

Why is it important?

- ✓ Use of a misplaced NG tube is a never event which is wholly preventable
- ✓ 95 incidents were reported between September 2011 and March 2016 where medications or food were administered into lungs or pleural cavity
- ✓ In 32 cases the patient subsequently died
- ✓ At least 45 of these incidents were related to CXR interpretation by medical staff
- ✓ Checking tube placement before use via pH testing of aspirate and when necessary CXR is essential
- ✓ Several alerts have been issued by the NPSA and NHS England in recent years urging hospitals to take action

Background

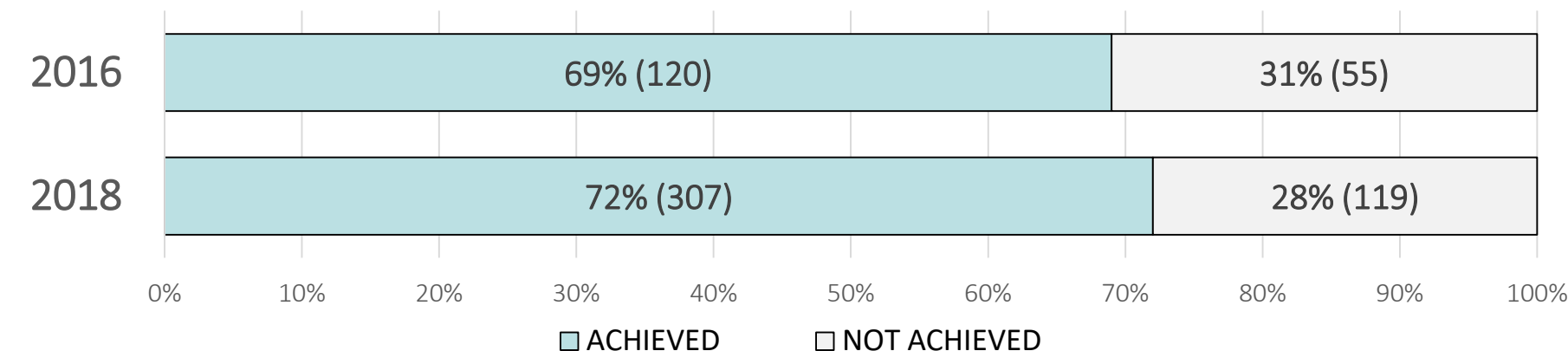
In response to the NPSA's alerts King's College Hospital introduced a separate code for radiographs requested for confirmation of the position of the feeding tubes ("NGT CXR"). Hospital's radiology department has committed to reporting all such X rays within 2 hours. Its performance was first audited in 2016 over a 2-month period and results were presented locally. We have repeated the audit in 2018 and results are presented below.

Study Design & Methods

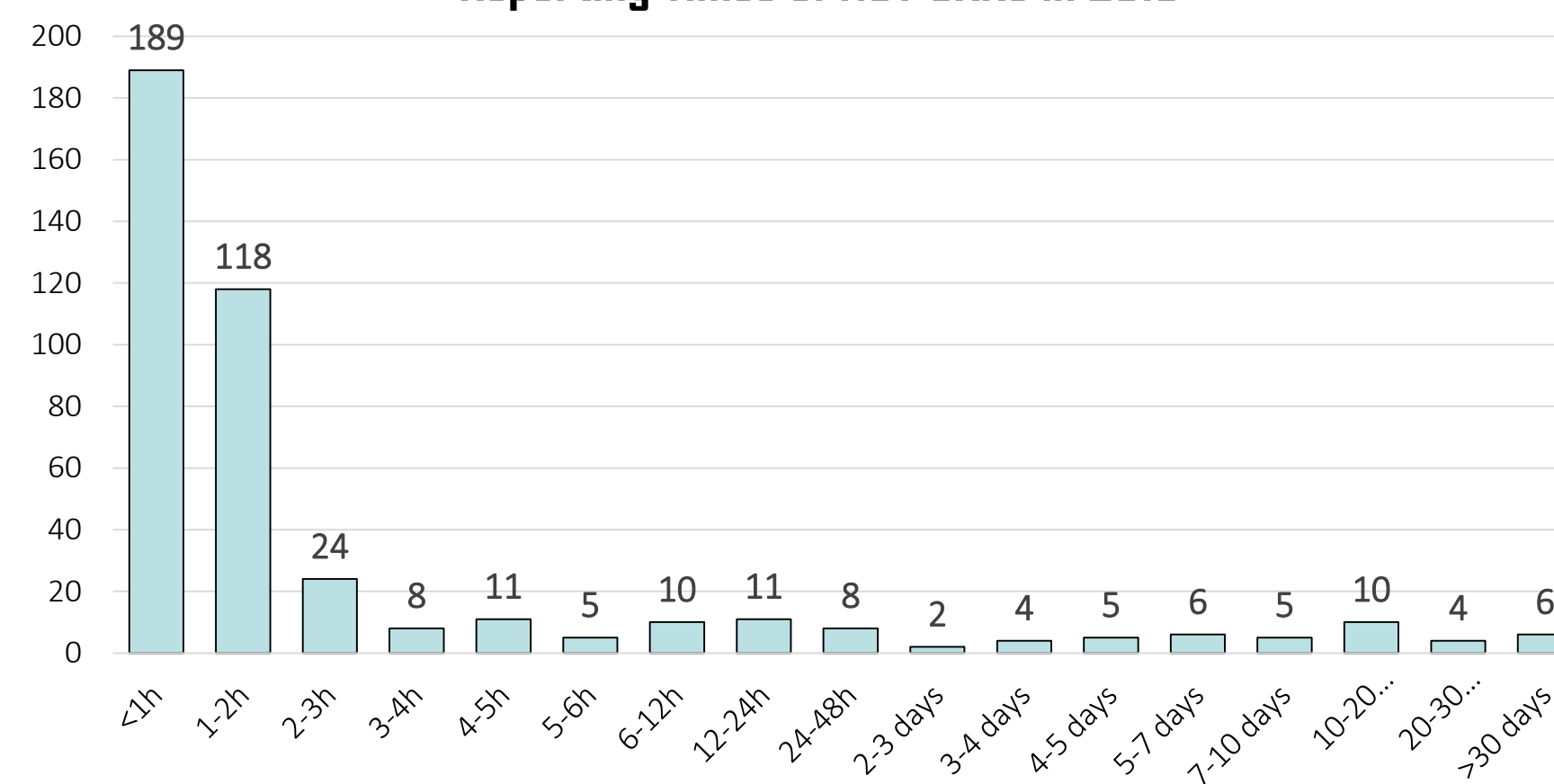
- ✓ 2nd Audit cycle
- ✓ Sample: 426 NGT-coded CXRs
- ✓ Audit period: 17th Feb - 18th April 2018
- ✓ Inclusion criteria: all NGT-coded CXRs
- ✓ Number of cases audited: 426
- ✓ How was the sample identified: Data pulled from radiology IT system (CRIS)
- ✓ Data collection type: Retrospective
- ✓ How data were obtained: IT generated spreadsheet

Results

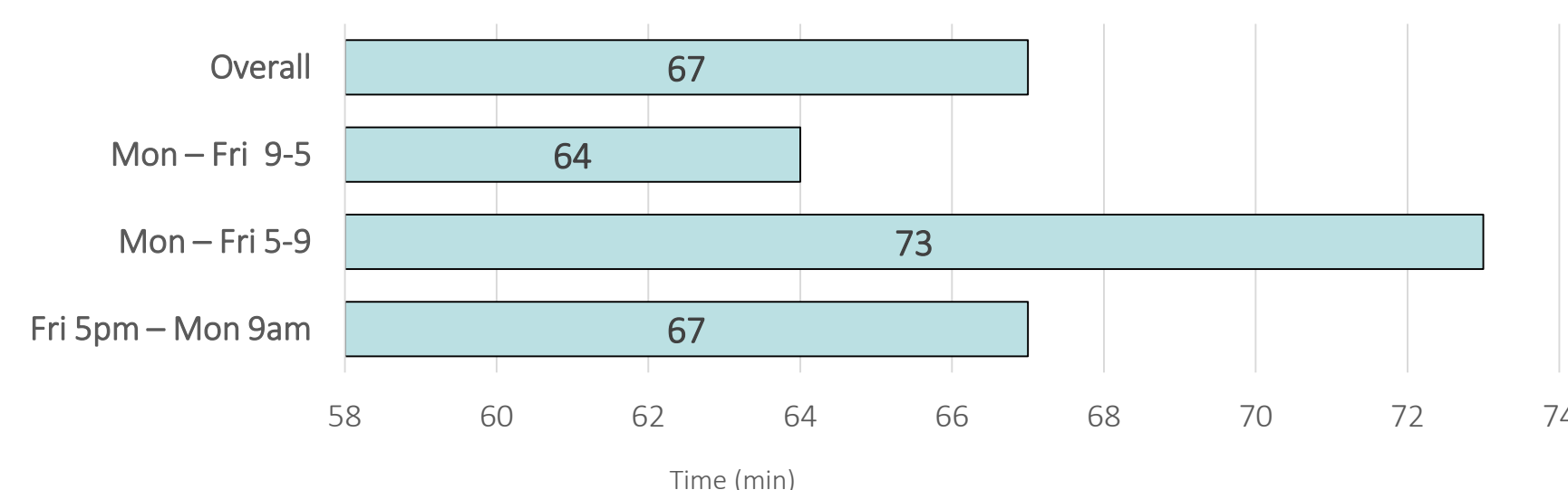
Achievement of the 2h reporting target in 2016 and 2018



Reporting Times of NGT CXRs in 2018



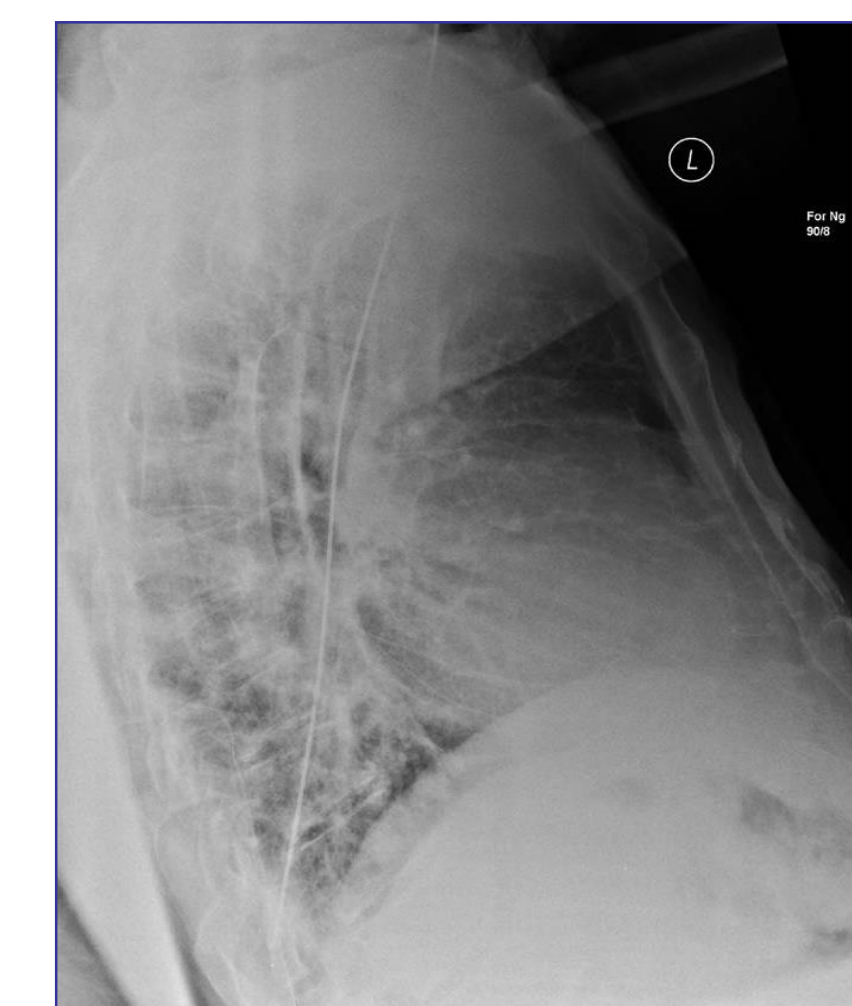
Median reporting time vs time of the week for 2018



Discussion & Conclusions

- ✓ Percentage of NGT-coded CXR reported within 2h has increased between 2016 and 2018, however there is room for further improvement
- ✓ Shortest median reporting time was recorded for radiographs performed Mon-Fri 9-5. NGT CXRs done after 5pm Monday-Friday had the longest reporting times
- ✓ Most X rays reported after the 2h target were requested by ITU
- ✓ The longest reporting time recorded during the 2018 audit loop was 41 days and 14h. The patient had another NGT CXR taken the next day, which was reported within the 2h target

Case Study



Interpretation of CXRs requested for confirmation of NG tube position can be challenging for a non-trained eye. In this patient's case, the feeding tube appears to be below the level of the diaphragm and therefore it could be incorrectly interpreted as being in the stomach. However the bases of the lungs extend much more inferiorly posteriorly. The tube also deviates at the level of the carina. Lateral x-ray confirms that the NG tube is actually in the base of the right lung.

References & Further Reading

- [1] NHSI (2016) Patient Safety Alert Nasogastric tube misplacement: continuing risk of death and severe harm. Alert reference number: NHS/PSA/RE/2016/006. Available at: <https://www.nlg.nhs.uk/> [Last accessed 14th Sept 2018]
- [2] Reducing the risk of feeding through a misplaced nasogastric tube: How to analyse check X-rays accurately to detect correct tube placement (PowerPoint Presentation). Available at: www.wales.nhs.uk/bcupinnacle/opedoc/259201 [Last accessed 14th Sept 2018]