An Evidence Based Practice Project: The Impact on Outcomes for Mechanically Ventilated Patients Receiving Intravenous Sedation Comparing Traditional Sedation Assessment Methods and Sedation Assessment with Bispectral Index Monitoring
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Problem:
Over sedation of the mechanically ventilated patient without adequate monitoring can lead to prolonged ventilation and length of stay.

Evidence:
Evidence suggests that use of the bispectral index monitor (BIS), initially developed to gauge level of consciousness during general anesthesia, as a method of assessing sedation in the critical care patient with mechanical ventilation and intravenous sedation.

Strategy:
With a goal of decreasing ventilator days and length of stay, staff education was completed on the use of the BIS monitor as an objective measure of sedation therapy for mechanically ventilated patients. Staff was educated on appropriate documentation and adjustment of sedation according to the BIS score.

Practice Change:
All mechanically ventilated patients receiving IV sedation in the critical care unit were placed on a BIS monitor. Staff was to document the BIS score every hour and adjust the sedation as appropriate.

Evaluation:
Retrospective data collection included review of 25 mechanically ventilated patients with standard monitoring and 25 patients with BIS monitoring. Data included demographics, diagnosis, ICU length of stay, ventilator days, hospital length of stay and amount of sedation administered.

Results:
Demographics were similar for both groups. Comparison between the baseline and study groups demonstrated a decrease in amount of sedation given, length of ICU stay, ventilator days and length of stay.

Recommendations:
Outcomes suggest that BIS monitoring is a useful adjunct in management of sedation in the ventilated patient. The results are limited by the small sample size and a generalist ICU population. Further investigation should include a larger sample size, more discreet inclusion criteria and a severity of illness score.

Lessons Learned:
A larger team to monitor compliance with practice change would have been helpful in our large (36 bed) ICU as data collection took longer than we anticipated. We also discovered that it takes continual monitoring to insure that a practice change becomes a routine part of bedside nursing practice.