From Bed to Chair in the ICU: Evidence Based Guidelines for Upright Sitting for Patients Who Are Critically Ill
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Session Learning Objectives

1. Identify risk factors and possible contraindications related to the positioning of critically ill patients in upright sitting
2. Recognize that once a patient is in an upright sitting position there is still a need for skilled physical therapist intervention
3. Implement appropriate guidelines for sitting progression for a patient in a critical care setting by using an algorithm that takes into consideration the patient’s diagnosis and Braden scale score
4. Explain the role that a physical therapist serves on the interprofessional patient care team across the spectrum of mobility observed in critically ill patients

Content Outline

- Who is here
- How we got here
- Overview of early mobility and implications for the patient in the ICU
- Pressure ulcers: definition and staging
- UNMH PU prevention initiative
- Presentation of sitting guidelines algorithm
- Barriers to implementation
- Questions/Discussion

The University of New Mexico Hospitals
History—how we got here
- 620 bed Level I Regional Trauma Center
- 72 adult ICU beds, 24 pediatric ICU beds
- Only teaching hospital in NM
- Community hospital serving a large underserved population
- Long tradition of early mobility
- Development of a specialized spinal cord team in 2010
- Site visit to Craig Rehab Hospital in November, 2010
- Importance of skin integrity for participation in rehab

First, a few questions
- How many of you are getting patients out of bed in the ICU?
- On a normal work day, what percentage of the patients who you treat in the ICU do you actually mobilize to a chair?
  - <25%
  - 26-50%
  - 51-75%
  - 76-100%
Patient Scenario

Pt is a 35 y/o male admitted on 2/9/16 after being hit by a car as a pedestrian. Intubated in trauma bay for waxing and waning mental status and airway protection
- PAST MEDICAL/SURGICAL HX: unknown
- INJURIES:
  - R petrous and squamosal temporal bone fx
  - Traumatic SAH
  - Temporoparietal scalp hematoma
  - Fixation hardware and mandibular condyle deformity, likely from previous fx
  - Compression fx of T9,10,11 chronic appearing
  - L femur fx
  - R tibia fx
- SURGICAL PROCEDURES:
  - 2/10: L femur I&D and femur IMN, R tibia IMN, WBAT B LE
- 24 Hour Events: extubated

Activity orders

Are these appropriate orders?

What if....
Once you have mobilized your patient to a chair.....

- How do you know that you chose the appropriate sitting surface?
- How long do you leave the patient in a seated position?
- How frequently do you check back on the patient?
- Who is responsible for getting the patient back to bed?
- What factors influence these decisions?

When we posed these same questions to our rehab staff...

- There was no consensus:
  - 1hr, 2hr
  - 3 hrs (to qualify for rehab)
  - As long as possible
  - I don't know
  - I am the out of bed therapist, not the back to bed therapist

What we all agree on:

- Benefits of early mobility
- And we have evidence and consensus statements to guide us
But....

- There is not a consensus about what we should do with a patient once she/he is OOB
- Overall acute care patients have very low levels of activity
  - 96-99% of the day in bed or a chair (Brown, 2009; Davenport et al., 2014)
- An issue is also WHERE the patient is when being inactive
  - How many hours do we leave a patient in a chair?
    - Brown, 2009: ~3 hrs.

Along with the many demonstrated benefits of early mobility programs:

- They have been shown to reduce the incidence of hospital acquired pressure ulcers by:
  - A. 40%
  - B. 25%
  - C. 12%
  - D. 4%
  - E. 0%

Early Mobility and Pressure Ulcer Incidence

- Can the Use of an Early Mobility Program Reduce the Incidence of Pressure Ulcers in a Surgical Critical Care Unit?

  Sharon Dickinson, MSN, RN, CNS-BC, ANP, CCRN; Tschannen, PhD, RN; Leah L. Shaver, PhD, RN
  Crit Care Nurs Q 2013; 36: (1) 127–140

- 112 Surgical ICU patients: 555 pre-, 557 post-implementation of an early mobility protocol.
- Statistically significant increase in pressure ulcers following implementation of the protocol.
This issue is not limited to PT; it is an interdisciplinary issue

- UNMH Early Mobility Guideline
  - Improve patient outcomes
  - ↓ incidence of VAP
  - ↓ length of stay
  - Reduce inappropriate consults
- Greenville Early Mobility Scale (GEMS)
  - A mobility rating scale developed by PTs that can be used by other healthcare providers, particular nursing staff (Newman et al., 2016)

UNMH ICU Early Mobility Guideline

- Nurse driven
- Perform initial mobility screen within 12 hours of admission to ICU
- Assign a mobility score
- Reassess mobility as well as Riker Scale score every shift (q 12 hr)

Inclusion Criteria

- PEEP ≤ 10
- O2 Sat > 88%
- RR 10 – 30
- No new arrhythmias
- No new Cardiac ischemia
- HR > 55 and < 120
- MAP > 55 and < 140
- SBP > 90 and < 180
- No increasing vasopressors
Level 1 (Riker 1&2)
- Patient is unarousable or unable to participate actively
- Q 2 hr turns and positioning to prevent skin breakdown and extremity edema
- ↑ HOB to 35-65° or chair mode for 30 min duration at least 2 x q 24 hrs (7am-7am)
- Passive ROM Exercises: 3 reps of each exercise at least 2 x q 24 hrs (7am-7am)
  - Heel cord stretch
  - Heel Slides
  - Shoulder Scaption with Elbow Flexion/Extension

Level 1 Activities

Level 1 Summary

Goals
- Clinical stability
- Passive ROM

Activities
- HOB ≥ 30° (if not contraindicated) for 30 min q shift
- Passive ROM minimum q shift
- CLR/Pronation or q 2 hours turning

Progress to Level 2 if patient tolerates Level 1 activities
Level 2 (Riker 3)

- Patient is arousable, but not fully alert, waxes and wanes
- Progressive sitting in bed: HOB 35-65° or chair mode for 30 min at least 3x q 24 hrs (7am-7am)
- Active or Assisted Active ROM exercises: same exercises as in Level 1 with ↑ patient participation: at least 3 reps of each exercise 3x q 24 hrs (7am-7am)
- Assisted ADLs
  - Yankauer use /oral hygiene with lollipop or toothbrush
  - Grooming: face washing, hair combing/brushing
  - Feeding

Level 2 Progressive Sitting

- HOB 35-65° or chair mode for 30 min ≥ 3x/day
- Arms supported with pillows
- Feet supported by foot board

Level 2 Activities:
Level 2 Summary

Goals
- Upright sitting
- Increased strength and movements are against gravity

Activities
- All Level 1 activities PLUS
- Progressive bed sitting for 30 min 3x daily
- Active (or Assisted Active) ROM
- Assisted ADLs

Level 3 (Riker >3)

- Patient is alert and would benefit from mobilization
- Active ROM from Levels 1&2 with addition of Resisted/Anti-gravity Exercises: at least 3 reps of each exercise, at least 3x q 24 hrs (7am-7am)
  - Bridging
  - Straight Leg Raise
  - Tricep antigravity AROM or manual resistance
- Sit EOB or oob to chair (if patient able to do above exercises) at least 1x q 24 hrs (7am-7am) and/or
- Attempt sit→stand at least 1x q 24 hrs (7am-7am)
- March in place at bedside
  - Oral Hygiene & Grooming
  - Self-Feeding
  - Transfer to bedside commode or toilet (if appropriate)

Level 3 Activities: Exercises to Determine Readiness for EOB/OOB
UNMH Level 3: Criteria for RN to stand patient

- SLR x 1 with ability to clear ankle off bed with straight knee
- ≤ Minimum assistance to sit EOB
- Assist of two people and use of gait belt when standing patient the first time

Level 3 Summary

Goals
- Stands with minimal to moderate assistance
- Able to weight bear, march in place
- Transfer to a chair

Activities
- Active anti-gravity exercises (with or without resistance) at least 3 x daily
- Sit EOB or in chair at least 1x daily
- Attempt sit→stand at least 1x daily
- Independent upright ADLs with set-up assistance only

Critical Issues for UNMH Level 3 Patients who are mobilized to a chair

- How do we know that we chose the appropriate sitting surface?
- How long do we leave the patient in a seated position?
- How frequently do we check back on the patient?
- Who is responsible for getting the patient back to bed?
- How do we know that we haven’t compromised the patient’s skin integrity?
Level 4 (Riker 4 and higher)
- Patient is able to follow commands consistently
- Level 3 mobility with increase in frequency: at least 3x q 24 hrs (7am-7am)
  PLUS
- Sit to stand at least 5-10 reps at EOB/chair
- Ambulation at least 1x q 24 hr (7am-7am)
- Encourage Independence with Level 3 Exercises
- Level 3 Independent ADLs but now standing /out of bed as appropriate
- Continue transfers to bedside commode or toilet

Pressure Ulcer, as defined by the National Pressure Ulcer Advisory Panel (NPUAP)
A pressure ulcer is a localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear and/or friction
- A number of contributing factors are associated with pressure ulcers, which include:
  impaired mobility, nutrition, moisture/incontinence and friction/shear

Pressure Ulcer Classification and Documentation

![Pressure Ulcer Diagram]
STAGE I: Red, intact skin, nonblanching; affects epidermis layer only.

STAGE II: Partial thickness wounds that extend through epidermis and dermis.

STAGE III: Are full thickness wounds that extend to the subcutaneous layer and may extend to but NOT through underlying fascia.

Can undermine and tunnel. Can have slough or eschar that covers less than 1/2 of wound bed.
STAGE IV: are FULL THICKNESS wounds with damage through the fascia to the muscle, bone, tendon or joint capsule

Again, can include undermining and tunneling

UNSTAGEABLE: are either Stage III or Stage IV but are obscured by more than 50% eschar or slough (semi-adherent or adherent)

They cannot be staged until debridement exposes more than 50% of the wound bed

Suspected Deep Tissue Injury: purple or maroon areas of intact skin or blood-filled blisters due to damage of underlying soft tissue from pressure and/or shear

Area can be:
• Painful
• Firm OR Mushy/boggy
Possible causes of DTI

A prospective study in 2012 by Curry et al on the hospital incidence of pressure ulcers suggests that deep tissue injuries can occur as a result of a febrile episode, a period of cardiovascular instability, or possibly a transient respiratory acidosis several days before.

- May not be preventable

Frictional forces on the skin and internal tissue shear both contribute to pressure ulcers in general, but deep tissue injuries in particular (Gefen et al, 2013).

- Are considered to be preventable (unless they occurred as a result of the mechanism of injury)

Single most important anatomical factor...

- Bony prominences
- Internal pressure is 3-5x greater
- By the time PUs are evident at the skin, the ulcer has worked its way completely from bone to skin
- A growing body evidence indicates that initial damage occurs with as little as 1-2 hours of loading

Individuals with spinal cord injuries are at additional risk

- In 2002, Thorfinn et al demonstrated that seating pressures were significantly higher in individuals with SCI compared with controls

But why?

- Patients with SCI have:
  - vascular response to loading
  - muscular tone
  - muscular atrophy
  - biofeedback systems

Leading to:
- tissue hypoxia, ischemia, vascular leakage, tissue acidification, compensatory angiogenesis, thrombosis, and hyperemia
Cost of Pressure Ulcers

- Approximately 2.5 million patients are treated annually for PUs in the United States
- In the last 5 years, it is estimated that $9.4 - $11.6 billion have been spent per year in the U.S. to treat pressure ulcers (costs in 2000 were estimated at $15.3 billion/year)
- Medical costs are estimated from $500 - $151,700 per pressure ulcer
- In October 2008, Centers for Medicare and Medicaid Services stopped reimbursements for hospital-acquired pressure ulcers (HAPUs), placing the stress on hospitals to prevent incidence of this costly condition
- Approximately 90% of pressure ulcers are considered preventable
- Reported incidence of pressure ulcers in U.S. hospitals ranges from 0.4% - 38%
  - Under reporting remains a problem
- How to measure the cost on quality of life? Osteomyelitis, sepsis, mortality as a result of a PU?

Cost of Preventing Hospital Acquired PUs

- Formal risk assessment
- Modern support surfaces
- Frequent patient repositioning
- Nutrition/ Hydration
- Management of moisture & incontinence
- Use of skin barrier products
- Chair cushion

Cost estimated at $54.66 per day, per patient (Padula, et al 2011)

Advice from the Institute of Healthcare Improvement on Quality Improvement Initiatives

Take a systematic multidisciplinary approach and keep it simple!
- Collaboration
- Consistency
- Identify staff motivation (and barriers to it)
- Improve education
- Develop standards of care
- Celebrate successes

Be patient and persistent; it can take as long as 17 years to affect a meaningful change in healthcare culture and routine care, even after clear evidence becomes widely available

IHI International Webinar "Pressure Ulcer Prevention: Strategies for Success" October, 2011
Who’s job is it?

- This is a story about 4 people named Everybody, Somebody, Anybody, and Nobody. There was an important job to be done and Everybody was asked to do it. Everybody was sure that Somebody would do it. Anybody could have done it, but Nobody did it. Somebody got angry about that because it was Everybody's job. Everybody thought Anybody could do it, but Nobody realized that Everybody wouldn't do it. It turns out that Everybody blames Somebody when Nobody did what Anybody could have done.

Keys to Prevention

- Identification of the problem
- Education
  - Raise awareness and address perceptions
  - Provide information/resources
  - Assess the usefulness/availability of the information provided
- Collaboration
  - It matters WHO is involved (attitudes, skills, etc) and HOW they interact
- Diligence
- Curiosity
- Engagement

A Multidisciplinary Approach in Preventing Pressure Ulcers: A Nursing and Physical Therapy Collaboration

Karen Brown, RN, WCC, Supervisor
Jasmime Safier, RN
Linda Halverson, RN, CCRN, UBE – TSBICU
Sunny Chistekelein, MPT
Rachael Brown, RN, UBE, yN
Chandra Blunt, Project Coordinator
The UNMH Journey to Pressure Ulcer Reduction

- Multidisciplinary Pressure Ulcer task force formed in 2011
- Extensive literature review performed to identify standards of care
- Progressive sitting guidelines developed for patients with SCI
- A small fleet of multi-patient use tilt and recline chairs was purchased
- Skin Integrity needs assessment survey is distributed to all nurses on 3 pilot units (Trauma/Born/Surgical ICU, trauma stepdown unit, and general medicine floor)
- Incidence data collected on each of the 3 pilot units for one month by task force members and displayed on the unit
- A SKIN Bundle was created, including visual tracking tools for all units
- Educational sessions were designed based on needs assessment and provided to all bedside nurses, patient care techs, and rehab staff members

Skin Integrity Survey Results

Familiarity with the UNMHSC Guideline for Pressure Ulcer Prevention, Minimization and Identification

- Yes – 9%
- Vaguely – 7%
- Never heard of it – 8%

Familiarity with the Braden Score

- Yes – 96%
- No – 4%

Braden score documented for your patient today?

- Yes – 91%
- No – 9%

Proper heel positioning

- Sheepskin or waffle boot – 0%
- Pillows under the heels – 7%
- Pillows under the calf to float the heels – 9%

Most significant barrier to repositioning

- Other priorities (sick patient, medication administration, etc.) – 45%
- Difficulty finding lifting help – 38%
- Unfamiliar with proper equipment – 18%
- Other ("not my job," "techs can do that," etc.) – 9%

Patients on specialty support surfaces do NOT require repositioning

- True – 8%
- False – 92%

Patients with HOB >30° or sitting up in a chair should be repositioned every 30 min

- True – 45%
- False – 55%
**S.K.I.N Bundle**

- **S** – Surface
- **K** – Keep Moving
- **I** – Increased Moisture (Avoid)
- **N** – Nutrition

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**Braden Scale**

- The most widely used scale for predicting pressure ulcer risk in healthcare facilities
- In use by nurses in our hospital for many years
- Six subscales for a total score ranging from 6-23. Lower number = Higher risk
  - Sensory Perception (1-4)
  - Moisture (1-4)
  - Activity (1-4)
  - Mobility (1-4)
  - Nutrition (1-4)
  - Friction and Shear (1-3)
- Encourages multidisciplinary collaboration and facilitates “buy in”
The Specifics of Prevention

- **How much pressure relief is sufficient?**
  
  Only complete pressure relief by off loading bony prominences can prevent tissue ischemia and cell deformation.

- **For how long?**
  
  - Supine in bed: Pressure relief every 2 hours
  - Sitting (in bed w/HOB > 30° or in chair):
    - Current studies in the SCI patient population recommend...
      - Complete pressure relief every 15-30 minutes for 2 minute periods

Increased head of bed angle leads to increased sacral, coccygeal, and ischial pressure as well as increased shear

Supine

Full Chair Mode

The Broda® chair

- Pressure distribution surface from head to toe
- Separate tilt and recline functions for individualized positioning
- Adjustable foot plates and padding to facilitate proper sitting posture
- Removable arm rests facilitate transfers in and out of chair
Sitting program for patients with SCI

- Pre-sitting Guideline
  - Patient must be upright in bed for 15 minutes BID
  - Inspect skin after each sitting
  - Proceed to sitting in chair if skin redness resolves <15 minutes

- Sitting Progression
  - Day 1-3: Patient sits 15 min BID
  - Day 4-6: Sitting to 30 min BID with pressure relief every 15 min
  - Day 7-9: Sitting to 45 min BID
  - Day 10-12: Sitting to 1 hour BID
  - Day 13-15: Sitting to 1 ½ hour BID
  - Day 16-18: Sitting to 2 hour BID
  - Day 19: Gradually sitting times as tolerated

Preliminary outcomes

- Our pilot general medicine floor celebrated one year free of unit acquired pressure ulcers in 2012 and has continued to track incidence diligently
- More consistent pressure ulcer risk assessment practices across all units
- Heightened awareness regarding the need for specialized pressure ulcer care
- Increased staff confidence in selecting/using proper equipment
- Improved documentation of pressure ulcers discovered upon admission
- Improved follow-up actions taken once a pressure ulcer is identified (proper reporting, more appropriate referrals made to wound care RNs/PTs/Dieticians)
- More appropriate selection of surfaces (bed and chair) for high risk patients
- A noticeable shift in our hospital’s culture regarding pressure ulcers!
Patient story: W.R.

Previously healthy 17 y/o male admitted with unstable fractures of C4-C6 (stabilized with a Halo device) and an incomplete spinal cord injury (ASIA C) at the level of C4 which he sustained during a cliff jumping accident

- Absent or impaired sensation in all dermatomes below C4
- Strength deficits in B LEs and distal UEs
- Improving trunk control

PT had initiated a sitting program which involved a slow progression of sitting in a tilt and recline chair (BID, increasing duration of sitting in 15 min increments while monitoring upright tolerance and skin integrity). A well-meaning night nurse sat the patient in an all-purpose chair for 3 hours to visit with friends… a Stage IV ulcer was discovered on his sacrum the next morning

- This case was the spark to develop a more formal algorithm for upright sitting in the ICU (to include frequency and duration of sitting time and pressure relief time)

How many of you have guidelines/protocols in place for sitting?

- For special populations or all patients?
- Is it hospital wide or specific to your department?
- Does it include a pre- and post- skin check?
- Does it include patients who already have a pressure ulcer?

We quickly realized…

Individuals with SCI are not the only patients who would benefit from a progressive sitting guideline

- Other neurological impairments
- Altered mental status
- Frail
- Impaired trunk control
- Morbidly obese
- Heavily Sedated
- Fluid overloaded
- Unable to clearly communicate needs
- "Gray Area" patients
  - Patients with pulmonary issues
    - "out of bed more than in bed"
    - How to reconcile the recommendations for VAP prevention and PU prevention
Bottom line:
If a patient can be mobilized to a chair but cannot:
• actively reposition their own body in a chair
• or sense the need to reposition
• or verbalize the need to reposition....

Then placing that patient in a chair significantly increases the risk of pressure ulcer development

How do we determine appropriate guidelines for sitting for the general acute care population in our hospital based on the evidence available?

What relevant factors do we need to take into account?

• Patient related
• Environmental
• Surface related
• Tissue tolerance
• Duration of sitting

Patient related factors
• Diagnosis
  • SCI, CVA, multi-trauma, recent fx or amputation
• Comorbidities
  • DM, PVD, CHF
• Recent general anesthesia
• Age (>65)
• BMI (<20 or >40)
• Altered sensory perception
• Impaired mobility
• Nutritional status
  • ↓ protein intake, zinc deficiency, vitamin C deficiency
• Skin (integumentary) health
• Hydration
• Metabolism
  • Altered lab values
• History of substance abuse
• Altered level of consciousness
Environmental factors
- Moisture
- Temperature
- Friction

Surface related factors
- Flexible vs. rigid surface
- Pressure redistribution
- Immersion

Sitting program for patients at moderate risk for pressure ulcer development
- **Inspect skin prior to sitting**
  - Sitting Progression
    - Progress sitting time in 30 minute increments
  - **Inspect skin after each sitting**
    - 1st time in chair: Patient sits 1 hour, with *pressure relief every 30 min*
    - 2nd time in chair: sitting to 1 hour and 30 minutes
    - 3rd time in chair: sitting to 2 hours
    - 4th time in chair: sitting to 2 hours and 30 minutes
    - Gradually, *sitting times as tolerated*
Not all surfaces are equal

Research of Stephanie Slayton, PT, DPT, CWS
- "Pressure Mapping of Hospital Recliners and Select Seating Surfaces in Healthy Adults"
- Slayton, Morris, and Leggett 2014 WOCN Annual Conference
- Measured interface pressures of volunteers of different weights on recliners in upright and reclined positions with and without cushions.
Key Findings
- Placing chair in the standard reclined position had no effect on interface pressures
- Some cushions did not reduce interface pressures
- 4” non-adjustable air-foam was best for their facility
- As part of a larger Quality Improvement Initiative, HAPU reduced >75%

Sitting is a dynamic activity
- Sitting behavior of healthy individuals (Reenalda, J et al., 2009)
  - Move 7.8 times/hour
  - Postural shifts/plane of motion
    - 80% occurred in sagittal plane, 20% in frontal
  - Improve subcutaneous oxygen
  - Subcutaneous oxygen saturation increased 2.3% on average with each postural adjustment indicating a positive effect of posture shifts on tissue viability
  - "Shifting posture at least every 8 minutes is advisable for healthy tissue viability in wheelchair users"

Proper sitting posture
- Improper posture sitting in a chair can contribute to pressure ulcers.
  - Slouching or leaning
  - ↑ Posterior pelvic tilt, ↑ recline
  - Knees higher or lower than hips
  - Surface area under thighs
- What is the proper positioning for patients sitting in a chair?
  - "Plumb line" posture
  - Anterior pelvic tilt
  - Knees & hips level
  - ↑ Surface area under thighs
More evenly distributed pressure:
Appropriate cushion & proper sitting posture

Pressure at ischium:
Hard surface
Inappropriate cushion
Knees above hips

Asymmetrical pressure:
Poor postural control
and/or awareness

Placed pillow on patient's right side to improve symmetry

Current Wound or Pressure Ulcer on the Posterior Surface of the Body:

UNM HOSPITALS
Another way to display the algorithm

- **Very high risk**: Patient has major neurologic deficits OR Braden score is extremely low (6-11)
  - Requires progressive sitting protocol with pressure relief every 15 minutes
- **Moderate risk**: Patient is neurologically intact with a moderate Braden score (< 16)
  - Out of bed to chair with pressure relief every 30 minutes
- **Low risk**: Braden score 17-23
  - **Up ad lib** with routine skin care and monitoring

**Very High Risk of Pressure Ulcer Development**

- **Initiate progressive sitting program**
  - **Pre-sitting Guideline**
    - Patient to sit upright in bed for 15 minutes BID
    - Inspect skin after each sitting
    - Proceed to sitting in chair if skin redness resolves <15 minutes
  - **Sitting Progression**
    - **Day 1-3**: Patient sits 15 min BID
    - **Day 4-6**: Sitting to 30 min BID with pressure relief every 15 min
    - **Day 7-9**: Sitting to 45 min BID
    - **Day 10-12**: Sitting to 1 hour BID
    - **Day 13-15**: Sitting to 1½ hour BID
    - **Day 16-18**: Sitting to 2 hour BID
    - **Day 19**: Gradually **sitting times as tolerated**

*CSCM, 2000; RLA, 2001*
Moderate risk for pressure ulcer development

- Initiate progressive sitting program
  - Sitting Progression
    - Progress sitting time in 30 minute increments
  - Inspect skin after each sitting
    1st time in chair: Patient sits 1 hour, with pressure relief every 30 min
    2nd time in chair: Sitting to 1 hour and 30 minutes
    3rd time in chair: Sitting to 2 hours
    4th time in chair: Sitting to 2 hours and 30 minutes
  - Gradually ↑ sitting times as tolerated

Pre-existing pressure ulcer on sacrum, coccyx, or ischia (any stage, including DTI)

Do not place patient in a chair UNLESS wound(s) can be effectively offloaded

Exercises

- Do 11, 22, and 33 each side
- Hip abductors: Hip abduction, with knee extended
- Full Thighs: Stand with one foot near the wall, extend the other and stand on it
- Bilateral: Stand with one foot near the wall, extend the other and stand on it
- Knee Bends: Stand hip abduction, chair up from floor level
PTs as advocates!
Assessment written for a patient with a complete C5 spinal cord injury on a neuro stepdown unit:
Nurse requested PT assistance to transfer pt to a Broda chair before lunch (current activity order states: OOBTC TID for all meals, no meals in bed). Per RN woundcare consult note on 11/12/15, pt has an unstageable pressure ulcer on his coccyx. In light of a pressure ulcer on the pt’s posterior sitting surface, the rehab team recommends no sitting in a chair at this time (until pressure ulcer is fully healed) secondary to likelihood of suboptimal perfusion to the wound while seated in a chair and risk of friction/shear injury during transfer to a chair. I discussed this recommendation with the patient, nurse, and provider. The patient is agreeable to eating meals in an upright position in the bed using chair mode to tolerate, where the coccyx can be offloaded by positioning the pt in ¼ turn to the L or R with pillows proximal and distal to the coccyx.

Minimizing friction?
- **Shearing**
  - During lateral transfers:
    - Have 4-8 people assist or use appropriate lifting equipment
    - Lift rather than drag
      - Including transfer or placement of equipment of diagnostic testing
  - During positioning from supine to sit:
    1. Have 1-2 staff members raise patient’s upper body
    2. draw sheet into upright position
    3. Then have additional staff member raise back of chair/bed into upright position
    4. Reverse this method upon return to supine in chair/bed

PT session today focused on progressively increasing the backrest angle of the bed using chair mode with BP checks every 10 degrees after effectively offloading the coccyx. The pt is able to tolerate a backrest angle of 50 degrees before he begins to demonstrate signs and symptoms of orthostatic hypotension (BP stable and with expected changes from 106/59 at 10 degree backrest angle to 97/58 at 50 degree backrest angle). PT also provided PROM to all B UE and LE joints (with isolated wrist/finger extension to preserve tenodesis grasp), active shoulder shrugs, diaphragmatic breathing exercises, and gentle isometric cervical stabilization exercises. I encouraged the pt to continue to direct his own care as much as possible to achieve an optimal functional outcome.

Minimizing friction?
- **Shearing**
  - During lateral transfers:
    - Have 4-8 people assist or use appropriate lifting equipment
    - Lift rather than drag
      - Including transfer or placement of equipment of diagnostic testing
  - During positioning from supine to sit:
    1. Have 1-2 staff members raise patient’s upper body
    2. draw sheet into upright position
    3. Then have additional staff member raise back of chair/bed into upright position
    4. Reverse this method upon return to supine in chair/bed
Barriers to Implementation

- Issues with documentation
- Accurate prevalence and incidence data and tracking
- Clinician attitudes/perceptions
- Staff turnover/rotations
- Resident rotation cycles
- Challenges associated with providing ongoing education

Take home message:

If a patient *cannot* actively reposition their own body in a chair (or sense the need to reposition or verbalize the need to reposition)...

*They should not be placed in a chair* unless it is a specialty chair (e.g., tilt-in-space with appropriate pressure distribution surface) that allows for *pressure relief every 15-30 minutes*

Case Presentation
The future

- Real time monitoring
  - Available for mattresses
  - Set up on ICU monitor
- Demonstrated to reduce the incidence of HAPUs
- Why not the same for chairs or chair cushions?
- Why not a monitor room equivalent?

Never believe that a few caring people can't change the world. For, indeed, that's all who ever have.

-Margaret Mead

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