**Chest x-ray confirmation of nasogastric tube placement: radiographer responsibility**

**Descriptor:**

Audit to assess technique compliance with NPSA patient safety alert :2011/PSA002- reducing harm caused by misplaced nasogastric tubes [1].

**Background:**

Nasogastric tube feeding is common practice and thousands of tubes are inserted daily without incident. Feeding into the lung, through a misplaced nasogastric tube is now a "Never Event" in England. "Never Event" reports to the National Patient Safety Agency (NPSA) suggests there are issues with x-ray interpretation [2].  This audit assesses the radiographic technique for chest x-rays taken to confirm nasogastric tube placement following initial insertion prior to commencement of usage for feeding and that the appropriate action was taken if the tube was misplaced.

## The Cycle

**The standard:**

The Radiographer performing the chest x-ray must ensure that:

1. The exposure of the x-ray is adjusted to allow the nasogastric tube to be visible to the bottom of the image

2. The X-ray is centred lower than would normally be appropriate for a chest x-ray so that it shows the abdomen as far as possible below the diaphragm

3. The X-ray must show the bottom of both hemi-diaphragms in the midline

4. If the tube is misplaced with the tip in for example the bronchus, the tube should be removed before the patient leaves the department

**Target:**

1. 100%

2. 100%

3. 100%

4. 100%

## Assess local practice

**Indicators:**

Percentage of chest x-rays performed to establish position of nasogastric tube for purpose of feeding with indication check position of nasogastric tube where the correct radiographic technique has been employed.

**Data items to be collected:**

• Time and date of relevant chest x-ray correlated on PACS

• Has the exposure of the x-ray been adjusted to allow the nasogastric tube to be visible to the bottom of the image?

• Is the x-ray centred lower than would normally be appropriate for a chest x-ray so that it shows the abdomen as far as possible below the diaphragm?

• Does the x-ray show the bottom of both hemi-diaphragms in the midline?

• Was the appropriate action taken by the radiographer in the case of tube malposition?

**Suggested number:**

At least 40 consecutive chest x-rays performed to establish position of nasogastric tube for feeding.

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

1. Radiographers to be reminded of adequate exposure to demonstrate tip of nasogastric tube - this may be a slightly higher dose in comparison to the normal chest x-ray

2. Junior radiographers are to be reminded that if in doubt, to request review by Senior radiographer, Consultant Radiographer or Radiologist. Suboptimal radiographs to be collated into radiographer review file.

3. Repeat date for next audit (following change): six months

**Resources:**

- Radiographer to log x-rays taken for nasogastric tube check

- Time for performing PACS check on a daily basis

- Audit lead to collate results and write report

**References:**

1. Patient Safety Alert NPSA/2011/PSA002: Reducing the harm caused by misplaced nasogastric feeding tubes in adults, children and infants; March 2011. [www.nrls.npsa.nhs.uk/resources](http://www.nrls.npsa.nhs.uk/resources) and [www.nrls.npsa.nhs.uk/easysiteweb/getresource.axd?assetid=129696](http://www.nrls.npsa.nhs.uk/easysiteweb/getresource.axd?assetid=129696)
2. National Patient Safety Agency. Misplaced naso or orogastric tube not detected prior to use. [www.nrls.npsa.nhs.uk/resources/collections/never-events/core-list/misplaced-naso-or-orogastric-tube-not-detected-prior-to-use/](http://www.nrls.npsa.nhs.uk/resources/collections/never-events/core-list/misplaced-naso-or-orogastric-tube-not-detected-prior-to-use/)

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