

Background

- Pressure injury: A localized area of skin damage and underlying soft tissue. May be intact or present as an open ulcer and may be painful. MDRPIs occur as a result of devices designed and applied for diagnostic or therapeutic use. Mirrors the shape and location of a medical device.
- Patients admitted to intensive care units are 2.4 times more likely to develop pressure injuries due to severity of illnesses, presence of comorbidities and the presence of medically necessary devices.
- Result in adverse outcomes for patients including, but not limited to pain, increased risk of infection, altered body image, extended length of stay and increased morbidity and mortality.

Purpose

The principal aim of this DNP project was to reduce the prevalence of medical device-related pressure injuries related to cervical collars, tracheostomy faceplates and ties in the surgical intensive care unit in an academic urban medical center.

PICO

In critically ill adults, does the implementation of an evidence-based bundle reduce prevalence rates of pressure injuries caused by cervical collars, tracheostomy plates, and tracheostomy ties on a Surgical Intensive Care Unit in an urban academic medical center?

Methodology

Design: Quality improvement, pre-and post-implementation

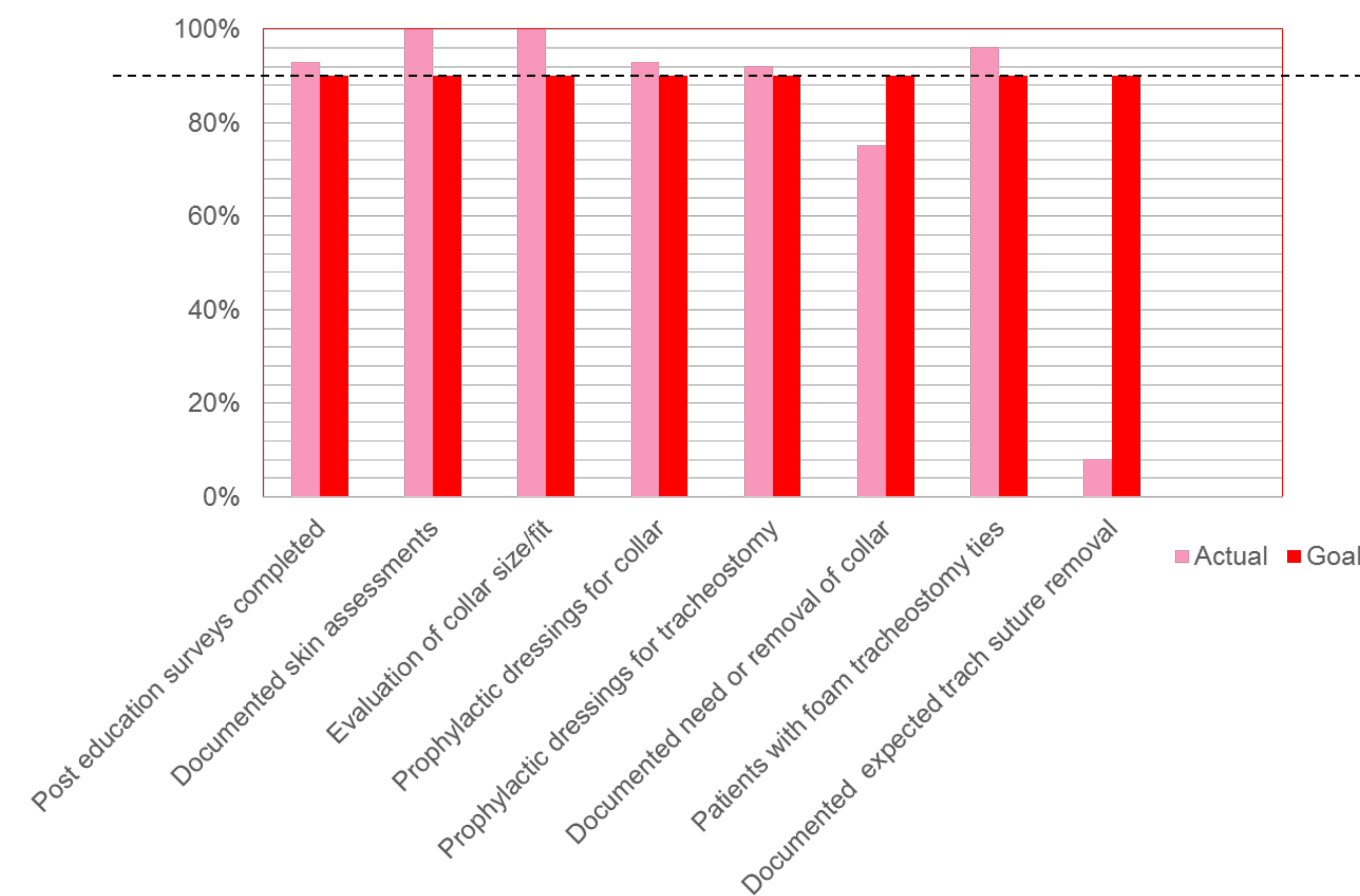
Setting: Urban Academic Level I Trauma Center

Population: Patients 18 years of age or older, admitted to the SICU with either a cervical collar or tracheostomy tube, or received one at any time during the specified period.

Evidenced Based Intervention Summary:

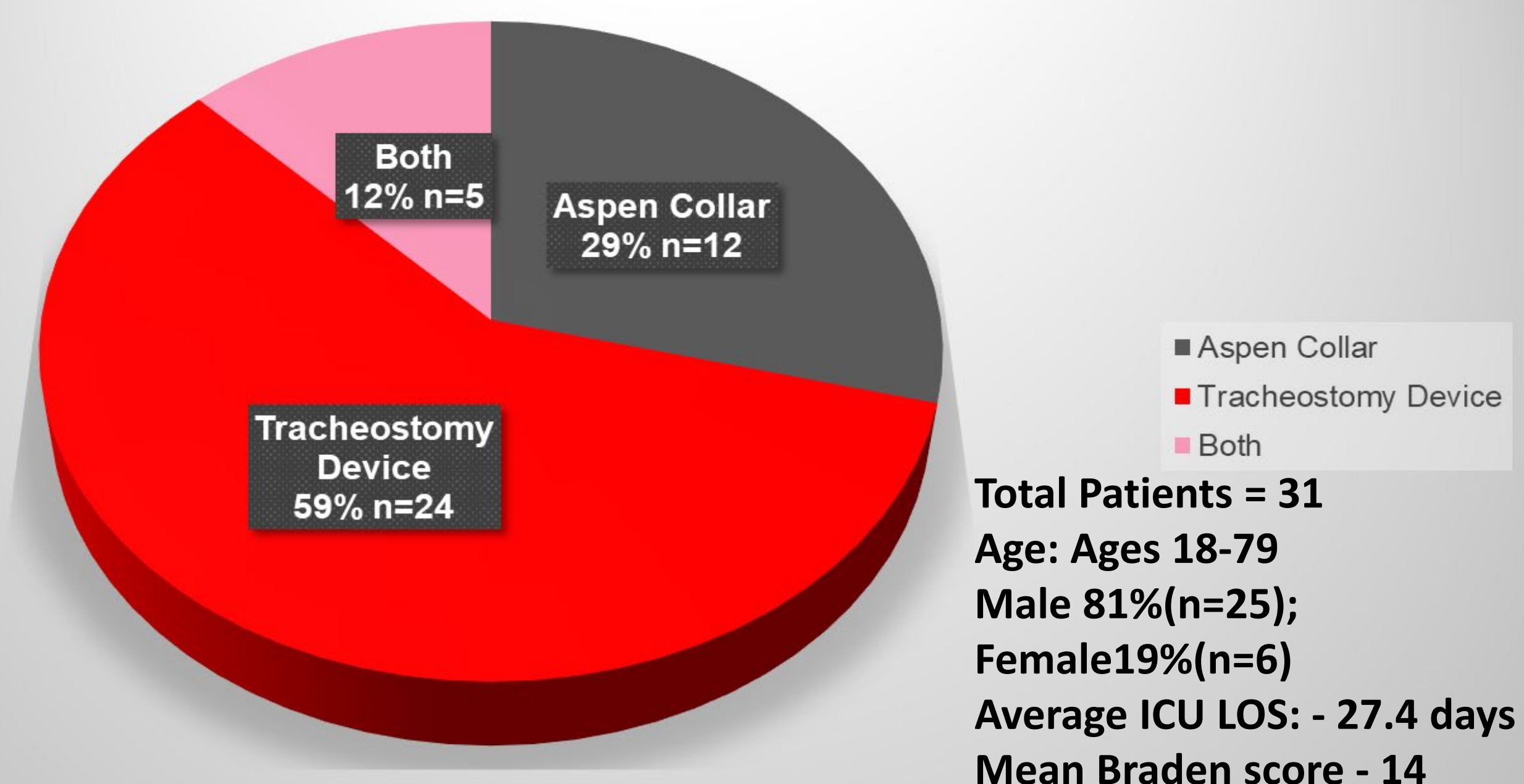
- Standardized skin assessment and documentation related to the device
- Application of prophylactic foam dressings in areas where medical devices were in use
- Standardized evaluation of need and timely removal of cervical collars
- Use of soft foam tracheostomy ties
- Timely suture removal at tracheostomy site.

Results



- 93% of nursing staff participated in educational program.
- Six of the eight interventions achieved 90% compliance
- Areas of improvement included:
 - Documented need or removal of collar
 - Documented expected trach suture removal

Participants by Device Type



- Outcome measure: 0 MDRPIs pre-intervention/0 MDRPIs post-intervention. There was **no change** in the PI prevalence rates.
- Demonstrated decrease from reported rates earlier this year.

Selected References

1. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel & Pan Pacific Pressure Injury Alliance. (2019). Prevention and Treatment of Pressure Ulcers/Injuries: Quick Reference Guide. <https://npiap.com/page/2019Guideline>
2. National Pressure Injury Advisory Panel. (2016). NPIAP Pressure Injury Stages. https://cdn.ymaws.com/npiap.com/resource/resmgr/online_store/npiap_pressure_injury_stages.pdf

Implementation Plan

- Using retrospective unit-based data, the researcher identified the prevalence rates and stages of MDRPIs related to cervical collars, tracheostomy plates and ties, in the surgical intensive care unit during the 2 months preceding the project implementation.
- A review of the literature was conducted to determine appropriate evidence-based interventions for preventing MDRPIs related to cervical collars, tracheostomy face plates, and tracheostomy ties.
- An educational program was presented to nursing staff incorporating best practice interventions.
- Staff compliance with selected interventions was monitored by observing staff and performing chart audits. Compliance rate was set at 90%.
- Prevalence of device-related pressure injuries pre- and 2 months post-implementation was compared.

Implications

Clinical Practice

- It is recommended that these bundled interventions be added to the existing institutional policy so that care across the facility is both evidence-based and standardized.
- Interventions requiring collaboration with physicians did not meet target compliance rate of 90%. Future multidisciplinary initiatives are important to improve overall outcomes.

Quality/Safety

- Revise documentation flowsheet to aid ease of documentation and increase compliance.
- Collaborate with IT professionals and nurse informaticists in flowsheet development
- Continue monitoring PI rates monthly for these devices

Healthcare Policy

- PIs are considered an adverse patient safety event.
- It is imperative to embed PI prevention practices into hospital protocol for improved patient outcomes

Education

- Offering continuing education at regular intervals helps to ensure retention of information and may positively affect PI rates.