Improving Delirium Outcomes Through Evidence Based Practice in a Surgical Trauma Intensive Care Unit

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What is the problem or challenge you identified?
Unknown incidence of delirium in the Surgical Trauma Intensive Care Unit (STICU) with no institutional guidelines for prevention and management.

Describe the intervention you developed/change you implemented to address the problem:
Creation and implementation of an evidence based practice (EBP) prevention and management guideline for hospital acquired delirium (HAD) for adults (age >50) admitted to a Level I Surgical Trauma Intensive Care Unit (STICU). This included both pharmacologic and non-pharmacologic components. The non-pharmacologic components included: quiet times in the ICU, use of light therapy for restoration of circadian rhythms, hand/foot massage, inter-professional collaboration and communication, re-orientation, use of hearing aids/glasses, early mobilization, and music therapy. In addition a robust educational program was provided to all healthcare providers which included attending physicians, resident staff, nursing staff, and patient care technicians. Education was multi-faceted including classroom education with the use of lecture, PowerPoint presentation, case studies, video, and point-of-care education with return demonstration, grand rounds lectures, and pocket cards as a reference. Education was also provided to the patient’s family and loved ones which were supplemented with educational materials such as brochures and posters.

How did you measure the effects of the change?
Data abstraction/analysis reviewing the following outcomes:

Primary Outcomes:
- incidence of delirium
- delirium free days/30 (30 minus number of days delirious [CAM positive])

Incidence of delirium pre-intervention was determined to be 47% and increased to 58% post intervention (p-value of 0.26). Although it was not the change expected, this was attributed to increased awareness and better identification of delirium by healthcare providers. Delirium free days increased from 24 pre-intervention to 27 post-intervention (p-value of 0.002).

Secondary outcomes:
- SICU Length Of Stay (LOS)
- Daily and cumulative doses of medications for pain, sedation and agitation.

SICU LOS decreased from 9 to 6 (p-value of 0.04). Patients’ pain was better controlled when evaluating hours of severe pain (pain scale ≥6/10) while using less cumulative doses of morphine (in total milligrams) from 401 to 260; both changes which each had a resulting p-value of 0.01. In addition use of benzodiazepines decreased from 85% to 63% pre/post intervention (p-value 0.05).
In summary, implementation of the delirium prevention and management program decreased: duration of time spent delirious, ICU LOS, time spent in severe pain with the use of lower doses of opioid analgesics as well as less benzodiazepine use.

**How did you sustain the change?**
Continuous interdisciplinary multi-faceted education initiated throughout the program’s implementation remains ongoing. Partnering with the School of Health Related Professions (SHRP) physical therapy program has now resulted in the ICU delirium program being incorporated into a didactic/clinical rotation for physical therapy students. Buy-in from key stakeholders within the organization such as the Chief Executive Officer, Chief Nursing Officer, Senior administration, and the Department of Education to support the project has been fundamental to the program’s success. Finally, the program’s implementation was funded by the generosity of the Healthcare Foundation of New Jersey who had the insight to realize there was a need for improvement in the area of hospital acquired delirium.