

## Health Care System

Jefferson Health

## Hospital Name

Jefferson Einstein Philadelphia

## Title of Initiative

Decreasing Tracheostomy Related Pressure Injuries- A Multidisciplinary Approach

## Abstract

**Background:** Pressure injuries (PI) are one of the most costly and common complications occurring in United States hospitals with an average incremental treatment cost of \$21,767 per hospital acquired pressure injury (HAPI). Tracheostomy related (TR), HAPI rates at an academic facility serving a low-income, high-risk adult population have been an organizational challenge for years. The TR-HAPI rate for July 1, 2016 - December 31, 2018, was 18.18%, 40 patients harmed of 220 open and percutaneous tracheostomies inserted associated with a treatment cost of \$870,680.

**Methods:** The recommendation was made to place non-bordered thin foam dressings immediately post-operatively (intervention 1) which was initiated in January 2019. In December 2019 it was discovered that two types of tracheostomies were used. Based upon the findings, the decision was made to switch to the tracheostomy with a fixed solid ring and softer flange (intervention 2) which went into effect February 1, 2020.

**Results:** Following the implementation of the first intervention, January 1, 2019 – January 31, 2020, the TR-HAPI rate decreased to 13%, 13 patients harmed out of 100 tracheostomies inserted or a 28.5% reduction in HAPIs. Following the addition of intervention 2, between February 1, 2020 – December 31, 2022, the TR- HAPI rate decreased to 2.85%, 10 patients harmed out of 350 tracheostomies inserted or a 84.3% further reduction in patient harm. The implementation of both interventions resulted in an overall 84.3% reduction in TR- HAPIs and estimated treatment cost reduction of \$653,010.

## What were the goals of your initiative?

Decreasing patient harm by tracheostomy related pressure injuries.

## What was the baseline assessment and/or data that indicated there was an opportunity for improvement?

This hospital's Tracheostomy Related-HAPI rate for July 1, 2016 - December 31, 2018, was 18.18%, 40 patients harmed of 220 open and percutaneous tracheostomies inserted associated with a treatment cost of \$870,680.

Describe the interventions that were instrumental in achieving the results for your initiative.

After reviewing the TR-HAPI rates, current evidence was reviewed, and the PI Quality Committee recommended implementation of the placement of non-bordered thin foam dressings immediately post-operative (intervention 1) which was initiated in January 2019. In December 2019 the TR-HAPI rates were reviewed again. At this point, a deeper dive into the patients with TR- HAPIs was performed and demonstrated that two types of tracheostomies were used. Based upon the findings, a meeting was scheduled with the Chairman of Trauma and the Chairman of Otolaryngology, Head and Neck Surgery, review the data. Based upon the findings, the decision was made to switch to the tracheostomy with a fixed solid ring and softer flange (intervention 2) which went into effect February 1, 2020.

What were the results of your initiative that demonstrate a notable level of improvement?

Following the implementation of the first intervention, January 1, 2019 – January 31, 2020, the TR-HAPI rate decreased from 18.18% (pre-intervention 1) to 13%, 13 patients harmed out of 100 tracheostomies inserted or a 28.5% reduction in HAPIs. Following the addition of intervention 2, between February 1, 2020 – December 31, 2022, the TR- HAPI rate decreased to 2.85%, 10 patients harmed out of 350 tracheostomies inserted or a 84.3% further reduction in patient harm. The implementation of both interventions resulted in an overall 84.3% reduction in TR- HAPIs and estimated treatment cost reduction of \$653,010.

Explain how the initiative demonstrates innovation.

Our retrospective review of TR-HAPIs is an important insight into the impact of implementing evidence-based guidelines. A deeper dive of the TR-HAPI incidence influenced the change in tracheostomy device and contributed to a significant decrease in TR-HAPIs and organizational cost savings.

How was health equity embedded into your initiative to improve health outcomes in marginalized communities?

This hospital serves a low-income, high-risk population with very little resources. It was very important to implement strategies to reduce patient harm in this population.

How did your initiative engage patients and families?

Patients and families received education regarding the importance of the non-bordered thin foam dressing post-operatively as well as during their inpatient stay.

How does this initiative demonstrate collaboration across care settings within your health system?

This initiative was truly driven by the Multidisciplinary team. The first intervention was suggested by the Pressure Injury Prevention Committee which is comprised of the Director of Nursing Quality, Wound Care, Nursing Education, Nurse Leaders and staff RNs. The required

engagement and education of the surgeons, OR staff as well as the ICU physicians, RNs and respiratory therapists. For intervention 2, the Chairman of Surgery and Trauma and the Chairmen of ENT met with the Director of Nursing Quality to review the findings and the decision was made to move to using one tracheostomy tube.

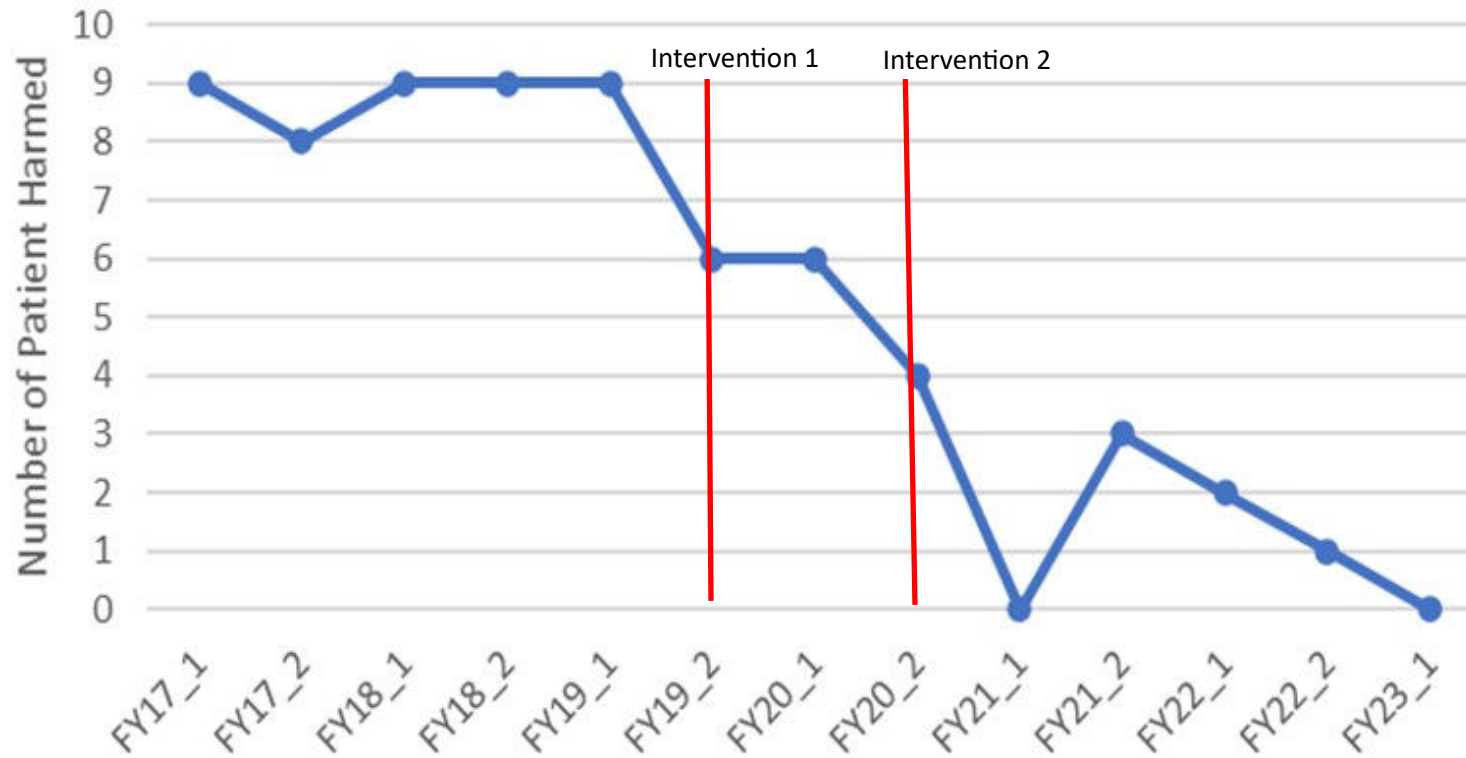
[Explain ways in which senior leadership exhibited commitment to the initiative.](#)

The Chief Nurse Executive and the Associate Chief Nurse are very engaged in our pressure injury prevention committee. They have embraced the implementation of pressure injury incidence tracking process and have been cheerleaders throughout the organization. The Chairman of Surgery and Trauma has been a partner and advocate among physicians specifically for addressing medical device related pressure injuries.

[Describe the key steps required to successfully replicate this initiative throughout the region.](#)

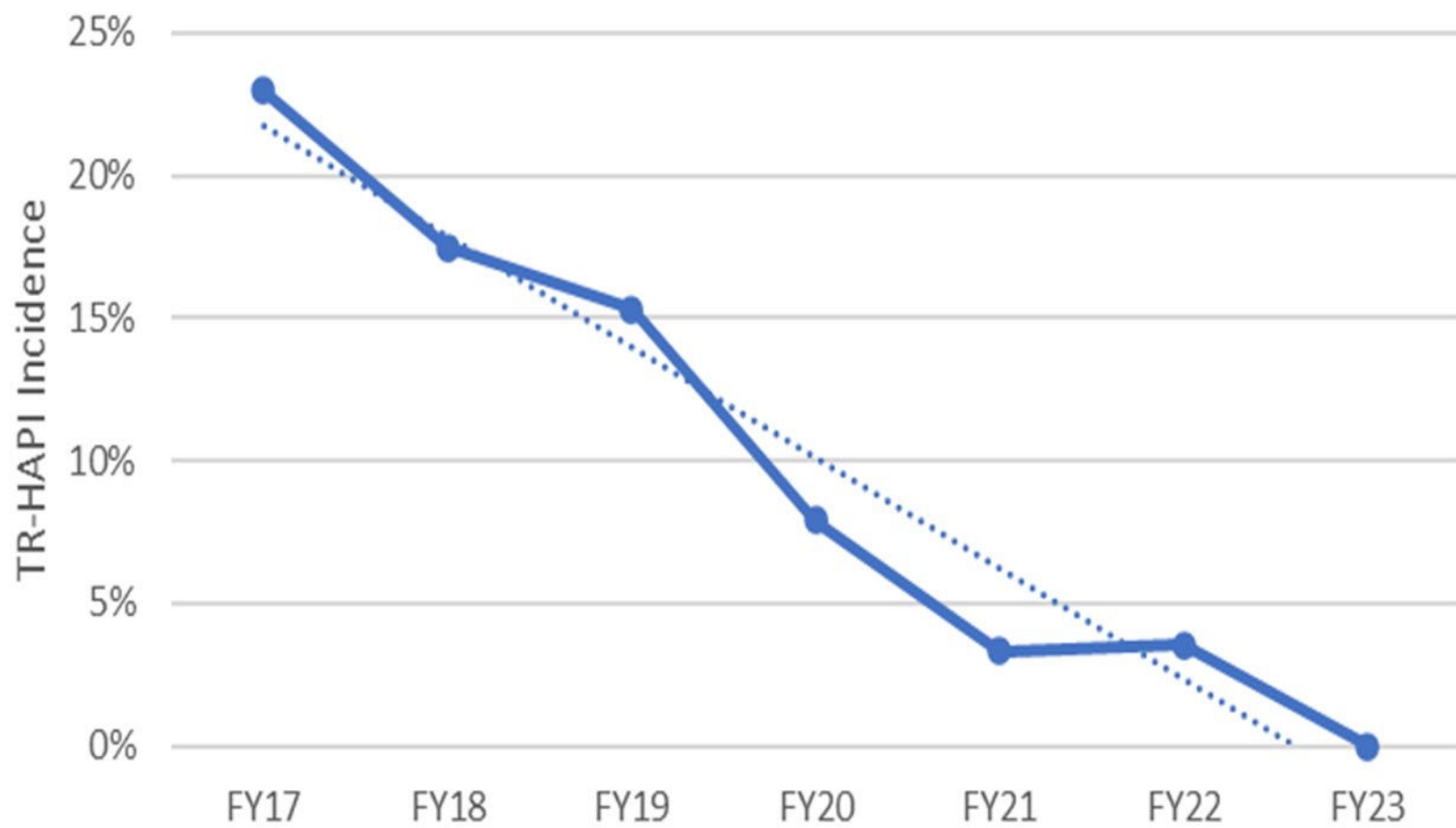
The key steps to decrease Tracheostomy Related Pressure Injuries are to understand your organizations problem, engage organizational key stakeholders, implement a non-bordered thin foam dressing post operatively, provide education to the OR staff, surgeons, ICU physicians, ICU RNs and respiratory therapists and utilize a tracheostomy tube with a fixed solid ring and softer flange for as many patients as possible.

# Tracheostomy Related Pressure Injuries July 2016 - December 2022





## Tracheostomy Related Pressure Injury Incidence FY17 - FY23



TR-HAPI Estimated Treatment Costs

