

## Introduction

A common area for pressure injuries to occur in the tracheostomy patient population is at the flange base of the tracheostomy tube. Typically the flange base consist of a hard, non-flexible, solid material. Our facility experienced 6 pressure injuries fiscal year 2020. The flange base of the tracheostomy tube was identified as the responsible portion of the medical device causing injuries. Our OR Pressure Injury Prevention Team tackled the challenge of preventing tracheostomy pressure injuries in patients receiving new tracheostomy tube placements. Prevention of medical device related injuries is a Stanford Hospital priority.

## Objective

The purpose of this project was to reduce the number of tracheal pressure injuries after newly placed tracheostomy tubes.

## Methods

This project was led by the OR Pressure Injury Prevention Team (PIP team). The PIP team included collaboration of CVT OR nurses, CVT physicians, wound care manager, OR educators, OR quality team and CVOR management.

1. Root cause analysis: identified tightness of the sutures holding the tube in place, length of time from suture insertion to removal, trach tube flexibility and dressing type were evaluated.
2. A literature search: was performed with new product identified.
3. Product comparison revealed flexible, clear flanged trach tube chosen for trial.
4. Soliciting CVT surgeons' support.
5. Providing staff education.
6. Conducting trial: 15 post CVT patients underwent flex tube placement. Trauma and ENT services continued product trial. No complications were reported during trial, no early decannulations were reported.

## Results

The results demonstrate a positive relationship between implementing the new flexible tracheostomy tube and decreasing the incidence of flange based pressure injuries. Number of sutures use postoperative were reduced. Number of days sutures are present were standardized. Hydrocolloid dressing is used for immediate postop dressing. No early decannulations were experience by any service during the trail. The positive trail of flexible tracheostomy tubes led to a full facility conversion.

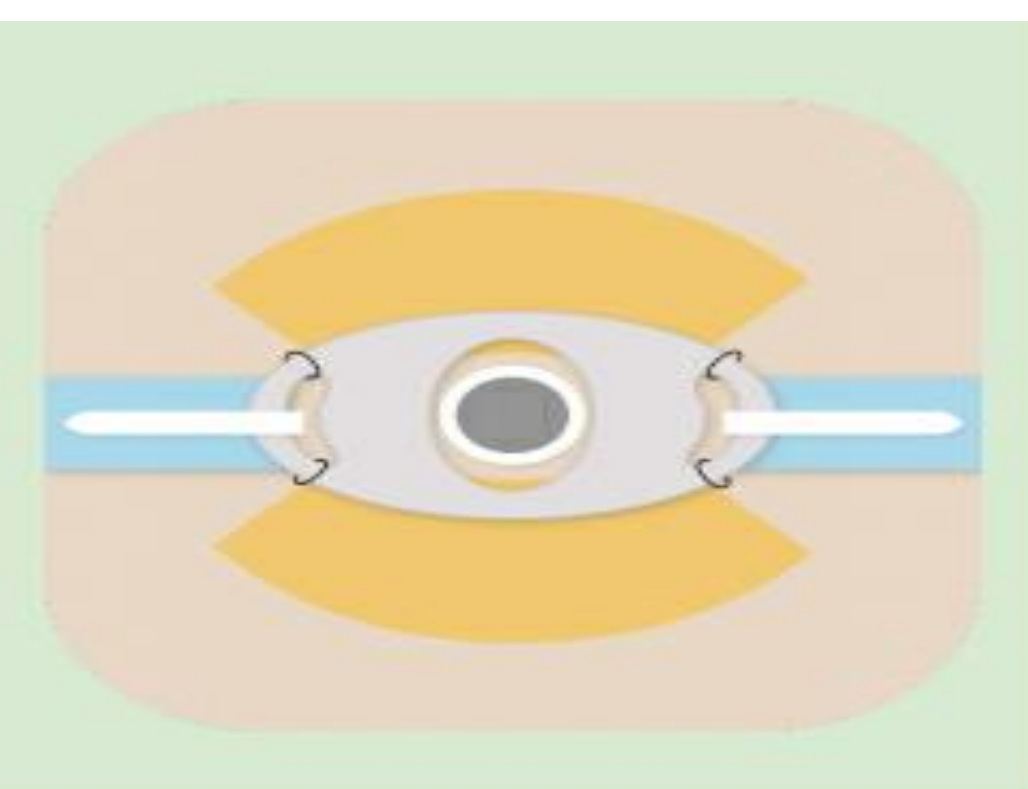
- Trach conversion was 3/16/21.
- Fiscal year 2022 has zero tracheostomy device related pressure injuries.



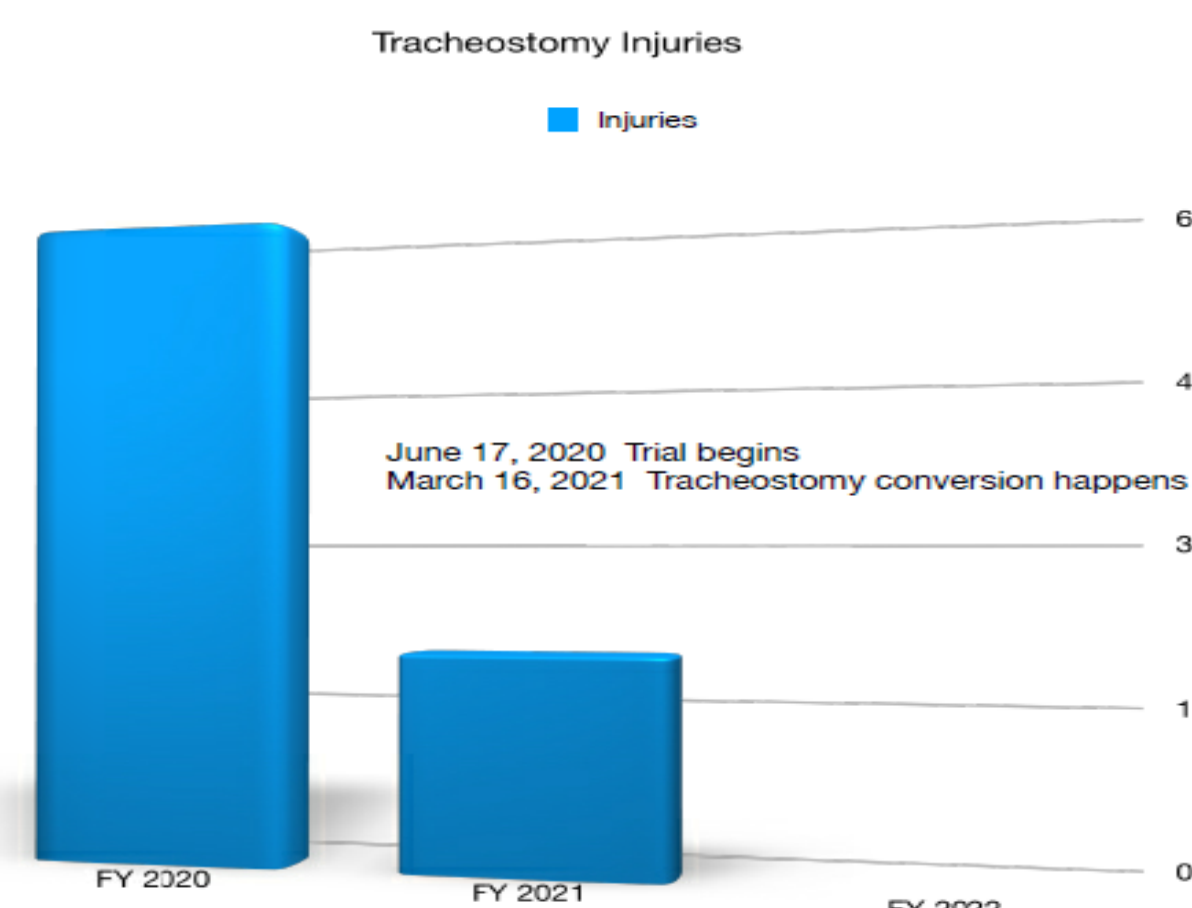
Unstagable pressure injury



Flexible Tracheostomy Tube



Standardized dressing placement



## Conclusion

The softer, more pliable, clear flange of the new tracheostomy tube has many advantages.

- Surgical skin assessments of the surrounding tissue may be performed without additional trauma to the area due to the transparency of the flange.
- The softer flange has more openings allowing for air contact to the underlying skin.
- Reduction in the number of sutures placed during surgery.
- Reduction of skin to device contact aids in less trauma.
- Easier changing of dressings. Hydrocolloid dressing standardized.
- Surgeons and staff found the tube to be easy to insert and similar to the device they were accustom to. The positive feedback resulted in the adaption of the flexible tracheostomy tube across the main hospital system. Patients entering the hospital with the old style of tube are changed to the new flexible style.
- Details for suppling the new inner cannulas were developed with the inpatient floors.

## Acknowledgments

Thank you to MacArthur, Dr. Shrager, Dr. Lui, Dr. Berry and all other Stanford physicians who participated in this product trail. Thank you to all of the CVT Surgical Team, MOR Team, OR PIP Team, and nursing leadership who made the CVT trial and conversion possible.

A special thank you to Chungmei Shih and the wound/ostomy department for their continued support in improving patient care.

