IMPROVING TRACHEOSTOMY CARE THROUGH IMPLEMENTATION OF A WEEKLY TRACHEOSTOMY WARD ROUND


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Introduction

Globally there are considerable patient safety risks associated with children who have tracheostomies, as a result of tracheostomy-specific complications and the underlying comorbidities within this group. Studies of this population report tracheostomy-specific mortality ranging from 0.9% (1) to 5.9% (2). Within our institution, concerns were noted regarding the risk of serious avoidable tracheostomy morbidity after merging three paediatric hospitals onto a single site in 2009. Similar concerns regarding paediatric tracheostomy safety exist nationally. In response, the Paediatric Working Party of National Tracheostomy Safety Project (NTSP) was established in 2014. Collaborators include health care professionals from multidisciplinary specialties: Paediatric Otolaryngology, Paediatric Anaesthesia, Paediatric Intensive Care, Speech and Language Therapists, Tracheostomy Nurse Specialists, Physiotherapists and Resuscitation Practitioners from across the UK and Ireland. The aims of the Working Party are to reduce mortality and morbidity in children living with a tracheostomy (3).

Locally with the support of the NTSP our institution initially implemented local safety protocols followed by the NTSP protocols and bedhead signs. Other interventions included appointment of a tracheostomy specialist nurse, attempts to cohort patients to fewer wards, equipment standardisation, nurse cascade training (two key trainers per ward responsible for tracheostomy competency training), carer training and patient-specific tracheostomy boxes. With these interventions we demonstrated a significant reduction in harm between 2010 and 2015 from tracheostomy patient safety incidents (p=0.013) (Figure 1). However, within our results there was a slight rise in harm in the last few years. As a result we instituted a multi-disciplinary paediatric tracheostomy ward round with the aim of further improving care and reducing harm as a result of tracheostomy patient safety incidents.

Ward Round Structure

All patients with tracheostomies are tracked within our hospital using electronic patient flagging which is started by the ward nurse when the patient arrives. This then means that all these patients and their locations will be visible to the tracheostomy specialist nurse. We currently meet on Mondays in a central hospital meeting room for an initial board round. Participants include Anaesthesia, Ear Nose and Throat surgeons, Speech and Language Therapists, Specialist Tracheostomy Nurses, Critical Care nurses and a number of junior medical trainees.

We then discuss each patient within the hospital, highlighting in particular:

• Tracheostomy indication and date of insertion.
• Tracheostomy size and type.
• Any problems that week.
• Any recent patient safety events.
• When the next routine fibreoptic scope is required.
• Swallowing concerns and tracheostomy site concerns

For many patients the tracheostomies are well established and without problem, however, we have identified a number of children who have been lost to follow-up over the years.

Once this aspect is complete, if necessary, the team can go and review certain patients the specialist nurse has concerns regarding.

With the inclusion of all these specialties we have been able to get an immediate multidisciplinary decision regarding problem tracheostomies and thus improve care. Following the round, the data is then inputted into both a local database and the Global Tracheostomy Collaborative (GTC) database as our institution is a member of the GTC.

Our Results

As noted previously, within our interventions over a 6 year period we have demonstrated a significant reduction in harm as a result of tracheostomy patient safety incidents. The ward rounds were commenced at the start of January and to date we have not shown a reduction in harm per patient incident. Data for the last 4 months are very low in actual harm using the NPSA grading system (4) (Table 1). However, most events are no harm or low harm. It is the feeling of the team and ward nurses that the ward rounds have improved the care of these children in an unquantifiable way related to the previously noted points.

Discussion

Few papers have been written detailing the specifics of a ward round approach. Most notably Arora et al. described their approach to improving adult tracheostomy (5). Like in our structure they utilize a multidisciplinary team, but do not include an anaesthetic presence. In the setting of children, we feel it is important to include an anaesthetist as they are often involved in the care at a number of significant settings that my not be present in adults. These include the insertion, other procedures that the children often require and at regular endoscopic checks under general anaesthesia. A significant part of their approach involved teaching. This has previously been established within our hospital. Their key findings included a significant reduced time to decannulation from ICU discharge and a non-significant increase in bundle compliance.

It is possible that the tracheostomy ward round would not be able to be demonstrate a reduction in harm after our already significant reductions over the last few years. It may be that in the future we need to consider other outcome measures including more quantitative measures such as parent and staff satisfaction and other quantitative measures such as decannulation rates and time to this point, reduction in loss to follow-up and compliance with bundles of care (6). Indeed, one of the main outcomes of our ward rounds has been the creation of a multidisciplinary database used in conjunction with the ward rounds, which we will use to ensure appropriate patient management, follow-up, audit and further quality improvement.

References


Figure 1 – The results of previous tracheostomy interventions.

Table 1 – Patient safety events since the creation of the tracheostomy ward round.

No-Harm Slight Moderate
Blocked/Dislodged/Accidental Decannulation 3 0 1
Tracheostomy Site Incidents 3 2 0
Inadequate Staff Numbers 1 0 0
Parent or Staff Training 1 0 0
Clinical Error 1 0 0
Equipment Problems/Use 2 0 0
Trache Box Problems 1 0 0
Total 12 2 1