**Serial chest radiographs: avoiding repeat examinations due to inappropriate exposure factors**

**Descriptor:**

An audit to identify and quantify the appropriate documentation of exposure factors in those examinations likely to be recurring.

**Background:**

Many patients in intensive care require multiple chest radiographs on subsequent days. Where the exposure factors are documented and reviewed prior to subsequent examinations, there have been unnecessary repeats of these examinations where under or over exposure may be avoided.

## The Cycle

**The standard:**

• All first chest radiographs performed on ITU patients have FFD, mAs and kVp documented

• All subsequent examinations in addition are performed with the documented exposure factors taken into account

**Target:**

• 100% of first examinations have FFD, mAs and kVp documented

• 100% of subsequent examinations have FFD, mAs and kVp documented AND indicate review of previously used exposure factors prior to subsequent exposure

## Assess local practice

**Indicators:**

• Percentage of examinations with documented exposure factors

• Percentage of subsequent examinations which indicate that comparison with prior documented exposure factors has been made

**Data items to be collected:**

For each examination, state:

1. Whether exposure factors are documented

2. Whether a prior examination has been performed

3. The factors for the current exam

4. The reason for any change in factors

**Suggested number:**

Typical number will be 40 examinations depending on volume of ITU examinations performed.

**Suggestions for change if target not met:**

Staff education.

**Resources:**

• Five hours work

**References:**

1. The Ionising Radiation (Medical Exposure) Regulations 2000 <http://www.legislation.gov.uk/uksi/2000/1059/pdfs/uksi_20001059_en.pdf>
2. The Ionising Radiation (Medical Exposure) Regulations 2000 - guidance and good practice notes section 5.10.2, [http://webarchive.nationalarchives.gov.uk/20130104220409/http://www.dh.gov.uk/prod\_consum\_dh/groups/dh\_digitalassets/@dh/@en/documents/digitalasset/dh\_064707.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/%40dh/%40en/documents/digitalasset/dh_064707.pdf)
3. The Royal College of Radiologists. Making the best use of a department of clinical radiology (8th edn). London: RCR, 2017 <https://www.rcr.ac.uk/publication/irefer-making-best-use-clinical-radiology-eighth-edition>
4. Cook JV, Kyriou JC, Pettet A, Fitzgerald MC, Shah K, Pablot SM Key factors in the optimization of paediatric X-ray practice. British Journal of Radiology, 74 (2001), 1032–1040 <http://bjr.birjournals.org/content/74/887/1032.full.pdf>
5. Strzelczyk JJ, Damilakis J, Marx MV, Macura KJ. Facts and controversies about radiation exposure, part 1: controlling unnecessary radiation exposures.  J Am Coll Radiol. 2006 Dec; 3(12):924-31

**Editor's comments:**

A template is also suitable for other regularly repeated examinations such as orthopaedic follow-ups.

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