MGH Prone Positioning Guidelines

Updated 3/24/20

Massachusetts General Hospital

Prone Positioning Guidelines

Designated Clinical Areas:

All areas caring for critically ill ARDS patient

Introduction/Purpose:

Many ICU patients have acute respiratory distress syndrome (ARDS) requiring advanced therapies to improve oxygenation. Most interventions and therapies do not improve mortality or better long-term patient outcomes. Prone positioning of ARDS patients leads to improved oxygenation and has recently been found to decrease mortality.[1,2] This document serves to inform our ICU clinicians about prone positioning of critically ill ARDS patients.

Contraindications:

- Spinal instability
- Facial or pelvic fractures
- Open chest or unstable chest wall
- Uncontrolled intracranial pressure
- *Relative contraindications*: Severe hemodynamic instability

Equipment:

- Minimal of 5 staff members to safely position the patient
- At least 5-10 foam dressings for padding
- 3 Waffle cushions: 2 for upper extremities and 1 for head
- 2 flat sheets
- EKG stickers
- Ambu with mask
- Gel Donuts

Link to Video:

- https://www.youtube.com/watch ?v=E_6jT9R7WJs or search "Prone Positioning in Severe Acute Respiratory Distress Syndrome" NEJM

Nursing Actions/Special Considerations

Nursing Action	Special Considerations
Assessment	
1. Assess hemodynamic status 2. Assess mental status. 3. Assess size and weight to determine the ability to turn within the bed frame. 4. Evaluate for absolute/relative contraindications (noted above).	The healthcare team should effectively manage agitation to provide a safe proning environment. Ensure whether a 180-degree turn may be safely accomplished within the confines of the bedframe.
Preparation	
1. Ensure order for prone positioning.	
2. If possible, turn off enteral feeding 1 hour prior to proning.	
3. Disconnect enteral feeding	Reduces the risk of aspiration during turn.
4. Keep 5 leads on anterior chest wall and remove remaining V2-V6 leads.	
5. Perform eye care (lubrication and taping of the eyelids horizontally closed).	
6. Protect and secure the airway. Note the position of the tube.	Frequently assess commercial endotracheal securement device during prone positioning because of the possibility of skin breakdown and potential of adhesive breakdown due to salivary drainage.
7. Empty ileostomy/colostomy bags.	
8. Secure tubes and catheters. Disconnect nonessential tubing.	
9. Apply 3M Cavilon moisture barrier to patient's face.	Will protect from drainage of oral secretions.
10. Place foam dressing to upper chest/clavicles, shoulders, pelvis, elbows, knees, forehead, and tops of feet.	The foam dressing will reduce the risk of friction and shear (Refer to appendix A).
11. Disconnect **arterial line** from the pressure bag. Cap the arterial line at the t-piece.	

Method for turning the patient in the prone position (five-step method)

1. Start with ensuring there is flat sheet under the patient.

2. Position the staff at the sides of the bed and the respiratory therapist at the head of the bed.

3. Maximally inflate the bed.

4. Pull patient using the underlying flat sheet while in the supine position to the side of the bed away from the ventilator.

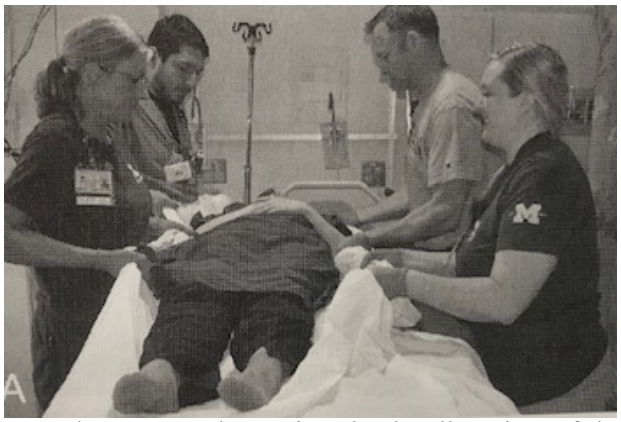
5. Cross the patient's outer leg over the inner leg at the ankle

6. Keep both patients arms straight against the body

7. Tuck a new flat sheet, and the arm closest to the ventilator with palm facing up, underneath the patient to the side you are turning. The *new* flat sheet will pull through as you are turning the patient.

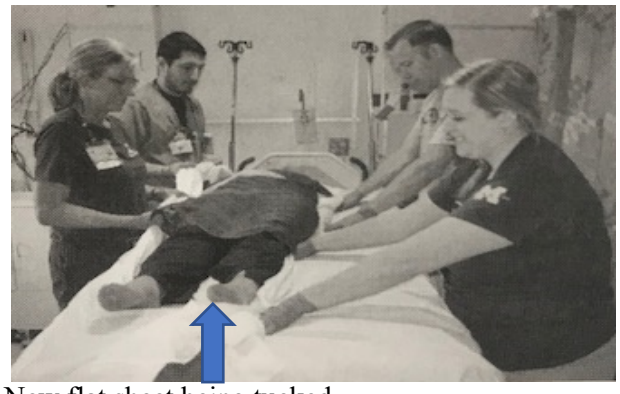
At least 5 staff members may be required to turn the patient.

The person on the side of the bed closest to the patient maintains body contact with the bed at all times to serve as a side rail. The RT at the head of the bed is responsible for securing the ETT, ventilator tubing.

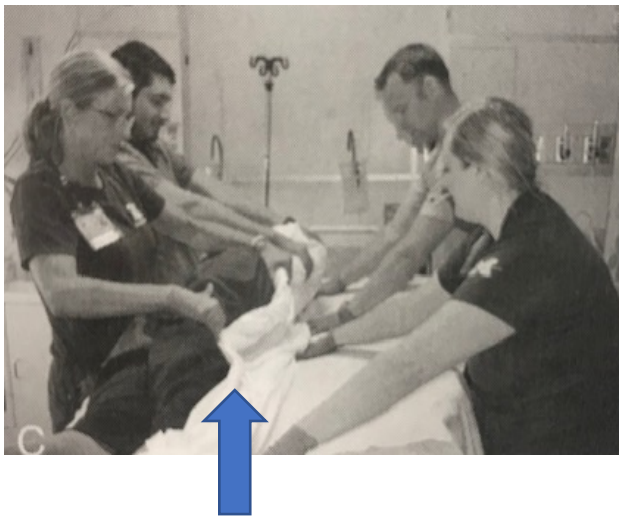
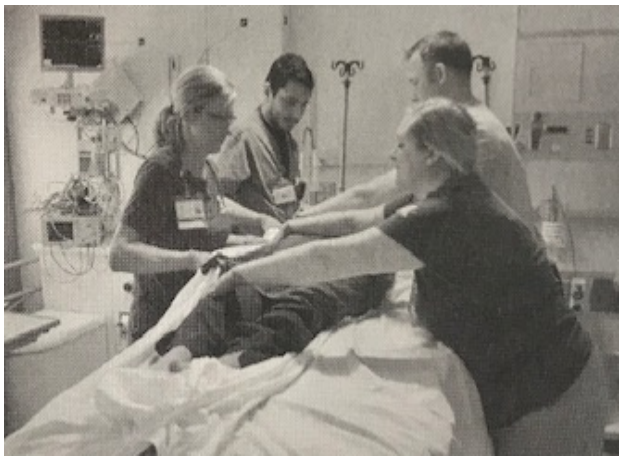


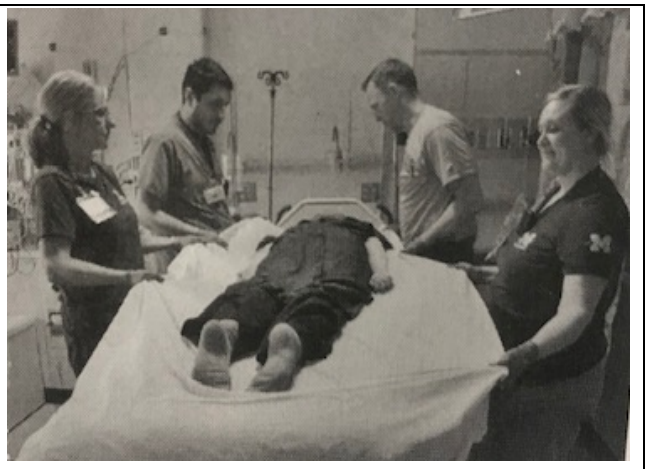
In order to turn the patient in the direction of the ventilator.

Chest and/or pelvic support can be done by placing a pillow at the abdomen before completing the turn.



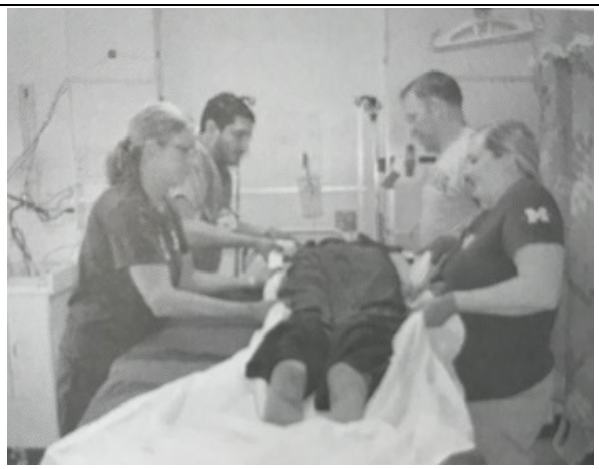
New flat sheet being tucked

	Patient should be laying directly on the arm that is going to be pulled through. EKG voltage may be altered as the heart shifts within the thorax. If a 12 lead EKG is needed, place precordial leads on the posterior thorax.
Begin by turning patient towards the ventilator and onto their side THEN stop. With the patient in the lateral position, reposition the patient's ECG leads on the patient's posterior thorax. Evaluate the quality of waveform and assess for arrhythmias. *May consider delaying the reposition of the patient's 5 lead ECG until the patient is in the prone position based on clinical stability and ease of turn.*	 .
8. Under the direction of the person at the head of the bed, at the count of 3, the patient is carefully turned over by pulling the tucked arm and *new flat* sheet through.	The staff member at the head of the bed supports the head during the turn and ensures all tubes and lines are intact. 

9. The patient is now prone. Pull and center the patient. Straighten and reconnect lines. Position the head to prevent pressure areas. Position arms in a modified swimmers position or aligned with the body. Utilize gel donuts to support the shoulders, abdomen, penile tip and pelvis where necessary. *No minimum or maximum time in prone position. In most cases, improvement in oxygenation, defined as PaO2/FiO2 ratio < 150 mmHg with an FiO2 >60% with ≤10cm of PEEP* 10. Reapply Prevalon boots inside out	 Every attempt is made to prevent pressure injuries. Alternate arms and head every 2 hours.
<u>Interruption of therapy</u> 1. Unintended extubation 2. Unintended right mainstem intubation 3. ETT obstruction 4. Hemoptysis 5. Cardiac arrest	
<u>Nursing Considerations</u> 1. Collaborate with the team to assess the patient's response to the prone position: - Pulse Oximetry - Mixed venous oxygenation or central venous mixed oxygenation saturation (Scvo2) and hemodynamics - Arterial blood gases - PaO2/FiO2 ratio (P/F ratio)	The team will determine the frequency of blood gases and enter the order as indicated.

2. Assess skin frequently for areas of nonblanchable redness or breakdown. 3. Provide frequent oral care and suctioning of the airway as needed. 4. Maintain eye care to prevent corneal abrasion. 5. Maintain tube feedings. 6. Alternate side to side head position every two hours 7. Alternate "swimmers arm" position every two hours 8. Document the patient's response to the prone positioning, ability to tolerate the turning procedure, length of time in the prone position, complications noted during or after the procedure, and patient and family education.	The prone position promotes postural drainage. It is important to maintain lubrication to prevent dryness and corneal abrasions.
<u>Preparation for Returning to Supine Position</u> 1. Position the staff at the sides of the bed and the respiratory therapist at the head of the bed. 2. Maximally inflate the bed Disconnect **arterial line** from the pressure bag. Cap the arterial line at the t-piece	The person on the side of the bed closest to the patient maintains body contact with the bed at all times to serve as a side rail and prevent a fall. The RT at the head of the bed is responsible for securing the ETT, ventilator tubing.

3. Pull patient using the underlying flat sheet while in the prone position to the side of the bed away from the ventilator.



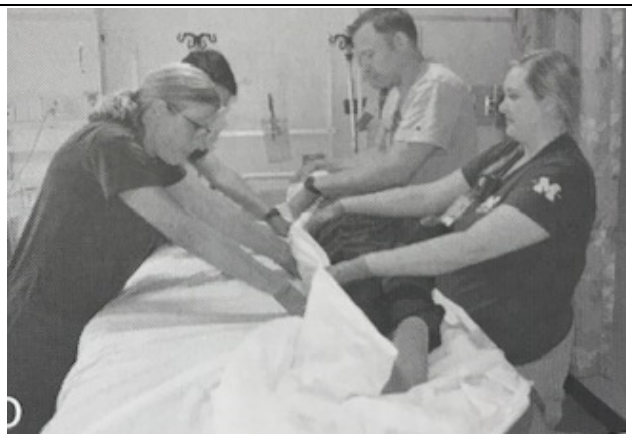
In order to turn the patient in the direction of the ventilator.

4. Cross the leg next to the edge of the bed over the opposite ankle.

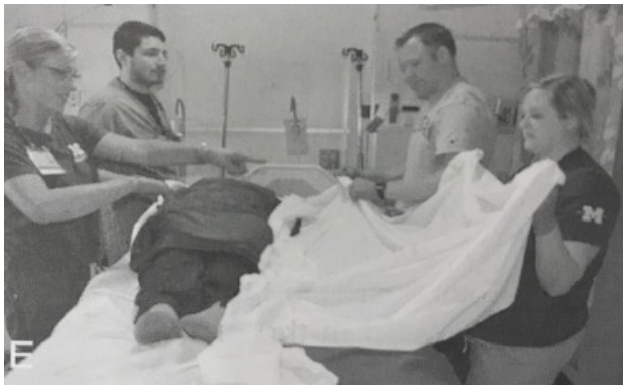
5. Keep both patients arms straight against the body

6. Tuck a new flat sheet, and the arm closest to the ventilator with palm facing up, underneath the patient to the side you are turning. The *new* flat sheet will pull through as you are turning the patient.

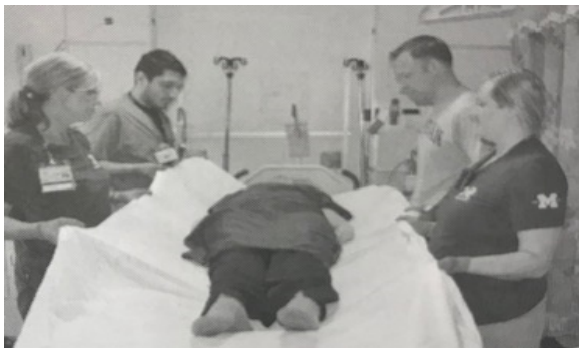
7. Begin by turning patient towards the ventilator and onto their side THEN stop. With the patient in the lateral position, reposition the patient's ECG leads on the patient's anterior thorax. Evaluate the quality of waveform and assess for arrhythmias. *May consider delaying the reposition of the patient's 5 lead ECG until the patient is in the supine position based on clinical stability and ease of turn.*



8. Under the direction of the person at the head of the bed, at the count of 3, the patient is carefully turned over by pulling the tucked arm and *new flat* sheet through.



9. The patient is now supine. Pull and center the patient. Straighten and connect lines and tubes.



10. Collaborate with the team to assess the patient's response to the supine position:
    - Pulse Oximetry
    - Mixed venous oxygenation or central venous mixed oxygenation saturation (Scvo2) and hemodynamics
    - Arterial blood gases
    - PaO2/FiO2 ratio (P/F ratio)
    - If P:F > 150 mmHg and Driving Pressure (Pplat – PEEP) < 15 cm H2O after two hours in supine positions consider not returning

to prone position, in collaboration with team.	

References:

Drahnak, D., & Custer, N. (2015). Prone Positioning of Patients with Acute Respiratory Distress Syndrome. *Critical Care Nurse*, 32(6): 29-37.

Guerin C, Reignier J, Richard J et al. Prone positioning in severe acute respiratory distress syndrome. NEJM (2013); 368(23): 2159-2168.

Guerin C, Constatin P, Bellani G et al. A prospective international observational prevalence study on prone positioning of ARDS patients: the APRONET (ARDS prone position network) study. Intensive Care Med (2018); 44:22-37.

Vollman, K, Dickinson, S, & Powers, J. (2017). Pronation Therapy. AACN Procedure Manual for Critical Care 7th ed. Elsevier Sanders, St Louis, Missouri pp. 142-163.

Revision Detail:

APPROVED: Critical Care Operations Committee (as of 03/24/2020)

Figure 1. – Areas at risk for pressure injury