

# RADIOGRAPHIC AUDIT

## NOT JUST A MATTER OF TICKING A BOX

### NEW GUIDANCE NOTES

#### QA of clinical image quality

A principal objective of the employer's QA programme is to

- ensure the consistent production of radiographs of adequate quality for diagnostic purposes,
- while minimising patient doses so far as possible.

It is therefore important to monitor image quality performance on a regular basis and a simple subjective image quality rating system is proposed for this.

With the widespread use of Guidance Notes for Dental Practitioners on the Safe Use of X-ray Equipment 2nd Edition of digital imaging systems replacing film-based imaging, one major source of reduced image quality (wet chemical processing) has been effectively removed.

The use of a two-point scale is now recommended for all forms of dental radiography and dental CBCT imaging, where the images are rated either 'diagnostically acceptable' ('A') or 'not acceptable' ('N')

These recommended performance targets represent what is observed to be achievable in the majority of well-managed dental practices

<u>DIAGNOSTICALLY</u> <u>ACCEPTABLE</u> <b>A</b>	<u>DIGITAL</u>	<u>FILM</u>
No errors or minimal errors in either patient preparation, exposure, positioning, image (receptor) processing or image reconstruction and of sufficient image quality to answer the clinical question	Not less than <b>95%</b>	Not less than <b>90%</b>
<u>DIAGNOSTICALLY</u> <u>NOT ACCEPTABLE</u> <b>N</b>	Not greater than <b>5%</b>	Not greater than <b>10%</b>
Errors either patient preparation, exposure, positioning, image (receptor) processing or image reconstruction which render the image diagnostically unacceptable		

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Some practices which serve particular patient groups (for instance those with additional needs) will not be able to achieve the performance targets below. In such cases, the practice

should consult its MPE and set its own performance targets and document the reasons for this in their employer's procedures

#### Clinical Audit

- A requirement under IRMER
- Reviews dental radiographic practice improving quality and outcome of patient care
- May lead to modification of practice .... or
- Application of new practices

#### Examines here & now

- Examines existing practice
- Monitors new knowledge and puts it into practice
- Identifies problem areas and encourages rectification
- Improve QA of radiographic images
- We hope to reduce the number of retakes
- Meet current requirements in the Radiation Protection File

#### How to Modify Practice

- Technique
- Quality Assurance documentation
- Exposures

#### Why Audit?

- To comply with Government initiatives
- To collate evidence
- To ensure standards are met
- To maintain standards
- To ensure competency to practice
- To ensure effectiveness of care
- To implement change / improvement

#### Image Appraisal

- To ensure a high **standard** of radiography
- To ensure **consistency** of standards
- To ensure the correct positioning for **image interpretation** purposes and subsequent purposes



- the justification and authorisation of radiographs

The clinical evaluation of radiographs Any such Clinical Audit or Peer Review should be carried out in accordance with the appropriate national arrangements

#### Structuring Your Audit

- Clearly defined question(s) to be answered by the audit
- Clear aim / objectives - keep it simple
- Establish a 'planning team'
- Liaise with Trust clinical audit office

#### Set a realistic standard

- Seek advice re most appropriate statistics
- Communicate with ALL staff - enlist support
- Consider funding / time / other resources

#### Clinic Audit

- Clinical audit is a requirement under IR(ME)R. It includes a review of dental radiological practices which seeks to improve the quality and outcome of patient care. This can be done through a structured review which might lead to a modification of practice or the application of new practices where necessary. The Employer's Written Procedures should include provision for carrying out clinical audit as appropriate.

#### Clinic Audit might include

##### Review of image quality monitoring

- These should be reviewed to see if there are any issues which may highlight training requirements
- Review of images, by multiple persons where possible, to agree levels of quality
- Dose audit
- An audit of dental records to ensure that each dental exposure has been referred, authorised and clinically evaluated in line with the written procedures and that the duty holders are identifiable
- An audit to check that entitlement of staff has taken place and that it is supported by appropriate training and CPD when necessary
- Audit of the patient identification process to ensure that each operator is following the correct procedure

#### Objectives

- To ensure that clinical audit is undertaken
- To ensure that the content of the written procedures are audited to ensure compliance by the duty holders

## Responsibilities

The employer will ensure that *annual* audit is undertaken with a consistent approach and that the outcome of all audits will be fed back to relevant staff.

## Process

Assurance that all procedures and protocols are within date and will be reviewed by the review date

1. An audit of duty holders' entitlement along with their supporting qualifications and training. This audit should ensure that their entitlement matches the duties performed and that it is supported with evidence of training and continuing professional development
2. An audit of referrals to ensure that they have been made with regard to the previously set out image appraisal. This will ensure that the referrer, practitioner and operator(s) for each exposure can be identified
3. An audit of referrals to ensure that they have been justified and authorised and that the practitioner can be identified
4. An audit to ensure that the patients are identified correctly and the operator can be identified
5. An audit of patient dose should be undertaken *3 yearly* by the MPE.
6. An overview of all *near miss and* incidents reported in the last 12 months including outcomes
7. Review of image quality and repeat exposures
8. An audit to ensure that research exposures have been taken with regard to second edition of the guidance
9. An audit to ensure that medico-legal exposures have been taken in line with new guidance

## Possible Audit Criteria

Where possible, the operator must ask the patient to give the 3 identifiers. The procedure must be positive and active i.e.

“What is your name?”

“What is your address?”

“What is your date of birth?”

## Referrer

The referrer is responsible for supplying the practitioner with sufficient information to justify an appropriate exposure

- **The area to be radiographed, tooth specific and any particular areas** of importance must be documented before the radiograph is taken.
- Why the radiograph has been requested, **clinical indications to allow justification**
- What **type of radiograph** is to be taken eg. Periapical or Bitewing
- There must have been a history and clinical examination prior to the referral
- Previous radiographs should accompany the patient if relevant
- Diagnostic information entered in writing

IRMER practitioner

The IRMER practitioner must be adequately trained to take decisions and the responsibility for the justification of every exposure.

- **Justification.** An intellectual gathering of information to determine if the radiograph is justified
- **Authorisation.** Proof by an electronic signature or code that the radiographic justification has taken place

Operator

- The operator will document how many images were taken and the exposure values Kilovoltage/Milliamperage/Time
- Repeat images and reasons for repeats will also be documented. This allows the patient dose to be calculated if needed. If the x ray unit displays the DOSE (measured in Grays) then this MUST be documented

Clinical evaluation is recorded and an assessment of grade is documented

- If a grade N is recorded please give reasons why.

Recommended publications:

Selection Criteria for Dental Radiography

3<sup>rd</sup> Edition

- *Published By: Faculty of General Dental Practitioners (UK)*
- *Royal College of Surgeons of England*

Guidance Notes for Dental Practitioners on the Safe Use of X-Ray Equipment

- *2nd edition Published by: Public Health England*

*Published: 2020*