

Implementing a Pediatric Delirium Scoring Tool in Order to Reduce Sedation Time

Background & Significance

- About 25% of children in pediatric medical, surgical, and cardiac ICUs suffer from delirium (Kalvas & Harrison, 2020)
- The CAP-D is a rapid, validated, objective tool to screen and measure PICU delirium (Traube et al., 2014)
- Introducing this tool in the PICU allows the providers to diagnose delirium and objectively measure interventions (Patel et al., 2017)
- Delirium when left untreated is highly associated with prolonged mechanical ventilation, increased length of stay, increased mortality, and increased cost
- When delirium is treated and measured objectively patients can wean from continuous sedation sooner and can be liberated from the PICU (Patel et al., 2017)

Cornell Assessment of Pediatric Delirium (CAP-D)

Please answer the following questions based on your interactions with the patient over the course of your shift:						
	Never 4	Rarely 3	Sometimes 2	Often 1	Always 0	Score
1. Does the child make eye contact with the caregiver?						
2. Are the child's actions purposeful?						
3. Is the child aware of his/her surroundings?						
4. Does the child communicate needs and wants?						
	Never 0	Rarely 1	Sometimes 2	Often 3	Always 4	Score
5. Is the child restless?						
6. Is the child inconsolable?						
7. Is the child underactive – very little movement while awake?						
8. Does it take the child a long time to respond to interactions?						
TOTAL SCORE						

Purpose

- In the PICU, does the implementation of an objective delirium measurement tool and daily discussion of the score with the multidisciplinary team reduce the length of sedation days for critically ill patients over three months?

Methods

1. Approval was granted by the institution's Nursing Scientific Review Committee
2. Nurses and providers attended educational sessions on the CAP-D and delirium treatment
3. CAP-D was implemented in the EMR and discussion occurs on daily rounds starting December 2021
4. Plan-do-study-act design was used to evaluate the effectiveness of the practice change
5. A retrospective, chart review was used to look at 10 randomly selected patients before and 11 randomly selected patients after implementation

Results

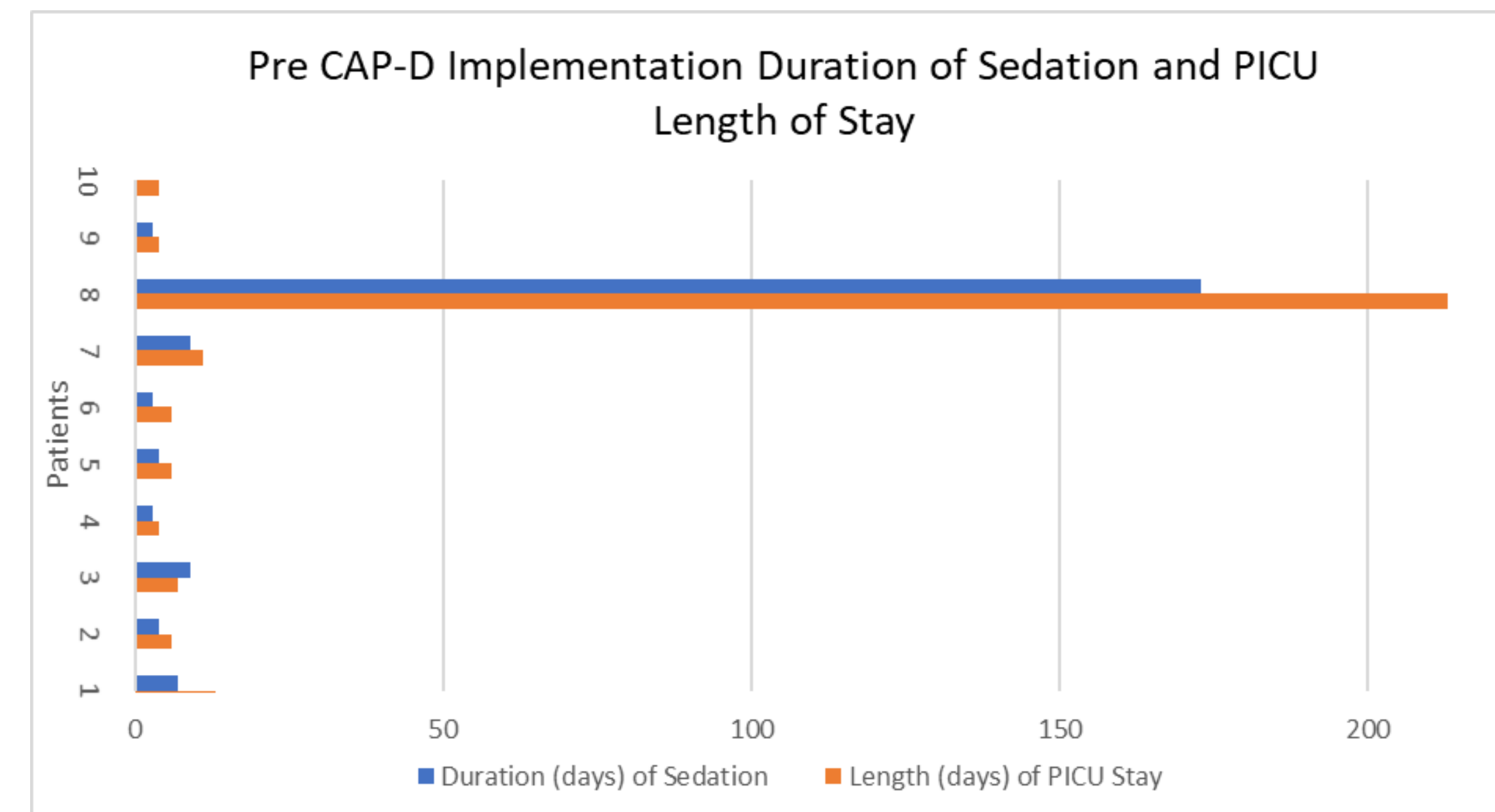


Figure 1 shows the duration of sedation in days BEFORE the implementation of the CAP-D with the duration of stay in days. Patients admitted for longer periods often require sedation for longer period.

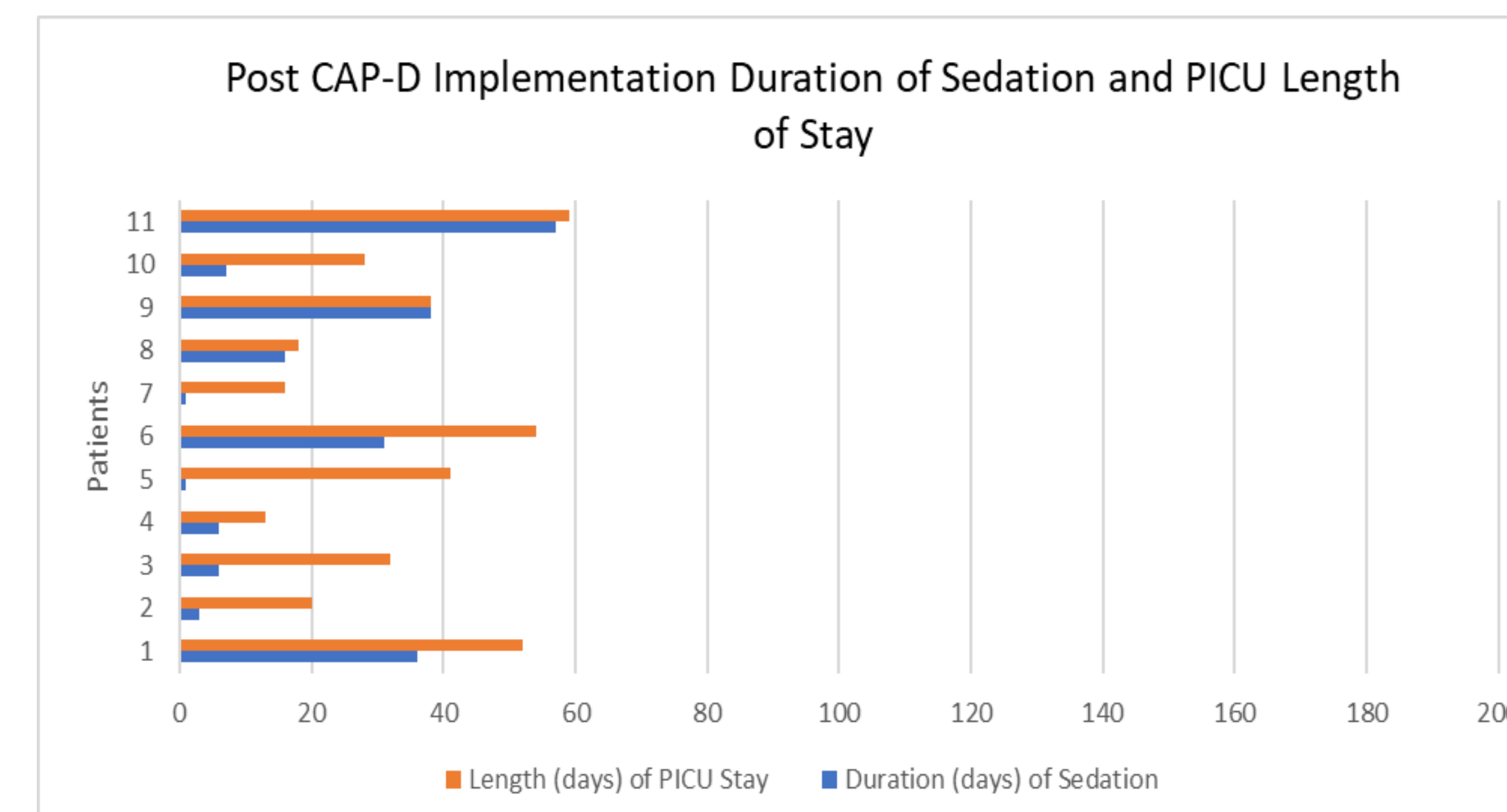


Figure 2 shows the duration of sedation in days AFTER the implementation of the CAP-D with the duration of stay in days. Patients admitted for longer periods often require sedation for longer period.

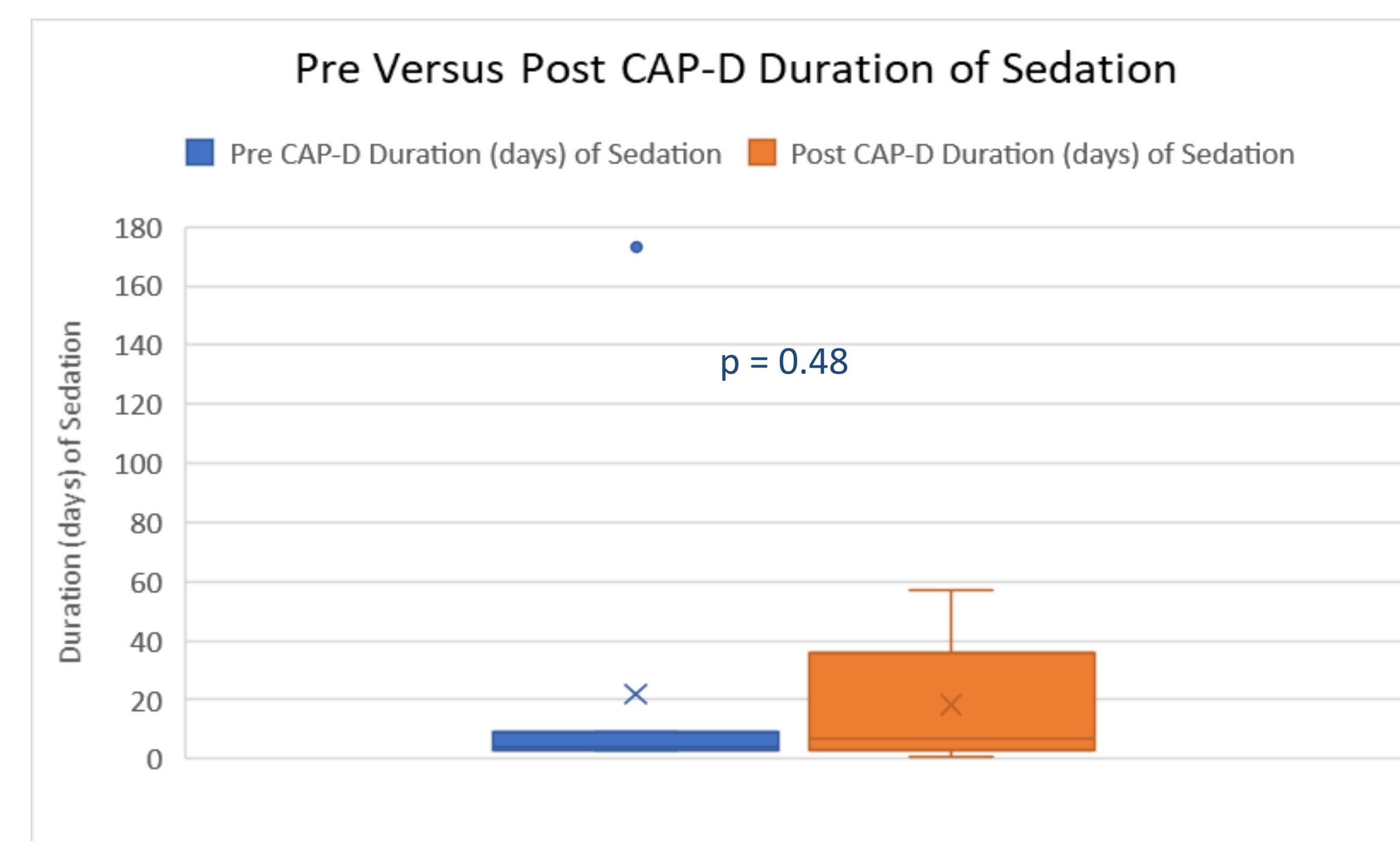


Figure 3 shows the average duration of sedation in days pre and post CAP-D implementation. Depicting that the average duration of sedation was slightly lower after the CAP-D implementation.

Discussion

- Although not statistically significant ($p = 0.15$), dexmedetomidine was used more than propofol or versed in the post CAP-D implementation compared to the pre CAP-D implementation
 - Is this awareness of delirium, change in patient population?
- Larger sample sizes should be used in the future as the Kruskal-Wallis Test showed that the duration of sedation differences were not significant ($p = 0.48$)
- Pediatric Critical Care Multidisciplinary Teams needs continued education as the post-implementation patients had inconsistent CAP-D scoring
- In the future, duration of sedation should be correlated with severity of illness
 - More critically ill patients may require more sedation, making them at higher risk of delirium

Conclusion

- Talking about delirium ensures the multidisciplinary team discusses sedation drugs, plan for weaning, and how long the patient requires them
- CAP-D implementation reduced the average amount of sedation days:
 - 21.9 days versus 18.4 days
- In the future, a larger data set should be used to corroborate these findings

More Information

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References and more information can be found by scanning the QR code below.



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