and staff and developing posters and information leaflets for the communication of the benefits and risks of medical exposures to patients (and/or their representative).

As stated previously, it was evident the radiology department has an underpinning culture of quality improvement. Management and staff demonstrated an inclusive, enthusiastic and proactive approach to patient centred service improvement. The staff feedback provided on the day of inspection confirmed this approach.

Inspectors concluded that there were no identified serious concerns regarding the actual delivery of the service.

There were 13 areas of improvement identified as a result of this inspection. These are fully outlined in the appended Quality Improvement Plan (QIP).

The management team and staff are to be commended for their commitment and enthusiasm to ensuring that the department is striving to operate within the legislative framework and maintaining optimal standards of practice for patients.

The inspectors would like to extend their gratitude to the management team and staff for their hospitality and contribution to the inspection process.

7.0 Quality improvement plan

Areas for improvement identified during this inspection are detailed in the QIP. Details of the QIP were discussed with senior management as part of the inspection process. The timescales commence from the date of inspection.

It is the responsibility of the Employer to ensure that all areas for improvement identified within the QIP are addressed within the specified timescales.

7.1 Areas for improvement

Areas for improvement have been identified where action is required to ensure compliance with The Ionising Radiation (Medical Exposure) Regulations (Northern Ireland) 2018 known as IR(ME)R and other published standards which promote current best practice to improve the quality of service experienced by patients.

7.2 Actions to be taken by the service

The QIP should be completed and detail the actions taken to address the areas for improvement identified. The employer should confirm that these actions have been completed and return the completed QIP via independent.healthcare@rqia.org.uk for assessment by the inspector.

Quality Improvement Plan

Action required to ensure compliance with The Ionising Radiation (Medical Exposure) Regulations (Northern Ireland) 2018 and other published standards which promote current best practice to improve the quality of service experienced by patients.

Area for improvement 1 **Regulation:** 6(5)(b) **Stated:** First time **To be completed by:** 26 November 2019	The Employer shall ensure that the final approval process is completed for the Ionising Radiation Safety Policy in accordance with the Trust's procedures. Ref: 6.1
	Response by the Employer detailing the actions taken: The Radiology Safety Policy (previously known as radiation safety policy) has been ratified and sent to the SHSCT board level for final scrutiny planned for February 2020.
Area for improvement 2 **Regulation:** 6(5)(c) **Stated:** First time **To be completed by:** 26 December 2019	The Employer shall ensure the following in relation to the establishment of Local DRLs:- • the four draft Local DRLs are fully ratified and implemented • develop an overall action plan with timescales for the establishment of Local DRLs • prioritise the establishment of paediatric Local DRLs Ref: 6.1
	Response by the Employer detailing the actions taken: The 4 draft local DRLs for CT head, CTPA, CTKUB and Plain Film PA Chest have been ratified and implemented. Final and further data for AP chests, abdomens (table), pelvis (table), lumbar spines (trolley), pelvis (trolley), thoracic spines (trolley) have been completed and sent to the Trust MPE for analysis. Further drafted DRLs as a result, will be sent to the Trust image optimisation team's (IOT) who are planned to meet in January 2020. Activity for plain film paediatric examinations throughout the Trust has been analysed for the feasibility of establishing local DRLs. Collated paediatric OPG data for under aged 3 years has resulted in actions to optimise imaging protocols prior to drafting new local OPG DRLs. Data for paediatric chests for under aged 3's will be collected from January to March. Paediatric DRLs for fluoroscopy is an agenda item for the next IOT meeting for actioning. Activity was also analysed across the Trust for Paediatric CT. Activity was not sufficient to establish local DRLs.

Area for improvement 3 **Regulation:** 7 **Stated:** First time **To be completed by:** 26 December 2019	The Employer shall ensure that an audit action plan is developed and implemented as necessary, formalising the re-audit process and the sharing of audit findings with the relevant stakeholders. Ref: 6.1
	Response by the Employer detailing the actions taken: An audit action plan has been developed. The plan includes tasking specialist radiographers to follow up post audit actions.The audit process is now formally described within the Employers procedure Q. Audits results are visible for all trust radiology personnel through Q-pulse. A pathway has been developed to ensure that information from audits is shared throughout the radiology services through e-mail, verbal communication, team briefs. Staff are being trained on the audit process to ensure they know the value of communicating results effectively and that practice is changed to reflect knowledge gained.
Area for improvement 4 **Regulation**: 7 **Stated:** First time **To be completed by:** 26 November 2019	The Employer shall further develop 'Employer's Procedure Q' to fully reflect current practice in relation to clinical audit. Ref: 6.1
	Response by the Employer detailing the actions taken: The audit action plan has been made more robust. It documents objectives of audit, roles and responsibilities, method, dissemination of results, post audit actions and the process of monitoring and evaluation.
Area for improvement 5 **Regulation:**6 **Stated:** First time **To be completed by:** 26 November 2019	The Employer shall ensure that 'Employer's Procedure I' is amended as follows: • to include reference to the guidance 'Significant accidental and unintended exposures under IR(ME)R' June 2019 (SAUE) • to develop the list of the report content to RQIA in line with SAUE guidance • to include reference to the Ionising Radiation Safety Policy appendix 1 which sets out timescales for reporting. Ref: 6.1
	Response by Employer detailing the actions taken: Employers 'Procedure I' has been amended with reference to SAUE guidance under IR(ME)R June 2019. The lists and timescales to be sent to RQIA in line with SAUE guidance is clearly documented.
Area for improvement 6	The Employer shall devise and implement meaningful trend analysis of accidental and unintended exposures and ensuring the findings

Regulation: 8(3) **Stated:** First time **To be completed by:** 26 December 2019	and learning is shared with relevant stakeholders. Ref: 6.1
	Response by the Employer detailing the actions taken: A quarterly retrospective root cause and trend analysis has been carried out for Apr- Oct 2019, this has been presented to the radiology safety committee, Southern Trust board level and disseminated among modality team leads for radiology staff to view. Operator checks were identified as learning points in relation to accidental and unintended exposures and near miss data collection. Trend analysis of data will continue in the future and will be on a quarterly basis to be reported to the Divisional Governance Committee.
Area for improvement 7 **Regulation: 6(3)(b) &** 17 **Stated:** First time **To be completed by:** 26 November 2019	The Employer shall further develop the competence form to include tasks associated with the duty holder's role and responsibility. Ref: 6.1
	Response by the Employer detailing the actions taken: A competency template has been developed. Feedback is being sought by an IR(ME)R working group and radiology staff prior to implementation.
Area for improvement 8 **Regulation: 6(3)(b) &**17 **Stated:** First time **To be completed by:** 26 November 2019	The Employer shall ensure robust review and scrutiny of training and competency records for non-medical referrers as part of the entitlement process and these records should be available for inspection. Ref: 6.1
	Response by the Employer detailing the actions taken: New trust wide documents have been implemented for individual referrer agreement including entitlement under IR(ME)R.
Area for improvement 9 **Regulation:** 6(2) **Stated:** First time **To be completed by:** 26 December 2019	The Employer shall ensure the entitlement of MPEs is in line with the Trust's entitlement procedures as set out in 'Employer's Procedure C'. Ref: 6.1
	Response by the Employer detailing the actions taken: This area has been completed.
Area for improvement 10 **Regulation:** 6	The Employer shall further develop 'Employer's Procedure K' to include radiology incident and near miss management, trend analysis of near misses and incidents, pregnancy checking, Image Optimisation Teams, establishing Local DRLs and peer review.

Schedule 2 **Stated:** First time **To be completed by:** 26 October 2019	Ref: 6.3
	Response by the Employer detailing the actions taken: Employers Procedure K has been updated to include all of the above areas for improvement 10.
Area for improvement 11 **Regulation:** 15(1) **Stated:** First time **To be completed by:** 26 November 2019	The Employer shall ensure that the ancillary radiology equipment is included on the equipment inventory. Ref:6.5
	Response by the Employer detailing the actions taken: Ancillary equipment is now included on the equipment inventory.
Area for improvement 12 **Regulation:** 15 **Stated:** First time **To be completed by:** 26 October 2019	The Employer shall develop an action plan to facilitate compliance with MPE QA programme for radiology equipment. Ref: 6.5
	Response by the Employer detailing the actions taken: The radiology service manager has escalated the need to develop an action plan for an MPE QA equipment program regionally.
Area for improvement 13 **Regulation:** 11(1) (f) **Stated:** First time **To be completed by:** 26 October 2019	The Employer shall ensure that the operator's full signature is completed on pregnancy forms. Ref: 6.7
	Response by the Employer detailing the actions taken: This area has been fully addressed.

Please ensure this document is completed in full and returned via independent.healthcare@rqia.org.uk

The Regulation and Quality Improvement Authority

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

Tel 028 9536 1111
Email info@rqia.org.uk
Web www.rqia.org.uk
@RQIANews