**The Image Quality of Abdominal Radiography [QSI Ref: XR-503]**

**Descriptor:**

Assessment of the Diagnostic Image Quality of Plain Abdominal Radiographs in Adult Patients.

**Background:**

Abdominal radiographs are a commonly requested investigation for patients presenting with abdominal symptoms. The clinical usefulness of the investigation can be limited by the quality of the radiograph, often due to inadequate exposure or the inability to cover the appropriate anatomical landmarks. The exposure may need to be adjusted for patient size and body habitus and this may also necessitate more than one radiograph to image the entire abdomen. The standard abdominal radiograph should include the area from the diaphragm cranially to the pubic symphysis caudally with the inclusion of both flanks [2].

The Royal College of Radiologists recommends plain abdominal radiography for only a limited number of indications, the most common being when there is a clinical suspicion of bowel obstruction or acute exacerbation of inflammatory bowel disease.  In more specific circumstances, abdominal radiography can be considered when where there is a palpable mass, abdominal injury or foreign body ingestion, or when constipation or pancreatitis is suspected.  When it is performed, the relevant anatomical structures should be included to maximise the diagnostic information obtained.

## The Cycle

**The standard:**

All abdominal radiographs which are performed should include the pubic symphysis and both hemi-diaphragms and extend sufficiently laterally to ensure that all bowel is included.

**Target:**

95%

## Assess local practice

**Indicators:**

Number of examinations which adhere to the ACR guidelines for abdominal radiography technique in adult patients.

**Data items to be collected:**

- Retrospective analysis of performed abdominal radiographs

- Each examination should be independently scored by a radiologist and radiographer in terms of:

   • How many examinations comply with the standard and whether or not this was achieved with more than one abdominal film or with an (erect) chest radiograph

   • The overall quality of the film (exposure quality) scored on a scale of 1-3 (good, adequate, poor)

- For cases where the initial film does not meet standard the clinical indication for the examination should be checked:

   • Was it diagnostic of condition such as pneumoperitoneum which then obviated the need for further films? or answered the clinical question?

**Suggested number:**

100 cases

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

- Present the results of the audit to both radiologists and radiographers within the department

- Discuss reasons as to why the target was not met and how improvements can be made

- Particular emphasis should be placed on whether or not failure to comply with the standard varied according to the clinical information e.g. bowel obstruction vs. renal colic

- Review and re-audit in 6 months

**Resources:**

Data Collection Table:

[**133\_DATA COLLECTION TABLE.doc**](https://www.rcr.ac.uk/sites/default/files/audit_template/cr/133_DATA%20COLLECTION%20TABLE.doc)WORD - 36 KB

**References:**

1. Royal College of Radiologists. iRefer Making the best use of clinical radiology. London 2012  [http://guidelines.irefer.org.uk/](http://www.irefer.org.uk/)
2. American College of Radiology: [ACR practice guideline for the performance of abdominal radiography: 2006](http://www.acr.org/~/media/79a594819bbd4631a7e31404daa66ef6.pdf)

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