ICU Restraint Reduction: Development of Evidence Based Tools to Guide Interventions

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Problem Statement

Restraint use in many ICUs was above the NDNQI benchmark for hospitals with 500 or more beds. It is imperative that nurses ensure patient safety and dignity as well as the basic right of a patient to be free from restraint. How can we move closer to, or get below, the NDNQI benchmark of 20.89% while still ensuring patient and staff safety?

Benefits

• Improved Patient Safety
• Improve Patient and Family Satisfaction
• Maintain Clinician Safety

Fastrac™ Team

Physician and Nursing leadership, staff nurses and nurse educators.
Significance

- ICU patients are frequently intubated and prone to develop pain, anxiety and delirium; assessing and treating the underlying causes, is imperative.
- Early extubation through “sedation vacation” reduces the need for restraints.
- Managing and monitoring patients at risk using innovative tools and family involvement while maintaining patient safety can reduce the need for restraints.
Most Wanted Improvements (MWIs)™

- ICU Restraint Best Practices Across ICUs and within Other Similar Healthcare Organizations
- Develop a Family Education Brochure
- Ventilator Liberation Algorithm
- Restraint Minimization Algorithm
ICU Best Practices

- Phone conferences conducted with similar healthcare organizations
- Inquiries on List Serves were reviewed

- Results- across the country: all tertiary large teaching organizations are struggling due to patient acuity. No significant best practices identified
Family Education Brochure
What can loved ones do to help?

- Do not manipulate, loosen or tighten the restraints once placed on your family member.
- Direct all questions about the restraints towards your nurse or primary doctor.
- Find family members who are willing to stay with your family member during the most wakeful hours.
- Provide your family member with their hearing aids and/or glasses.
- Inform the nurse and/or doctor of your family members normal routine and if there is anything specific that the patient needs to do on a daily basis. Also inform the team about their routine with medications.
- Remember to remain calm and collected in their presence as much as possible.

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World Class Care.

Restraints In
The ICU And
Your Family
Member

Education to prepare you and your family member for the possible use of restraints and their stay in the Intensive Care Unit.

9330 Euclid Avenue
Cleveland, OH 44106
Phone: 800-225-2273
Family Education Brochure

What are restraints?
- A restraint is anything that will limit the movement of the patient.
- Examples are: wrist straps, ankle straps, mitts, and vests.

Who needs restraints?
- A patient who is confused and/or agitated.
- A patient who is at risk of removing medical devices. For example: breathing tubes, IV lines, other catheters.

Why are they used?
- To prevent patients from scratching or pulling at incisions and dressings.
- To protect the patient from hurting themselves or others.

Are there alternatives?
- Family members can stay with the patient to help orient the patient and assist with behavior.
- Keeping the environment of the room calm, quiet, and relaxed.
- Distracting the patient with activities.
- Utilizing a bed and chair alarm.
- Offer your family member objects to distract them, i.e., personal objects, toys, pictures, stress balls, etc.
- Read and have conversations with them.
- Listen to calming or their favorite music.
- Watch TV with them.
- Ensure that their pain is treated and controlled so that it is tolerable for your family member.

Who can remove the restraints?
- The nurse that is taking care of the patient at that time.
- The nurse should also involve the family, the doctor, and any other assisting personal in the decision to remove the restraints.

When will the restraints be removed?
- As soon as possible, when the patient is safe from harm and the reason that the restraints had been applied has been adequately resolved.
- Occasionally, restraints will have to be reapplied shortly after removal because the staff may feel the patient isn’t safe enough to be unrestrained.
Ventilator Liberation

Algorithm
Early Weaning and Extubation

Ventilator Liberation Process

Wean Fio2/Peep to keep O2 Sat >90

SAT Safety Screen
- No active seizures
- No paralytics
- No alcohol withdrawal
- No MI
- No excessive bleeding
- Minimal Inotropic support

Presence of all criteria required to pass

Perform SAT per unit specific guidelines RN____
Time____

SBT Safety Screen
- MAAS 3-4
- Oxygen sat > 90
- Fio2 ≤ .50
- Peep < 8.0 cm H20
- Presence of spontaneous breaths
- RR ≤ 35 breaths/min
+ Cough/gag reflex

Presence of all criteria required to pass

Pass
Reassess Q 24 hrs and PRN

Fail
Reassess Q 24 hrs and PRN

Obtain ABG in 30 minutes

Review Results with MD/LIP
RT____

Perform SBT

SAT Safety Screen

SBT Safety Screen

Perform SBT

Pass

Pass

Pass

Perform SBT

No
Ready to Extubate?

Yes
Exubate patient once order obtained by MD/LIP

Perform post-extubation survey

This document is not permanent part of medical record

SAT=Spontaneous Awakening Trial (e.g. “sedation vacation”)
SBT= Spontaneous Breathing Trial
Algorithm References

Spontaneous Awakening Safety (SAT) Screen
Failure
• Anxiety
• Agitation
• Pain
• Respiratory Rate > 35 breaths per minute
• SpO2 <88%
• Respiratory Distress
• Acute Cardiac Arrhythmia

Spontaneous Breathing Trial (SBT) Failure
• Respiratory Rate > 35 breaths per minute
• Respiratory Rate < 8 breaths per minute
• SpO2 < 88%
• Respiratory Distress
• Mental Status Change
• Acute Cardiac Arrhythmia

Post-Extubation Safety Survey
• Strong cough, Able to maintain airway/clear secretions
• Able to vocalize
• Calm and Cooperative
• Awake and Alert, Able to follow simple commands
• No Stridor
• Hemodynamically Stable
• Perform Survey Q15 mins for one hour following extubation.
• No change in mental status

Unit-Specific Customization
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Restraint Minimization

Algorithm
Decision Algorithm

ICU Restraint Minimization Algorithm

Is patient exhibiting behaviors that may warrant restraints?

YES

Assess Causes
Hypoxia, pain, anxiety, delirium

PAIN?

Check NPAT score or visual analog scale

If pain is present, administer pharmacologic/non-pharmacologic as appropriate

Reassess pain at least q1hr after intervention and prn

Pain Controlled?

YES

Consider pain mgmt. consult

NO

Assess Causes
Continuously assess mental status of patient

ANXIETY?

Check MAAS

Acute Anxiety?

YES

Consider anxiolytic

Chronic Anxiety?

YES

Reassure. Encourage visitation if calming to patient.

Consider anxiety

NO


Consider anxiolytic

Agitated?

YES

Contact Psychiatry if unable to control behavior.

Determine cause:
Drugs:
• Opiates
• Anxiolytics
• Anticholinergics: benedryl, ditropan pepcid, steroids,
Disease Processes:
• Encephalopathy
• Drug Intoxication or drug interactions
• Alcohol withdrawal

Hypo delirium

NO

Hyper delirium

Use Restraints as a Last Resort

Restrain patient to prevent self-harm or risk of physical injury and where staff are in immediate risk of harm. Review medications with pharmacist and review medications to identify: Potential drug withdrawal, alcohol withdrawal, reactions/interactions.

All patients: soft music, minimal environmental stimuli. Maintain circadian rhythms: lights on during day, dark at night.

Clocks & calendars in room.

NO

Do not restrain or d/c restraints
Implementation During Q4 2010

- The final products were presented to all ICU leadership and key stakeholders
- To promote the use of the tools, a poster of the interventions was developed and displayed at competency days for viewing
- Posters were then distributed to each ICU and education provided to nursing staff by Clinical Instructors and Clinical Nurse Specialists
- The brochure was made available to all families of ICU patients
- The ventilator liberation algorithm was also distributed to ICU Respiratory Therapists and Medical Directors
ICU Restraint Minimization Algorithm

Is patient exhibiting behaviors warranting restraints?

First Assess for hypoxia

Assess for PAIN

Assess for ANXIETY

Assess for DELIRIUM

Use Restraints as a Last Resort
Restrain patient to prevent self-injury & where staff are in immediate risk of harm. Review medications to identify: Potential drug / alcohol withdrawal, or reactions/interactions.

Ventilator Liberation Process

• Daily Assessment of Readiness to Extubate
• Daily Awakening (e.g. “Sedation Vacation”) & Breathing Trials per unit protocol
• RN and respiratory therapist driven process!

Restraint use in our ICU’s is above the NDNQI benchmark for hospitals > 500 beds. As nurses, it is imperative that we ensure patient dignity, safety and the basic patient right to be free from restraints.
Restraint Prevalence ICUs
Q3 2010 - Q3 2011

NDNQI Mean 08-09 20.54, 09-10 20.89 beds >500
Sustaintment

- Monthly restraint prevalence observations using the NDNQI criterion
- Using data to drive improvements
  - Distribution of monthly trend reports and quarterly NDNQI reports
  - Review data with bedside staff and display
Sustaintment

- Quarterly monitoring of intubated and sedated patients that are restrained
- Daily rounding by Clinical Nurse Specialists to sustain the use of the tools
- Ongoing reinforcement of nursing education
A Unit Story

Neuro ICU’s Journey to Reduce Restraint Use
Neuro ICU Unit Description

- Combined Neurological and Neurosurgical patients
- Most common diagnosis
  - Subarachnoid Hemorrhage
- 22 NICU Beds
- 2 physical units
- 2:1 Nurse to Patient Ratio
- Staff
  - 1 Nurse Manager
  - 4 Assistant Nurse Managers
  - 1 Clinical Nurse Specialist
  - 1 Clinical Instructor
  - 64 Registered Nurses
  - 11 Clinical Technicians
- Staff rotate between units
How They Got There

- CNS met with Nursing Leadership and Medical Provider team to discuss current state and ensure buy in
- Implementation of restraint reduction algorithm, ventilator liberation algorithm, family brochure
- CNS began including restraint use in daily rounding
  - Initially targeted patients with Glasgow Coma Scale of 3-5 then increased to more challenging patients
  - Encouraged removal of restraints on select patients
- The CNS to write new restraint order if needed
How They Got There

- CNS reported to Nursing Leadership on regular basis
- Joint Nurse Manager/CNS rounds
- Assistant Nurse Managers include appropriate restraints use discussion in daily rounds
- Restraint prevalence results reviewed by Clinical Director and Nurse Manager and shared with bedside staff
NICU Success

Restraint Prevalence NICUs
Q3 2010 - Q3 2011

NDNQI Mean 08-09 20.54, 09-10 20.89 beds >500
Lessons Learned

- Reducing restraint use was achieved through educating frontline staff and family involvement.
- Assessing the need for restraints, these tools enhance nurse’s decision making process by placing the focus on underlying causes for patient behaviors.
- Appropriate interventions are chosen to improve patient outcomes.
- ICU nurses must keep vital therapies intact while maintaining human dignity.
References

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