

# A Proposal for Dedicated “Prone Team” and “Prone Bundle of Care” in COVID-19 ICU

Rahul K Anand<sup>1</sup>, Dalim K Baidya<sup>2</sup>, Souvik Maitra<sup>3</sup>, Bikash R Ray<sup>4</sup>

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Sir,

The novel coronavirus disease (COVID-19) pandemic has affected most of the countries worldwide and has become a major global health problem. About 15% of patients may develop severe disease and 5% critical disease requiring admission to intensive care unit (ICU) and mechanical ventilation.<sup>1</sup>

The use of “awake prone position” has been found to improve oxygenation in COVID-19 pneumonia patients.<sup>2</sup> Patients with severe COVID-19 pneumonia and acute respiratory distress syndrome (ARDS), who are treated with invasive mechanical ventilation, require prone position ventilation. Prone ventilation is associated with improved survival in ARDS patients with refractory hypoxia ( $\text{PaO}_2/\text{FiO}_2$  ratio < 150).<sup>3</sup> Therefore, prone position ventilation is being commonly used in COVID-19 ARDS; and in the absence of definitive therapy for COVID-19, it may be considered one of the most important interventions in these patients.

However, prone ventilation may be associated with various complications including pressure ulcers, accidental extubation, and displacement of lines and catheters.<sup>4</sup> Incidence of complications may be reduced by the presence of trained staff and use of specific prone protocols and checklists.<sup>5</sup>

During the huge surge of cases at the peak of pandemic and high bed occupancy in ICUs, the availability of trained staff may be an important limiting factor and can affect the quality of care. Moreover, the use of small duration shifts, reduced efficacy while wearing personal protective equipment, and risk of quarantine of some staff are a major hindrance in managing manpower in ICU.

Therefore, we propose the institution of a dedicated “prone team” to improve the quality of this most important yet risky intervention in sedated and paralyzed ICU patients. The prone team should consist of a resident doctor, nursing and technical staff, or physiotherapist who are already trained and experienced in prone positioning in ICU. Simultaneously a video- or simulation-based training program should be started to train all the available ICU staff, irrespective of their experience, in prone positioning. The prone team is a very important initiative and should be continued till most of the general staff in COVID-19 ICU complete training, and is confident in the prone positioning of patients. The involvement of resident doctors and nursing staff from various departments like medicine, anaesthesiology, surgery, and other allied clinical departments will add a multidisciplinary perspective in the clinical care, expand the available pool of doctors and nurses trained in proning, and simultaneously ensure a smooth supply of manpower during the crisis. The use of a dedicated prone team,

<sup>1-4</sup>Department of Anaesthesiology, Pain Medicine and Critical Care, All India Institute of Medical Sciences, New Delhi, India

**Corresponding Author:** Dalim K Baidya, Department of Anaesthesiology, Pain Medicine and Critical Care, All India Institute of Medical Sciences, New Delhi, India, Phone: +91 1126593743, e-mail: dalimkumar.ab8@gmail.com

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consisting of non-regular ICU doctors and physiotherapists, has been described in busy COVID ICUs with acceptable safety and efficacy.<sup>6,7</sup> Moreover, a checklist of “prone bundle of care” may be followed to improve the efficiency of the team. The bundle should include a separate time-based checklist of the awake prone session and prone ventilation session. The important characteristics of the prone team and prone bundle are described in [Table 1](#). The clinical team in ICU should sincerely follow the bundle and call the prone team whenever needed. In case a hospital runs multiple COVID ICUs on the campus, one or two dedicated prone team can perform 24-hour on-call and cater to all the ICUs. This will be an efficient way to manage skilled manpower and ensure uniformly good quality of care.

Based on our experience, a combination of a prone team and a prone bundle of care can improve the safety and efficacy of prone ventilation. However, this may be tested in a well-designed study protocol.

## ORCID

Rahul K Anand  <https://orcid.org/0000-0002-7852-1231>

Dalim K Baidya  <https://orcid.org/0000-0001-7811-7039>

Souvik Maitra  <https://orcid.org/0000-0002-2328-9201>

Bikash R Ray  <https://orcid.org/0000-0003-1461-1518>

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**Table 1:** Components and characteristics of “prone team” and “prone bundle” checklist

<b>Prone team</b>	<ul style="list-style-type: none"> <li>• Consists of resident doctor (clinical specialty like anesthesia, surgery, and medicine), nursing, and technical staff or physiotherapists</li> <li>• Usually, five members are required for proning (one person at the head end and two on each side for turning).</li> <li>• Staff already experienced do proning in ICU should be part of the team</li> <li>• Continued video- and simulation-based training of other experienced to do proning</li> </ul>
<b>Awake prone bundle</b>	<p>Patients should be/have</p> <ul style="list-style-type: none"> <li>• Mentally alert and can communicate</li> <li>• Able to turn supine on his/her own</li> <li>• Hemodynamically stable</li> <li>• No urgent indication of intubation</li> <li>• After 2 hrs can turn supine for 30 min followed by prone/lateral again</li> <li>• Check improvement in oxygenation (SpO<sub>2</sub>)</li> </ul>
<b>Prone ventilation bundle</b>	<ul style="list-style-type: none"> <li>• Indication checklist—COVID ARDS with PaO<sub>2</sub>/FiO<sub>2</sub> ratio &lt; 150 on lung-protective ventilation on sedation and paralysis</li> <li>• Contraindication checklist—patient should have no contraindication for prone (e.g., hemodynamically stable and no open abdomen)</li> <li>• Call the prone team if there are an indication and no contraindication</li> <li>• Trained personnel for prone (including trained in performing cardiopulmonary resuscitation and point of care ultrasound in prone)</li> <li>• Perform any necessary procedure/intervention and document in the file (like echocardiography, insertion of a central venous or arterial catheter) and stop nasogastric feed before turning prone. Resume nasogastric feed at lower volume after prone positioning</li> <li>• Perform lines/tubes/drain safety checklist before prone. Ensure they are properly fixed at a place and optimum care to prevent any dislodgement/kinking/malfunction during proning and while in prone position</li> <li>• Use other safety checklists (lubricate and close eyes, cotton pad over eyes, adhesive transparent dressing over ETT fixation, diaper below face with the absorbent surface above, electrocardiography electrodes over back, gel pads/water-filled gloves below pressure points)</li> <li>• No ventilator disconnection while making prone</li> <li>• Prone signboard at bed displaying the <i>n</i>th number of prone session, prone onset time, time to supine, and planned time to perform arterial blood gas</li> </ul>

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