

Tracheostomy insertion in Critical Care: are we on “the right trach”?

L Bridge, L Winslow, P Jeanrenaud

Critical Care Medicine, Whiston Hospital (St Helen's and Knowsley Teaching Hospitals NHS Trust)



Background

Tracheostomy is typically performed within Critical Care to definitively relieve upper airway obstruction, to avoid the sequelae of prolonged tracheal intubation, and for the long-term airway management and ventilation of the neurologically injured.

The NCEPOD report “On the Right Trach” made key recommendations covering several domains of tracheostomy care.

They suggested several features pertaining to tracheostomy insertion should be adhered to in order to improve patient care and safety, and avoid unnecessary, serious complication.

Recommendations included use of consent and WHO type (surgical) checklists prior to insertion, appropriate choice of tube (based on anatomy and the individual), and confirmation of placement both with capnography and bronchoscopic visualisation.

Aims

Our aim was to compare all tracheostomies inserted within our Critical Care department in 2014 to the national findings and NCEPOD recommended best practice.

We intended to assess whether we were conforming to best practice, and to identify areas requiring improvement in order to create a standardised national framework.

Methods

Data was collected retrospectively from the notes of all patients undergoing tracheostomy in our Critical Care department between January and August 2014 (eighteen patients in total).

We assessed demographics, insertion technique, consent practices and tube type. Additionally, we analysed confirmation of placement and post-insertion protocols.

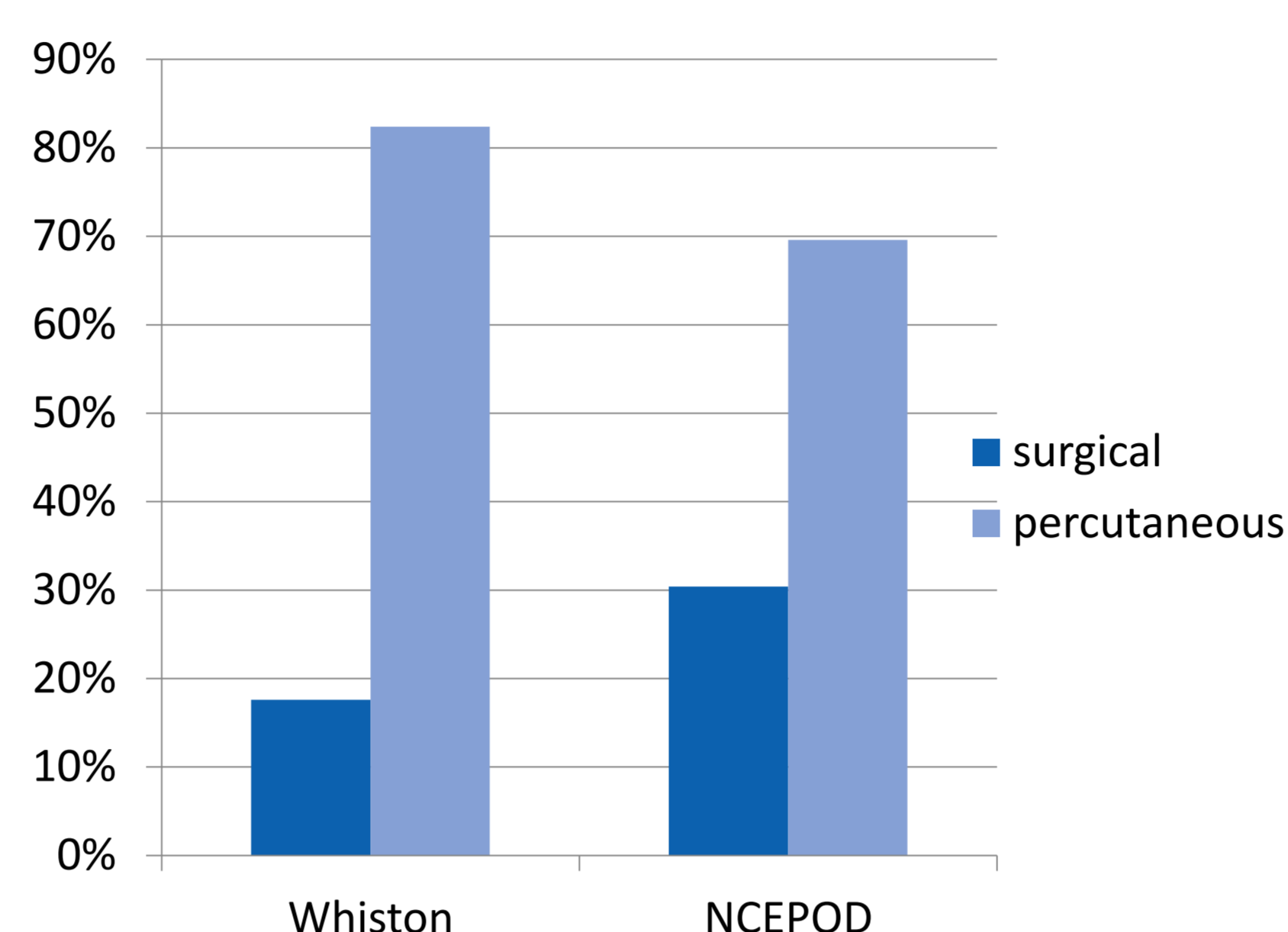
Conclusions

Broadly speaking, our Critical Care unit is adhering to the recommendations for tracheostomy insertion as set out in the NCEPOD “On the right trach?” data. However, use of the WHO surgical checklist is scant (as is the case nationally) and this must be addressed in order to maximally enhance patient care and safety.

Similarly, use of post-insertion bronchoscopy to confirm position should be the norm. Availability of equipment and staff training must therefore be addressed nationally.

Results

Fig 1: comparison of tracheostomy insertion approach between groups



Comparison was made between the cohort of patients identified within our Critical Care, and the nationally audited NCEPOD data.

NCEPOD recommends that consent and WHO type (surgical) checklists should be adopted in all instances prior to tracheostomy insertion.

Our unit performed well above the nationally audited average (as illustrated in figures 2 and 3) though failed to meet the gold-standard 100% across all areas.

Fig 2: completed consent forms for tracheostomy insertion compared by insertion approach

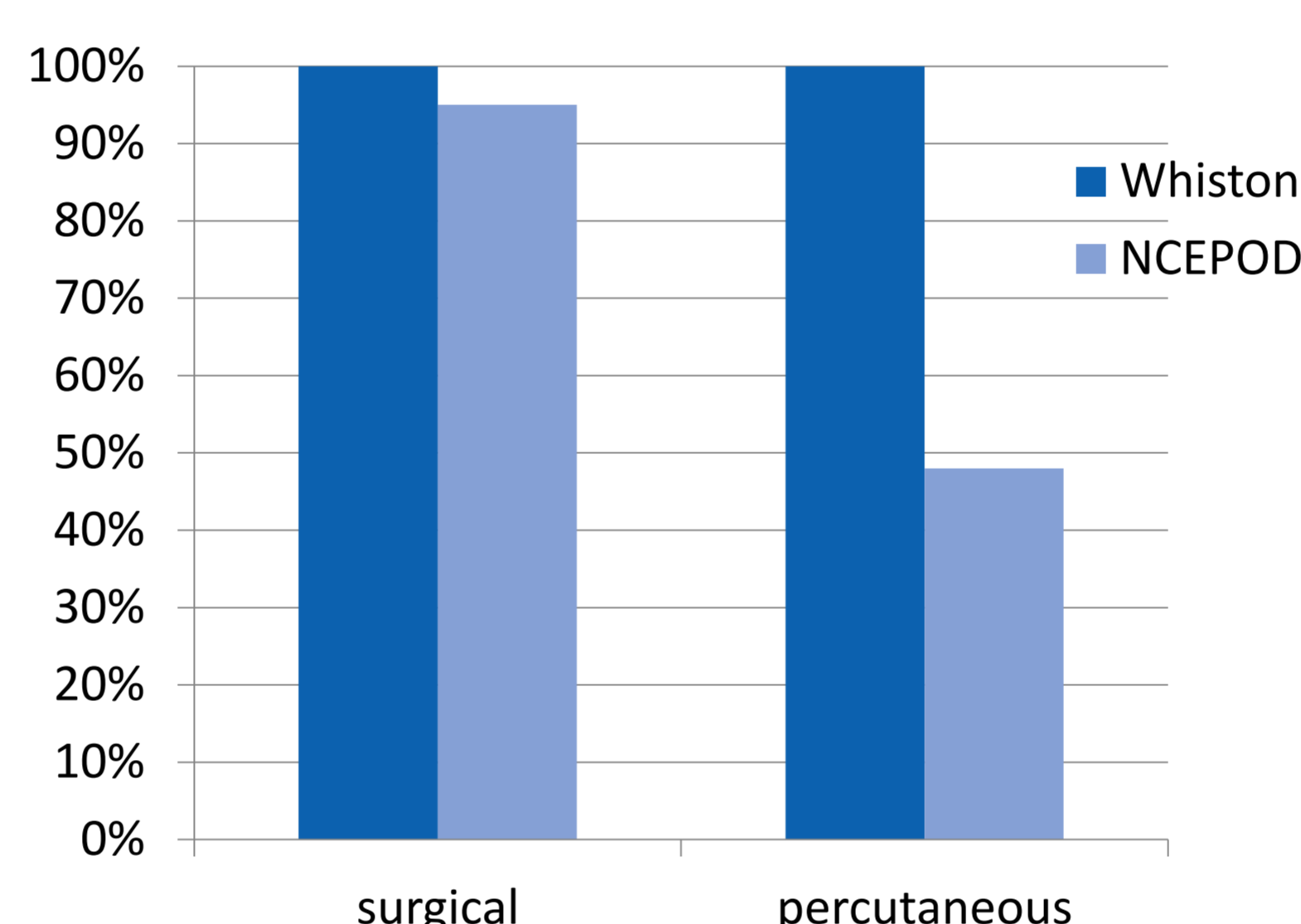
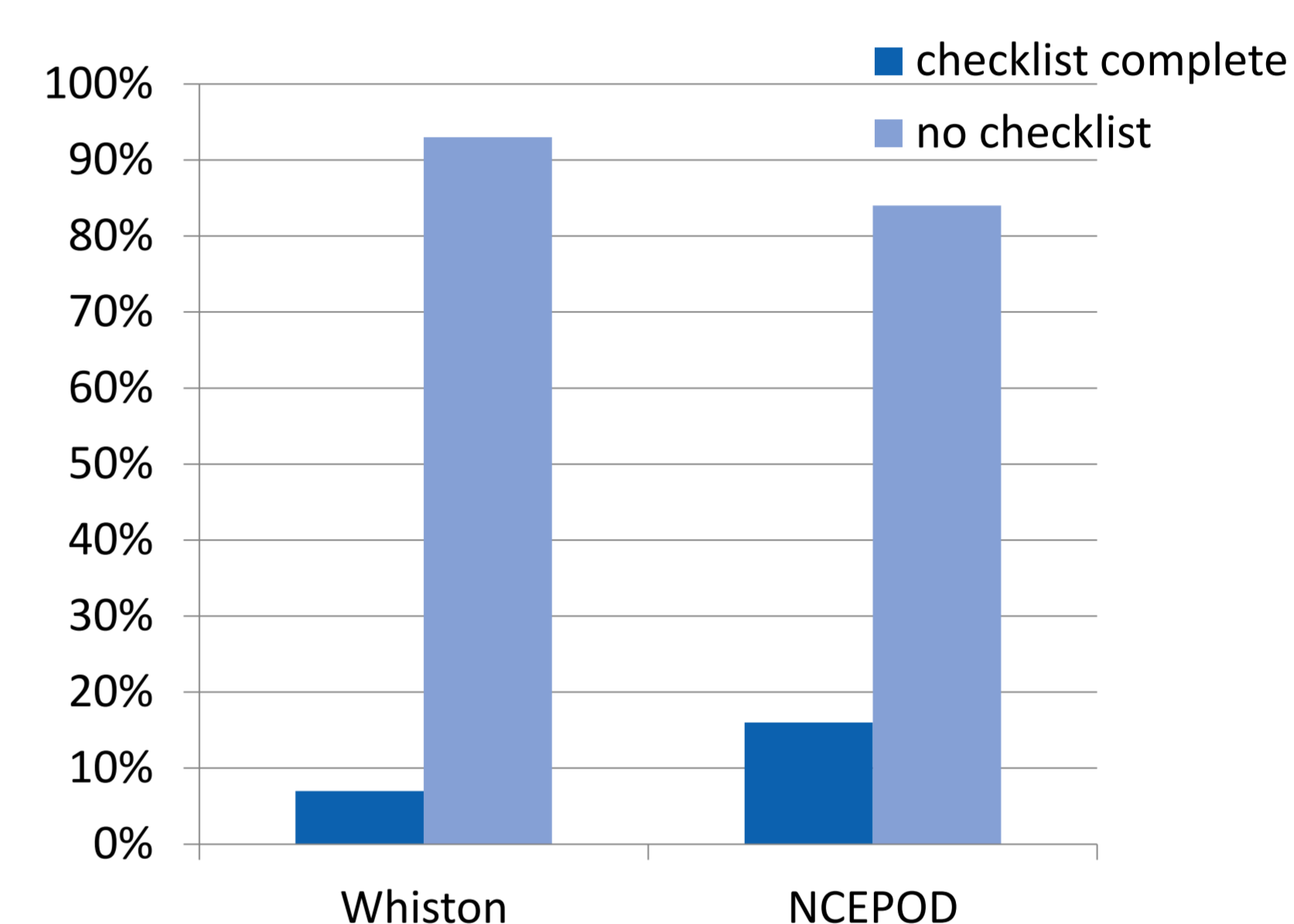


Fig 3: WHO surgical checklist completion rate for percutaneous tracheostomy between groups



Recommendations for tube type suggest that consideration should be made to the individual patient and their anatomy. This suggests that an adequate range of tube types be readily available, and that adjustable flange tracheostomies be more frequently considered. A correctly chosen tube size is less likely to culminate in a tracheostomy emergency.

In this respect our Unit performed similarly to the national standard, with inner tubes being routinely deployed (in 93% of cases), and adjustable flange tubes utilised 11% of the time. It should be noted however, that 100% of our patients had an appropriate tube selected at first placement.

Fig 4: types of tracheostomy tube compared between groups

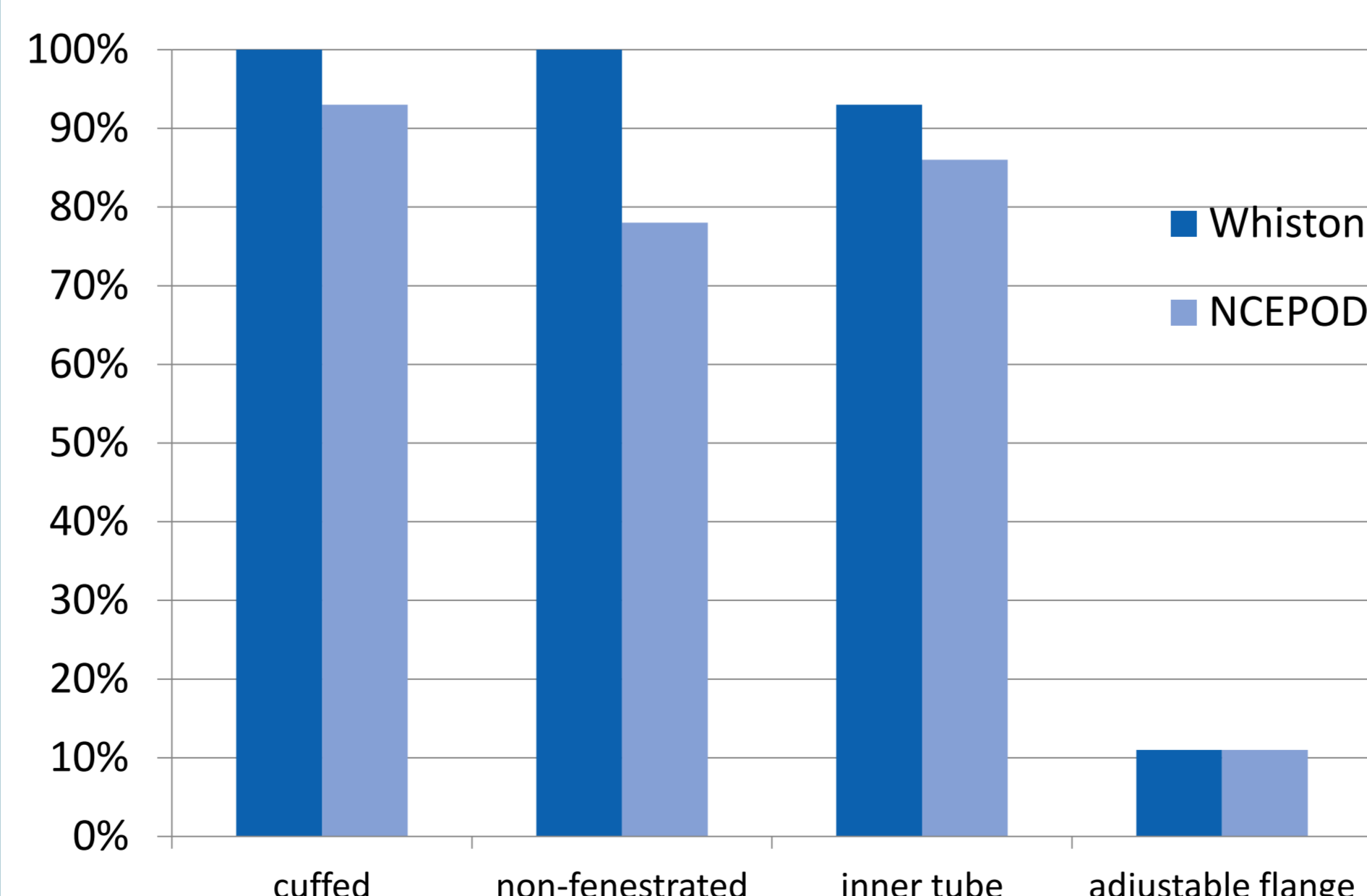
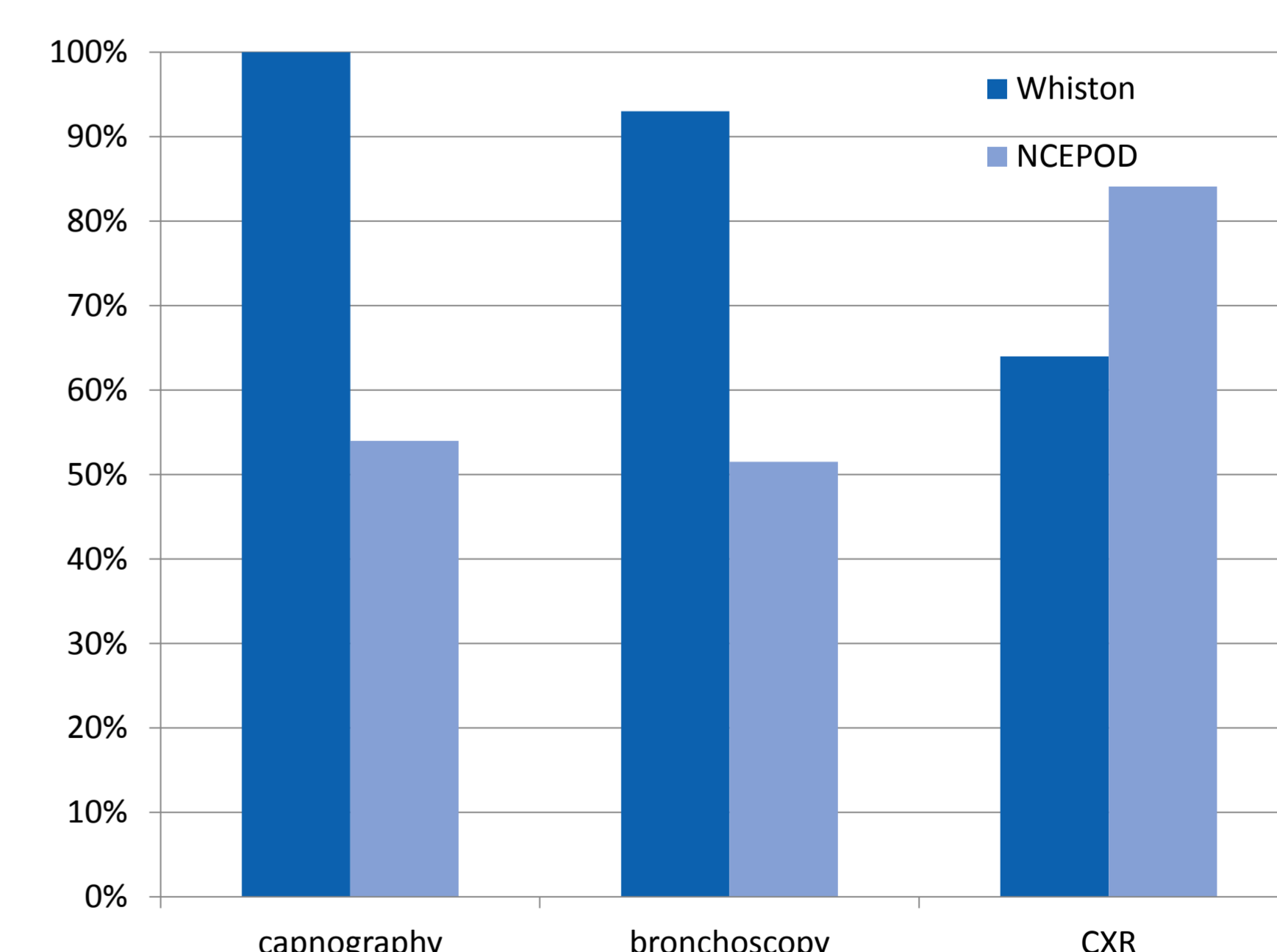


Fig 5: use of post-insertion placement check methods compared between groups



NCEPOD recommendations suggest that tube placement should always be confirmed by capnography. In this respect our unit matched the gold-standard 100%, whereas national figures lagged somewhat behind (with only 54% of tube placements confirmed in this manner)

Similarly, it is recommended that appropriate positioning of the tube be confirmed using bronchoscopy. 93% of our cohort (100% percutaneous, 67% surgical) underwent post-insertion bronchoscopy compared with 51.5% nationally.

References

“On the Right Trach?": A review of the care received by patients who underwent a tracheostomy
A report by the National Confidential Enquiry into Patient Outcome and Death (June 2014)