Audit: Radiographic Conspicuity of Medicina Nasogastric Feeding Tubes to Allow Confirmation of Safe Placement

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### Background and Aim

- A Patient Safety Alert in 2005 aimed to reduce harm from Nasogastric Tubes (NGT).
- Existing brand of Ryles NGT at St Mary’s Hospital was found to be unsafe for feeding in the ICU setting - Near misses and a “Never Event” (aspiration on feed).
- These NGT had a poorly conspicuous radio-opaque line along their length ending in a metal tip. This led to misleading CXR’s. Ryles NGT is normally used for drainage.
- Through error reporting and multi-professional team working, a safer brand of NGT was sourced (Medicina) and required evaluation to close the audit loop.
- **AIM:** To assess radiographic conspicuity of an alternative (Medicina) NGT.

### Methods

- **Audit criteria:** All NGT should be clearly visible along their whole length allowing safe placement of NGT to be confirmed by ward clinicians and subsequently reporting Radiologists.
- Prospective audit, 30 consecutive ICU CXRs were reviewed where “Medicina” NGT was stated on the request card.
- **NGT Radiographic Criteria:** 1) Follows contours of the oesophagus, 2) Clearly bisect the Carina, 3) Cross the diaphragm near midline, 4) Tip clearly visible below the left hemidiaphragm (NPSA).

### Results

<table>
<thead>
<tr>
<th>30 Visible NGT</th>
<th>26 Confirmed Safe Placement NGT (Figure 1)</th>
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<tbody>
<tr>
<td>4 Showed incorrect placement (Fig. 2-5)</td>
<td>2 ICU Clinician Rectified (Fig. 2-3)</td>
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<tr>
<td>2 Missed, Radiology Reported (Fig. 4-5)</td>
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**Fig 1.** Example of correctly placed NGT meeting above Radiographic criteria. **Fig 2.** NGT doubled back along oesophagus, therefore significant aspiration risk. **Fig 3.** NGT incorrectly placed in the right main bronchus. **Fig 4.** NGT not fully through oesophageal sphincter, feeding holes seen superior to this – increasing risk of aspiration. **Fig 5.** As per figure 4, NGT needs to be placed more inferiorly.

### Conclusion

- Medicina NGT are visible on CXR along their full length.
- Misplaced Medicina NGT are more readily detected by Clinicians and Radiologists.
- NGT that are not clearly visible along their length are not safe for feeding.