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AMERICAN
ASSOCIATION
of CRITICAL-CARE
NURSES

AACN PEARL: Implementing the ABCDE Bundle at the Bedside

An Evidence-Based Approach for
Managing the Complex Care of the
Critically and Acutely Ill Patient

NOTE: Extensive speaker notes are
included with this presentation.
Click on View > Notes Page

Why Another Bundle?

- Managing critically ill patients is becoming more complex
- Effective care requires alignment of people, processes and technology
- A bundle approach provides a guide to coordinating evidence-based care practices at the bedside

ABCDE Bundle

- Evidence-based organizational approach
- Improves collaboration among clinical team members
- Standardizes care processes
- Breaks the cycle of oversedation and prolonged ventilation in critically ill patients

ABCDE

ABCDE Bundle Components

Awakening &
Breathing Trial
Coordination

Delirium
Assessment &
Management

Early Exercise &
Progressive
Mobility

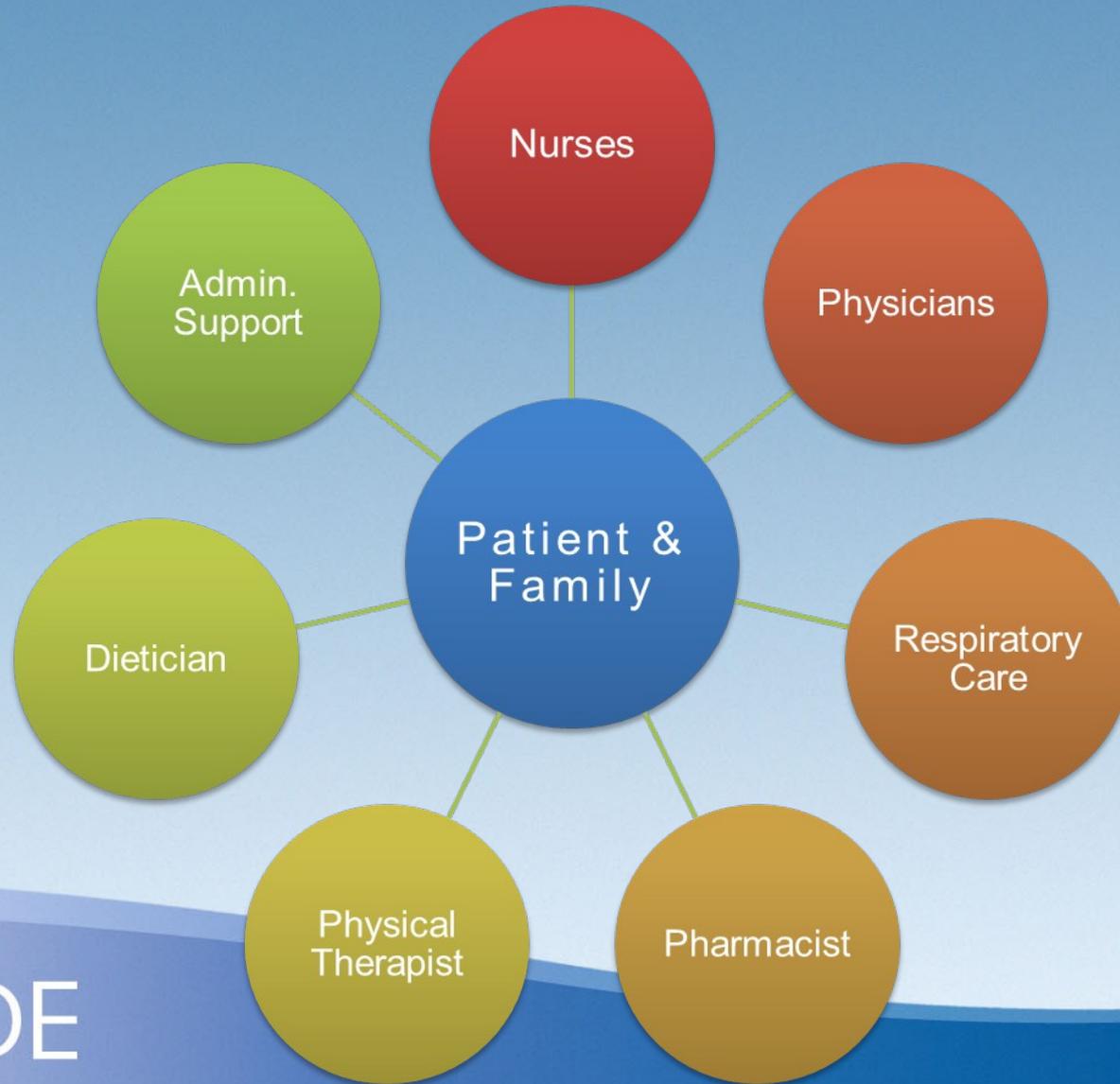


ABCDE

ABCDE Bundle Benefits

- Decreased ventilator time
- Decreased ICU length of stay
- Improved return to normal brain function
- Increased independent functional status
- Improved patient and family satisfaction
- Increased survival

Multi-Professional Collaboration



ABCDE

Awakening and Breathing Trial Coordination

ABCDE

The Problem

- Negative outcomes of prolonged ventilation
 - VAP
 - Immobility
 - Delirium
- Sedation used to relieve anxiety and agitation
 - Oversedation
 - Undersedation
 - Harmful outcomes

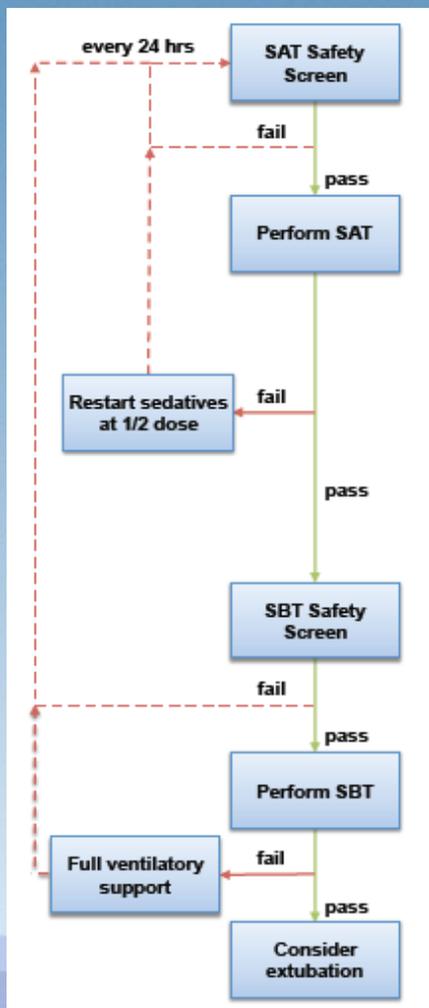
Evidence-Based Management

- Targeted Sedation Protocols
 - Effective in achieving sedation goals
 - Minimize drug accumulation
 - Maximize alertness
- Spontaneous Awakening Trials (SAT)
 - Decrease ventilator time
 - Decrease complications without increased psychological discomfort
- Spontaneous Breathing Trial (SBT)
 - Objective screening
 - Decreases time on ventilator
 - Decreases complications

ABC Protocol

- Synergy of SAT & SBT
 - Decreased medication accumulation
 - Decreased oversedation
 - Increased opportunity for effective independent breathing
- “Wake Up and Breathe” Protocol
 - Combines SAT and SBT
 - Two step process
 - Safety screen
 - Trial period

Wake Up and Breathe Protocol



SAT Safety Screen

No active seizures
 No alcohol withdrawal
 No agitation
 No paralytics
 No myocardial ischemia
 Normal intracranial pressure

SAT Failure

Anxiety, agitation, or pain
 Respiratory rate > 35/min
 Oxygen saturation < 88%
 Respiratory distress
 Acute cardiac arrhythmia

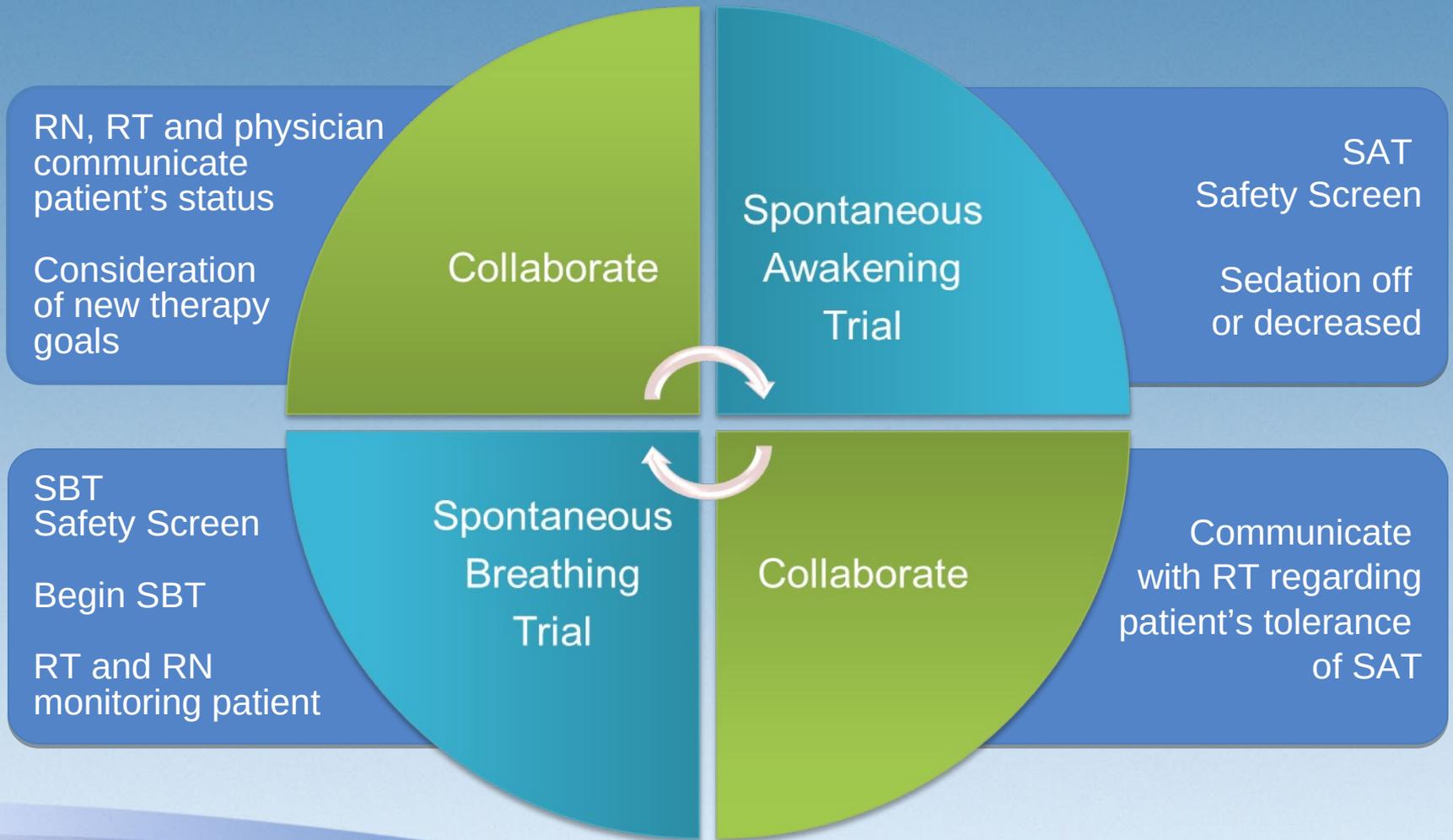
SBT Safety Screen

No agitation
 Oxygen saturation \geq 88%
 FiO₂ \leq 50%
 PEEP \leq 7.5 cm H₂O
 No myocardial ischemia
 No vasopressor use
 Inspiratory efforts

SBT Failure

Respiratory rate > 35/min
 Respiratory rate < 8/min
 Oxygen saturation < 88%
 Respiratory distress
 Mental status change
 Acute cardiac arrhythmia

Coordination and Collaboration



Delirium Assessment and Management

ABCDE

The Problem

- Affects up to 60-80% of mechanically ventilated patients
- Generates \$4-16 billion annually in associated costs in the U.S.
- Associated with increased:
 - Length of stay
 - Ventilator time
 - Mortality
 - Long-term neuropsychological deficits
- Undetected and untreated in many patients

Delirium Defined

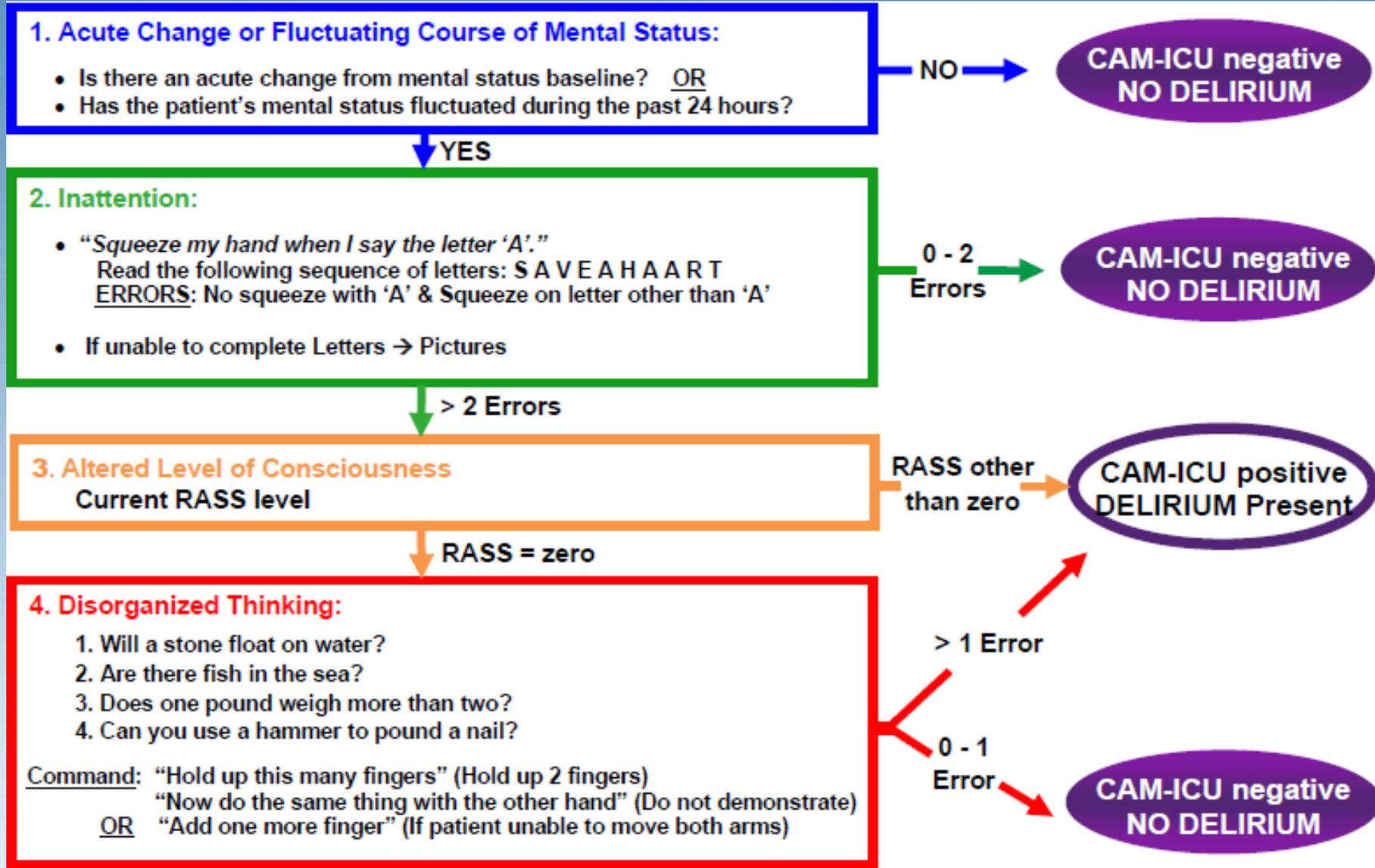
- Acute change in consciousness accompanied by inattention and either a change in cognition or perceptual disturbance
- Three subtypes:
 - **Hyperactive:** Agitation, restlessness, attempts to remove catheters, emotionally labile
 - **Hypoactive:** Flat affect, withdrawal, apathy, lethargy, decreased responsiveness
 - **Mixed:** Combination of hypoactive and hyperactive

Evidence-Based Management

Assess for presence of delirium

- Baseline risk factors to identify susceptibility
 - Pre-existing dementia
 - History of baseline hypertension
 - Alcoholism
 - Admission severity of illness
- Standardized assessment tool to detect delirium that would otherwise go undetected
- Two valid and reliable tools
 - Confusion Assessment Method for the ICU (CAM-ICU)
 - Intensive Care Delirium Screening Checklist (ICDSC)

CAM-ICU



Stop, Think and (Perhaps) Medicate

- **Stop**
 - Do any medications (especially benzodiazepines) need to be stopped or lowered?
 - Is the patient on the minimal amount of sedation necessary? Do any titration strategies need to be used, such as a targeted sedation plan or daily sedation cessation?
 - Do the sedative drugs need to be changed?

Stop, Think and (Perhaps) Medicate

- **THINK**
 - Toxic situations
 - CHF, shock, dehydration
 - Deliriogenic medications
 - New organ failure
 - Hypoxemia
 - Infection or sepsis
 - Immobilization
 - Non-pharmacologic interventions employed?
 - Glasses, hearing aids, reorientation, sleep protocols, noise control
 - **K+** or electrolyte problems

Stop, Think and (Perhaps) Medicate

- **Medicate**
 - No FDA-approved drug to treat delirium
 - Haloperidol (Haldol) and atypical antipsychotics (ziprasidone [Geodon], quetiapine [Seroquel])
 - Traditionally recommended medication class to treat delirium
 - Little evidence to support treatment
 - All patients receiving antipsychotics should be routinely monitored for side effects, especially QT prolongation

Patient and Family Education

Delirium is different from dementia

DELIRIUM

- Delirium comes on quickly, in hours or days. Signs of delirium can change from one day to the next.
- Delirium can make memory and thinking problems worse.
- Delirium usually clears up after a few days or even a week.

DEMENTIA

- Usually dementia is a permanent condition.
- Dementia is a disturbance of thinking. It comes on over months or even years.
- Patients with dementia are more likely to develop delirium.

Does delirium cause thinking problems after a patient leaves the hospital?

- Research shows that patients who develop delirium might have dementia-like thinking problems that can last for months.
- At this time we cannot predict who might develop dementia-like thinking problems.

How you can help

- Speak softly and use simple words or phrases
- Remind the patient of the day and date.
- Talk about family and friends.
- Bring glasses, hearing aids.
- Decorate the room with calendars, posters, or family pictures. These familiar items might be reminders of home.
- Provide the patient with favorite music or TV shows.
- If your loved one has delirium, we might ask you to sit and help calm them.

ICU Delirium &
Cognitive Impairment
Study Group

www.ICUdelirium.org
for questions, please email
delirium@vanderbilt.edu

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In the Intensive Care Unit

Delirium

*A guide for families
and patients*



www.ICUdelirium.org

Click to download sample brochure

Early Exercise and Progressive Mobility

The Problem

- ICU-acquired weakness – Acute onset of neuromuscular/functional impairment without plausible etiology
- Impairs ventilator weaning and functional mobility
- Patients with ICU-acquired weakness require approximately 20 additional ventilator days
- Increased mortality
- Effects persist well after discharge

Evidence-Based Management

- Early mobility protocols (early exercise, progressive mobility)
 - Progress from passive to active range of motion (early PT)
 - Sitting position in bed
 - Dangle
 - Stand & Transfer
 - Ambulation
- Screen for participation
- Two-step process
 - Safety screen
 - Mobility protocol

Sample Progressive Mobility Protocol

Safety Screening

(Patient must meet all criteria)

M – Myocardial stability

- No evidence of active myocardial ischemia x 24 hrs.
- No dysrhythmia requiring new antidysrhythmic agent x 24 hrs.

O – Oxygenation adequate on:

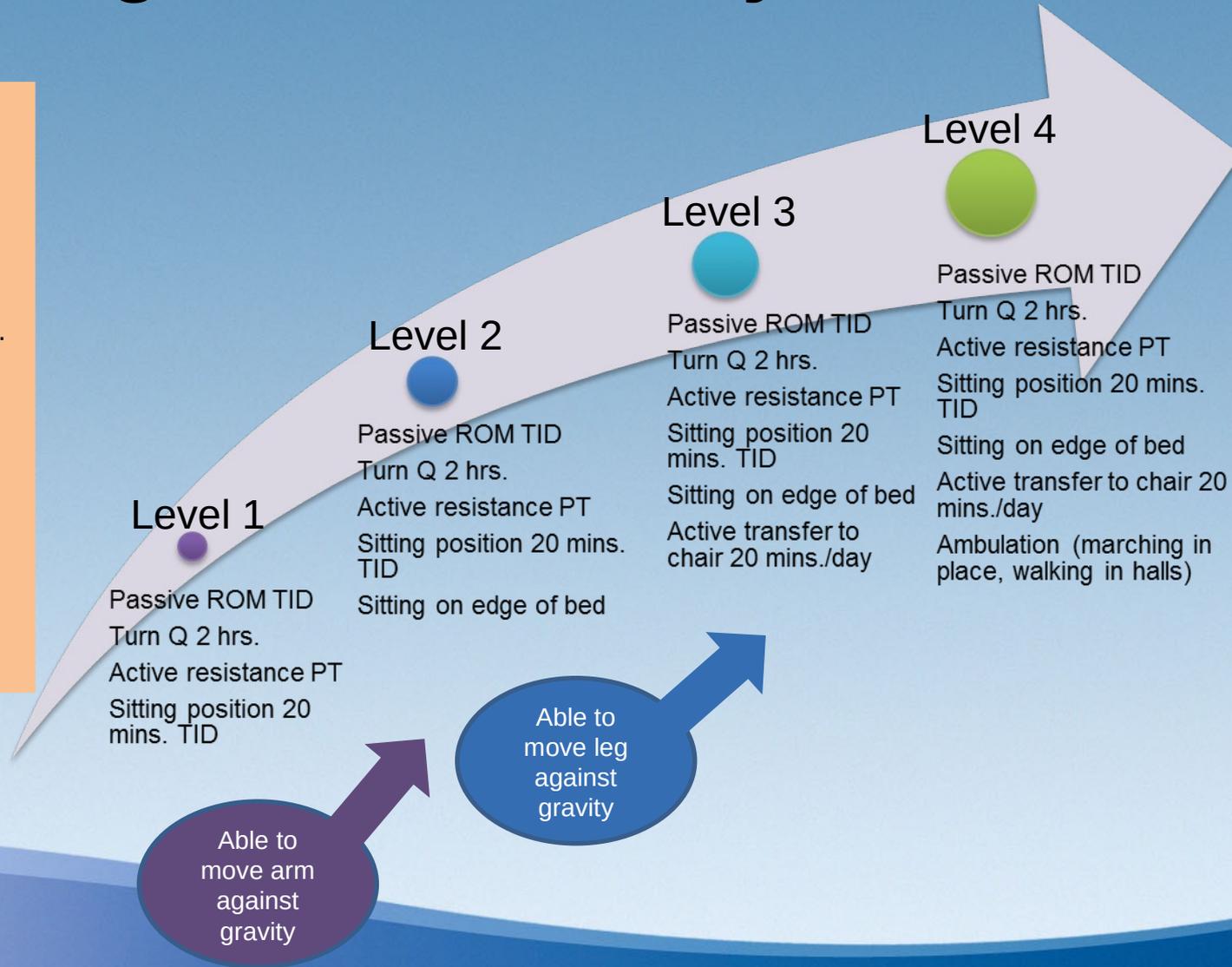
- FiO₂ < 0.6
- PEEP < 10 cm H₂O

V - Vasopressor(s) minimal

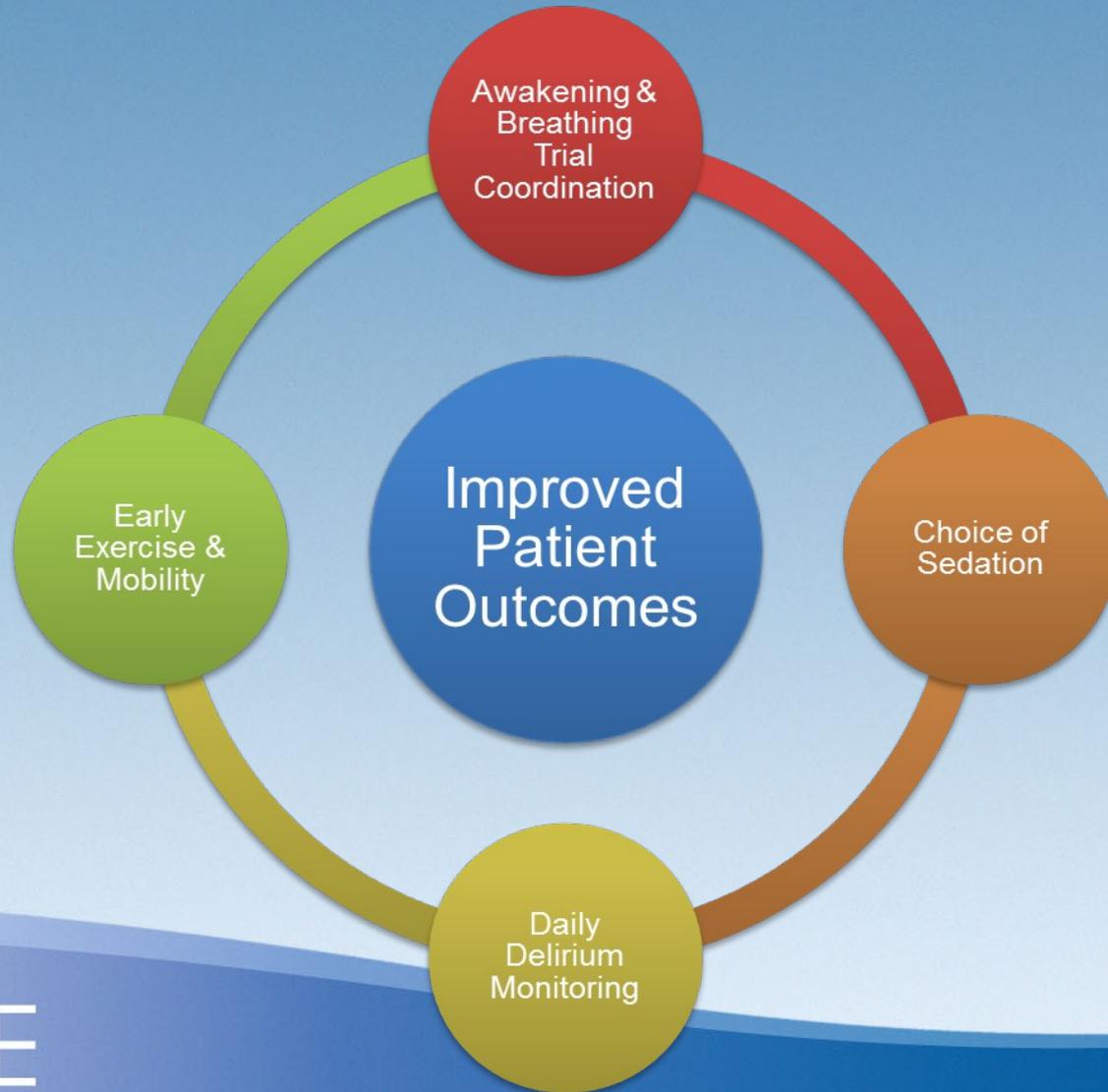
- No increase of any vasopressor x 2 hrs.**

E – Engages to voice

- Patient responds to verbal stimulation



ABCDE Bundle



ABCDE

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pCAM-ICU

Note: Pediatric alternative to CAM-ICU slide.

STEP 2 → Pediatric Confusion Assessment Method for the ICU (pCAM-ICU)

Delirium Diagnosis Requires = Feature 1 + Feature 2 + EITHER Features 3 OR 4

