

Radiographic Audit

Examines here & now

Examines existing practice

Monitors new knowledge and puts it into practice

Affects local practice

Audit - Set up

- 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 time / other resources

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

Can be set externally - by professional bodies

Can be set internally - by the audit participants at a local level

The later is more likely to succeed because the audit team are more likely to implement change

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
- To ensure the **reproducibility** of radiographs so that the progression of a disease process can be accurately followed or the improvement of a condition can be monitored
- To ensure that **Ionising Radiation Regulations (2017)** are adhered to
- To ensure that the **Ionising Radiation (Medical Exposure) Regulations 2018(Northern Ireland) Ionising Radiation Regulations 2017 (Scotland and England)** are adhered to
- To emphasise the importance of the above from a medico-legal perspective

Image Appraisal Criteria

1. Check patient's name / date of examination / Patient identifying number
2. Correct anatomical marker - in situ / clearly visible / away from area of interest. In particular Dental Panoramic images
3. Correct area of interest included - correct projection / correct positioning criteria / all relevant anatomical structures included (name them)
4. Exposure factors - correct contrast / density / sharpness
5. Abnormality / pathology - anything that would require a further projection to better demonstrate the area in question
6. Artifacts - any present
7. Need for additional projection(s) - either of a modified nature or a separate projection altogether
8. Need for a repeat radiograph - because criteria have not been met

Quality Rating of Radiographs

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

DIAGNOSTICALLY ACCEPTABLE A	DIGITAL FILM	
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 95%	Not less than 90%
DIAGNOSTICALLY NOT ACCEPTABLE N Errors either patient preparation, exposure, positioning, image (receptor) processing or image reconstruction which render the image diagnostically unacceptable	Not greater than 5%	Not greater than 10%

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QA audits

Each procedure within the QA programme will include a requirement for records to be made by the responsible person at varying intervals. In addition, the person with overall responsibility for the QA programme should check the full programme at intervals not exceeding 12 months. This is an essential feature of demonstrating effective implementation of the programme.

Clinical audits and/or peer reviews of radiography must be provided for, as appropriate, and may include:

- (a) the QA programme and associated records;
- (b) the justification and authorisation of radiographs
- (c) 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 - in non threatening way
- **Consider funding / time / other resources**

Audit Objectives

IR(ME)R Employer’s procedures

Clinical Audit

Clinical audit is a requirement under IR(ME)R Regulation 8. 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. (See Dental Employer’s Written Procedure EP13)

Clinical audit might include:

- a) Review of image quality monitoring These should be reviewed to see if there are any issues which may highlight training requirements
- b) Review of images, by multiple persons where possible, to agree levels of quality
- c) Dose audit
- d) 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

- e) An audit to check that entitlement of staff has taken place and that it is supported by appropriate training and CPD when necessary
- f) 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

1. Assurance that all procedures and protocols are within date and will be reviewed by the review date
2. 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
3. An audit of referrals to ensure that they have been made according to EP2 and that a clinical evaluation has been carried out in line with EP8. This will ensure that the referrer, practitioner and operator(s) for each exposure can be identified
4. An audit of referrals to ensure that they have been justified and authorised in line with EP3 and that the practitioner can be identified
5. An audit to ensure that the patients are identified in line with EP4 and the operator can be identified
6. An audit of patient dose should be undertaken *3 yearly* by the MPE.
7. An audit of operator compliance with EP6, should also be undertaken
8. An overview of all *near miss and* incidents reported in the last 12 months including outcomes
9. Review of image quality and repeat exposure

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

Clinical evaluation is recorded and an assessment of grade is documented

If a grade N is recorded please give reasons why.

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References

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