



Atrium Health

ABCDEF Bundle

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Background



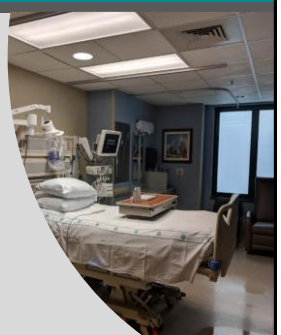
ICU Liberation Collaborative

- The Neurosurgical ICU at Carolinas Medical Center was chosen to be a part of Society of Critical Care Medicine's ICU Liberation Collaborative
 - Officially began January 2016; began clinical changes June 2016
- One of few neuro specialized ICUs chosen
- From an organizational perspective, the ultimate goal was to take lessons learned and spread system wide (18 ICUs)



Who we are: Neurosurgical ICU

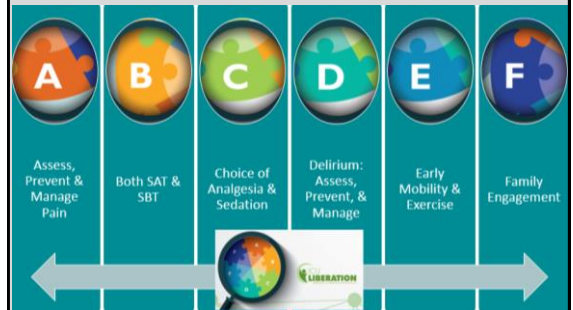
- 29 Bed ICU specializing in neuro critical care within Carolinas Medical Center (level one trauma center in Charlotte, NC)
- Typical patient population: strokes (hemorrhagic and ischemic), traumatic injuries, seizures, infectious diagnoses, post-craniotomy
- Open ICU
 - Admitting groups: Critical care team, neurosurgery, and hospitalists



What is "the bundle"?



The Bundle



Implementation



Implementation Strategies

- Checklists
- Protocols
- Education
- Incorporate bundle elements in the EMR
 - Cerner
- Extract bundle compliance
 - Utilize quality resources



Assess, Prevent, Manage Pain

• Pain assessment scales:

- CPOT
- NRS

• Unable to Self Report Pain

- Facial Expression
- Body Movements
- Ventilator Compliance
- Vocalizations
- Muscle Tension
- Secondary Pain Site
- Additional Pain Site
- Primary Scale



Choice of Analgesia and Sedation

- Goal is to treat pain before sedating
- Measure sedation levels using RASS

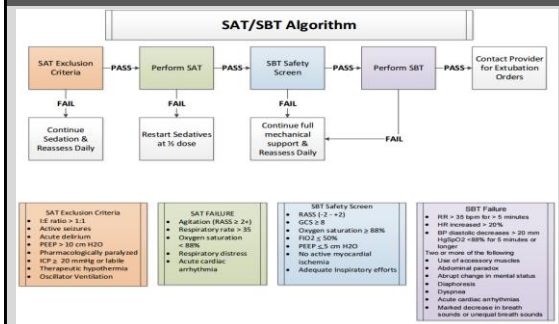
Score	Description
-4	Comatose: Responds minimally to painful stimuli
-3	Very agitated: Pulls at or removes tubes, equipment
-2	Agitated: Frequent non-purposeful movements, fights ventilator
-1	Restless: Frequent, intermittent but non-purposeful movements, no response to requests
0	Alert & calm: Responds to verbal commands, maintains eye contact & oriented x3
1	Light sedation: Easily awoken to verbal commands, eye contact & oriented x2
2	Moderate sedation: Responds to verbal commands to come to the bedside
3	Deep sedation: No response to voice, but movement in response to physical stimulation
4	Unarousable: No response to voice or physical stimulation



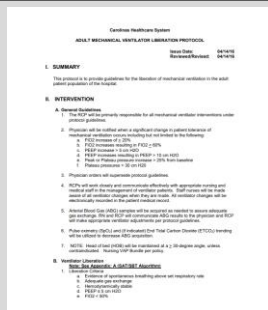
Choice of Analgesia and Sedation

Criteria	Action	Frequency
RASS -2 to -3	Continue current analgesia and sedation	Continuous
RASS -1 to 0	Continue current analgesia and sedation	Continuous
RASS 1 to 2	Continue current analgesia and sedation	Continuous
RASS 3 to 4	Continue current analgesia and sedation	Continuous
RASS 5 to 6	Continue current analgesia and sedation	Continuous

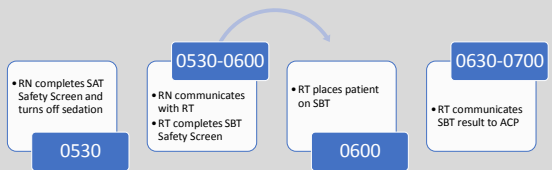
Both SAT and SBT



Both SAT and SBT

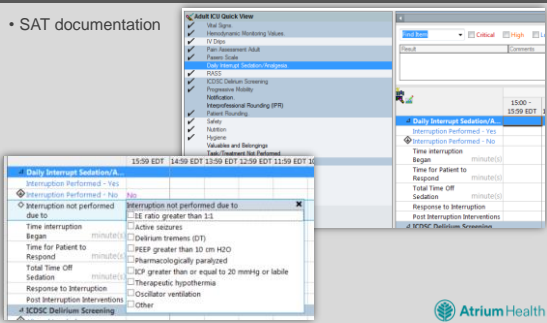


Both SAT and SBT



Both SAT and SBT

• SAT documentation



Delirium: Assess, Manage, and Prevent

Intensive Care Delirium Screening Checklist

ICDSC Delirium Screening
Altered Level of Consciousness
Inattention
Disorientation
Hallucinations or Delusions
Psychomotor Agitation or Retardation
Inappropriate Speech or Mood
Sleep Wake Cycle Disturbance
Symptom Fluctuation
Total ICDSC Score



ICDSC assesses the patient for the presence of abnormalities in 8 domains.

A score ≥ 4 indicates delirium



Early Mobility and Exercise

STEPWISE APPROACH TO EARLY MOBILITY

SAFETY ASSESSMENT

Stable Hemodynamics

- No active cardiac ischemia
- No new or increasing inotropic medications
- RASS ≥ 2 or ≥ 3

Tubes Secure

- No unsecured airway or invasive devices
- No active temporary pacemaker or defibrillator

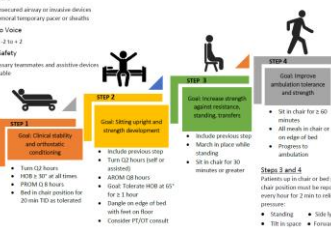
Engages to Voice

- RASS ≥ 2 or ≥ 3

Provider Safety

- Necessary resources and assistive devices available

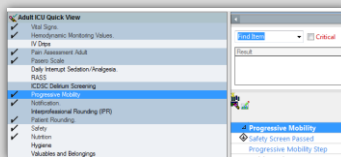
- Assess eligibility within 8 hours of admission and then every 8 hours thereafter, during, and after each activity
- Allow a 5-minute period for the patient to recover from the position change before determining cardiorespiratory stability



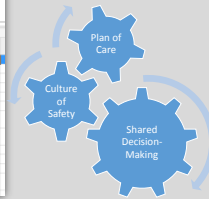
Nurse-driven stepwise approach to early mobility.



Early Mobility and Exercise



Family Engagement

[illegible]

Interprofessional Rounds

[illegible]

Team Dynamics



Results and Data

Navigator	ICU Education	11/14/2016 9:27 EDT	11/15/2016 9:00 EDT	11/15/2016 9:30 EDT	11/16/2016 8:00 EDT
Pain Assessment Add	Pain Assessment Add				
Daily Internet Sedation/Analg.	Pain Record				Yes
ICDOC Delirium Screening	Guides to Self Report Pain				Y/N/T
RASS	Pain Evaluation				Score
ICDOC Delirium Screening	Early Movement				Medication
Progressive Mobility	ventilator Compliance				Coughing but tolerating
Notification	Moving Tolerant				Score, right
Interpersonal Rounding	<input type="checkbox"/> Ventilated Score				4
	Daily Internet Sedation/Analg.				
	Intervention Documented - Yes				Yes
	Time for Intervention Began				11/15/2016 7:00
	<input type="checkbox"/> Time for Patient to Respond				20 minutes
	<input type="checkbox"/> Total Time ON Sedation				40 minutes
	Response to Intervention				Verbal and Calf Future commands
	Post Intervention Interventions				OT notified to assess for SBT
	RASS				
	<input type="checkbox"/> RASS Score				Restless -1
	<input type="checkbox"/> RASS Score				5
	ICDOC Delirium Screening				
	Adverse Level of Consciousness	Response to mild or moderate stimulus			
	Disorientation	No following commands, shifting			
	hallucinations or Delusions	no abnormally present			
	Psychomotor Agitation or Retardation	no abnormally present			
	Inappropriate Speech or Mood	responsive or incoherent psychomotor			
	Deep State Cyclic Disturbance	no abnormally present			
	Symptoms Fluctuation	Stop <4 hrs, wakes then at night			
	<input type="checkbox"/> Total ICDOC Score	Yes			
	Delirium Prevention	Provide eye wear, Daytime lighting			
	Progressive Mobility				
	Walking Screen Passed		Yes		
	Progressive Mobility Step		Step 2		
	Activity Assistance		Moderate assist		
	Bedside Position		Bed to chair post		
	Head of Bed Position		30 - 45 Degrees		
	Notification				
	Decision Maker Informed		With at bedside		
	Decision Maker Communication Details		Plan of care discussed		
	Interpersonal Rounding (IPR)				
	IPR Performed		Yes		
	IPR Participants		attending MD, I		

Collaborative Data

AACN Healthy Work Environment Assessment (HWE)

Item	Mean Pre	Mean Post
Skilled Communication	3.78	4.05
True Collaboration	3.64	4.12
Effective Decision Making	3.77	4.21
Appropriate Staffing	3.51	4.05
Meaningful Recognition	3.70	4.09
Authentic Leadership	3.76	4.20

Collaborative Data

- We saw increase in compliance and performance for all elements
- Did not see a significant decrease in mechanical ventilation time
 - Collaborative brought to light some of the barriers to mechanical ventilation weaning in the neuro critical care patient population
- Did see decrease in LOS and mortality

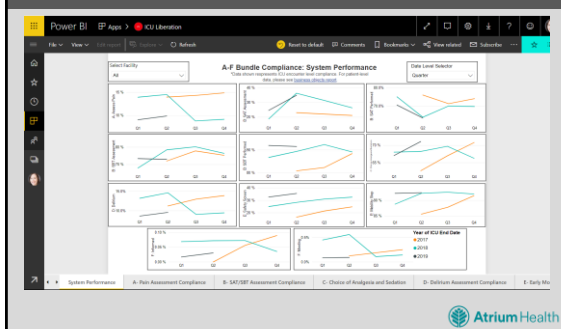


Collaborative Data

Measure		Retrospective	Prospective
ICU LOS (in days)		5.6 +/- 9.0	4.1 +/- 3.8
Hospital LOS (in days)		11.2 +/- 10.4	10.1 +/- 9.2
Discharge Status	Died in ICU (collaborative stay)	10%	7%
	Died in ICU (non-collaborative stay)	3%	0%
	Died during hospitalization, not ICU	3%	1%
	Discharged alive	83%	91%

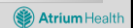
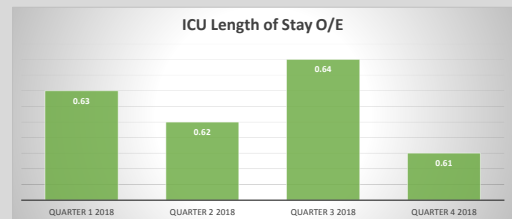


Atrium Health Data



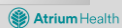
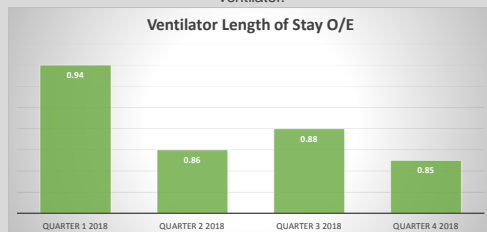
Atrium Health Data

When interventions are performed **early** and **consistently**, (ie. minimizing continuous sedation, preventing delirium and improving mobility), we can reduce the patient's time in the ICU



Atrium Health Data

When spontaneous awakening and breathing trials are done **early** and **daily** on appropriate patients, we can reduce the time that a patient is on the ventilator.



Lessons Learned

- Be prepared for trial and error.... And more trial and error
- Never assume- just because it's in the EMR does not mean staff understand
- Be mindful of parallel initiatives
- Trust the experts on your interprofessional team!
- Share the data with the people who do the work



Questions?

Contact Information
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