# Mobilization and Prone Positioning of an Awake Patient in Non-Critical Care Settings

## Site Applicability

PHC inpatient acute care units

## Practice Level

Registered Nurses (RN), Licensed Practical Nurses (LPN), Physiotherapists (PT), Registered Respiratory Therapists (RRT)

## Requirements

Discussion with and agreement from Most Responsible Physician (MRP), or an order is required to initiate awake prone positioning

## Algorithm(s) – See page 3

## Need to Know

- Prone positioning is intended to improve oxygenation and delay or ideally avoid the need for intubation in patients with COVID-19, thus improving health outcomes (see Appendix A).
- Close monitoring of the patient's $SpO_2$ is required for the first 15 minutes after position change.
- Patient needs to be awake, able to assist with positioning and able to reposition themselves (off prone) independently, or with minimal assistance.

### Contraindications

Absolute contraindications for prone position are:

- Respiratory distress (i.e., respiratory rate 35 breaths per minute or more, shortness of breath, accessory muscle use, $PaCO_2$ of 50 mmHg or more)
- Hemodynamic instability (i.e., SBP less than 90 mmHg) or arrhythmia
- Agitation or altered mental status
- Unstable spinal injury, thoracic injury, or recent abdominal surgery

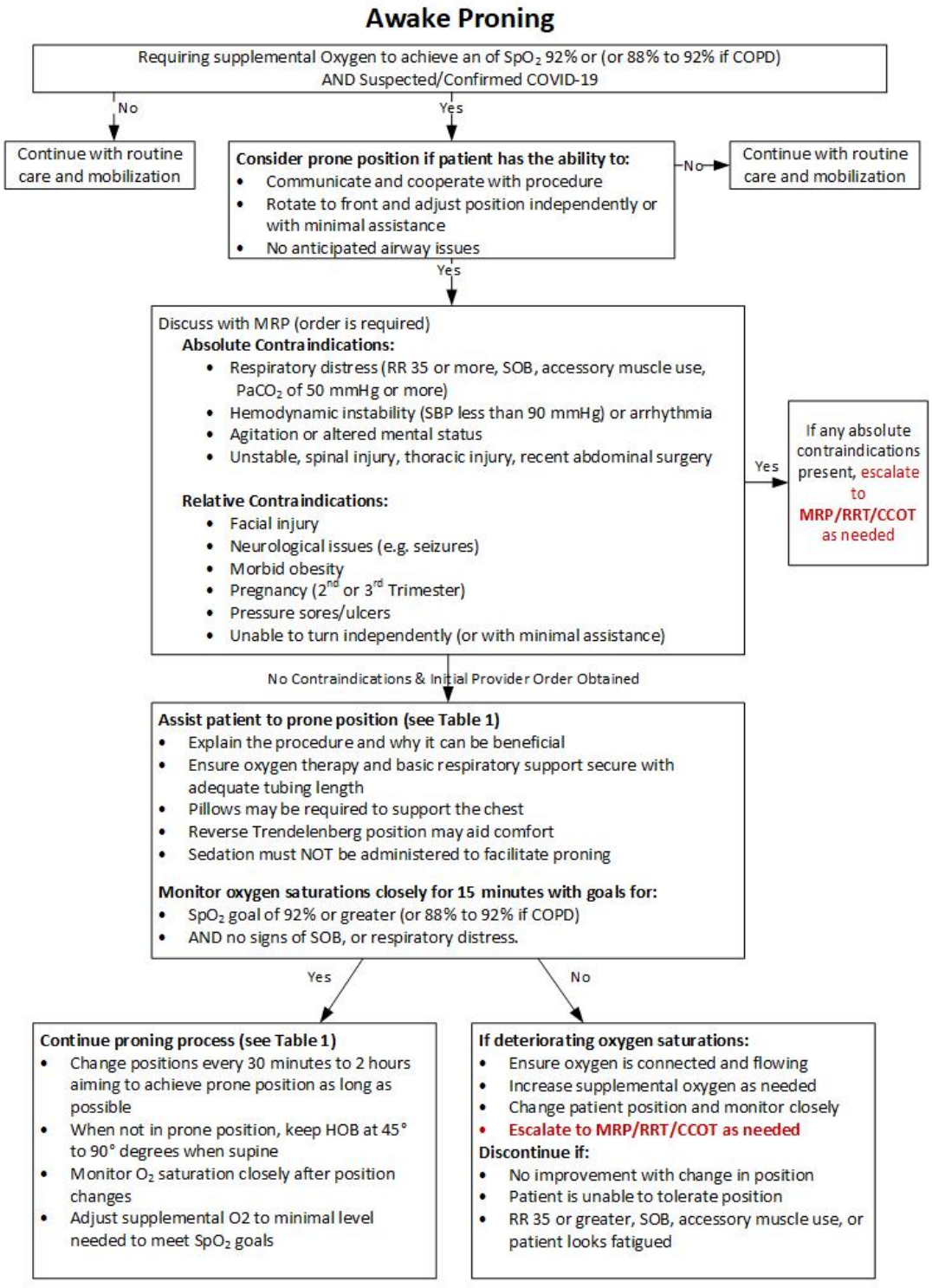
Relative contraindications for prone position are:

- Facial injury
- Neurological issues (e.g., seizures)
- Morbid obesity

- Pregnancy (2nd or 3rd Trimester)
- Pressure sores/ulcers
- Unable to reposition independently or with minimal assistance

Consider consulting the MRP, RRT and/or Critical Care Outreach Team (CCOT) if the patient is in respiratory distress, hemodynamically unstable or has an altered mental status

## Algorithm




Adapted from Intensive Care Society Flow Diagram decision tool for conscious proning process (Nov. 2020) https://emcrit.org/wp-content/uploads/2020/04/2020-04-12-Guidance-for-conscious-proning.pdf

## Equipment and Supplies

| | |
|---|---|
| • Towel or Foam head positioner (if available), converted to C shape<br>• Pillow cases | • Foam wedge or 4 pillows<br>• Extra ECG electrode pads if requiring telemetry |
|  |  |

## Procedure

**Table 1 Timed Position Changes**:

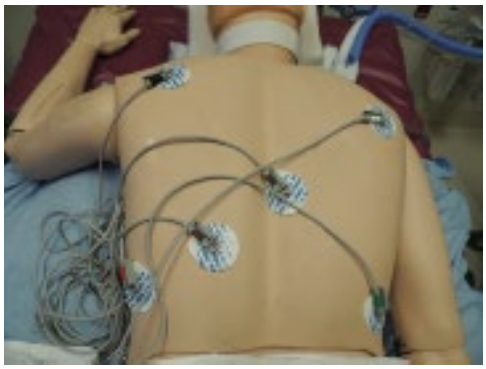
If patient fulfils criteria for prone position ask the patient to switch positions as follows. Monitor oxygen saturations 15 minutes after each position change to ensure oxygen saturation has not decreased.

1. 30 minutes to 2 hours lying fully prone (bed flat).
2. 30 minutes to 2 hours lying on right side (bed flat)
3. 30 minutes to 2 hours sitting up (45°to 90° degrees) by adjusting head of the bed
4. 30 minutes to 2 hours lying on left side (bed flat)
- Continue to repeat the cycle……

### Steps

- Put the foam head positioner or towel in a pillow case
- Explain to patient what is happening and why they need to lie prone
- Assist with repositioning the patient's attached equipment:
  - Tubes and lines – either disconnect tubes lines temporarily for turn if possible, or secure them and watch lines to ensure they do not catch with the repositioning
  - Telemetry - move ECG electrodes to the sides of the patient's chest
  - Oxygen therapy, CPAP or BIPAP – secure and watch equipment to ensure they are not disconnected or dislodged with the repositioning. Consider enlisting RRT support for turn.

- Get patient to move all the way over to one side of the bed
- Place the chest and pelvis pillows as well as the head support on the bed
- Patient turns on to the pillows (independently or with minimal assistance)
- Check position of head support (towel or foam head positioner)
- If applicable (i.e., telemetry) place ECG electrodes on the back (see picture) ➔
- Arm up on the side the head is turned towards
- A wedge cushion or pillows under lower legs to float the feet
- Flexing the arm and ipsilateral hip can make the position more comfortable
- If the head positioner seems too high consider adding an additional pillow to the chest to elevate



- If applicable, reconnect, and/or check any equipment (i.e., tubes and lines) that was temporarily disconnected for the repositioning
- If applicable, ensure oxygen therapy is connected, secured and functioning appropriately.
- Assess for any pressure points (i.e., knees, hips, forehead) and adjust to optimize patient comfort.
- Ensure the patient's call bell is within reach and top two bedrails are up (lower bed rails down)

| | |
|---|---|
|  Arm up on the side the head is turned towards |  A wedge cushion or pillows under lower legs to float the feet |
|  Head is supported with a foam head positioner (or towel or pillow). |  Pillows under the chest and stomach is used to support prone position. |
|  Flexing the ipsilateral hip can help too. |  Prone can be comfortable! |

### If Hypoxemia Occurs After a Position Change

If patient has significant drop in oxygen saturation after a position change:

1. Ensure the oxygen is still connected to the wall outlet and properly positioned on the patient (this is a common cause for desaturation)
2. Ask patient to change to a different position:
    a. **if repositioning improves oxygenation**, consider avoid the position that caused the drop in oxygenation with the following position changes;
    b. **If repositioning does not improve oxygenation**, increase supplemental oxygen, notify MRP, and RRT for escalation of oxygen modality vs. trial of additional positions. Consider also activating CCOT.

## Early Mobilization and Pre-oxygenation

Early mobilization can be initiated with most patients. Early mobilization with a focus on returning to functional activities is encouraged as it helps to reduce the risk of further deterioration in the patient's condition, minimize functional decline and prevent future problems. Mobilization should be encouraged early in the course of illness, when safe to do so. This may include:

- Sitting out of bed
- Performing simple exercises
- Performing activities of daily living

Early mobilization should incorporate a multi-disciplinary approach involving careful consideration of the patient's medical status (e.g. stable clinical presentation with stable respiratory and hemodynamic function). Fatigue, breathlessness and oxygen desaturation are common symptoms, and must be monitored and managed carefully.

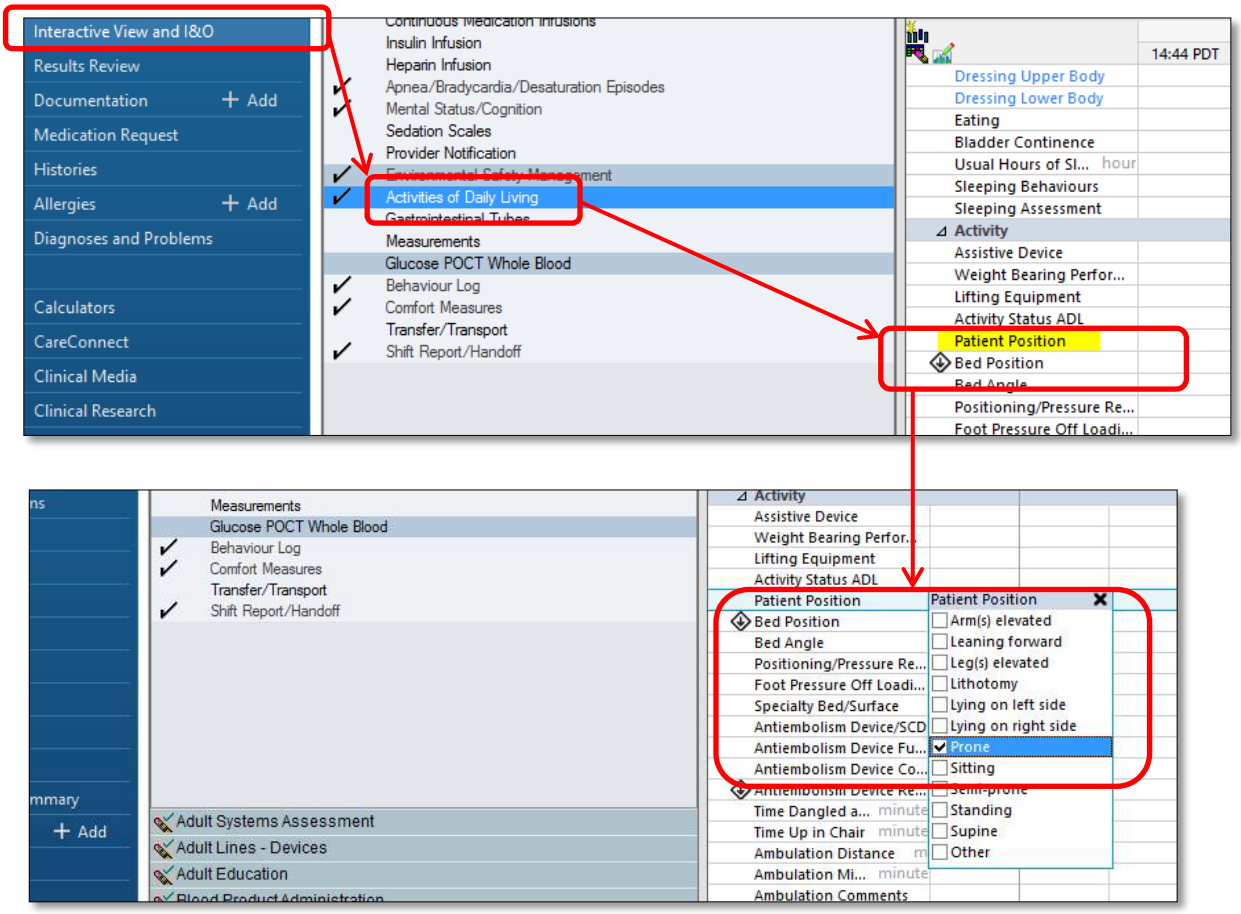
Pre-oxygenation is when you temporarily increase the patient's supplemental oxygen therapy for a few minutes before, during and sometimes after, mobilization to prevent acute desaturation with mobilization. The expectation is that the patient can return to their baseline oxygen therapy shortly after mobilization. For some patients who struggle to maintain their oxygenation during mobilization, this strategy can be effective to help prevent acute desaturation events, and maximize the patient's ability to mobilize.

**Consult with the RRT and/or PT to tailor a pre-oxygenation strategy if the patient has difficulty maintaining their saturation during mobilization.** Patients with COVID-19 can be highly variable with their oxygen needs during mobilization. Depending on the patient's condition, this could be starting or increasing oxygen by nasal prongs by 2 L/min, or temporarily switching from 5 L NP to a simple mask or Optiflow to achieve an increase in oxygen therapy.

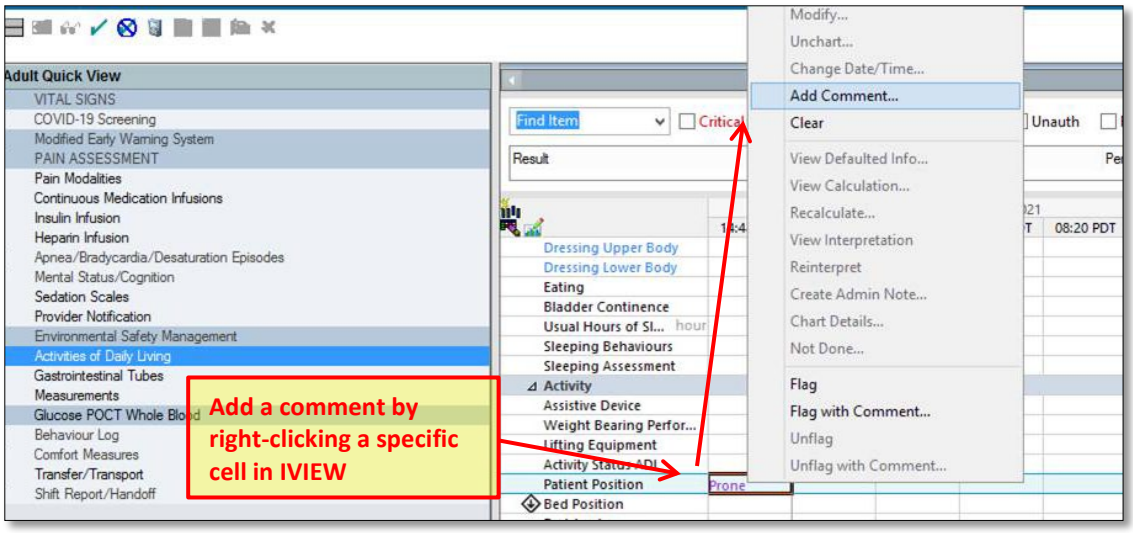
## Documentation

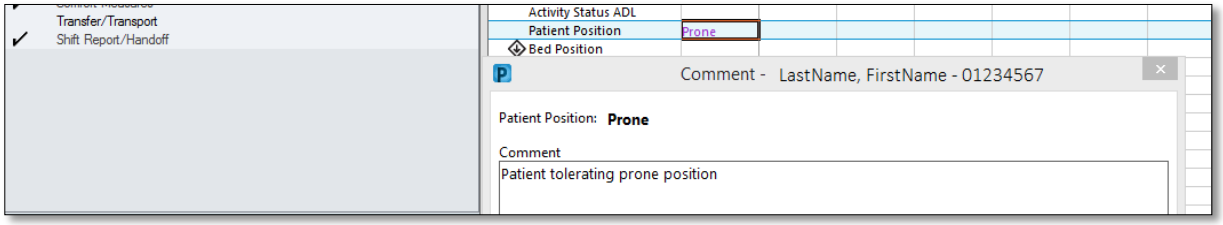
Document VS with each turn in IVIEW

Document the patient's position changes in IVIEW under the "Activities of Daily Living" band.

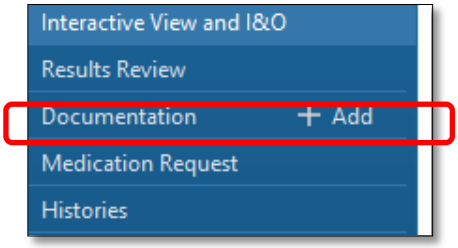



You can also insert a short comment by right-clicking the box if you want to highlight any key points about the position change.




A more detailed assessment about the position change and the patient's response to the intervention can be entered in a separate document (i.e., Physiotherapy, RRT, or Nursing notes) by adding a new document in the "Documentation" section of the Electronic Health Record (EHR). Ensure you create a specific title for the document (e.g., Assessment of Awake Prone position Intervention) so it is easy to identify in the EHR.




### Patient and Family Education

Explain process of proning and why it is being used. Encourage and facilitate mobilization where appropriate

**Patient Education Video:**

"A Guide to Prone Positioning for COVID-19 Patients" from https://youtu.be/cCkHPYpwg2g

**Pamphlet:**

"The Benefits of Proning" from the Patient Education Brochure (PHEM web site) accessible from https://phc.eduhealth.ca/en/permalink/phem4194

## Related Documents

1. BD-00-12-40110 – Proning of a Mechanically Ventilated Patient

## References

Bamford, P., Bentley, A., Dean, J. Whitmore, D., Wilson-Baig, N. Intensive Care Society Guidance for Prone Positioning of the Conscious COVID Patient 2020. Accessed May 12 2020 at: https://emcrit.org/wp-content/uploads/2020/04/2020-04-12-Guidance-for-conscious-proning.pdf

Damania, Z. [ZDoggMD]. (2020, Sept. 4). *Tummy time for COVID-19? Proning explained* [Video]. YouTube https://www.youtube.com/watch?v=N2Y4L8LAyuU

Gattinoni L, Busana M, Giosa L, Macrì M, Quintel M. Prone Positioning in Acute Respiratory Distress Syndrome. Semin Respir Crit Care Med. 2019;40(1):94-100. doi: 10.1055/s-0039-168518

Malhotra, A., Kacmarek, R. M. (2020) Prone ventilation for adult patients with acute respiratory distress syndrome. In G. Finlay (Ed.), *UpToDate*. Retrieved May 17, 2021 from https://www.uptodate.com/contents/prone-ventilation-for-adult-patients-with-acute-respiratory-distress-syndrome

Nasa, P., Azoulay, E., Khanna, A. K., Jain, R., Gupta, S., Javeri, Y., Juneja, D., Rangappa, P., Sundararajan, K., Alhazzani, W., Antonelli, M., Arabi, Y. M., Bakker, J., Brochard, L. J., Deane, A. M., Du, B., Einav, S., Esteban, A., Gajic, O., Galvagno, S. M., Jr, … Myatra, S. N. (2021). Expert consensus statements for the management of COVID-19-related acute respiratory failure using a Delphi method. *Critical care (London, England)*, *25*(1), 106. https://doi.org/10.1186/s13054-021-03491-y

UConn Health. (2020, Apr. 24). *A guide to prone position for COVID-19 patients* [Video]. YouTube https://www.youtube.com/watch?v=cCkHPYpwg2g

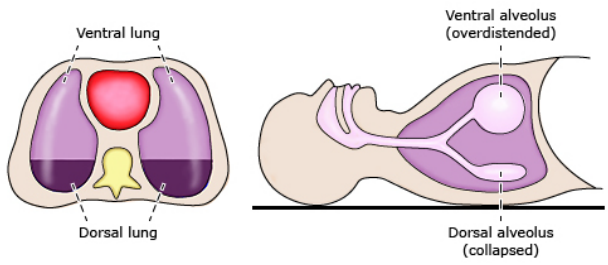
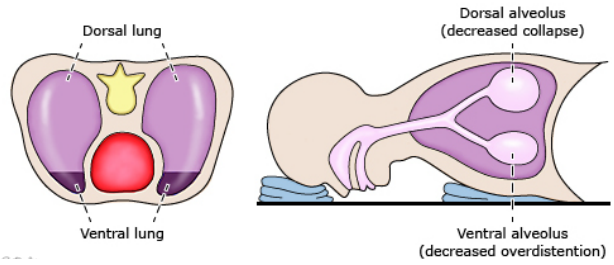
## Appendix A: Physiological Reasoning to Support Use of Prone Position in Awake Patients with COVID-19

Adapted from

https://emcrit.org/pulmcrit/awake-prone-covid/

Improved oxygenation may relate to:

1. Recruitment of previously collapsed alveoli in the posterior lungs
2. Improved secretion management (which may further serve to prevent atelectasis ad improve recruitment of lung tissue)
3. Shifting perfusion towards healthier alveoli located in the anterior lungs (thereby improving the ventilation-perfusion matching)

| Supine Position | Prone Position |
|---|---|
|  |  |
| Image from (Malhotra & Kacmerek, 2020) | |

Experimental evidence on prone positioning has previously indicated that the major mechanism of action is recruitment of lung tissue, rather than improvements in ventilation-perfusion matching. The emerging data in COVID-19 is consistent with this concept that prone ventilation promotes lung recruitment. If prone positioning primarily caused an improvement in oxygenation due to ventilation/perfusion matching, this benefit should disappear immediately after the patient is no longer prone – a pattern not observed clinically. Prone ventilation may be working largely to prevent progressive atelectasis of basilar lung tissue.

The other mechanism by which prone positioning may work is by improving the distribution of the tidal volume. In prone the volume is more homogeneous throughout the lungs which could decrease lung injury and inflammation over time. This means that there may still be a benefit even if there isn't a sustained saturation improvement.

Post-extubation the benefit is likely largely driven by the ability to clear secretions

Current evidence suggests the benefit may be greater the longer the patient can spend in the position and the earlier prone positioning is considered.

Video (6 minutes) explaining effect of prone positioning:
https://www.youtube.com/watch?v=N2Y4L8LAyuU

**Person/Groups Consulted**

Clinical Nurse Leader, Medicine

ICU physician

Patient Care Manager, Medicine

Project Manager, Patient and Family Centered Care

**Developed By:**

Clinical Nurse Specialist – Critical Care

Practice Leader – Respiratory Therapy

Physiotherapy Clinical Specialist – Respiratory and Critical Care

Nurse Educators – Medicine

Clinical Nurse Specialist - Medicine

Adapted from Surrey Memorial Hospital COVID Awake Repositioning/Proning Protocol (CARP). November 2020

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| | Professional Practice Standards Committee |
| **Owners:** | PHC |
| | Critical Care<br>Medicine |