# Audit to optimise CT KUB imaging in investigation of renal colic

**Descriptor:**

An audit to evaluate CT KUB technique, aiming to reduce unnecessary scan length and ionising radiation exposure.

**Background:**

CT KUB is a commonly performed procedure in emergency departments, as it is the first-line test in suspected renal colic [1]. However, as imaging techniques involving ionising radiation become more common, it is important that these tests are used appropriately; the area of the body scanned should be limited to what is needed to answer the clinical question [2]. Therefore, in the case of CT KUB for renal colic, the upper pole of the highest kidney should be the upper limit for the examination; in the assessment of renal colic, there is no diagnostic usefulness in any imaging above this point, but it would contribute to higher radiation dose.

## The Cycle

**The standard:**

• Excess scan length above the upper pole of the highest kidney should not exceed 10% of total length of scan

• Standard defined locally within department - A local standard should be agreed within each department and adopted

**Target:**

100% of CT KUB scans performed for renal colic should have ≤ 10% excess scan length.

## Assess local practice

**Indicators:**

The indicators to be measured in this audit are:

• Number of slices above the upper pole of highest kidney, relative to total scan length (expressed as percentage)

**Data items to be collected:**

An example data collection table is included in the “Resources” linked to this template.

Each scan identified in the sample will require the below data to be collected from it:

a) A unique identifier (Trust number, RIS number)

b) Date of scan

c) Total number of slices

d) Slices above upper pole of highest kidney (overscan slices)

e) Percentage of total scan that is “overscan” i.e. e/d x 100

**Suggested number:**

50 CT KUB scans is recommended to provide adequate data for analysis.

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

• Present findings at departmental meeting

• Consider providing information and re-education to CT radiographers in form of visible poster in CT area, highlighting importance of limiting scan area

• Consider targeted re-education of specific staff members if there is a proportionately higher number of “over-scans” from individuals

**Resources:**

Table for data collection attached.

[**data\_collection\_sample\_table.docx**](https://www.rcr.ac.uk/sites/default/files/audit_template/data_collection_sample_table.docx)DOC - 12.76 KB

**References:**

1. British Association of Urological Surgeons (BAUS); Guidelines for acute management of first presentation of renal and ureteric lithiasis, 2012. [http://www.baus.org.uk/\_userfiles/pages/files/Publications/RevisedAcuteStoneMgtGuidelines.pdf (last](http://www.baus.org.uk/_userfiles/pages/files/Publications/RevisedAcuteStoneMgtGuidelines.pdf) accessed 31/08/2015)
2. IAEA Radiation Protection of Patients, Information for Health Professionals; [rpop.iaea.org/RPOP/RPoP/Content/InformationFor/HealthProfessionals/6\_OtherClinicalSpecialities/Urology/](http://rpop.iaea.org/RPOP/RPoP/Content/InformationFor/HealthProfessionals/6_OtherClinicalSpecialities/Urology/) (last accessed 31/08/2015)
3. Public health England: Doses from Computed Tomography Examinations in the UK – 2011 Review; <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/349188/PHE_CRCE_013.pdf> (last accessed 31/08/2015)

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