Advisory Statement A19/01

Clarifying the Required Evidence for Standard 3.2, Optimised Radiation Technique Charts

Purpose

To provide clarifying information to assist practices to interpret the Required Evidence for Standard 3.2, *Optimised Radiation Technique Charts* in terms of how it applies to each unit of ionising radiation equipment used to perform diagnostic imaging procedures.

This Advisory Statement should be read in conjunction with the requirements of Standard 3.2, in its entirety and the DIAS User Guide for Practices Applying for Accreditation.

Issue

The intent of Standard 3.2 is to ensure that practices adopt a consistent approach to imaging procedures to enable the production of images of diagnostic quality while adhering to the (ALARA) principle of keeping radiation doses **A**s **L**ow **A**s **R**easonably **A**chievable. There has previously been confusion arising from the descriptions of the Required Evidence in Standard 3.2, particularly how the evidence relates to different types of ionising radiation equipment and when equipment settings are either entered manually or are programmed and embedded in the equipment. This confusion has impacted compliance with the Standard.

Requirements

Standard 3.2 requires a practice to provide different types of evidence depending on the type of ionising radiation equipment used for diagnostic imaging procedures.

The following is a list of the evidence that would be expected to be provided in an application for accreditation to demonstrate compliance with the requirements of Standard 3.2:

- for each unit of **general x-ray, orthopantomography (OPG) and mammography equipment where settings are entered manually**, a technique chart, consistent with the ALARA principle. A technique chart would comprise a table of pre-determined equipment settings (mA, time, kVp) that can be referred to when selecting exposure factors for different types of procedures
- for each item of **general x-ray, OPG, mammography, fluoroscopy, angiography and computed tomography (CT) equipment, (including the CT component of hybrid systems)**, **whether or not the equipment settings are entered manually or are programmed and embedded in the equipment console,** documentation demonstrating that equipment settings have been reviewed annually, and authorised by a qualified person. This documentation might comprise either,
  - an imaging protocol submitted as evidence for *Standard 3.1, Diagnostic Imaging Protocol* provided that the protocol additionally includes information about when the equipment settings for each unit of equipment were reviewed; the review outcomes and any actions arising; and who authorised the review and the outcomes, or

  - a practice based check list identifying each unit of equipment; when the equipment settings for each unit of equipment were reviewed; the review outcomes and any actions arising; and who authorised the review and the outcomes, or
  - a technique chart, for x-ray, OPG and mammography equipment, provided that the technique chart includes information about when the pre-determined equipment settings were reviewed; the review outcomes and any actions arising; and who authorised the review and the outcomes
- for each item of **fluoroscopy equipment**, a log identifying the procedure name and screening times (or alternatively the system generated dose metrics) for the procedure as well as information demonstrating when the log (or dose metrics) were reviewed, the review findings and actions arising (such as if the equipment settings were optimised); and who authorised the review and the outcomes
- for each unit of **angiography equipment**, a log identifying the procedure name, the system generated dose metrics and the screening times, as well as information demonstrating when the log was reviewed, the review findings and actions arising (such as if the equipment settings were optimised); and who authorised the review and the outcomes. A log of screening times is only acceptable for systems that are not capable of generating dose metrics
- for **equipment for which Diagnostic Reference Levels (DRLs)** have been established, documentation:
  - describing the process for comparing Facility Reference Levels (FRLs) to DRLs including how data is collected, how FRLs are calculated and compared to DRLs, how audit outcomes are documented, and how and when the process is reviewed
  - demonstrating that FRLs have been annually compared to DRLs, and
  - if DRLs are consistently exceeded, evidence that FRLs are reviewed to determine whether exposure factors require optimisation.

To further clarify the evidentiary requirements in Standard 3.2, the information provided in this Advisory Statement is summarised in Table 1 on the following page. Table 1 should be read in conjunction with the other information in Advisory Statement 19/01; Standard 3.2, in its entirety; and the DIAS User Guide.

For more information

Practices should also refer to the DIAS User Guide for Practices Applying for Accreditation, and the associated Appendices, for further clarifying information about the evidentiary requirements in Standard 3.2, and contact their accreditor if they require any further information or advice. Relevant Appendices to the DIAS User Guide include Appendix 2, Example Safety and Quality Manual (Attachment 4) and Appendix 11, Fluoroscopy Screening Log.

Additionally, practices should refer to and consider advice in DIAS Advisory Statement 17/01 and DIAS Advisory Statement 18/02 regarding the requirements for annually comparing FRLs with DRLs for diagnostic procedures for which DRLs have been established in Australia.

Table 1: Advisory Statement 19/01, Required Evidence for Standard 3.2, Optimised Radiation Technique Charts

Ref[1].	Required Evidence (adapted for ease of interpretation)	General X-Ray	OPG	Mammography	Fluoroscopy	Angiography	Computed Tomography	Nuclear medicine[2]
3.2.1 (a)	For each unit of ionising radiation equipment located at the diagnostic imaging practice (a) a technique chart, consistent with the ALARA principle; and	Required, where settings are manually selected	Required, where settings are manually selected	Required, where settings are manually selected	Not required Note: Settings are always embedded in device	Not required Note: Settings are always embedded in device	Not required Note: Settings are always embedded in device	N/A
3.2.1 (b)	(b) evidence that equipment settings (whether entered manually; or predetermined, programmed and embedded in the equipment console) have been reviewed and authorised by a qualified person annually.	Required	Required	Required	Required	Required	Required	N/A Note: Refer to footnote 2.
3.2.2	For each item of fluoroscopy equipment, a copy of the log of screening times and evidence that the log has been reviewed by a qualified person. As an alternative a log of dose metrics can be provided.	N/A	N/A	N/A	Required	N/A	N/A	N/A
3.2.3	For each item of angiography equipment, evidence that system generated dose metrics (and screening times) have been logged and reviewed annually by a qualified person; or alternatively, a log of screening times (if the equipment is not capable of generating dose metrics) and evidence that the log has been reviewed annually by a qualified person.	N/A	N/A	N/A	N/A	Required	N/A	N/A
3.2.4	The practice must establish a program to ensure that radiation doses administered to a patient for diagnostic imaging purposes are: (a) annually compared with diagnostic reference levels (DRLs) for diagnostic procedures for which DRLs have been established in Australia; and (b) if the DRLs are consistently exceeded, reviewed to determine whether radiation protection has been optimised.	N/A No DRLs for general X-Ray	N/A No DRLs for OPG.	N/A No DRLS for mammography	N/A No DRLs for fluoroscopy	Required for coronary angiography DRLs published 31 March 2020	Required	Required Note: Refer to footnote 2.

[1] These references are provided for navigation purposes only. This numbering is not included in Standard 3.2.

[2] The CT component of hybrid systems such as SPECT/CT and PET/CT must comply with the CT related requirements specified in Standard 3.2.

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Relevant standard	Standard 3.2, Optimised Radiation Technique Charts
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