HRET HIIN VAE Hot Topic Virtual Event

July 24, 2019
11:00 a.m. – 12:00 p.m. CT
Welcome and Introductions
Kavita Bhat, MD, MPH
Performance Improvement Coach, AHA
Hello, My Name is…

- Name
- Hospital/State Hospital Association
- City, State
AGENDA

- Welcome and Introductions
- Sprint Overview
- The Challenge: Pain & Sedation Management
- Questions and Answers
- Bring it Home
Learning Objectives

- Explore common barriers to decreased sedation and increase engagement in ventilated patients
- Identify how the elements of the ABCDEF bundle work together to promote improved patient outcomes
- Describe tools to assist in treating pain first
- Discover areas of improvement for sedation management in ICU
- Create a plan to “Say it out loud”
- Commit to a small test of change
Sprint Overview

Kavita Bhat, MD, MPH
Performance Improvement Coach, AHA
VAE Sprint Overview

- A quality improvement collaborative with low performing participants who agreed to small tests of change that can be measured across a short time frame.

- Subject matter experts offered topic guidance and support with participants identifying and testing interventions.

- 3 focused virtual events from April 2019-June 2019 designed to assist hospitals in assessing the root causes of VAE harms and provide guidance and support on how to address VAE challenges and gaps in practices.
VAE Sprint Overview

- The tools and resources that were utilized in the Sprint were:
  - VAE Process Discovery Tool
  - VAE Coaching Guide
  - HRET HIIN VAE Change Package

- Sprint Evaluation is being conducted through pre and post assessments.
VAE Sprint Overview

24 States

57 Hospitals
The Challenge: Pain & Sedation Management

Kavita Bhat, MD, MPH
Performance Improvement Coach, AHA

Maryanne Whitney, RN, CNS, MSN
Improvement Advisor, Cynosure

Steve Tremain, MD, FACPE
Improvement Advisors, Cynosure
“There appears to be significant potential for harm arising from the current ICU culture of patient immobility and an often excessive or unnecessary use of sedation.”

Herridge MS. Mobile, awake and critically ill. CMAJ. Mar 11 2008; 178(6): 725-726.
50-70%
Cognitively Impaired
60-80%
Functionally Impaired
ICU PAD Guidelines: ABCDEF Bundle Checklist*

- A – Assess, prevent and manage pain
- B – Both SATs and SBTs
- C – Choice of sedation
- D – Delirium: assess, prevent and manage
- E – Early mobility and exercise
- F – Family engagement and empowerment

*www.icudelirium.org
*www.iculiberation.org
The ABCDEF Bundle Objectives

• Optimize pain management.

• Break the cycle of deep sedation and prolonged mechanical ventilation.

• Reduce the incidence and duration of ICU delirium.

• Improve short and long-term ICU patient outcomes.

• Reduce health care costs!

• Morandi et al Curr Opin Crit Care 2011;17:43-9
• Vasilevskis et al Crit Care Med 2010;38:S683-91
• Zaal et al, ICM 2013;39:481-88
• Colombo et al, Minerva Anest 1012;78:1026-33
Negative Consequences of Over-sedation

- Reduced six-month survival
- Hospital mortality
- **Longer duration of mechanical ventilation**
- Longer ICU length of stay
- Increased physiologic stress
  - Trends show increase in PTSD symptoms with deep sedation
Liberation is the GOAL
Liberated…
…texting while on vent
Polling Question

- Does your ICU treat pain prior to administering sedation?
  - Always
  - Sometimes
  - Never
  - Not sure
Voices from the Field

- If you answered sometimes or never, what barriers have you encountered?

- If you answered always, what successful practices does your ICU follow to ensure pain is treated first.
Challenge

Does your ICU treat pain prior to administering sedation?

- Not thinking about it: 12.7%
- Just starting to plan: 14.6%
- Testing in one unit: 16.4%
- Spread to multiple units: 56.4%

55 respondents!
Assess, Prevent, and Manage Pain

Assess
- Assess pain > 4x/ shift & PRN
- Significant pain with pain score >3 or CPOT >2

Prevent
- Administer pre-procedural interventions or analgesia
- Treat pain first, then sedate

Treat
- Treat pain within 30 minutes of detecting and reassess
- Incorporate both non-pharmacological and pharmacological treatments

## CPOT - Critical Care Pain Observation Tool

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>FACIAL EXPRESSION</td>
<td>Relaxed, neutral 0, Tense 1, Grimacing 2</td>
</tr>
<tr>
<td>BODY MOVEMENTS</td>
<td>Absence of movements 0, Protection 1, Restlessness 2</td>
</tr>
<tr>
<td>MUSCLE TENSION (evaluate by passive flexion and extension of upper extremities)</td>
<td>Relaxed 0, Tense, rigid 1, Very tense or rigid 2</td>
</tr>
<tr>
<td>COMPLIANCE WITH VENTILATOR (intubated patients)</td>
<td>Alarms not activated; easy ventilation 0, Coughing but tolerating 1, Fighting ventilator 2</td>
</tr>
<tr>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>VOCALIZATION (extubated patients)</td>
<td>Talking in normal tone or no sound 0, Sighing, moaning 1, Crying out, sobbing 2</td>
</tr>
</tbody>
</table>

**CPOT range = 0 – 8; CPOT >2 is significant**

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Both Spontaneous Awakening Trials and Spontaneous Breathing Trials

- Daily spontaneous awakening trials (SAT) showed a decrease in the duration of mechanical ventilation
  - Pause sedation infusion until patient is awake
  - Restart at 50% prior dose

- Spontaneous breathing trials (SBT) Increases opportunity for effecting independent breathing
  - Duration a minimum of 30 minutes
  - Requires communication and coordination between RN, RT, and MD
Polling Question

Are benzodiazepines used as a first line agent for sedation in your ICU?

- Yes
- Sometimes
- No
- Not Sure
Voices from the Field

- If you answered yes or sometimes, what barriers have you encountered in switching from benzodiazepines as first line agents in your ICU?

- If you answered no, how did your ICU move away from using benzodiazepines as first line agents?
Challenge

Does your ICU use benzodiazepines as the first line agent for sedation?

- Never: 15.1%
- Sometimes: 67.9%
- Always: 17.0%

55 respondents!
C Choice Analgesia

- Goal of ICU Care:
  - Pain: 3 or less or 2 or less (CPOT)
  - Sedation: RASS = +1 to -2
    - (Is (-2) the best goal?)
  - Delirium: CAM-ICU Negative

Goals of Sedation

- Keep patient calm, comfortable, cooperative,
- Reduce anxiety and agitation, facilitate mobility
- Decrease traumatic memory of the ICU stay and procedures
Changes for Improved Outcomes

- Treat pain FIRST then sedate
- Not all mechanically ventilated patients need to be started on IV opioids and/or sedation infusions following intubation
- Targeted sedation, consider changing goal from (+1 – (-2)) to (+1- (-1))
- Non-benzodiazepine sedative are associated with better ICU outcomes
  - Multimodal
Polling question

- Do you use RASS target goal to guide administration of sedation?
  - Always
  - Sometimes
  - Never
  - Not Sure
Voices from the Field

- If you answered **never**, what barriers have you encountered in implementing RASS?

- If you answered **always**, what is your experience with utilizing RASS in your facility?
Choose Target RASS
Assess Actual RASS
Modify treatment so Actual = Target
## Richmond Agitation-Sedation Scale (RASS)

<table>
<thead>
<tr>
<th>Score</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>+4</td>
<td>Combative</td>
<td>Overtly combative, violent, immediate danger to staff</td>
</tr>
<tr>
<td>+3</td>
<td>Very agitated</td>
<td>Pulls or removes tube(s) or catheter(s), aggressive</td>
</tr>
<tr>
<td>+2</td>
<td>Agitated</td>
<td>Frequent nonpurposeful movement, fights ventilator</td>
</tr>
<tr>
<td>+1</td>
<td>Restless</td>
<td>Anxious but movements not aggressively vigorous</td>
</tr>
<tr>
<td>0</td>
<td>Alert and calm</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>Drowsy</td>
<td>Not fully alert but has sustained awakening (eye opening/eye contact) to voice (≥10 seconds)</td>
</tr>
<tr>
<td>-2</td>
<td>Light sedation</td>
<td>Briefly awakens to voice with eye contact (&lt;10 seconds)</td>
</tr>
<tr>
<td>-3</td>
<td>Moderate sedation</td>
<td>Movement or eye opening to voice (but no eye contact)</td>
</tr>
<tr>
<td>-4</td>
<td>Deep sedation</td>
<td>No response to voice but movement or eye opening to physical stimulation</td>
</tr>
<tr>
<td>-5</td>
<td>Unarousable</td>
<td>No response to voice or physical stimulation</td>
</tr>
</tbody>
</table>

Verbal Stimulation

Physical Stimulation
Adjusted Ratio of Medians: 0.71 (95% CI: -1.31, -0.10)

Dale CR & Treggiari M, Ann ATS 2014 epub
**Hopkins QI Project = Reduced Delirium via less benzodiazepines and more mobility**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pre-QI (n=27)</th>
<th>Post-QI (n=30)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days with any benzodiazepine use**</td>
<td>150 (50%)</td>
<td>118 (26%)</td>
<td>.002</td>
</tr>
<tr>
<td>Days alert (RASS -1 to +1)</td>
<td>88 (30%)</td>
<td>311 (67%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>PT/OT in MICU</td>
<td>19 (70%)</td>
<td>28 (93%)</td>
<td>.040</td>
</tr>
<tr>
<td>Number of PT/OT treatments in ICU</td>
<td>1 (0-3)</td>
<td>7 (3-15)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Days without delirium</td>
<td>61 (21%)</td>
<td>243 (53%)</td>
<td>.003</td>
</tr>
<tr>
<td>Days of delirium in ICU</td>
<td>107 (36%)</td>
<td>125 (28%)</td>
<td></td>
</tr>
<tr>
<td>Days of Coma</td>
<td>129 (43%)</td>
<td>86 (19%)</td>
<td></td>
</tr>
</tbody>
</table>

**Benzodiazepine dose (median midazolam eq) from 47mg down to 15 mg/day**

Needham DM Arch Phys Med Rehabil 2010; 91:536-542
No Sedation: ICU Length Stay

 Patients Remaining in ICU (%)

Control (n=58)  
Intervention (n=55)  

9.7 days  

Polling question

- Our daily multidisciplinary rounds include a discussion regarding level of sedation?
  - Yes
  - No
  - Not Sure
  - We don’t conduct rounds everyday
Voices from the Field

- If you answered no, what barriers have you encountered in discussing the level of sedation in rounds?

- If you answered yes, what is your experience with discussing levels of sedation in rounds daily? How has it helped?
Say it out Loud

- Confirm findings
- Influence practice
- Improve care
Brain Road Map
(A framework for bedside rounds)

1. Where is the patient going?  
   Target RASS

2. Where is the patient now?  
   Current RASS  
   Current CAM-ICU

3. How did they get there?  
   Drugs
Key Ideas

- Attempt to manage ICU pts without sedation
- Treat pain FIRST- even if pt appears agitated. Multimodal
- If sedation becomes necessary AVOID benzos
- If you must administer benzos – give 3 boluses doses prior to infusion (to minimize sedation)
- Decrease sedation by 50% after awakening trial everyday
- Integrate RASS and sedation into bedside rounds. “Say it out loud”
Questions?
Your feedback is important to us! Please take 2 minutes to complete this survey!
A-E and A-F Bundle References

**ABCDE Bundle**
2. Vasilevskis EE, Chest, 2010;138:1224-33

**ABCDEF Bundle**
10. Barnes-Daly MA, Crit Care Med, 2017;45:171-78
14. Barnes-Daly MA, World Evid Based Nurs, 2018;15:206-16
15. Pun BT, Crit Care Med 2019;47:3-14
17. Balas MC, Crit Care Nurse 2019;39:46-60
HRET Resources

VAE Process Discovery Tool

VAE Change Package

VAE Checklist
thank you!