

The South West of England multicentre tracheostomy service audit

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INTRODUCTION

In 2014 NCEPOD published 'On the Right Trach' recommendations aiming to improve safety.

We undertook a 6 week long trainee-led audit of tracheostomy insertion to understand whether recommendations from this document have been incorporated into clinical practice and if patient care has improved as a result

12 ICUs within the South West region of England participated

SUMMARY OF NCEPOD 'ON THE RIGHT TRACH' RECOMMENDATIONS

- ✓ If no trial of extubation undertaken prior to tracheostomy, the reason is documented in the notes
- ✓ Tracheostomy insertion recorded and coded as an operative procedure
- ✓ Consent form completed prior to tracheostomy insertion
- ✓ A 'WHO' type surgical checklist completed prior to/during tracheostomy insertion
- ✓ Capnography available to confirm tube placement
- ✓ Airway endoscopy performed post insertion to confirm position of the tube
- ✓ The following data is available at the patient bedside: Tube size, Tube type, Cuff pressure, Tube cleaning plan
- ✓ An essential box of portable equipment which can be transferred with the patient is available
- ✓ No Unplanned or night time discharge of patient
- ✓ Immediate access to a difficult airway trolley
- ✓ A fiberoptic or video laryngoscopy is available within the intensive care unit itself and immediately available
- ✓ Capnography is available at every bedspace
- ✓ There is a training programmes in blocked /displaced tubes /airways and difficult tube changes in place for staff within the Trust
- ✓ Core competencies for the care of tracheostomy patients including resuscitation are set out by the Trust
- ✓ Discharge summary is detailed and structured
- ✓ Appropriate size and design of tracheostomy tube used
- ✓ Unplanned tube changes are reported locally as clinical incidents (via the incident reporting system)
- ✓ If the patient is transferred from ICU with a cuffed tube in situ, the reason is documented

METHOD

We used the trainee research networks, STAR and SWARM, to identify trainees willing to act as lead data collectors in each hospital within the Severn and Peninsular. Of the 13 hospitals in these regions we were able to collect data in 11. Each hospital's audit department assessed and approved the audit prior to its roll out at the site.

The lead data collectors identified a supervising consultant and registered the audit locally with their audit team. A basic outline of the audit was emailed to each data collector to ensure the same audit standards were registered at each site.

Each data collector was emailed a data collection proforma, but it was left to their discretion how to administer the collection process. Each unit selected a four to eight week period within which to audit. Some sites were also given access to an electronic data collection programme, REDcap, and were able to upload data directly.

PATIENT SELECTION

Inclusion:

Any adult patient on the intensive care unit during the audit window who underwent tracheostomy insertion for the primary purpose of ongoing ICU treatment was added to the audit database.

Exclusion:

Patients admitted with a tracheostomy in situ or who had a tracheostomy as part of their planned pre-ICU care (namely those undergoing ENT or thoracic surgery where a tracheostomy was included in the surgical plan) were excluded from the audit.

RESULTS

Every intensive care unit had a difficult airway trolley and immediate access to a fiberoptic or video laryngoscope.

Capnography was available at every bed space in 11 of 12 units.

7/11 (64%) of units have a lead for care and management for tracheostomies

Tracheostomy Insertion

Compliance to NCEPOD recommendations :

	Yes (%)	No (%)	Unknown (%)
Consent form used	47 (67%)	13 (19%)	10 (14%)
WHO-style checklist used during procedure	38 (54%)	19 (27%)	13 (19%)
documentation of medication used	48 (69%)	16 (23%)	6 (8%)
Imaging of neck used (USS, CT etc)	44 (63%)	24 (34%)	2 (3%)
bronchoscopy used during the insertion procedure	67 (96%)	1 (1%)	3 (3%)
Capnography post-procedure	63 (90%)	1 (1%)	6 (9%)
CXR after the tracheostomy	59 (85%)	10 (14%)	1 (1%)

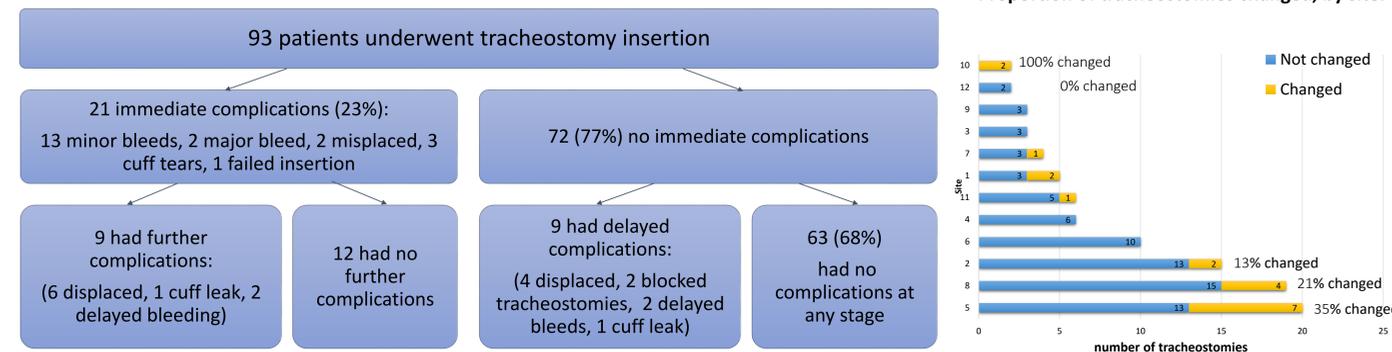
93 tracheostomies inserted
(25% surgical, 75% percutaneous)

925 patients screened

Tracheostomy rate 10%

Median day of insertion: 9 (IQR 5-12 days after ICU admission)

Complications



Tracheostomy daily care and outcomes

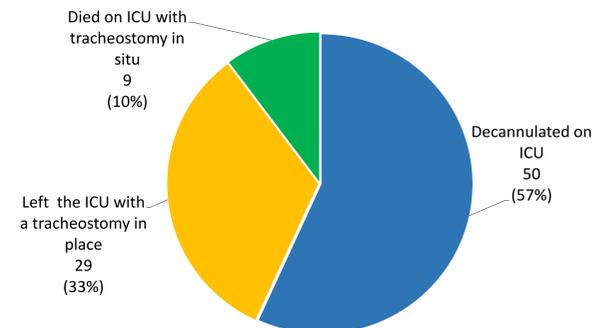
Daily documentation:

	Yes (%)	No (%)	Unknown (%)
cuff pressure measured at least 8 hourly	34 (38%)	48 (53%)	8 (9%)
cuff pressure documented at least once a day	74 (82%)	15 (17%)	
portable source of equipment readily available at the bedside	52 (58%)	37 (41%)	

Information readily available at the bed space :

	Yes	No
Tube size	86 (92%)	7 (8%)
Tube type	69 (74%)	24 (26%)
Cuff pressure	84 (90%)	9 (10%)
Tube cleaning plan	75 (81%)	18 (19%)

Patient outcomes:



DISCUSSION

In the south west region, 10% of patients in ICU underwent tracheostomy insertion

Immediate complications occurred following 20.6% of percutaneous insertions, most commonly bleeding.

32% of patients suffered a tracheostomy-related complication at some stage during the ICU stay

11% of tracheostomies became displaced, and 20% needed changing.

Bronchoscopy use was widespread but imaging of the neck pre insertion was not.

Compliance with the NCEPOD recommendations was variable: Poorest compliance was with consent form and surgical checklist use, portable equipment availability, and presence of a training programme. Best compliance occurred with capnography and bronchoscopy use.

THE FUTURE



The first national trainee-led research project in ICU

ATOMIC2 has been adopted as the next national project by RAFT, the Research and Audit Federation of Trainees.

Keep in touch; in 2019 we want to audit **YOUR** tracheostomies!

[@tomicproject](#) [@STARResearch](#) [@ukswarm](#)

The ATOMIC collaborators

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