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Reduction of Non-Behavioral Restraints in an Intensive Care Unit

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Introduction

- Sentara CarePlex Hospital (SCH), part of a 12-hospital system, has a 24-bed intensive care unit (ICU).
- Review of non-behavioral patient restraint data revealed that the SCH had the highest restraint use prevalence in the health system. SCH's incident rate at the end of 2013 was 6.77% against a system average of 4.22%.
- **Restraints were most frequently used to prevent patient unplanned extubations and falls.** However, these patients may have benefitted from less restrictive means.
- 7 out of 8 unplanned extubations that occurred between January and July 2014 were restrained at the time of extubation.
- Previous unit management promoted the use of restraints on all intubated patients.

Background and Significance

- Non-behavioral patient restraints are widely used in the ICU, posing unique challenges to patient quality and safety.
- Unplanned extubations occur frequently in the ICU, but the use of restraints to prevent them are not always effective and can create more safety hazards (Chang, Wang & Chao, 2008).
- A restraint management bundle (RMB), as a patient safety strategy, may provide opportunities to balance risks and benefits of restraint use for this vulnerable population.
- Alternative patient management strategies should be explored prior to restraint application, and restraints should be discontinued as soon as possible to avoid complications.

Project Aims

This study aims to explore differences in the incidence of restraints when a RMB is implemented in an intensive care patient population. Research questions include:

- Will the incidence or restraint episodes per patient day and the number of patients in restraints per patient day decrease after the implementation of a restraint management bundle?
- Will the rate of unplanned extubations and falls increase as a result of a decrease in restraint utilization?

Methodology

In August 2014, SCH ICU instituted an RMB to improve patient quality and safety, and minimize patient harm. RMB components included:

- Number of restrained patients reported daily to hospital leadership, with focus on restraint use greater than 72 hours
- Bi-daily audits to verify orders and nursing documentation (see Figure 1)
- Safety partner use at the bedside, when available and appropriate
- Audit results reported at staffing huddle
- Staff education on least restrictive devices

DNV Audit Tool

Name: _____ Unit: _____ Date Audit Performed: _____

NC1-7 Restraint Documentation NON-BEHAVIORAL	(Patient MR#)	(Patient MR#)	(Patient MR#)	(Patient MR#)	(Patient MR#)
☐ Documentation indicates that the patient was monitored every 1.5-2.5 hours on 'Non-Behavioral' Flowsheet	YES NO NA	YES NO NA	YES NO NA	YES NO NA	YES NO NA
☐ **Evidence of alternatives** tried (or that they were documented as inappropriate) prior to restraint use. Location: Notes and/or Alternatives Row in Restraint Flow-sheet/Pt Care Summary Safety Section) and must be charted prior to Restraint initiation (unless Emergent)	YES NO NA	YES NO NA	YES NO NA	YES NO NA	YES NO NA
☐ Indication for restraint use does not conflict against documented level of consciousness and/or sedation score.	YES NO NA	YES NO NA	YES NO NA	YES NO NA	YES NO NA
☐ An order exists for every episode of restraint use. No PRN Orders.	YES NO NA	YES NO NA	YES NO NA	YES NO NA	YES NO NA
☐ Ensure that Restraint Order includes specific behaviors to indicate restraint use is justified.	YES NO NA	YES NO NA	YES NO NA	YES NO NA	YES NO NA
☐ Validate type of Restraints ordered is the type placed on patient and documented against in Restraint Flowsheet.	YES NO NA	YES NO NA	YES NO NA	YES NO NA	YES NO NA
NC1-7 Restraint Documentation BEHAVIORAL	(Patient MR#)	(Patient MR#)	(Patient MR#)	(Patient MR#)	(Patient MR#)
☐ Clear nursing documentation of behavior that lead to application of violent restraint matches clinical indication in physician order.	YES NO NA	YES NO NA	YES NO NA	YES NO NA	YES NO NA
☐ Restraint Order is initiated and renewed according to policy. Order must be renewed **within 4 hrs for Adults** (18 or older), **2 hrs** for children and adolescents 9-17, **One hr** for children less than 9.	YES NO NA	YES NO NA	YES NO NA	YES NO NA	YES NO NA
☐ Documentation indicates that the patient was monitored every 15 minutes on 'Behavioral' Flow-sheet	YES NO NA	YES NO NA	YES NO NA	YES NO NA	YES NO NA

Figure 1. Bi-daily restraint audit toll.

Significant Findings

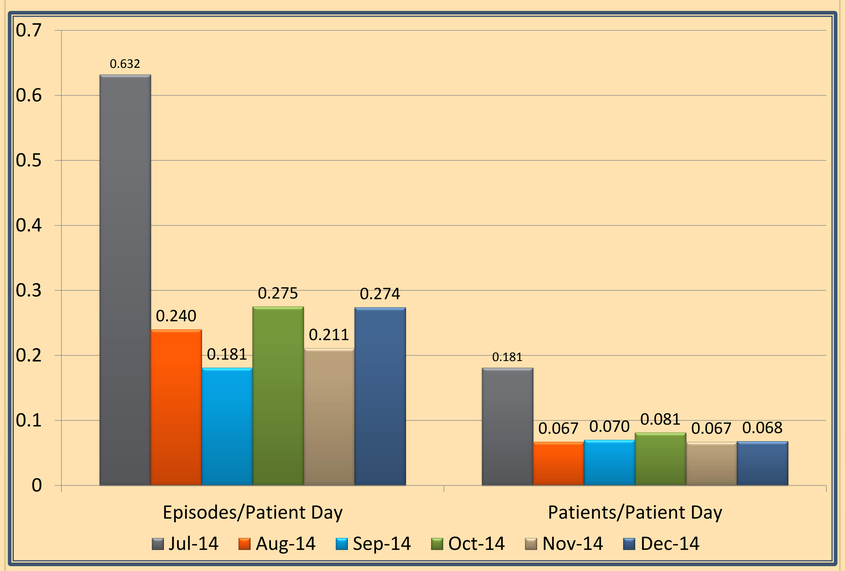

Figure 2. Comparison of restraint utilization from July through December 2014.

Results

- Restraint episodes per patient day decreased an average of 62%, from a rate of 0.632 in July 2014, to a rate of 0.274 in December 2014.
- The number of patients restrained per patient day decreased an average of 61%, from a rate of 0.181 to 0.068 during the same time period.
- When restraint utilization decreased, the fall rate and the fall with injury rate also decreased.
  - Of the 4 patient falls in the unit in 2014, 3 occurred prior to RMB implementation, and only 1 after implementation.
  - Both falls with injury in the unit occurred prior to RMB implementation.
- Decreasing the restraint utilization rate did not cause a significant increase in unplanned extubations.
  - 9 unplanned extubations occurred after RMB implementation; all were restrained at the time of extubation.

Conclusions and Implications

Despite traditional nursing beliefs, increased restraint usage did not provide increased safety in the prevention of falls or unplanned extubations in the ICU.

SCH ICU is focused on sustaining these results over time. The RMB was an appropriate management strategy, limiting the use of restraints while preventing patient harm. Psychological, emotional and physical risks, along with side effects of restraint use, can be minimized with appropriate restraint management. These methods are easily transferable to any inpatient setting.

References

Chang, L. Y., Wang, K. W., and Chao, Y. F. (2008). Influence of physical restraint on unplanned extubation of adult intensive care patients: a case-control study. American Journal of Critical Care, 17(5), 408-415.

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