**Audit template to assess compliance of low radiation dose CT used in the Targeted Lung Health Check Scans**

**Descriptor:**

This audit is intended to assess the quality of Computed Tomography (CT) scans of the thorax in the setting of Targeted Lung Health Check scans.

**Background:**

The NHSE Targeted Lung Health Check (TLHC) protocol recommends the implementation of standardised acquisition and reconstruction parameters for TLHC low dose CT scans, as described in the NHSE Standard Protocol[1] and Quality Assurance Standards[2].

## The Cycle

**The standard:**

All teams delivering NHSE TLHC programmes should use the standardised acquisition and reconstruction protocols for low dose CT as described in the protocol [1,2]. Involvement of the medical physics department is recommended to audit doses and investigate if median dose length product (DLP) consistently exceeds local DRL. In the absence of a national diagnostic reference level (NDRL) a maximum recommended local DRL is 74 mGy.cm, but it may be appropriate to set a lower value based on local setup. For average patients this will approximately equate to 2mSv.

**Target:**

Image reconstruction is standardised and used for any subsequent follow-up examinations where possible with emphasis on ensuring that slice thickness, reconstruction increment, reconstruction algorithm is identical

* Median DLP for a sample of patients does not exceed the local DRL.
* 100% of reconstructed slice thickness of ≤ 1.25mm
* 100% of reconstructed slice increment of ≤ 0.7mm
* 100% scans reconstructed with correct standard lung algorithm.
* 100% of scans with correct anatomical coverage (i.e. entire lung parenchyma).

## Assess local practice

**Indicators:**

* Median DLP (assess if this exceeds local DRL)
* Percentage of scans reconstructed with slice thickness ≤ 1.25mm
* Percentage of scans with  reconstructed slice increment of ≤ 0.7mm
* Percentage of scans correct reconstruction algorithm.
* Percentage of scans with correct anatomical coverage.

**Data items to be collected:**

Number of scans included:

a) Total number of scans

Scan acquisition/reconstruction parameters:

b) DLP

c) Slice thickness

d) Reconstruction increment

e) Reconstruction algorithm

f)  Area of interest covered

**Suggested number:**

This will vary according to the size of the department. 100 examinations is recommended

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

* Present and discuss findings CT optimisation team meetings.
* Correct acquisition and reconstruction settings, if required.
* Discuss possible solutions for quality improvement and plan for a quality improvement cycle.

**Resources:**

* List of eligible scans [may require support from PACS administration staff]
* Data collection from PACS (and RIS if required)
* Analysis and interpretation of data [which can be radiographer led]

**References:**

1. [1] Standard Protocol prepared for the Targeted Lung Health Checks Programme, NHSE <https://www.england.nhs.uk/publication/targeted-screening-for-lung-cancer/>
2. [2] Quality Assurance Standards prepared for the Targeted Lung Health Checks Programme, NHSE <https://www.england.nhs.uk/publication/targeted-screening-for-lung-cancer/>

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