**Missed Lung cancers on Chest Radiographs**

**Descriptor:**

Reporting accuracy of chest radiography in patients subsequently shown to have lung cancer.

**Background:**

Chest radiography is used almost as an extended clinical assessment of patients presenting with chest symptoms. Lung cancer is one of the most common malignancies but there are no specific symptoms or signs that reliably differentiate it from a non neoplastic chest pathology [9]. It is imperative to have a high standard of reporting accuracy by radiologists in order to detect lung cancer at the earliest stage possible or for the radiologist to suggest appropriate follow up if there are suspicious features on CXR. This will directly improve the quality of patient care. Literature reveals a range of missed lung cancer rates from 20% to 60% [1-7]. In one published report, 90% of peripheral lesions and 75% of peri-hilar lesions were visible on retrospective review at a centre of excellence [8].

## The Cycle

**The standard:**

Abnormality on a CXR suggestive of malignancy should be reported as such and appropriate action recommended.

**Target:**

The following target was used by the RCR in the national audit of 2005 -

In patients with proven lung carcinoma:

1. The lesion should be identified in > 75% of chest radiographs performed within one year of the diagnosis

2. When a lesion is reported, further investigation should be recommended in >95% of cases

## Assess local practice

**Indicators:**

1. Number of correctly identified malignancies

2. For indeterminate lesions number of appropriate reports with suggested further investigation / follow up

**Data items to be collected:**

- Obtain list of all patients diagnosed with lung cancer from Pathology department or appropriate MDT co-ordinator

- Review all CXR reports issued within the 12 months prior to the diagnosis of lung cancer being made. For all patients in whom malignancy was not suggested review CXR

Categorize reports as:

• Appropriate reports: Lesion identified

• Appropriate reports: Lesion identified as indeterminate (not as malignant). Appropriate further investigation or follow up suggested

• Non-specific reports: Lesion identified as indeterminate (not as malignant). No follow up suggested

• Missed cancers: Lesion not identified

• Examination not reported by Radiology Department

**Suggested number:**

- Will depend on size of department, but in large departments a large number is required if there are many reporting radiologists otherwise worrying patterns may not be detected

- 6-12 months is suggested

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

• Discrepancy meeting and presentation of missed lung cancers

• Personal feedback of discrepancy meeting opinions - i.e. missed or not visible

• Personal feedback of non-specific reports, including failure to advise on appropriate further investigation to Radiologist concerned

• Using the missed cancer chest x-rays for educational objectives

**Resources:**

• Retrospective review using PACS/RIS 5-10 hours depending on sample size

• Review of discordant reports and CXRs 1-3 hours

• Analysis and interpretation of data 1-3 hours

**References:**

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**Editor's comments:**

For the category "examination not reported by radiology department" if there are cases in this category it may be appropriate to audit these separately.

- Were they reported by a clinician and documented in writing in the patient's notes?

- Was this report accurate?

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