Institute for Healthcare Improvement

مستشفى الرميلة
Rumailah Hospital

مؤسسة حمد الطبية
Hamad Medical Corporation

CARE BUNDLES: An Effective Way in Preventing Ventilator Associated Events

Long Term Care Unit 4 (Adult Ventilator Unit)
Rumailah Hospital

AIM

- Ensure all eligible patients receive all elements of tracheostomy care bundle by June 2017.
- Ensure all enteral feeding patients receive all elements of Prevention of Aspiration Pneumonia Bundle by June 2017.
- All patients on ventilator receive all elements of VAP prevention bundle at least 95% by June 2017.

OVERVIEW

Our unit started its operation on 22nd March 2015 having 20 bed capacity. Our scope of service includes patients on long term mechanical ventilation. From then on, IHI change concepts were spread in our unit including the VAP Prevention Bundle. The Tracheostomy Care Bundle and Aspiration Pneumonia Prevention Bundle was introduced in the unit last June 2015.

BACKGROUND

Ventilator Associated Events (VAE) is one of the leading causes of mortality among patients. The best way to stop VAE is to wean the patient from the ventilator as soon as possible. In long term care however, we cater to patients who cannot be weaned off and have been ventilator dependent for months to years.

Tracheostomy care can contribute in the prevention of tracheostomy complications such as bleeding, aspiration pneumonia, stenosis, granuloma formation, and infection. All of these complications can later on lead to more expenses for the hospital because of increased patient length of stay, use of expensive antibiotics and treatment, and also increase in required care hours.

Along with good tracheostomy care and maintenance, developing an aspiration pneumonia prevention bundle an VAP Bundle is essential in eliminating ventilator associated events and thereby reducing costs for the hospital.

INTERVENTIONS

PRE-FEEDING ASSSESSMENT

POSITIONING

POST-FEEDING ASSESSMENT

ORAL HYGIENE

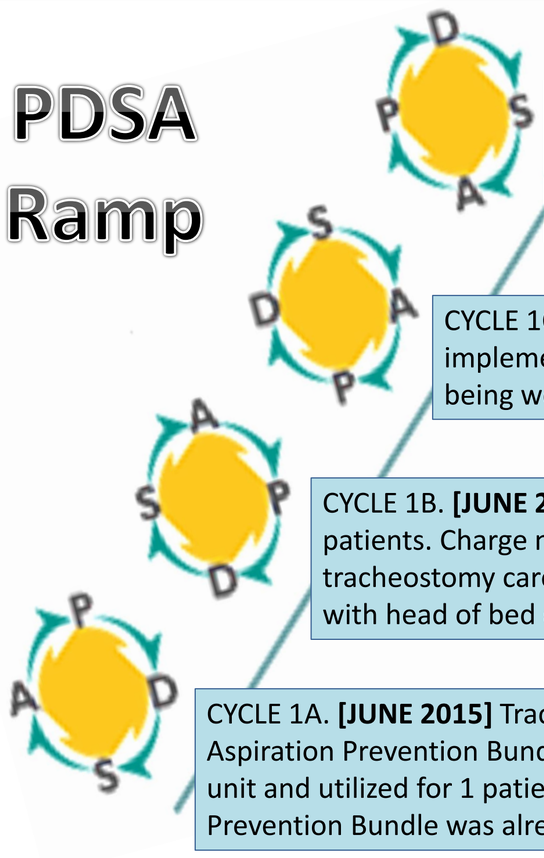
SUCTIONING

ASPIRATION PNEUMONIA PREVENTION BUNDLE

VAP PREVENTION BUNDLE

- Head of Bed Elevation Between 30-45 Degrees
- Daily Oral Care with Chlorhexidine (0.1%) as Mouthwash
- DVT Prophylaxis (unless contraindicated)
- Peptic Ulcer Disease Prophylaxis

PDSA Ramp



CYCLE 1D. **[JUNE 2015 to present]** Continue to use the tracheostomy and aspiration pneumonia bundle and collect data on compliance monthly.

CYCLE 1C. **[JUNE 2015]** Simultaneous with the implementation of the bundles, patients were being weaned from the mechanical ventilator.

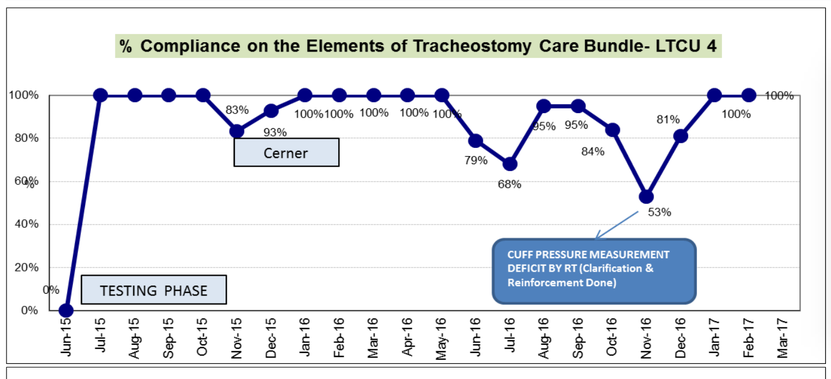
CYCLE 1B. **[JUNE 2015]** The bundles were used for all patients. Charge nurses observe staff while giving tracheostomy care. Hourly rounds done to comply with head of bed elevation and suctioning.

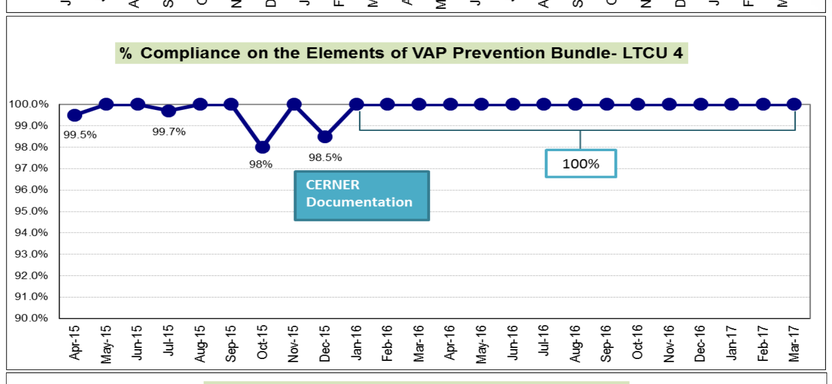
CYCLE 1A. **[JUNE 2015]** Tracheostomy Care and Aspiration Prevention Bundle was introduced in the unit and utilized for 1 patient for 3 days. VAP Prevention Bundle was already in use since April 2015.

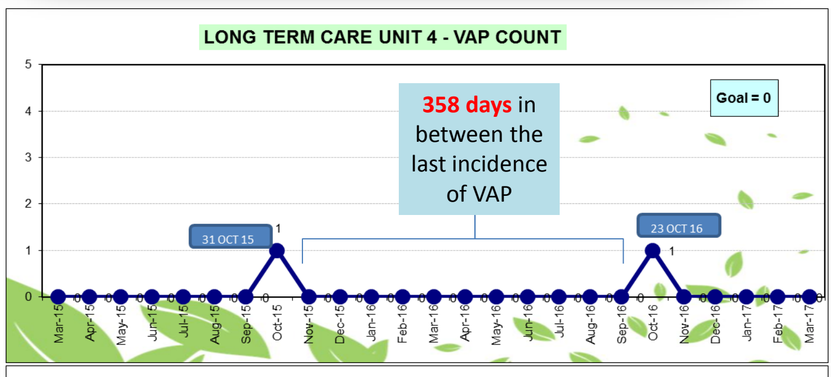
TRACHEOSTOMY CARE BUNDLE

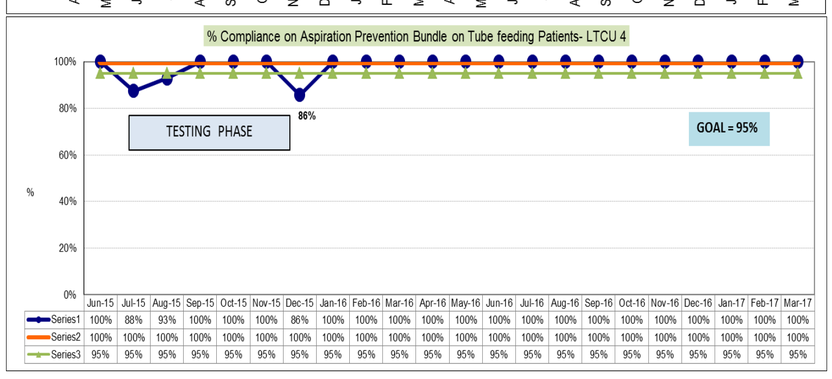
- STOMA & SKIN ASSESSMENT
- POSITIONING
- ORAL HYGIENE
- SUCTIONING
- STOMA DRESSING
- HUMIDIFICATION
- CUFF PRESSURE MEASUREMENT
- EMERGENCY EQUIPMENT

DATA COLLECTION









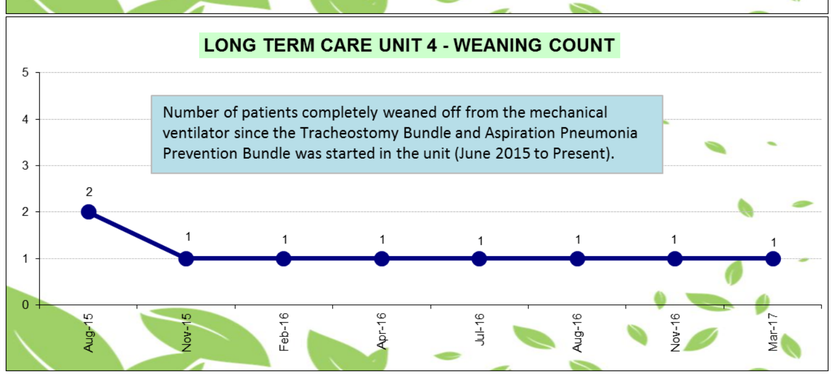


IMAGE SOURCES: Photos of multidisciplinary team members were taken and posted with consent. All other images taken from www..google.com.

CONCLUSION

By utilizing the Tracheostomy Care Bundle, Aspiration Pneumonia Prevention Bundle, and VAP Prevention Bundle, ventilator associated events can be greatly reduced as evidenced by our unit's VAP incidence rate. The acceptable VAP incidence in long term care is 1.67 cases per 1,000 ventilator-days [1]. By applying the principles of Tracheostomy Care Bundle, Aspiration Pneumonia Prevention Bundle, and VAP Prevention Bundle, ventilator associated events were avoided. In our own little way, we have reduced the expenses that the corporation would have spent for the management of healthcare associated infections such as antibiotics and other medications, diagnostic procedures, and nursing care hours also thereby reducing the patient's length of stay in the hospital.

Our success is greatly attributed to:

- Weaning the patients from mechanical ventilation.
- Utilizing the Tracheostomy Care Bundle, Aspiration Pneumonia Prevention Bundle, and VAP Prevention Bundle.
- Surveillance and monitoring by the unit's infection control practitioner and infection control link nurse for early detection of VAE and hand hygiene compliance.
- Leadership walk rounds where nurses and other members of the multidisciplinary team are given opportunity to dialogue directly with the executive committee of the hospital to address issues relevant to patient safety in the unit.
- Multidisciplinary team collaboration.

[1] https://www.ncbi.nlm.nih.gov/pubmed/19245314

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