`Document Control Report

Title Diagnostic Reference Levels (DRLs) Standard Operating Procedure - IR(ME)R 2017					
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1.1	Nov 2017	Final	Amendments to document made following CQC IR(ME)R inspection		
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CONTENTS

1. Introduction

The Ionising Radiation (Medical Exposure) Regulations {IR(ME)R} 2017 were introduced to protect patients against the hazards associated with the use of ionising radiation in medical settings. It is a requirement of IR(ME)R that for each patient examination, the dose of ionising radiation will be kept as low as reasonably practicable (ALARP) to obtain the necessary clinical information with minimal risk.

The Diagnostic Imaging Department has a duty to optimise radiation exposure to the patient such that it is proportionate with the necessary clinical purpose. Local Diagnostic Reference Level's (LDRLs) are required by the IR(ME)R Regulations and must be identified. These should routinely be reviewed comparing patient dose data against both LDRLs and National Diagnostic Reference Levels (NDRLs).

2. Purpose

The Standard Operating Procedure (SOP) has been written to:

- National Diagnostic Reference Levels (NDRLs)
- Local Diagnostic Reference Levels (LDRLs)
- Role of the Radiation Safety Group.

3. Scope

This Standard Operating Procedure (SOP) relates to the following staff groups who may be involved in Assessment of Patient Dose and the setting and review of LDRLs:

- Radiographers (Operators)
- Radiologists (Practitioners)
- Medical Physics

4. Location

This Standard Operating Procedure applies to medical exposures being undertaken in the Radiology Departments at the North Devon District Hospital, Barnstaple; Bideford and District Hospital, Bideford; and Tyrell Hospital, Ilfracombe.

Staff undertaking ionising radiation exposures at these sites must be able to demonstrate competence as per the organisations policy on assessing and maintaining competence.

5. Equipment

All Radiology imaging equipment on the above sites including General and A+E x-ray units, AMX Mobile imaging machines, Dental imaging equipment, Mobile Image Intensifiers, Interventional fluoroscopy equipment, CT and DEXA.

6. Procedure

6.1. NDRLs

Examinations requiring DRLs have been identified based upon either the existence of an NDRL, provided the frequency of the examination provides sufficient data, or whereby any standard examination contributes >1% of a given modality for a standard projection.

NDRLs have been provided and are located in all x-ray rooms. These are on full display as laminated notices; they can also be found on the examination protocols. This is to enable IR(ME)R Operators to assess whether a patient has received a dose that is deemed to be reasonable.

6.2. LDRLs

LDRLs will be formulated locally with the assistance of the MPE using data input on CRIS. LDRLs will be based on mean values of patient dose. Where possible LDRLs will be in the form of Dose Area Product (DAP) or Dose Length Product (DLP).

If the LDRL exceeds the equivalent NDRL formal justification, accepted by the Radiation Safety Group, is required to apply this higher value as an LDRL.

LDRLs may be amended in consultation with the Medical Physics Expert (MPE). LDRLs will be reviewed on an annual basis and should only be amended if there is significant data indicating a change in performance.

Medical Physics shall routinely review patient dose data against both LDRLs and National Diagnostic Reference Levels (NDRLs) and present findings at the Radiation Safety Committee.

LDRLs may be amended by the Radiation Safety Committee. It should be noted that justification should always be made and documented for increasing a LDRL. Justification is required to amend a LDRL taking into consideration the reason for the variations e.g. equipment, technique etc. It is anticipated that increasing an LDRL will be very unlikely.

A local audit of doses and examinations will be undertaken monthly to monitor doses within the department.

When an IR(ME)R Operator thinks that an individual's dose may be excessive they should consult the senior radiographer responsible for that particular area of work. The senior radiographer should make a decision as to whether the dose is excessive.

If the senior radiographer deems that the dose may be excessive or DRLs are being consistently exceeded they should contact a Diagnostic Radiology Medical Physics Expert (MPE) in Medical Physics at RD&E. The senior radiographer and MPE shall work together, and decide upon any necessary remedial action.

For reporting of exposures much greater than intended please refer to: \\Nds.internal\public\Radiology Clinical Governance\IRMER\IR(ME)R Procedures - Standard Operating Procedures\IR(ME)R procedure 12 SOP-Reporting and investigating of over-exposures (V1.0 Updated).docx

The definition of "over-exposure" is that used in the guidance published by the Department of Health in January 2017: "Guidance on investigation and notification of medical exposures much greater than intended" accessible at:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/583637/MGTI_guidance_Jan_17.pdf

6.3. Role of the Radiation Safety Group

The Radiation Safety Group will review recommendations, formally adopt LDRLs and make decisions on any recommended actions whereby LDRLs are consistently exceeded.

Regular audit will be conducted to ensure LDRLs are being adhered to, or indeed that LDRLs have been set at the correct level.

Doses for standard procedures will be reviewed at least three yearly following an audit programme accepted by the Radiation Safety Group.

Where doses consistently vary by 20% from the LDRL an investigation will be triggered and managed by the Dose Optimisation Group, the Radiology Services Manager should be informed.

An investigation may typically involve discussion with the operator(s), area supervisors, engineers and medical physics to identify the cause of the dose variance and the appropriate action.

7. References

- Ionising Radiation (Medical Exposures) Regulations 2017. Statutory Instruments 2017 No 1322

  http://www.legislation.gov.uk/uksi/2017/1322/pdfs/uksi_20171322_en.pdf

- Ionising (Medical Exposures) Regulations 2000. Statutory Instruments 2000 No 1059 –

  http://www.opsi.gov.uk/si/si2000/20001059.htm

- IRMER – Ionising Radiation (Medical Exposures) Amendment Regulations 2006

  http://www.opsi.gov.uk/si/si2006/uksi_20062523_en.pdf

8. Associated Documentation

- Northern Devon Healthcare NHS Trust Radiation Policy

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