Evidence Based Positioning and Mobility Practices

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Critical Care Clinical Nurse Specialist
Objectives

- Discuss the importance of mobilizing acute care patients
- Understand research related to turning and positioning patients
- Discuss safe patient handling related to patient mobilization
- Discuss the prevalence and impact of delirium in the ICU
- Introduce a novel seating positioning device
Do you currently have a turning and positioning protocol for your patients?

- Yes: 872 responses (87%)
- No: 135 responses (13%)

n = 1007
How often do you turn/reposition your patients?

81% of respondents do Q2 turning.

n = 830
On a scale of 1 to 10, how well do you think your turning/repositioning protocol is followed?

82% of respondents communicated room for improvement.

n = 807
Have you or a coworker ever had a wrist, shoulder, or back injury from turning or boosting a patient?

802 responses, 89%

102 responses, 11%

n = 904
Critical Care Mobility Practice Patterns

- Q 2 hour turning – Is it really happening?
  - Krishnagdopalan et al. (2002)
  - Study to determine perception and compliance with q2h turning standards of practice in three separate ICUs
  - 74 patients with a total of 566 observation hours
    - No body position changes during 49.3% of observation time
    - Only 2.7% of patients actually received Q2h position changes.
    - 80% to 90% of survey respondents believed Q2h turning was an acceptable standard and that it prevented complications.
    - Percent of MDs and RNs who believed q2h position changes was achieved in the ICU – 57%.

Positioning Prevalence Study

Methodology

- Prospectively recorded, 2 days, 40 ICU’s in the UK
- Analysis on 393 sets of observations
- Turn defined as supine position to a right or left side lying

Results:

- 5 patients prone at any time, 3.8% (day 1) & 5% (day 2) rotating beds
- Patients on back 46% of observation
- Left 28.4%
- Right 25%
- Head up 97.4%
- Average time between turns 4.85 hrs (3.3 SD)
- No significant association between time and age, wt, ht, resp dx, intubation, sedation score, day of wk, nurse/patient ratio, hospital

Goldhill DR et al. Anesthesia 2008;63:509-515
Delirium and the ICU
Prevalence of Delirium in the ICU

- 50-80% of ventilated ICU patients develop delirium
  - These patients have a higher in hospital and 6 month mortality rate and longer hospital stay
- 20-50% of lower severity ICU patients develop delirium
- Over 40,000 ventilated ICU patients are delirious everyday
- 10% remain delirious at discharge
Delirium: Synonyms

- Acute brain failure
- Acute confusional state
- Acute organic syndrome
- Cerebral insufficiency
- Encephalopathy
- Postoperative psychosis
- Toxic psychosis

ICU psychosis
ICU Syndrome
Cardiac psychosis
Postoperative delirium
Postpump delirium
CMS Indicators 😊
Delirium in the ICU

- Increase ICU length of stay (8 vs. 5 days)
- Increase hospital length of stay (21 vs. 11 days)
- Increase time on ventilator (9 vs. 4 days)
- Higher ICU cost ($22,000 vs. $13,000)
- Estimated $4 to $16 billion associated U.S. costs
- 3-fold increased risk of death
- Occurs in 8 out of 10 mechanically ventilated ICU patients

Sedation, Delirium Management and Mobility

- It is essential that the nurse is aware of the role of comfort drugs.
- This _is_ nursing work
  - Balance the risk of narcotics and benzo’s with the risk of delirium development and the risks of immobility.
  - A delirious patient is more difficult to assess and _may be_ agitated thus decreasing the likelihood that mobility will be aggressively pursued.
  - Mobility can be a preventive factor
The Community Experience
The Prevalon Turn and Position System reduces the amount of time it takes to turn patients.

<table>
<thead>
<tr>
<th>Agreement Level</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Strongly Agree</td>
<td>68%</td>
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<td>Agree</td>
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Breathable Low-Friction Glide Sheet features comfort-grip gray material to keep the Body Pad in place under the patient, as well as blue ripstop nylon that helps the sheet move with the patient to make turning easier.

Anti-shear strap anchors the system to the bed to prevent shearing on skin, and reduces frequency of boosting required.

Universal bed attachment adheres the anti-shear strap to the head of the bed.

30-Degree Body Wedges placed on the mattress easily position patient at appropriate angle to offload the sacrum.

Full size M² Microclimate Body Pad has four layers to effectively absorb and lock in moisture while allowing air to flow through.

High-strength handles allow clinicians to easily grasp the glide sheet.
The Prevalon Low-Friction Glide Sheet with handles makes it easier to reposition and boost my patients than current approach

- **Strongly Agree**: 81%
- **Agree**: 19%
- **N/A**: 0%
- **Disagree**: 0%
- **Strongly Disagree**: 0%

The Prevalon Turn and Position System will make it easier for me to routinely reposition patients while reducing back and shoulder strain during a typical shift

- **Strongly Agree**: 73%
- **Agree**: 24%
- **N/A**: 0%
- **Disagree**: 3%
- **Strongly Disagree**: 0%

The Prevalon 30 degree wedges are easy to place and enable proper sustained lateral positioning for the patient as compared to the traditional pillows

- **Strongly Agree**: 68%
- **Agree**: 30%
- **N/A**: 0%
- **Disagree**: 3%
- **Strongly Disagree**: 0%

The Prevalon Turn and Position System reduces the strain on my wrist, shoulders, and back while repositioning and boosting patients

- **Strongly Agree**: 75%
- **Agree**: 25%
- **N/A**: 0%
- **Disagree**: 0%
- **Strongly Disagree**: 0%
Driving Practice

- Safe Patient Handling
  - Benefits of Early Nurse Managed Mobility Progression
  - Employee Harm Reduction/Elimination
Non-ICU: Moving Closer to Home

- Deconditioning
- Fall risk
- Pressure/shear/friction and moisture risk
- Greater time spent in the chairs
- Less caregivers more patients

- Reduce pain
- Minimize fall & skin risk
- Length of stay reduction and prevention of readmission
Early Progressive Mobility

Progressive Mobility:

- Planned movement in a sequential manner beginning at a patient's current mobility status and returning them to baseline & includes:
  - Head elevation
  - Manual turning
  - Passive & Active ROM
  - Continuous Lateral Rotation Therapy
  - Movement against gravity
  - Physiologic adaptation to an upright/leg down position
    - (Tilt table, Bed Egress)
  - Chair position
  - Dangling
  - Ambulation
Progressive Mobility Continuum

Includes complex, intubated, hemodynamically unstable and stable intubated patients; may include non-intubated

Includes intubated, non-intubated hemodynamically stable/stabilizing, no contraindications

**LEVEL I**
- RASS -5 to - 3
  - Goal: clinical stability; passive ROM

**LEVEL II**
- RASS -3 & up
  - Goal: upright sitting; increased strength and moves arm against gravity
  - ACTIVITY: Q 2 hr turning
    - *Passive /Active ROM 3x/d
    - 1. HOB 45º X 15 min.
    - 2. HOB 45º, Legs in dependant position X 15 min.
    - 3. HOB 65º, Legs in dependant position X 15 min.
    - 4. Step (3) & full chair mode X20 min. 3X/d
      - Or
      - Full assist into cardiac chair 2X/day

**LEVEL III**
- RASS -1 & up
  - Goal: Increased trunk strength, moves leg against gravity and readiness to weight bear
  - ACTIVITY: Self or assisted
    - Q 2 hr turning
      - 1. Sitting on edge of bed w/RN, PT, RT assist X 15 min.
      - 2. Progressive bed sitting Position Min.20 min. 3X/d
      - Or
      - Pivot to chair position 2X/d

**LEVEL IV**
- RASS 0 & up
  - Goal: stands w/ min. to mod. assist, able to march in place, weight bear and transfer to chair
  - ACTIVITY: Self or assisted
    - Q 2 hr turning
      - 1. Chair (OOB) w/ RN/PT/RT assist Min. 3X/day
      - 2. Meals consumed while dangling on edge of bed or in chair
    - Or
    - Active Transfer to Chair (OOB) w/ RN/PT/RT assist Min. 3X/d

**LEVEL V**
- RASS 0 & up
  - Goal: Increase distance in ambulation & ability to perform some ADLs
  - ACTIVITY: HOB > 30º
    - *Passive ROM 2X/d performed by RN, or UAP
    - Or
    - Q 2 hr turning

**START HERE**
Perform Initial mobility screen w/in 8 hours of ICU admission
Reassess mobility level at least every 24 hours (Recommended at shift Δ)

Refer to the following criteria to assist in determining mobility level
- o PaO2/FiO2 > 250
- o Peep <10
- o O2 Sat ≥ 90%
- o RR 10-30
- o No new onset cardiac arrhythmias or ischemia
- o HR >60 <120
- o MAP >55 <140
- o SBP >90 <180
- o No new or increasing vasopressor infusion
- o RASS ≥ 3

Start at level I*
Start at level II and progress*

For each position/activity change allow 5-10 minutes for equilibration before determining the patient is intolerant

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*Mobility is the responsibility of the RN, with the assistance from the RT’s Unlicensed Assistive Personnel and PT/OT. PT and OT may assist the team with placement to the appropriate mobility level of activity, always prioritizing patient and provider safety. Placement is based on clinical judgment.

**If the patient is intolerant of current mobility level activities, reassess and place in appropriate mobility level**
The New Bundle: ICU

A. AWAKE
B. BREATHE
C. CHOICE OF SEDATION
D. DELIRIUM
E. EARLY MOBILITY

Current Seating Positioning Challenges

Uncomfortable

Airway & Epiglottis compressed
Lack of Body Alignment
Shear/Friction
Sacral Pressure

Frequent repositioning & potential caregiver injury
Potential fall risk
The Only Way: Patient Benefits

↑ Comfort ↑ Compliance

Airway & Epiglottis in Alignment

Lock & Load

Less risk for falls

Shear/friction

Pressure reduction cushion

Position shifting
### Number, Incidence Rate, & Median Days Away From Work for Occupational Injuries RNs with Musculoskeletal Disorders in US, 2003 – 2009

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The Only Way: Caregiver Benefits

↑ Compliance

Easy patient manipulation within the chair

Less caregiver injury r/t position shifting from the rear of the chair

Position Shifting

Assist in prep for transfer

Proper sitting with Seated Positioning System
Benefit/Outcomes

- Safe Patient Handling
  - Reduces Skin injury
  - Reduces Staff injury
  - Achieving Optimal Seated Position
Repositioning Patients in Chairs – An Improved Method

- Fragala et al. (2013)
- Study comparing exertion required on three methods of positioning patients in a chair

Method 1
- Required two caregivers, one on each side of the chair, using a standard draw sheet to reposition the patient from a slouching to an upright posture in the chair.

Method 2
- Required two caregivers to reposition the patient from a slouching to an upright posture in the chair using the SPS.

Method 3
- Required one caregiver to reposition the patient from a slouching to an upright posture in the chair using the SPS.

Immediately after performing each repositioning method, caregivers reported perceived exertion for their whole body, shoulders, upper back, and lower back using a validated exertion scale.

Workplace Health Saf. 2013 Apr;61(4):141-4
Results

- Method 1 (SOC) required 234% and 122% greater exertion than Method 2 (SPS w/ 2 caregivers) and Method 3 (p < .05)

- Method 3 (SPS with 1 caregiver) required 51% greater perceived exertion than Method 2 (p = .013)
Perceived Exertion of Repositioning Using Three Methods of Repositioning.

*Workplace Health Saf.* 2013 Apr;61(4):141-4
The Old Way

The Only Way

Prevalon Seated Position System
Intended for the Patient /
Designed for the Caregiver
Final Thoughts

- Nursing Owns Comfort and Mobility
- Can we improve the process of Turning, Positioning, and Mobilizing our patients?
- Are there tools available that can increase compliance and make this process safer?
- As we leave tonight, let’s make a commitment to do our due diligence and insure that we are maximizing the SAFETY of our PATIENTS and our NURSING STAFF!!!
Questions?

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