

Aldrete Assessment: Decreasing Over-Sedation Post-Operatively



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Abstract

Post Anesthesia Care Unit (PACU) nurses are charged with the delicate task of providing adequate pain relief post-operatively while working to limit the adverse effects of opioids including low oxygenation, decreased mental status, and respiratory depression. Additionally, over-sedation post-operatively has the potential to increase the cost to both patient and organization as a result of increased length of hospital stay.

Previously, PACU staff utilized the Pasero Opioid-Induced Sedation Scale (POSS) to measure and assess the level of discharge readiness. Though the independent use of POSS limited discharge assessment to sedation only, and ineffective when used alone to assess discharge readiness, as shown in safety event reporting trends. Pre-implementation data collection found that of 105 total case of naloxone administration at time of inpatient admission, twenty-three occurred post-operatively secondary to over sedation following discharge from PACU.

The quality improvement project began with implementing the use of the Aldrete Discharge Readiness Tool in addition to the POSS scale to assess for over-sedation prior to discharge from PACU. The Aldrete Discharge Readiness tool is a scoring system comprised of five criteria, each criterion worth two points; a minimum score of eight indicate readiness for discharge. A total of 48 Registered Nurses participated in the quality improvement project, incorporating the additional assessment in their discharge workflow. Expanding our discharge assessment to include the Aldrete tool required the clinician to perform a detailed sedation and discharge readiness assessment prior to discharge from PACU.

Descriptive statistics found the use of the Aldrete Discharge Readiness Tool in addition to POSS, decreased the number of naloxone administration by 66%. Staff surveyed preferred the Aldrete tool used in combination with POSS when compared to utilizing POSS sedation scale independently; citing the addition of Aldrete assessment to be "more comprehensive" while gaining a "better picture of the patient", and considers "hemodynamics."

The findings of this data analysis suggest utilizing Aldrete in addition to a sedation assessment tool prior to discharge from PACU will decrease the number of naloxone administrations, subsequently decreasing corresponding safety events, and ultimately increasing patient safety. The methods used in this quality improvement project may easily be reproduced in other Post Anesthesia Care Units who are experiencing trends of increased over-sedation post-operatively. Findings suggest PeriAnesthesia clinicians should include Aldrete assessment prior to discharge as the standard, though larger studies should be conducted. Primary investigators acknowledge over-sedation is multifactorial, and vary with respect to comorbid conditions. Additionally, the advanced assessment has proven to be fiscally sound, helping to prevent lengthy hospitalization, providing mutual benefit to both patient and organization.

Background

- PACU nurses at the bedside must be mindful to provide sufficient analgesia while working to quickly identify, and prevent low oxygenation, decreased mental status, and respiratory depression.
- The Pasero Opioid-Induces Sedation Scale (POSS) is used to measure sedation alone, assessing level of consciousness.
- Aldrete Discharge Readiness Scoring provides a comprehensive measurement of overall recovery from general anesthesia considering patient's activity level, respirations, blood pressure, level of consciousness, and oxygen saturation.
- Over-sedation can be a costly measure to the patient, and organization as a result of increased length of hospital stay.

Problem Statement

- 105 cases of naloxone administrations throughout the medical center in FY19. Twenty-three administrations occurred on one of four medical-surgical units secondary to over-sedation.
- Thorough assessment prior to discharge from PACU can help reduce the number of required naloxone administrations, while current state includes a level of consciousness assessment only.

Purpose

- Implement Aldrete Discharge Readiness Tool, used in addition to POSS, to assess for over-sedation prior to discharge from PACU
- Reduce the number of Safety Events reported secondary to naloxone administration at RUMC on acute inpatient units after discharge from PACU post-operatively.

Quality Improvement Question

Will utilizing the Aldrete Discharge Readiness tool in addition to POSS sedation assessment decrease the number of safety events reported secondary to over-sedation post-operatively.

Implementation

The screenshot displays the Aldrete Discharge Readiness Tool interface. It shows a list of criteria for assessment, each with a score of 0, 1, or 2. The criteria include: Activity (2= Able to move 4 extremities voluntarily or on command, 1= Able to move 2 extremities voluntarily or on command, 0= Unable to move extremities voluntarily or on command), Respiration (2= Able to breathe deeply and cough freely, 1= Dyspnea or limited breathing, 0= Apneic), Circulation (2= Blood pressure within 20% of pre-anesthetic level, 1= Blood pressure + 20% to 49% of pre-anesthetic level, 0= Blood pressure 50% of pre-anesthetic level), Consciousness (2= Fully awake, 1= Arousable on calling, 0= Not responding), and Oxygen Saturation (2= Able to maintain oxygen saturation greater than 92% on room air, 1= Needs oxygen inhalation to maintain oxygen saturation greater than 90%, 0= Oxygen saturation less than 90% even with oxygen supplement). The Modified Aldrete Score is shown as 5. Red circles and arrows highlight the 'Expand=Expand' button and the 'Clicking here Expands all the criteria needed.' text. A note at the bottom right states: 'This score is automatically calculated from the criteria answers and if the score is less than 7 it opens the second line here for them to free text the physician that they notify if required.'

Implementation, cont.

- Aldrete Discharge Readiness assessment is completed by the nurse prior to discharge from Phase I, per revised discharge criteria.
- Education provided to staff related to the correct use of the Aldrete Scoring tool, expectations for completion per discharge criteria, and rationale for implementing the additional assessment.
- Data collected weekly, monthly, and quarterly quantifying total number of safety events, and naloxone administrations post-implementation.
- Post-implementation survey provided to staff to gather staff perceptions and feedback related to the addition of Aldrete assessment in current discharge workflow.

Outcomes/Conclusion

- One quarter of data collection yield one Safety Event related to naloxone administration secondary to over-sedation was recorded.
- Total of 0.5 Safety Events recorded per month, compared to 2 Safety Events per month prior to implementation.
- Findings of data analysis suggest the use of Aldrete Assessment, in addition to POSS assessment, prior to discharge from Phase I of PACU will decrease the number of safety events secondary to naloxone administration.
- Findings suggest PeriAnesthesia clinicians should include Aldrete assessment prior to discharge as the standard; the significance of positive outcomes will help to bring about positive changes to patient safety.
- Medical and scientific advancements, coupled with increasing lifespan, require providers to manage the complex health needs of all patient populations; while in tandem, facing the heightened challenge of providing acceptable post-operative pain relief and preventing over-sedation.

References

The Joint Commission Sentinel Event Alert. (August 8, 2012). *Safe use of opioids in hospitals.* (Issue 49). Retrieved from http://www.jointcommission.org/sentinel_event.aspx

Pasero, C. (2012). Opioid-Induced Sedation and Respiratory Depression: Evidence-Based Monitoring Guidelines. *Journal of PeriAnesthesia Nursing*, 27(3), 208-211. doi: 10.1016/j.jopan.2012.03.003

Watson, J. (2015). *Welcome to Caring Science.* [video]. Retrieved from https://www.youtube.com/watch?v=rGv_hFJetYI