**Timing of Perfusion or Ventilation/Perfusion Scanning and CXR in the investigation of acute pulmonary embolus (PE)**

**Descriptor:**

This audit assesses the time period between the acquisition of a plain chest x-ray (CXR) and subsequent perfusion or ventilation/perfusion (V/Q) scan in the investigation of suspected pulmonary embolus.

**Background:**

In many departments suspected pulmonary embolism is investigated with CT pulmonary angiogram (CTPA). However for a number of reasons in other departments V/Q scans are the primary imaging modality after CXR. When a V/Q or perfusion scan and CXR are the imaging methods of choice, the timing of each should follow the British Nuclear Medicine Society guidelines for V/Q scanning which state ‘A chest x-ray performed within 24 hours should be reviewed before undertaking the study’[1]. This should reduce the likelihood of interpretative error due to any delay between the CXR and perfusion imaging.

## The Cycle

**The standard:**

When a V/Q or perfusion only scan with a CXR is the investigation of choice for suspected PE, the scan should be performed within 24 hours of the CXR in order to facilitate accurate interpretation.

**Target:**

100% of perfusion or V/Q scans should be performed within 24 hours of a CXR when investigating suspected PE.

## Assess local practice

**Indicators:**

The percentage of scans performed with a delay in excess of 24 hours since the CXR.

**Data items to be collected:**

Data collected retrospectively.

For all patients who have undergone V/Q or perfusion only scanning for suspected PE, obtain:

1) The date and time of the initial CXR

2) The date and time of the perfusion / V/Q scan

**Suggested number:**

100 consecutive perfusion/ V/Q scans.

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

- Departmental discussion to identify issues affecting the processing of patients, the capacity to perform perfusion or V/Q scanning and /or access to V/Q scanning

- Consider repeating the CXR if there has been a greater than 24 hour delay when the patient attends for the scan

- Consider performing CTPA for cases out of hours if perfusion scanning is only available during normal working hours

**Resources:**

- Use of PACS to access patient imaging and then compile spreadsheet of data (6 hours)

- Analysis (2 hours)

**References:**

1. [Bajc, M., Neilly, J., Miniati, M., Schuemichen, C., Meignan, M. and Jonson, B. (2009). EANM guidelines for ventilation/perfusion scintigraphy. European Journal of Nuclear Medicine and Molecular Imaging, 36(9), pp.1528-1538.www.bnms.org.uk](http://www.bnms.org.uk/)

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**Published Date:**

Wednesday 29 December 2010

**Last Reviewed:**

Tuesday 26 July 2022