Sedation Scales in the Pediatric ICU

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Background/Significance

- Sedation scoring tools help assess the patient to achieve optimal sedation, minimizing risks of oversedation and undersedation.
- Risks:
  - Undersedated: lung injury, increased oxygen needs, intolerance of mechanical ventilation, increased use of PRNs
  - Oversedated: VAP, lung injury, prolonged mechanical ventilation, increased risk for withdrawal
- Without a validated sedation scale, there is not a standard assessment for sedation leading to
  - Variable levels of sedation
  - Increased overall use of sedation medications

Background/Significance

- The current sedation scale being utilized on the PICU, the Agitation-Sedation Scale Documentation, is not a validated tool and does not accurately assess the level of sedation.
- The Agitation-Sedation Scale Documentation does not measure level of sedation, rather goes straight to oversedation, making it difficulty to achieve a sedation goal.
- Did not carry it over to EPIC for this reason.

PICO QUESTION

For patients in a pediatric intensive care unit requiring sedation, which validated sedation scale compared to our current scale, would help achieve optimal sedation and decrease overall usage of sedation medication.

Trigger?

- Problem Focused Trigger: Variable sedation levels leading to possible increased overall usage of sedation medications.
- Knowledge Focused Trigger: When the patient is assessed using a standardized validated tool, an optimal sedation level can be identified and achieved utilizing a decreased overall use of sedation meds.

Evidence

- Search Engines used: EBSCO, CINHAL
- Key words: sedation, pediatric, scale

- Insert comfort scale here

Comfort Scale

- Analyzed in multiple studies across a pediatric population in ICUs.
- Subjective in evaluation of certain parameters and the hemodynamic variables can be influenced by other factors other than sedation.
- Evidence of undersedation were addressed and children were more adequately sedated after using the scale.
- Shown to be easily used by nurses of varying education backgrounds.
- The evidence was inconclusive whether the implementation of the Comfort Scale improved sedation treatment.
- Also used to assess pain.

Comfort B Scale

- Insert comfort b scale here

Comfort B scale

- The Comfort B Scale was adapted from Comfort scale. Physiological factors, such as blood pressure and heart rate were excluded from scale.
- Evidence showed higher reliability with physiological factors excluded.
- The Comfort B Scale is recommended for ages <18yrs.
- Very limited evidence.

Pediatric Sedation Agitation Scale (P-SAS)

- Insert p-sas here

Pediatric Sedation Agitation Scale (P-SAS)

- The Pediatric Sedation Agitation Scale (P-SAS) was analyzed across a ten bed PICU.
- Evaluates the sedation depth across mechanically intubated children; the level of response to a stimulus. Each age group, 0-1 year, 1-3 years, 4-7 years and 8-18 years, is individually assessed.
- The P-SAS content validity is not validated.
- The P-SAS is not comprehensive in its evaluation: it does not assess respiratory response, alertness, muscle tone or facial tension.

State Behavioral Scale

- Insert scale here

State Behavioral Scale

- The State Behavior Scale (SBS) was analyzed in a study of a pediatric population in a Medical-Surgical ICU and Cardiovascular ICU.
- The SBS evaluates the mechanically intubated child's respiratory effort, response to ventilation, coughing, best response to stimulation, attentiveness to care provider, tolerance to care, consolability and movement after consoled.
- SBS scale has clearly defined dimensions that are easily rated by nurses.
- SBS scale is recommended in children from ages 6 weeks – 6 years.

Current Practice at LVHN

- Prior to EPIC:Agitation-Sedation Scale
- Currently subjective sedation assessment among providers/nurses
  - Sedation goals discussed daily in rounds.
- No protocols/pathways in place for sedation

Implementation

1. Presented evidence at PICU PI meeting
2. Consensus between SBS and Comfort tool to be determine after pilot.
3. Multidisciplinary team: Physician, 2 RN, PCS, CRS, pharmacy formed.
4. Gather data related to overall use of sedation medication in mg/kg totals.
5. Small scale pilot tool on unit.
6. Availability of tool in EPIC.
7. Education roll out.
8. Incorporation of tool in Pediatric Sedation Pathway.

Practice Change

- Implement validated sedation scale in PICU
- Small scale pilot on unit for nurse interrater reliability/ease of use on unit utilizing experienced/novice nurses for 4-6 patients.

Goal

- Implement Pediatric Sedation Clinical Pathway with utilization of Pediatric sedation scale.

Results

- Next steps: small scale pilot on PICU.
- Take evidence to Pediatric Practice Council for approval.

Implications for LVHN

- Better assessment of sedation leading to improved patient care.
- Pediatric Sedation clinical pathway.

Strategic Dissemination of Results

- Unit based project:
  - PICU PI
  - Children's Practice Council
  - Staff education with key champions.

Lessons Learned

- Barriers:
  - EPIC implementation slowed progress
  - Lack of validated pediatric sedation scales
  - Data collection/identifying appropriate metric

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Make It Happen

- Questions/Comments:

Contact Information: