

# The Implementation of Sedation Guidelines in the PICU

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## ABSTRACT

**Problem Statement:** Despite recommendations for the implementation of goal directed sedation guidelines to reduce practice variation in sedation management in the pediatric population, the practice in our unit still relies on provider choice for sedation management, leading to large variations in provider management that can affect patient outcomes as well as nursing satisfaction.

**Methods:** A set of evidence-based sedation titration guidelines was developed by a multi-disciplinary PICU team. Prior to implementation, a survey on nursing perception of current sedation practice was emailed to all PICU nurses. Compliance data was collected during the initial six-week implementation period.

**Results:** The majority of nurses surveyed felt that provider variation was the largest barrier to sedation management on our unit. At the start of the observation period, less than half of patients had an appropriate SBS score ordered, despite that having been the practice on the unit prior to the project. Patients cared for on the cardiac side by nurse practitioners had better guideline adherence and overall exposure to less total medications than the medical patients.

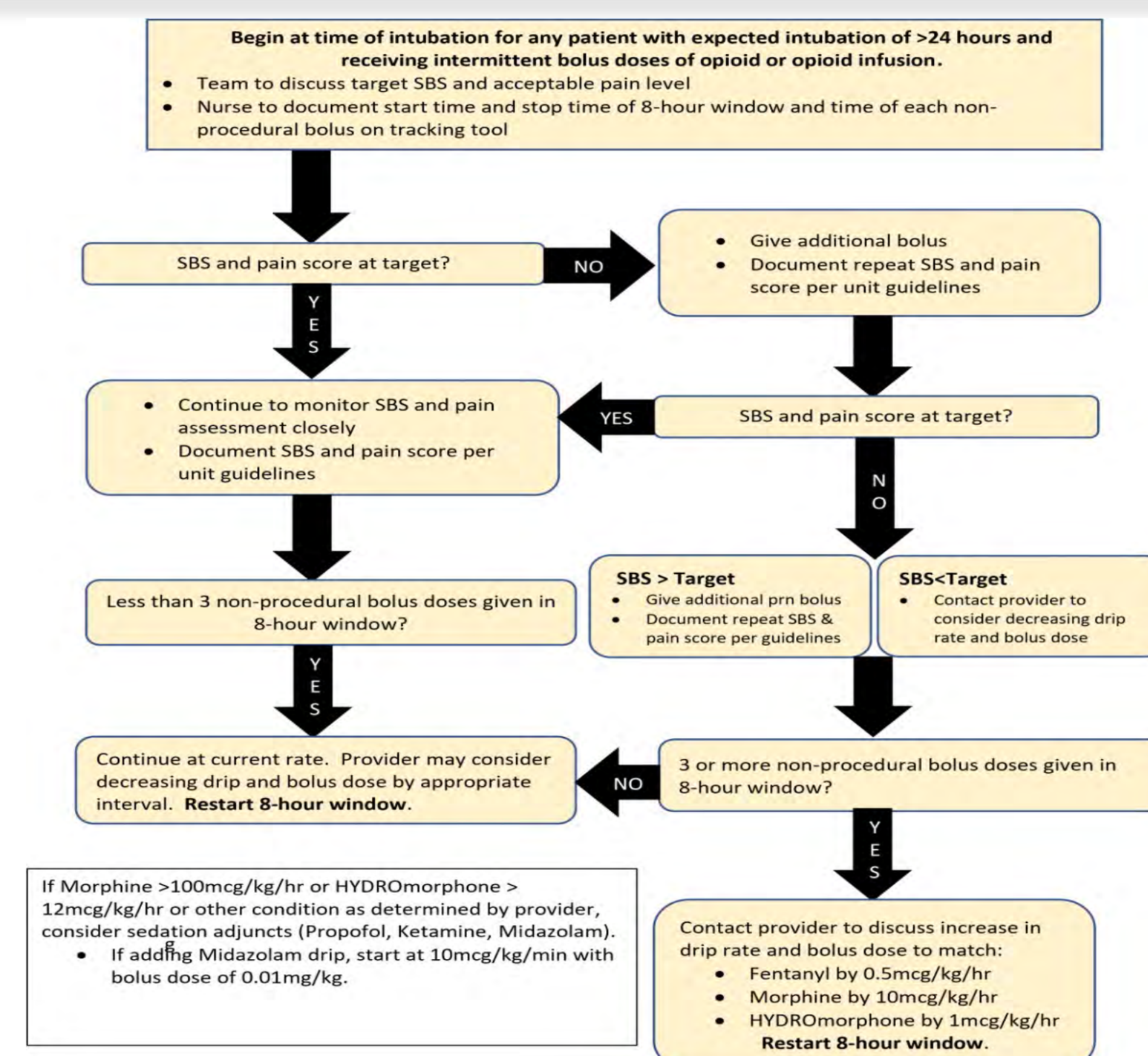
**Conclusion:** Job satisfaction of nurses in our PICU is affected by their patient's level of sedation. Sedation guidelines may help to increase nursing autonomy and encourage newer nurses to notify the provider more frequently to ensure their patient is adequately sedated. Additional study is required to determine whether patients were overall exposed to a decreased amount of sedation agents by following titration guidelines.

## PURPOSE

The purpose of this quality improvement project was to decrease provider variation in sedation management and increase nursing satisfaction with patient sedation by implementing sedation guidelines in a 28 -bed mixed medical and cardiac PICU.

## BACKGROUND

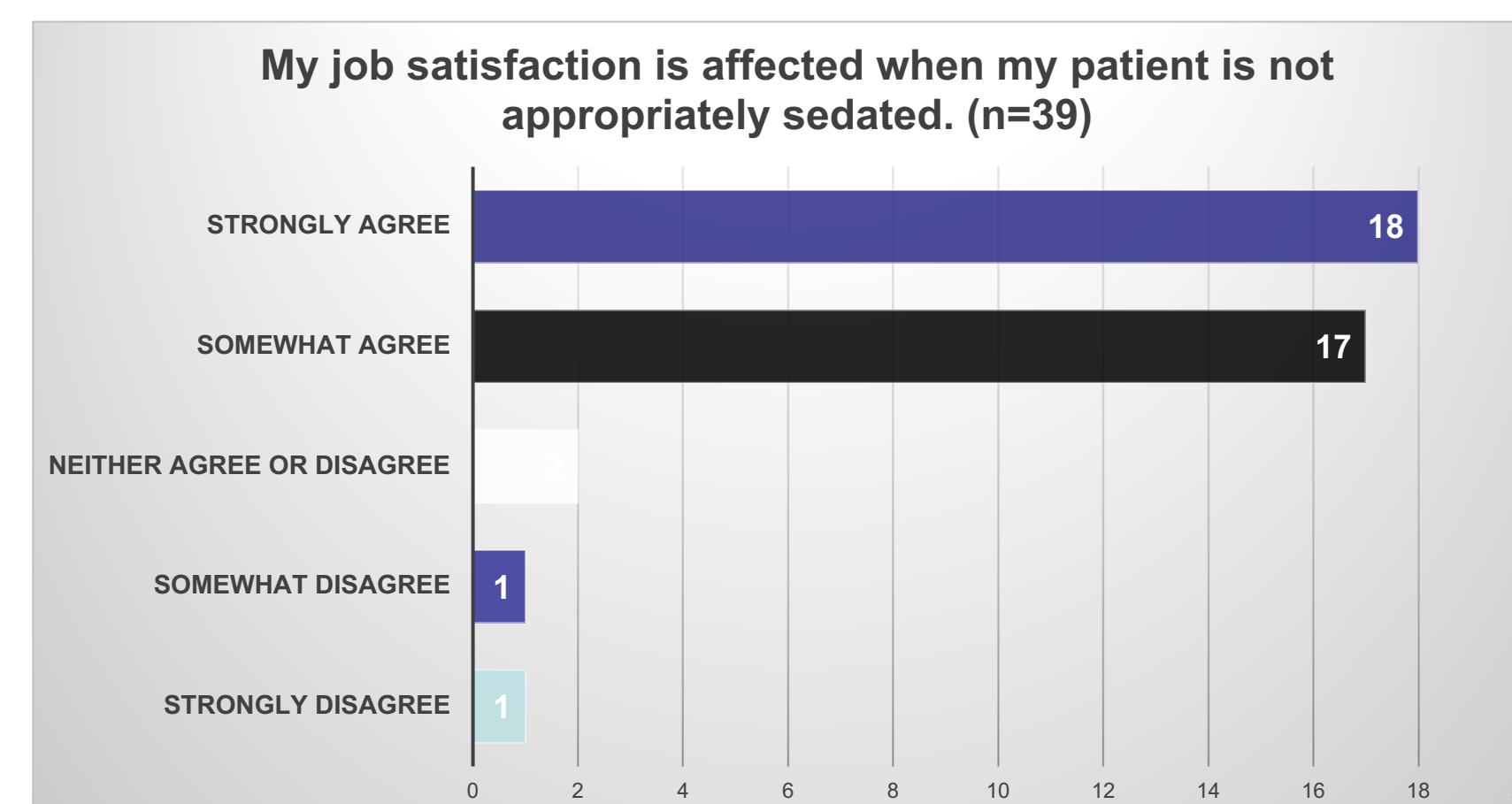
Medications for pain and sedation are frequently utilized in the PICU in order to keep critically ill children requiring mechanical ventilation comfortable and safe.<sup>1</sup> These medications treat pain from surgical wounds or noxious stimuli such as endotracheal tubes and prevent agitation that may lead to the dislodgement of essential medical equipment.<sup>2</sup> Excessive use of sedation medications can lead to significant side effects, including respiratory depression, constipation, tolerance, delirium and iatrogenic withdrawal syndrome (IWS).<sup>1</sup> Recent Clinical Practice Guidelines for adults recommend the utilization of a protocol-based approach for the management of pain and sedation. While no pediatric specific recommendations exist, the current literature suggests that institution-based protocols for pain and sedation titration help to reduce provider variation, increase nursing satisfaction, and may lead to an overall reduction in opioid and benzodiazepine exposure without an increase in pain, agitation, or adverse events.<sup>3-10</sup>



## METHODS

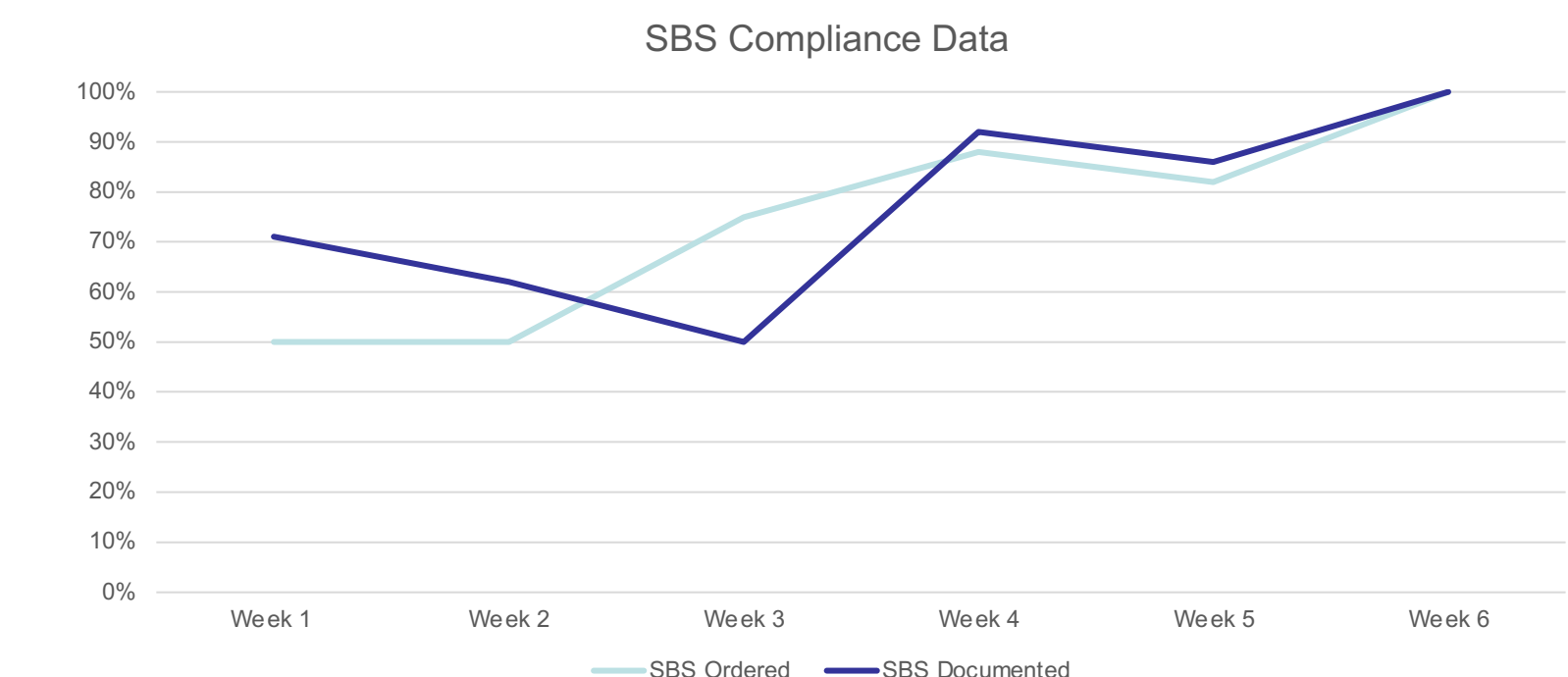
- Pre implementation surveys on nursing perception of current sedation practice were emailed to all PICU nurses
- Education sessions were provided for all nurses, ARNPs, residents, fellows, attendings, and pharmacists prior to project implementation. These sessions included review of SBS scoring and ordering, as well as explanation and education on the new guidelines.
- Initial project implementation period was 6-weeks long. At the conclusion, a post-intervention survey was emailed to all PICU nurses.
- Compliance data was collected during the 6-week implementation period and evaluated
- Feedback from the surveys as well as the compliance data will be utilized to make necessary adjustments to guidelines
- An additional 6-week PDSA cycle will begin in August 2021 to evaluate overall impact on total number of agents utilized, total number of PRN bolus doses received, and maximum drip rate.

## RESULTS



- 39 out of 100 PICU Registered Nurses completed the pre-intervention survey (response rate 39%)
- 35 out of 39 (90%) of nurses agreed that their job satisfaction was affected when their patient was not appropriately sedated.
- The most common barrier to current sedation practice was overwhelming provider variation (62%).
- The majority of nurses also disagreed that there was consistency amongst providers in sedation management (56%).

## RESULTS



- Run chart data looking at consistency in protocol adherence showed improvement in both the areas of SBS scoring and matching PRN bolus doses.
- Appropriate SBS ordered improved from 50% at the beginning of the intervention period to 100% by the end of the six-week period.
- Matching PRN bolus doses also improved from 29% from the first week of observation to 79% during week six.
- When analyzed by team, the cardiac patients had 100% matching PRNs by week six, whereas the medical team only had 50% compliance with matching PRNs.

## CONCLUSIONS

Job satisfaction of nurses in our PICU is affected by their patient's level of sedation, as well as how well the provider listens to their concerns. Having guidelines and training nurses in using these guidelines may help to increase nursing feelings of autonomy and encourage newer nurses to notify the provider more frequently to ensure their patient is adequately sedated. Compliance data from the initial PDSA cycle shows an improvement in ordering and charting SBS scores as well as ordering PRN boluses that match drip rates. Further PDSA cycles are required to determine the overall effect of the guidelines on total sedation exposure and

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