

# Improving tracheostomy care during the COVID-19 pandemic

In anticipation of an increase in patients requiring a temporary tracheostomy due to the huge surge in patients placed on ICU ventilation at the peak of the COVID-19 pandemic, the NHS England National Patient Safety Team launched a National Patient Safety Improvement programme to rapidly support the NHS to provide safe tracheostomy care.

Tracheostomy is a procedure to provide an artificial airway to assist breathing. A small surgical opening is made through the front of the neck into the windpipe and a curved plastic tube, known as a tracheostomy tube, is placed through the hole allowing air to flow in and out of the windpipe. There are various reasons why someone might need a tracheostomy. The commonest reasons are due to a blockage of the normal air passages (nose and mouth or at the back of the throat) or because a patient needs help from a ventilator for more than a few weeks.

Previous research<sup>1-4</sup> showed up to 30% (nearly one in three) patients receiving tracheostomy care have been found to suffer from avoidable harms related to lack of equipment, staff training, and/or limited infrastructure. During the pandemic this risk increased as patients with temporary tracheostomies were managed in makeshift ICUs or ward areas, and by staff who may not be familiar with the key principles to keep these complex and vulnerable patients safe.

To support staff to keep tracheostomy patients safe at this challenging time, the National Patient Safety Improvement Programme expanded the work of the [Improving Tracheostomy Care \(ITC\) project](#), that had been working with 20 NHS sites between 2016 and 2019; and commissioned the Academic Health Science Network's (AHSN) 15 Patient Safety Collaboratives to rapidly deliver safety interventions across 180 NHS hospital sites in England.



Central to this was the roll out of the three safety specific strategies (interventions) from the ITC programme:

- **Standardised tracheostomy care bundles** – evidence-based practices that are grouped together to encourage the consistent delivery of safe care.
- **Bedhead signs** – providing specific key information about the patient's tracheostomy, along with details of what staff should do in an emergency and who to call for help.
- **Standardised bedside and ward tracheostomy equipment** – ensuring emergency equipment needed to manage a blocked or displaced tube was immediately available at all times, and accompanied the patient wherever they went during their hospital stay.

A '[Safer Tracheostomy Care – a toolkit for healthcare staff](#)' was also developed by a multi-disciplinary team to further support healthcare staff.

The ambition was for >90% sites to have implemented these interventions including the nine elements of the safe tracheostomy care bundle over 2020-21.

By March 2021:

- 92% of hospital sites (n=192) had adopted all three tracheostomy interventions
- Bedhead signs reached 94% adoption
- Emergency equipment reached 100%
- Delivery of a daily care bundle reached 97% adoption
- Delivery of all nine elements of the daily care bundle reached 57%.

Researchers from the University of Manchester, as part of the National Institute for Health and Care Research (NIHR) Applied Research Collaborative Greater Manchester (ARC-GM), were commissioned by NHS England, to evaluate the impact of the programme. Owing to the challenges of the pandemic, detailed data collection for the 180 hospital sites was not possible. Therefore, findings from the 20 original hospitals was utilised to understand the potential impacts of the safety interventions from March 2020 to March 2021, and modelling was used to show the impact if the findings were scaled up to the 180 sites.

The evaluation estimates that the programme led to a 33 day average reduction in total hospital stay per tracheostomy admission. Multiplied by the number of admissions requiring a tracheostomy in the 180 hospital sites and taking into account the expected costs of length of stay, this would give an estimated notional saving of £1.92 million per hospital, per year.\*

The full evaluation report is available on the [NIHR ARC-GM website](#).

\*Please note that there was a surge in tracheostomies during the pandemic when the tracheostomy interventions were implemented and the estimates are based on modelling denoting significant positive impact on NHS resources and aimed at promoting evidence-based practice to improve safety and care.

## References

1. Martin IC, Freeth H, Kelly K, Mason M. NCEPOD: On the right Trach? [Internet]. A review of the care received by patients who underwent a tracheostomy. 2014. Available from: [www.ncepod.org.uk/2014tc.htm](http://www.ncepod.org.uk/2014tc.htm)
2. Thomas AN, McGrath BA. Patient safety incidents associated with airway devices in critical care: a review of reports to the UK National Patient Safety Agency. *Anaesthesia* 2009; 64: 358–65 6.
3. McGrath BA, Thomas AN. Patient safety incidents associated with tracheostomies occurring in hospital wards: a review of reports to the UK National Patient Safety Agency. *Postgrad Med J* 2010; 86: 522–5 7.
4. Cook TM, Woodall N, Harper J, Benger J. Major complications of airway management in the UK: results of the Fourth National Audit Project of the Royal College of Anaesthetists and the Difficult Airway Society. Part 2: intensive care and emergency departments†. *British Journal of Anaesthesia* 2011; 106: 632–42