

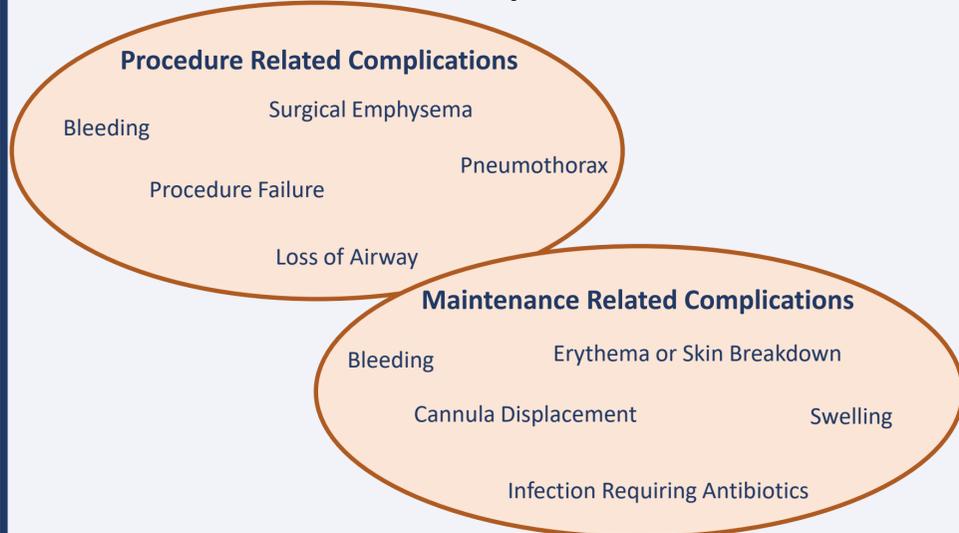
# Comparison of Complications Associated with Percutaneous and Surgical Tracheostomies

## Introduction

- Tracheostomy is a **frequently** performed procedure in **critically ill patients**
- Both **percutaneous dilatation tracheostomy (PDT)** and **open surgical tracheostomy (OST)** methods are used, with **PDT** often being the **preferred** method on critical care units (CCU)
- Tracheostomies can be associated with **complications** and **significant morbidity**

## Methods

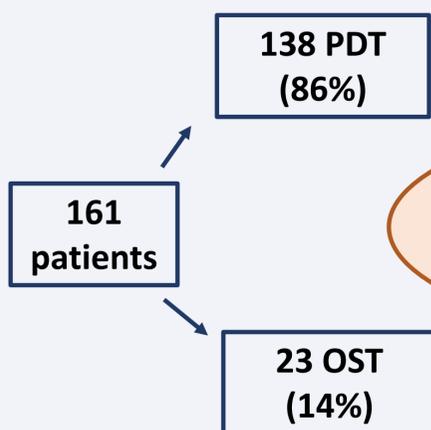
- Retrospective analysis
- All patients on ICU at Salford Royal Hospital who underwent a tracheostomy, between **January 2018 and December 2019**
- We reviewed **procedure related complications** and **maintenance related complications**



## Aim

- To determine the complications associated with tracheostomies on the Intensive Care Unit (ICU) at Salford Royal Hospital, UK
- To compare the complication rates between PDT and OST

## Results



**The most common reasons to proceed to OST:**  
 → Aberrant vessels overlying the trachea – 30%  
 → C-spine injury or inability to flex neck – 17%

### Time to Tracheostomy



### Time in CCU



### Immediate Complications:

→ No significant difference in the occurrence of procedure related complications between PDT and OST ( $p = 0.97$ )

### Maintenance Complications:

→ Patients in the OST group experienced significantly more maintenance related complications ( $p < 0.05$ )

→ Complication rates:

- PDT = 6.5% (9)
- OST = 30% (7)

### Percutaneous Tracheostomy

4% complication rate:

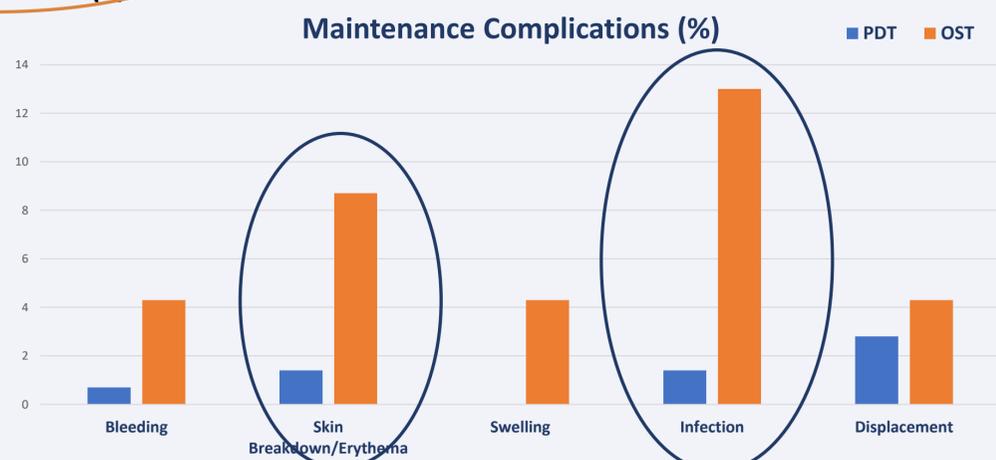
- 2 = surgical emphysema (no intervention needed)
- 1 = pneumothorax (required chest drain)
  - 2 = required 2 tracheal punctures

(19 = uncomplicated tracheal ring fracture)

### Surgical Tracheostomy

- 0% complication rate – no complications intra-operatively

### Maintenance Complications (%)



## Conclusions and Further Work

- OST are associated with significantly higher rates of maintenance related complications, particularly infection.
- Further research is needed to determine whether; 1) clinical experience is related to complication rate, 2) aberrant vessels detected on USS always require referral for OST, and 3) protocols can be devised to identify patients who may benefit from a hybrid approach to tracheostomy.