



Letter to the Editor

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The Oxygen Demand Table, a Simple Concise Way for Tracking Oxygen Saturation During COVID-19 Pandemic

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Clinical Procedure: Oxygen Demand Table, a simple tool to save lives.

Specialty: Pulmonology Critical Care

Objective: Unique low cost and low technology solution to potentially save lives.

A COVID-19 viral infection can present with progressive hypoxemia due to the direct destruction of pneumocytes in the lungs. An acute process associated with inflammation that can rapidly progress into respiratory failure and death. Hospitals in American have worked with the assumption of maintaining fixed ratios between nurses to patients, therapist to patients and even cap models of patients to students and trainees. With the multiple variants of COVID-19 that we are facing at this point compounded with the large influx of patients, these classic lifesaving and quality improvement ratios are invalid. The staff is forced to treat the patient as if we were in a mass casualty scenario where the high influx of patients with hypoxemia can overwhelm the medical staff. As we have seen in Asia, India, and South America. Many Physicians have had to stretch their resources to provide essential care. As seen in social media, journals and reports, the lack of oxygen has caused multiple deaths.

When there are limited resources and multiple casualties, we don't have the luxury of following old paradigms of care based on a world that no longer exists. As physicians and hospital administrators we need to look for a low technology, low cost high yield solutions with possible single variable that can provide a 20 percent investment for 80 percent improvement and this business skill can be scaled with proper training to potentially save lives.

We present a very simple way to track oxygen saturation for multiple COVID 19 patients on several floors throughout the hospital. This tracking tool consists of a simple writable sign that is attached to the front door of a patient's room or on the gurney. Instead of depending on the classic 2: 1 nurse ration, even the 4:1 or the extreme 6:1 ration of nursing to patients to maintain a measure of all vital signs. We empowered and trained all available personnel to periodically monitor two things, oxygen flow from the wall outlet or concentrator and the patient's oxygen saturation. This can be applied as an all hands-on deck approach to include students, therapist and when appropriate, enlisting lay people to track the patient's oxygen requirements. This tool works independently from the normal duties of nursing, physician, and Intensive Care Unit staff, it allows for monitoring, recording and reporting any changes in situation, variability or desaturations. Which can be life threatening events.

There have been many reported cases from all around the world where people have died from facilities running out of oxygen, patients not using oxygen or dramatic desaturation that can lead to a preventable death.

Protocol

1. The sign will be attached to the patient's room, gurney, or bed
2. A handheld pulse oximeter will be charged and readily available for a technician to use and monitor oxygen saturation every 4 hours. If you are dealing with floors that have a large number of patients, probably every 2 hours may be indicated to ensure all patients are seen.
3. If there is a recorded drop by 4 % the technician will report to the nurse or respiratory therapist in charge. In turn, this will trigger medical therapy or a consultation with a physician to address the drop in oxygen.
4. If Oxygen flow is low or lack of oxygen from the source, a phone to call to management and a physical plan should be done to assure proper flow of oxygen.

Oxygen Tracking Board

Record O₂ saturation and O₂ usage with vitals and any change. Please record the **date and time** of all results.

*Document SpO₂ with exertion PRN.

CURRENT

SpO₂ = % / LPM

*SpO₂ with exertion

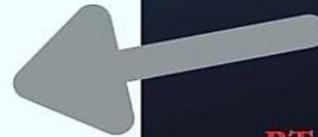
% / LPM

GOAL

Keep saturation \geq %

Home O₂ LPM

Great for tracking daily weaning of oxygen on Covid patients



Conclusion

A simple sign as illustrated above can remind the team members, what the patient's baseline oxygen use is. This especially with patients that have chronic oxygen requirements, indicating what is the expected baseline if the patient is to be discharged home. It can also give a quick overview to the clinicians as they round on how the patient's COVID infection may be progressing, improving or if step up therapy with oxygen, noninvasive ventilation or mechanical endotracheal ventilation is required. It can also guide progress, improvement and clarify expectations to the treating team, patient, and family members.

In a world with a virus that only wants to replicate, survive and potentially cause death. We can no longer afford to think only of matrixes, conventional standard and rules that never considered or were meant to deal with a mass casualty scenario. America today has over 100,000 hospital admissions due to delta variant and many countries have experienced thousands of deaths per day. If we don't adapt to the current needs, the rapid progression of infection will overwhelm facilities. A simple concept like the Pareto Effect, where the least amount of effort gives you the most return can be a low-cost solution that can potentially save lives.

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