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Appendix 1: Prone Positioning Protocol

1. Remove patient gown for full exposure of all lines, tubes, and monitoring devices.
2. Unlock bed and move caudally to allow intensivist or respiratory therapist adequate space for airway management. Once ideal position is confirmed, lock bed position. Use bed adjustment to completely flatten bed and adjust bed to appropriate height.
3. Disconnect oxygen saturation monitor, blood pressure cuffs, and patient restraints. Remove all EKG lead pads, catheter-securing devices, and other potential pressure points **(Figure 2)**.
4. Pause nasogastric/enteral feedings and cap tubing, if applicable. Place rectal tubing and/or urinary catheter collection bags between patient's legs on foot of mattress.
5. Disconnect and cap any non-essential peripheral vascular access, excluding intravenous sedation, circulatory pressure support, and active dialysis catheters **(Figure 3A, 3B)**.
6. Re-confirm that all tubes, monitoring devices, peripheral vascular access points, potential pressure points, and risks for tethering while turning have been addressed **(Figure 4)**.
7. Place pillows in appropriate positions overlying patient's shoulders, pelvis, and knees. Lay AirTAP sheet over pillows **(Figure 5)**.
8. Allow team member who is managing airway to determine direction of turning for maximal airway safety.
9. Tuck edges of overlying AirTAP underneath patient on side that will be "down" in the lateral decubitus position **(Figure 6)**. For example, if the left side will be down, AirTAP must be tucked underneath patient’s left side. This allows for access to AirTAP to appropriate team members during turning **(Figure 7)**.

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10. Airway management team member indicates when it is safe to move patient at all times. Confirm with all team members direction that patient will be turning and order of steps in which patient will be moved.
11. Patient is first shifted cephalad so patient's head is off the bed to minimize increase in intraocular pressure **(Figure 8)**.
12. Patient remains supine and is shifted horizontally, away from the side that will be "down" in the lateral decubitus position.
13. Patient is turned 90 degrees into lateral decubitus position and held securely by team members facing the ventral surface of patient **(Figure 9)**.
14. Team members facing the dorsal surface of patient grab AirTAP underneath "down" side of patient that were previously tucked in. Ensure that arm/shoulder on the "down" side are in a safe position to complete PP.
15. Patient is turned another 90 degrees into the prone position. Confirm pillows are appropriately padding shoulder girdle, pelvis, and knees. Remove soiled chux from patient's back.
16. Confirm caudal/cephalad positioning of patient with airway management team member. Confirm patient is centered on mattress. Use patient transport sheet to adjust position if needed. Place an additional pillow underneath feet for padding.
17. Place EKG lead pads on back with appropriate lead placement and ensure proper functioning of cardiac monitor **(Figure 10)**.

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18. Reconnect previously disconnected peripheral vascular access lines, tubing, monitors, and restraints. Ensure disconnected lines are sanitized prior to reconnecting. Confirm that infusions have been reconnected to correct points of access.
19. Confirm function of monitoring devices, specifically arterial lines, oxygen saturation, and cardiac monitors.
20. Ensure patient genitalia are safely positioned with appropriate slack on catheters/tubing. Replace urinary catheter/rectal tubing collection bags into appropriate positions.
21. Observe shoulder/cervical neck flexion/extension. Place shoulder pads as needed. Patient's head should be off bed or controlled with a head positioning pad/device **(Figure 11)**.
22. When determined appropriate by airway management team member, place patient in 20 to 30 degrees reverse Trendelenburg positioning.
23. Previous patient transport sheet to be sanitized and folded for re-use. Re-gown patient.
24. Remove/sanitize soiled PPE as per institutional protocol.

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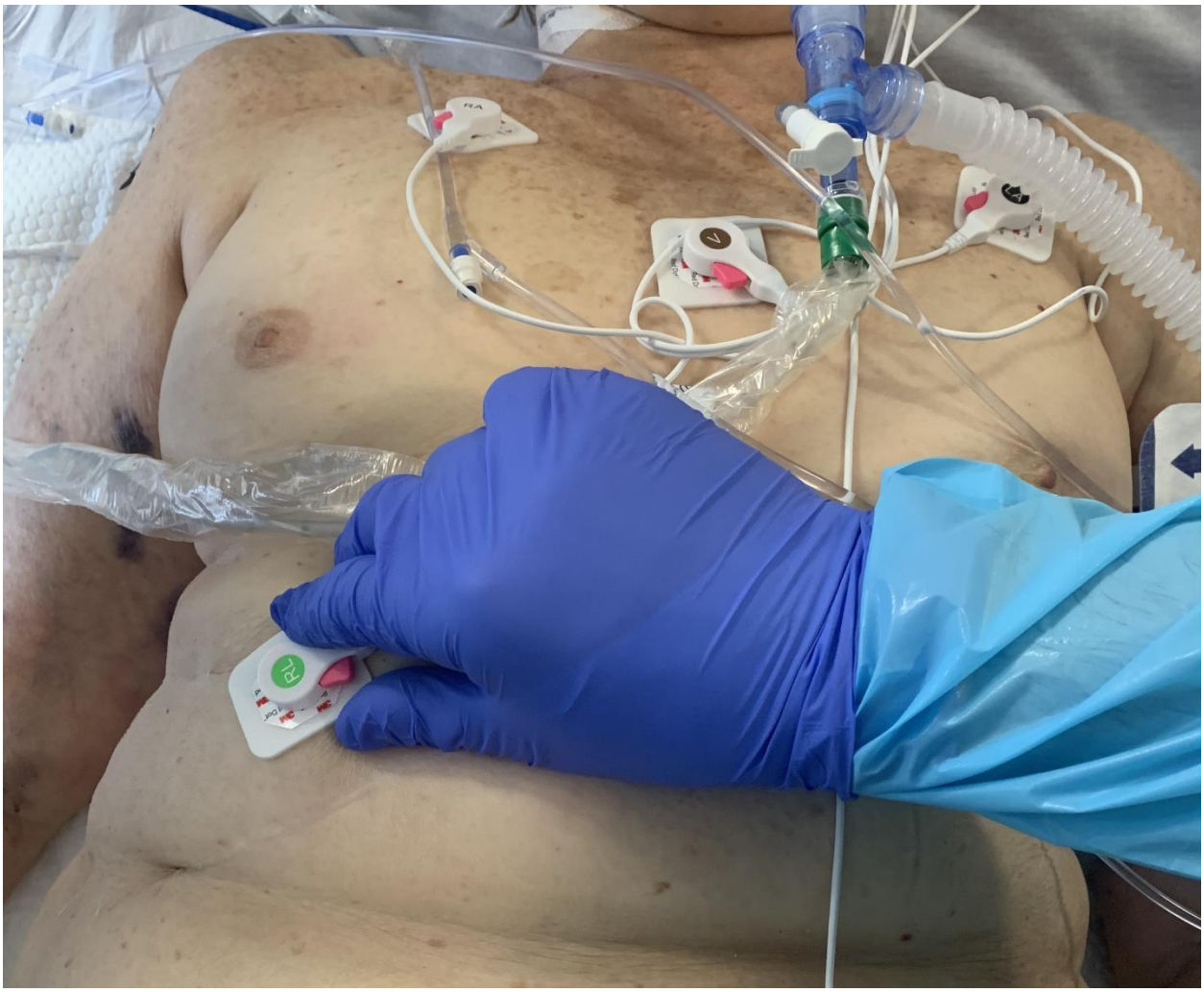

Figure 2: Leads are removed along with any other items likely to cause pressure ulcers when prone.

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Figure 3A: Arterial lines are identified and appropriately capped. We have found it necessary to cap all lines in order to avoid pulling out lines inadvertently while prone positioning.

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Figure 3B: Arterial line that has been capped on both ends. Notice the stopcock is turned towards the line insertion to prevent blood from flowing into the tubing and potentially clotting the line.

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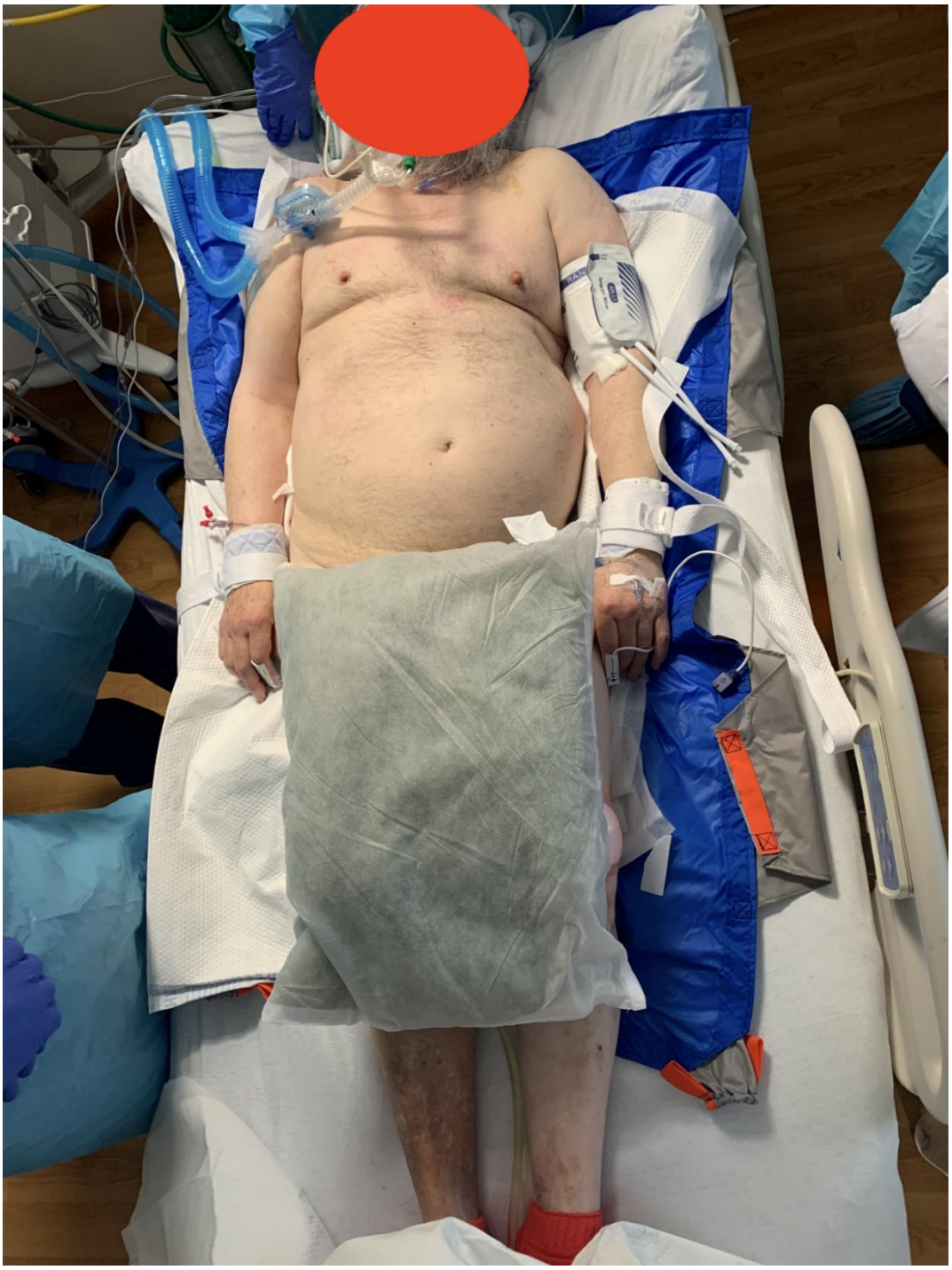

Figure 4: At this point, all leads have been removed, lines have been capped, wrist restraints have been untied, and blood pressure cuff disconnected. The patient is now ready to be positioned prone.

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Figure 5: Three pillows are used to appropriately pad the patient's chest, pelvis, and knees.

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Figure 6: The AirTAP (chux is also appropriate) is put top of the pillows. This patient will be put in the right lateral decubitus position. Patients are often turned prone towards the ventilator. The top sheet must be tucked under the patient (red arrows), which will facilitate turning the patient.

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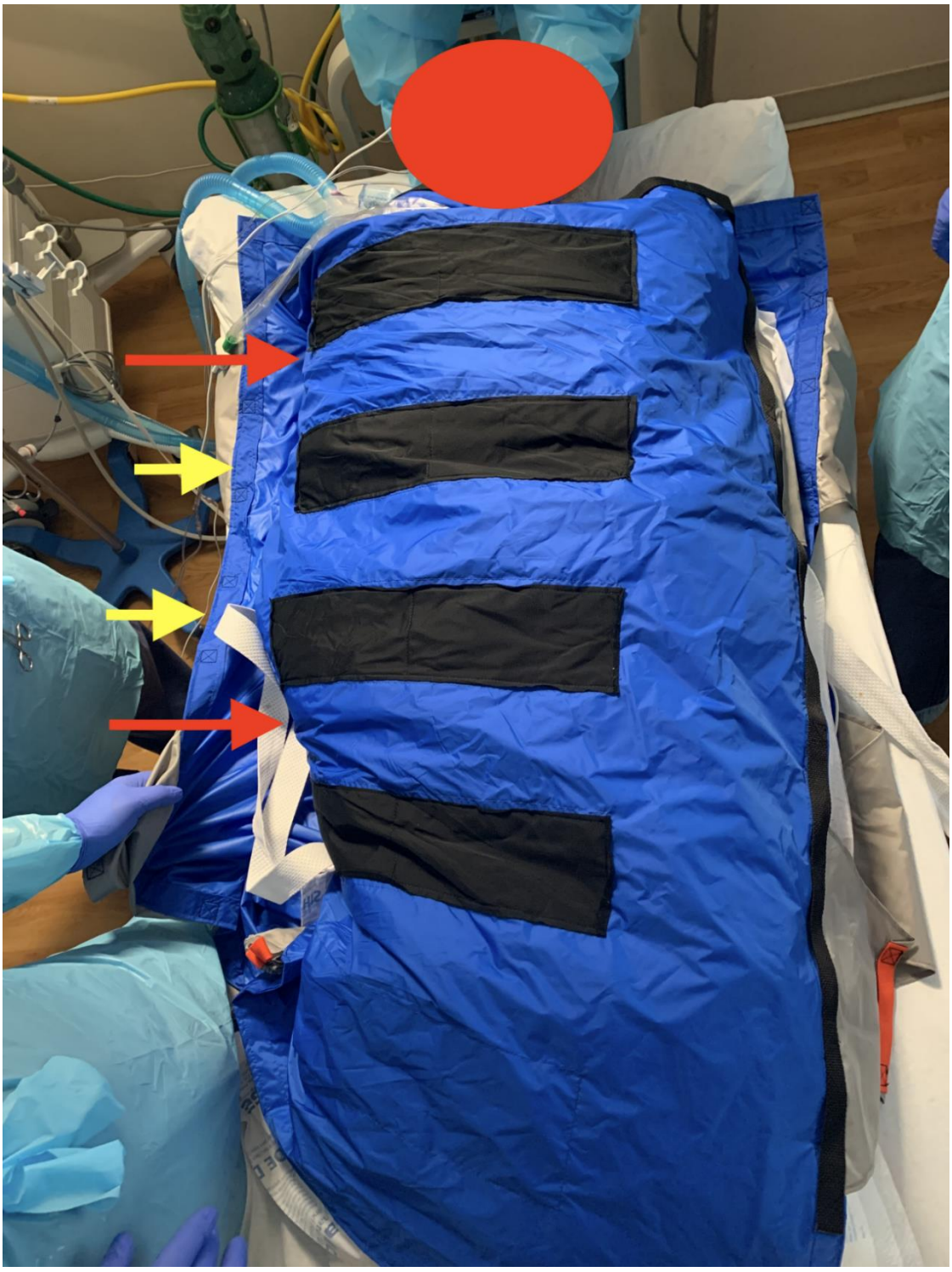

Figure 7: The top sheet (red arrows) are tucked underneath the patient. The bottom sheet (yellow arrows) can be used to move the patient.

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Figure 8: The first step is to move the patient cephalad so that the endotracheal tube can clear the head of the bed.

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Figure 9: The patient is then translated horizontally to the side of the bed and turned on their side. The top sheet can now be retrieved underneath the patient and the bottom sheet is removed as the patient is turned fully prone.

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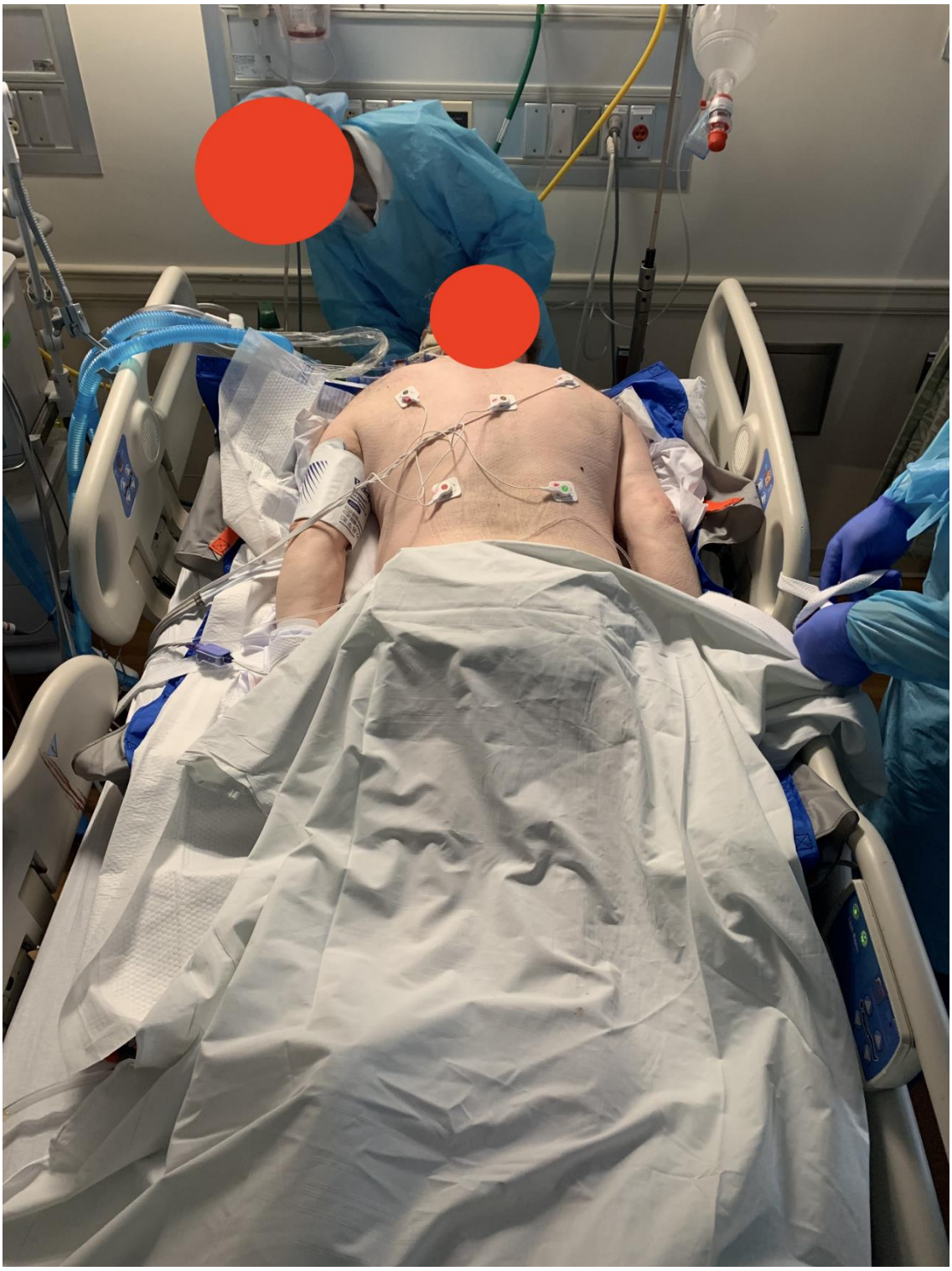

Figure 10: The patient is now prone with leads and lines re-connected.

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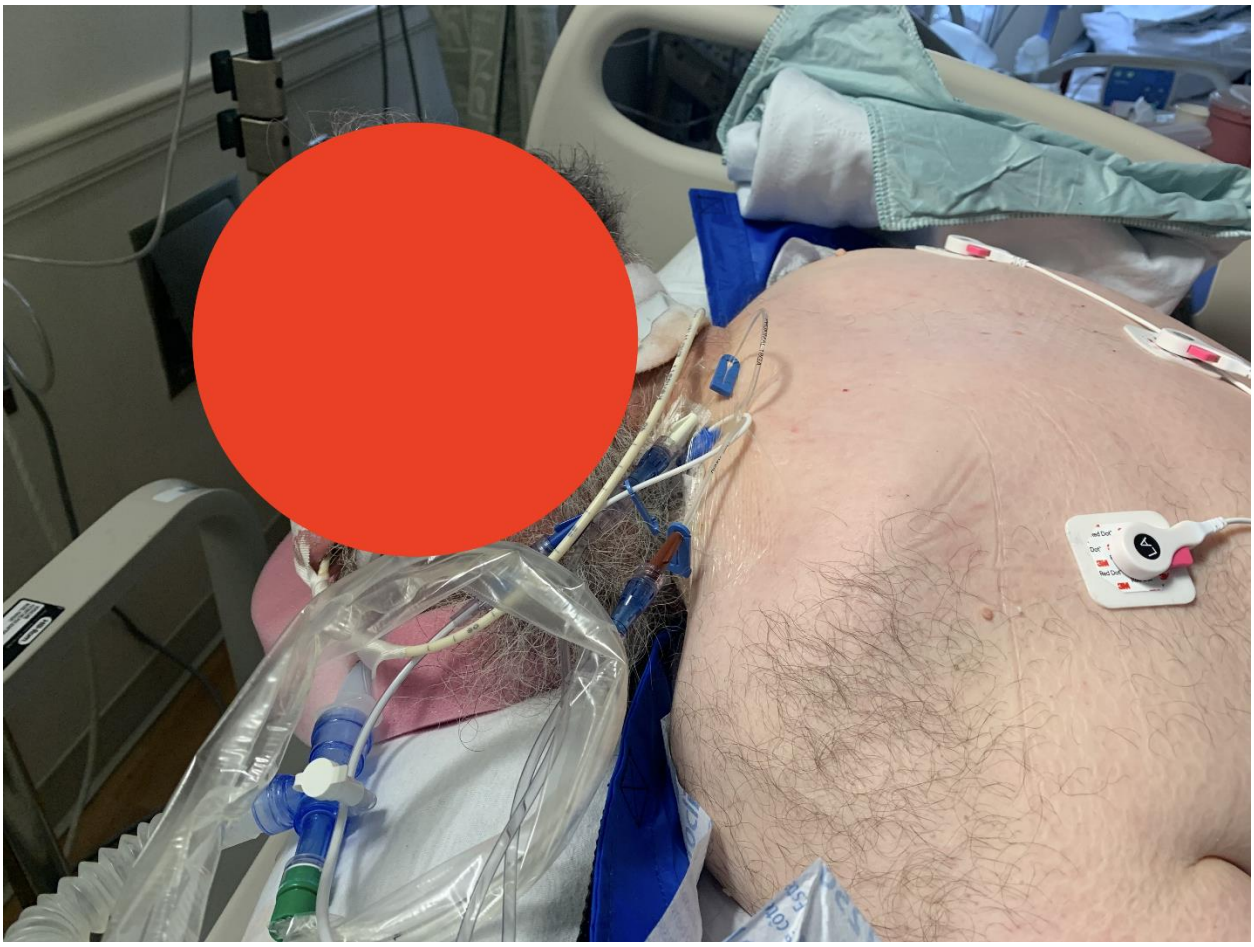

Figure 11: The provider managing the head should ensure that the eyes are completely clear of bed and that the tube is secure. A donut style pillow (optional) is used to pad the chin.