Project Goals

Get patients off the ventilator faster

Tap the wisdom of frontline staff

Harness the power of local data to drive improvement efforts
SAT & SBT Specific VAP Prevention Guidelines

*Society for Healthcare Epidemiology of America*¹

- Recommends simultaneous use of daily sedation interruption (SAT) and daily assessment of readiness to wean (SBT)
- Recommends management of ventilated patients with minimal sedation whenever possible and avoidance of benzodiazepines
SAT & SBT Specific VAP Prevention Guidelines

Centers for Disease Control and Prevention\(^2\)

- Does not specifically address SAT and SBT, however supports weaning

American Thoracic Society\(^3\)

- Recommends use of daily interruption or lightening of sedation to avoid constant heavy sedation and to facilitate and accelerate weaning
- Does not specifically address SBT
Spontaneous Awakening Trials (SATs) Protocol\textsuperscript{4,5}

- SAT consists of two parts: safety screen and trial
- Safety screen checks for contraindications
- Patient passes the screen unless following factors are present
- Receiving a sedative infusion for active seizures or alcohol withdrawal
- Receiving escalating doses of sedative for agitation
- Receiving neuromuscular blockers
- Evidence of active myocardial ischemia in prior 24 hours
- Evidence of increased intracranial pressure
Spontaneous Awakening Trials (SATs) Protocol$^{4,5}$

If patient passes the safety screen,

- Stop all sedatives and analgesics used for sedation
- Continue analgesics used for pain
Spontaneous Awakening Trials (SATs) Protocol\textsuperscript{4,5}

- Passes the SAT if can do 3 out of 4 task on request
  - Open their eyes
  - Look at their caregiver
  - Squeeze the hand
  - Put out their tongue
- OR can go without sedation for 4 hours without new symptoms or complications
Spontaneous Awakening Trials (SATs) Protocol\textsuperscript{4,5}

Passes the SAT if without sedation for 4 hours without the following:

- Sustained anxiety
- Agitation
- Pain
- Respiratory rate of 35 breaths/minute for ≥ 5 minutes
- \text{SpO}_2\text{ of less than 88\% for ≥ 5 minutes}
- Acute cardiac dysrhythmia
- Two or more signs of respiratory distress
  - Tachycardia
  - Bradycardia
  - Use of accessory muscles
- Marked dyspnea
  - Abdominal paradox
  - Diaphoresis
Spontaneous Awakening Trials (SATs) Protocol\textsuperscript{4,5}

If patient fails the SAT,

- Sedatives are started at one half the prior dosage
- Then titrated up as needed
CDC Prevention Epicenters’ Wake Up and Breathe Collaborative

SATs & SBTs Increases
- 63% in SATs
- 16% in SBTs
- 81% in SBTs done with sedatives off

VAE Reductions
- 37% in VACs
- 65% in IVACs

63% in SATs
16% in SBTs
81% in SBTs done with sedatives off
CDC Prevention Epicenters’ Wake Up and Breathe Collaborative^6

SATs & SBTs Increases
- 63% in SATs
- 16% in SBTs
- 81% in SBTs done with sedatives off

2.4 vent days
3.0 ICU days
6.3 LOS days
Vent Days & LOS Reductions
Daily Interruption of Sedatives

Less than half of practitioners worldwide have implemented daily interruption of sedatives\textsuperscript{7,8}

- Germany: 34%
- Canada: 40%
- USA: 40%
Perceived Barriers to Sedation Protocols and SATs

- Multidisciplinary web-based survey (n=904)
- Reasons for lack of protocol use
  - No physician order, 35%
  - Lack of nursing support, 11%
  - Fear of over sedation, 7%
- Barriers for daily sedation interruption
  - Nursing acceptance, 22%
  - Risk of device removal, 19%
  - Respiratory compromise, 26%
  - Patient discomfort, 13%
ICU Barriers to SATs

- View SATs as unnecessary, and light sedation as more appropriate and safer
- Claim no physician orders
- Maintain inadequate staff to undertake protocols
- Unconvinced lowering sedation will benefit patients
ICU Barriers to SATs

- Nursing attitudes account for one-third of variance in number of patients who received sedatives.
- Only 17.7% of respondents thought it was easier to care for an awake and alert patient receiving mechanical ventilation than to care for a similar patient more sedated.
SAT & SBT Daily Care
Process Measures

- SAT
- SAT Contraindication
- SBT
- SBT Contraindication
- SBT with Sedatives Off

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<tr>
<th>Spontaneous Awakening Trial</th>
<th>Reason SAT Contraindic</th>
<th>Spontaneous Breathing Trial</th>
<th>Reason SBT Contraindic</th>
<th>SBT With Sedatives Off?</th>
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SAT Contraindications

0. Other
1. Sedatives for active seizures or objective evidence of active alcohol withdrawal
2. Escalating sedative doses due to ongoing agitation
3. Neuromuscular blockers
4. Active myocardial ischemia in the previous 24 hours
5. Increased intracranial pressure in the previous 24 hours
6. High frequency oscillation ventilation


References


Importance of Nurse-led Mobilization

• Most ICU nurses know *why* Early Mobility in the ICU is critically important
• Need to do root cause analysis of barriers and address each through education, training, policies, equipment, communication
• Barriers found upon Beaumont survey:
  – Safety is a high concern
  – Risk of injury to patient and self
  – Accurately dosing mobility, choosing equipment, and communicating
Problems Associated with Critical Illness

- When deconditioning and muscle weakness occur, the course becomes complicated, the stay in the ICU is prolonged, and mortality increases.
- Risk developing ICU-associated weakness due to polyneuropathy, myopathy, or a combination of both.
- The cumulative effect of the complications are functional limitations that might or might not resolve.
Potential body/structure effects of critical illness

## What Are Your Barriers?

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<th>Barrier</th>
<th>Strategy to Overcome Barrier</th>
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| Lack of leadership                           | • Designate an overall leader involved & committed to OI (PMT)  
• Involve champion from every discipline: MD, RN, PT, OT, RT                                                                                                                                                                                                                                   |
| Lack of staffing & equipment                 | • Equipment rental process  
• Obtain grants/review capital budget for purchase of equipment  
• Nursing grants for a dedicated PT/OT & PT tech full time                                                                                                                                                                                                                                 |
| Lack of knowledge and training               | • Educate the multidisciplinary team about the rationale & evidence for early PM & R interventions  
• Create simple guidelines for PT/OT consultations  
• Cross trained staff  
  • PT to basic ECG / suctioning ventilators modes & troubleshooting alarms  
  • RNs for safe transfer techniques from bed to chair                                                                                                                                                                                                 |
| Lack of referrals & Standardized Documentation| • Screening criteria met  
• Education about appropriate referrals  
• Bed rest orders vs PT consults  
• Chart build guideline created for Mobility                                                                                                                                                                                                                                                 |
| Oversedation                                 | • Interdisciplinary education about continuous vs. bolus sedation  
• Standardized approach to sedation assessment- RASS                                                                                                                                                                                                                                             |
| Delirium                                     | • Screening with CAM-ICU  
• Minimize use of benzodiazepines- see sedation NM protocol  
• Encourage use of antipsychotics to treat delirium                                                                                                                                                                                                                                             |
| Pain & discomfort                            | • Initiate a NM pain protocol to titrate pain medications                                                                                                                                                                                                                                                                                                      |
| Physiological Instability                    | • Create guidelines for screening physiological stability                                                                                                                                                                                                                                                                                                    |
| Safety                                       | • PT/OT screen daily for safety before initiating therapy  
• RT @ bedside before initiating therapy beyond dangling for any intubated patient  
• Untangling of lines prior to therapy to avoid accidental dislodgement                                                                                                                                                                                                                   |

Needham and Korpolu, Top Stroke Rehabil 2010;17(4):271–281
## 4E’s Early Mobility

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<th>Frontline Staff</th>
<th>Early Mobility</th>
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| *Engage* | Ask, how will Early Mobility make the world a better place?  
- Help staff understand preventable harm  
- Share stories about patients affected  
- Develop a business care  
- Include execute champion/physician leadership | - Define evidence related to preventing VAEs (short and long term cognitive affects, and physical/psychological disabilities)  
- Share success stories, videos, or explore the IRN website during CUSP 4 MVP-VAP mtgs  
- Plan a site visit with experienced units/facilities  
- Create business case related to the impact of early mobility, including increased time off the ventilator, decreased hospital LOS and decreased ICU LOS  
- Share business case with executive champion/physician leadership |
| *Educate* | What do we need to mobilize critically ill patients?  
- Convert evidence into behaviors  
- Evaluate awareness and agreement | - Discuss Post-Intensive Care Syndrome (PICS)  
- Review the literature  
- Develop mobility criteria and progressive mobility protocol/guideline  
- Define your education plan (utilizing workshops, hands-on trainings, conferences, slides, presentations and interactive discussions via multiple modalities to cater to different learning styles)  
- Identify support through outreach to the leadership team |
| *Execute* | How will we implement early mobility at our hospital give local culture and resources?  
- Listen to resisters  
- Standardize care and create independent checks  
- Make it easy to do the right thing  
- Learn from mistakes | - What is the process for mobilizing a patient?  
- Is there a policy on the unit?  
- Who should be involved?  
- Do we have all the equipment?  
- Discuss as part of interdisciplinary rounds/daily goals  
- Learn from defects |
| *Evaluate* | How will we know that our efforts to mobilize our patients made a difference?  
- Define measures  
- Regularly assess measures  
- Provide feedback to staff and celebrate success | - Collect Early Mobility Daily Rounding measures and review at CUSP 4 MVP-VAP meetings  
- Use CECity to trend performance |
Educate
Turn evidence into behaviors

• Define/Approve Mobilization readiness criteria
• Develop early/progressive mobility protocol/guideline

Question:
Our unit has protocol for early exercise and progressive mobility for ALL patients

Question:
Immobile patients on our unit receive passive range of motion regularly, if tolerated.