

# Implementation of Evidence-Based Accidental Tracheostomy Tube Dislodgement Bundle in Critical Care Settings

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## Introduction/Backgrounds

- Accidental tracheostomy tube dislodgement is the most common tracheostomy related adverse event (Brenner, 2020).
- It is a serious complication that can lead to airway compromise and mortality (Cipriano et al., 2015; Rajendram, Khan, & Joseph, 2017).
- Fresh tracheostomy tube dislodgement carries even higher risk because the tracheal opening has yet to heal to form a stable airway (Hood, Lewis, & Bowens, 2017; Bontempo & Manning, 2019).
- The rate of dislodgement is 2.28 (95% CI = 2.0-2.7) per 1000 total bed days in adult patients.
- The evidence addressing the proper management of fresh tracheostomy tube dislodgement is scarce (Mitchell et al., 2013).
- Critical care units at a Mid-Atlantic not-for-profit 225-licensed-bed community hospital had three sentinel events.
- Root cause analysis showed:
  - Ineffective management strategies
  - Lack of clinician knowledge and comfort level

## Problem Statement

There is a lack of knowledge and comfort level among nurses and respiratory therapists regarding the management of accidental tracheostomy tube dislodgement. Inefficiency in the management of accidental dislodgements can result in catastrophic patient outcomes.

## Research Findings

Clear management plan:

1. Airway management algorithm
2. Visual patient information sheet
3. Easy access to supplies and equipment

## Aims

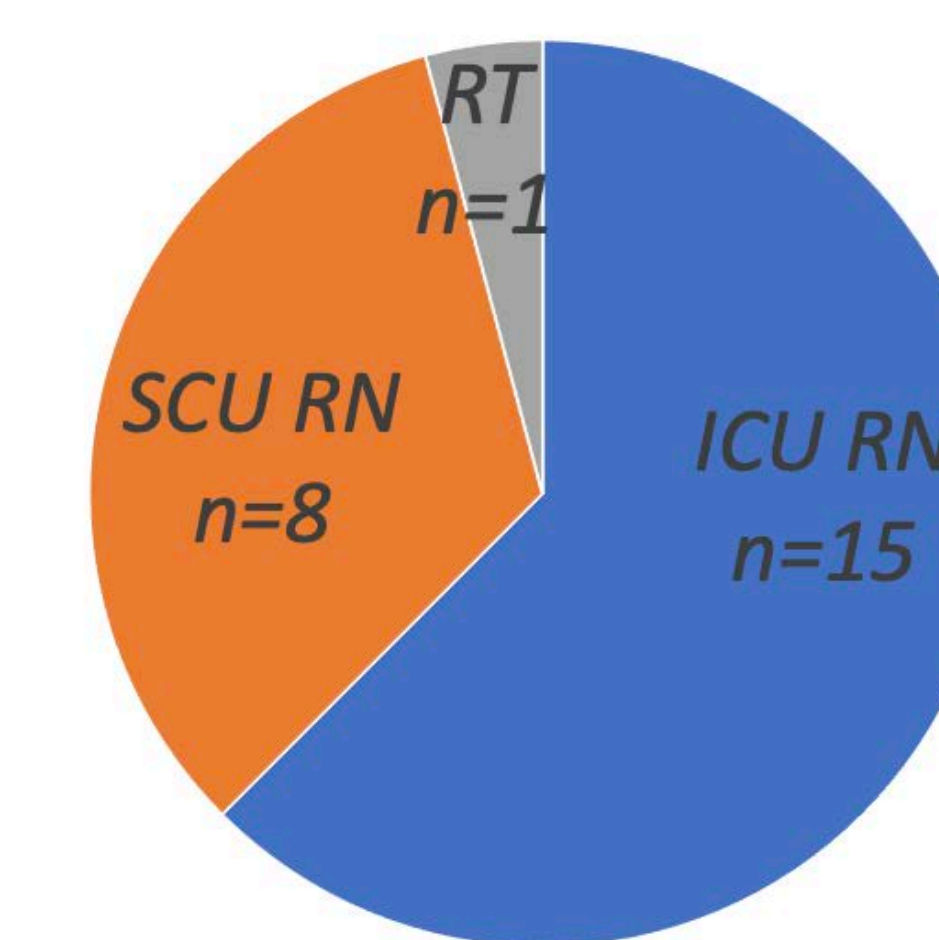
1. Increase nurses and respiratory care practitioners' knowledge in managing accidental tracheostomy tube dislodgement
2. Increase nurses and respiratory care practitioners' comfort level in managing accidental tracheostomy tube dislodgement
3. Critical care units will have a 75% or greater compliance rate

## Methods

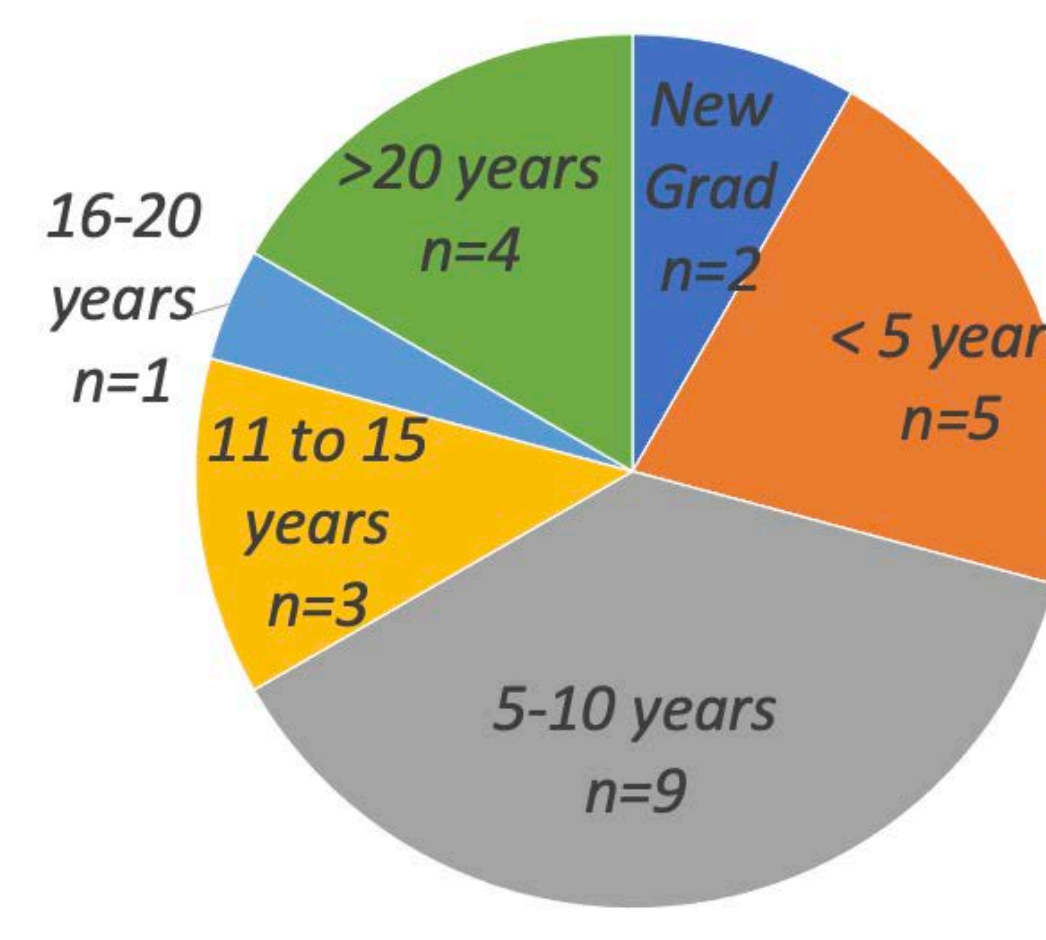
- Pre-test/post-test study design to measure knowledge and comfort level.
- Convenience sampling of participants: critical care nurses (ICU and SCU), and respiratory care practitioners.
- Interventions: **ATD bundle** (Tracheostomy Dislodgement Algorithm, Head of the Bed Tracheostomy Communication Tool, and Emergency Tracheostomy Kit) & education video on the use of ATD bundle.

## Results

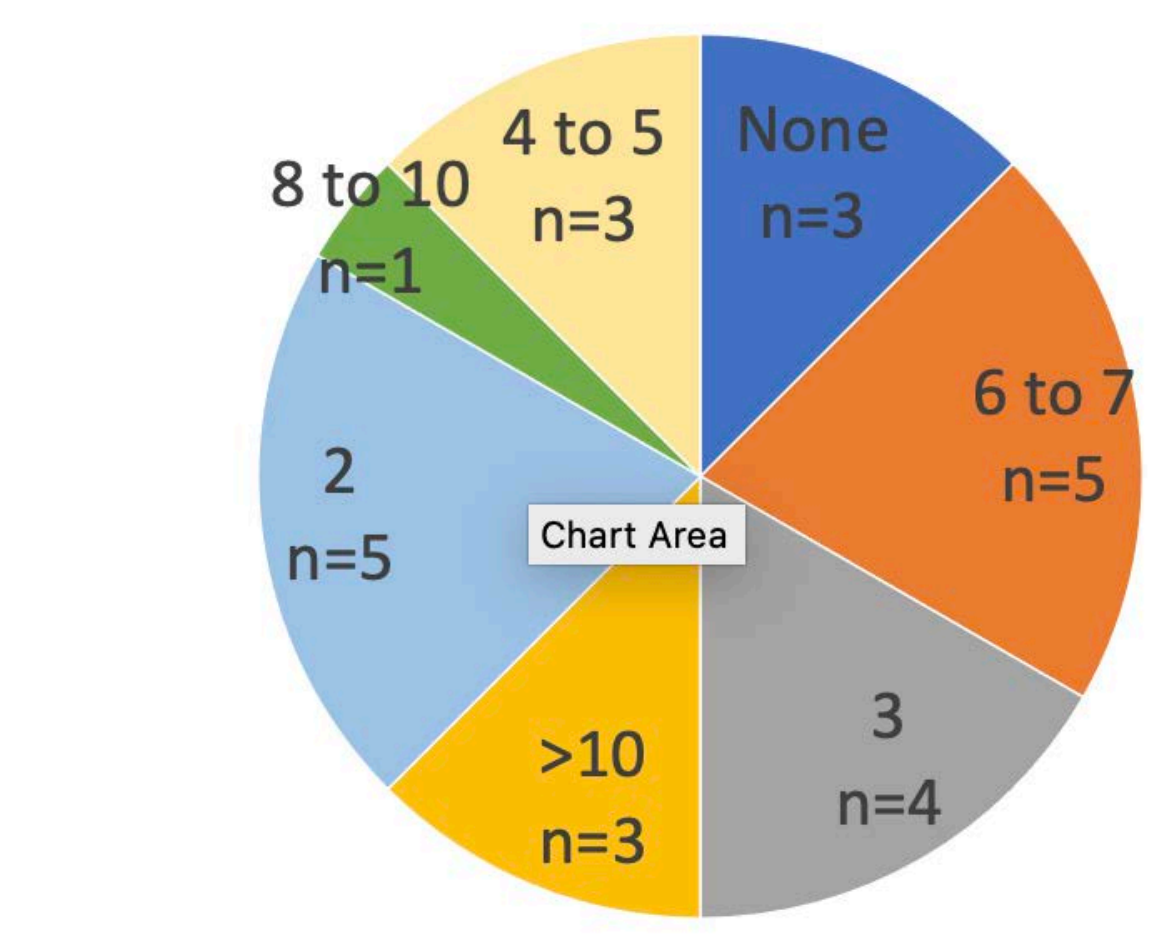
Survey Participants



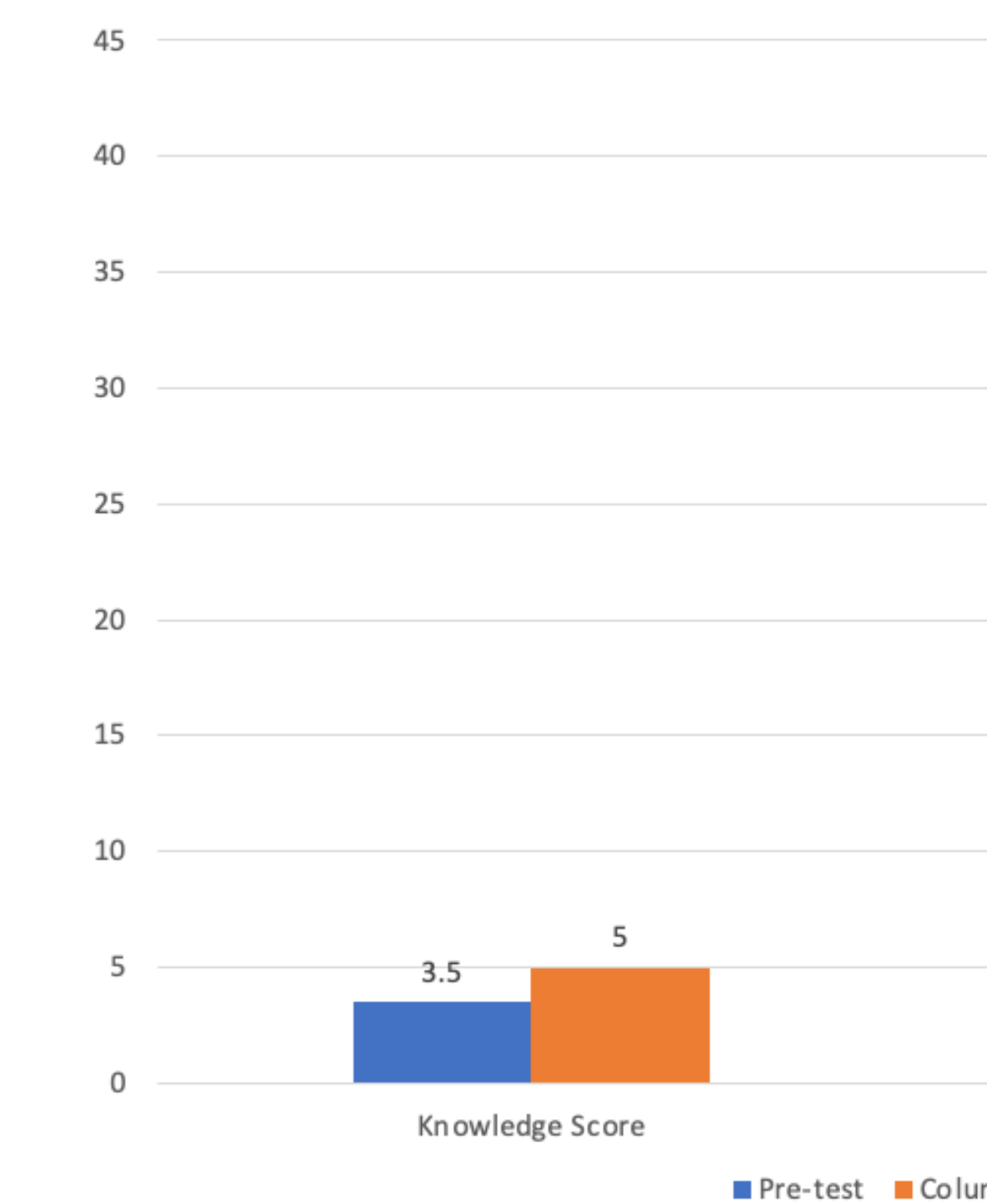
Years of practice in current role



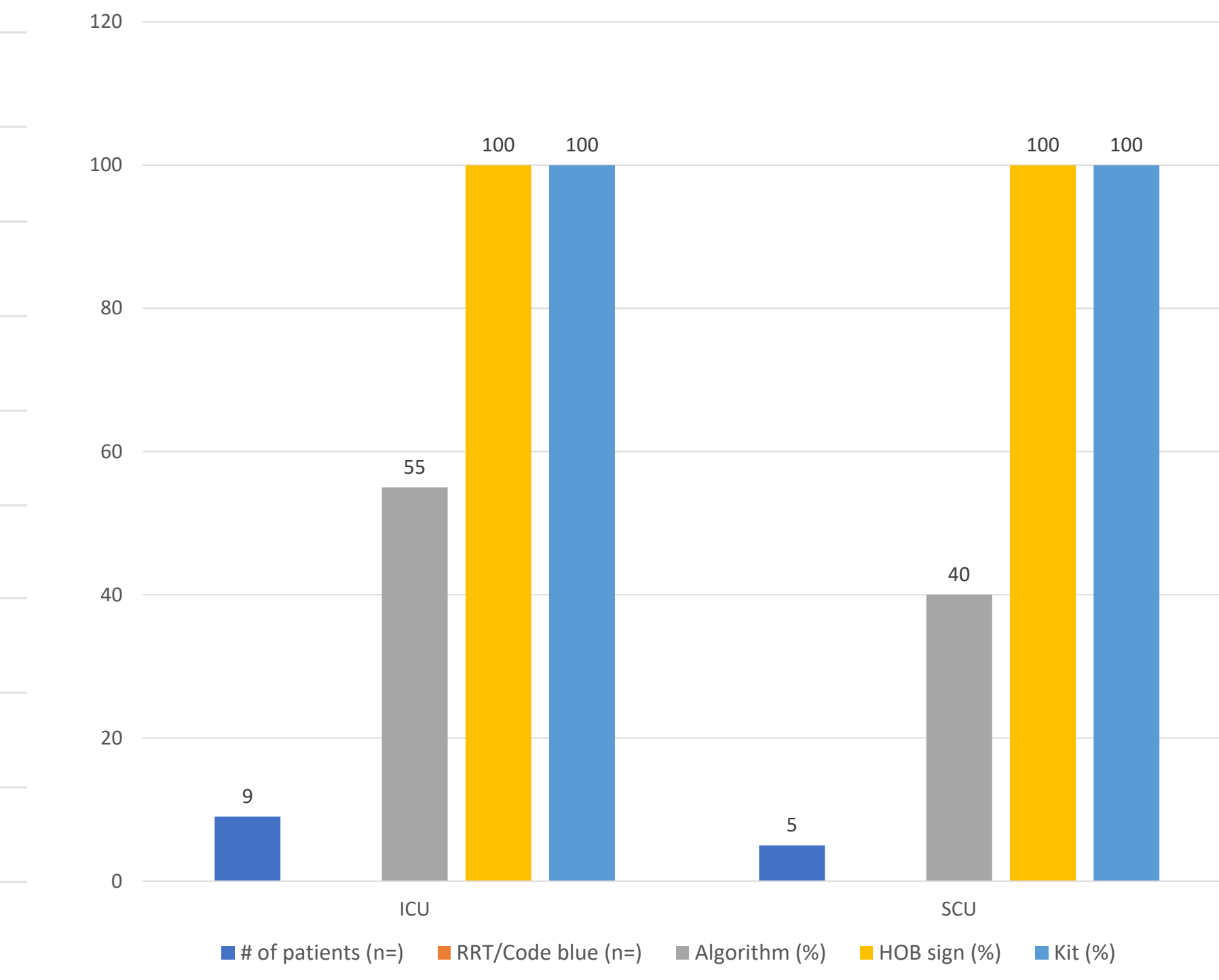
# of tracheostomy patients treated in year 2020



Knowledge Score and Comfort Level Survey (median score)



ATD Bundle Audit



## Conclusion

- Median two-point increase in both knowledge score and comfort level is statistically significant.
- Clinical significance is difficult to assess since no RRT or Code blue was called during the duration of project implementation.
- Can be expected to have a positive impact on clinical patient safety.
- Incorporate ATD bundle into hospital policy and procedure.