

Coronavirus COVID-19

BC Centre for Disease Control | BC Ministry of Health



COVID-19 Oxygen Therapy and Intubation Threshold Guidance

The COVID-19 crisis poses many challenges for staffing, clinical management and resource utilization. The management of patients with suspected or confirmed COVID-19 infections is different from our standard approach. The dominant respiratory feature of severe COVID-19 is arterial hypoxemia greatly disproportionate to abnormalities in respiratory system mechanics. What follows is a concise approach for oxygen therapy and clinical indicators for potential rapid decline and/or need for intubation.

PPE level:

Standard contact and droplet precautions as treatment options are non-AGMP

Early confirmation of goals of care

Early CXR, POCUS, lab work

ABG to correlate PaO₂ with SpO₂

Standard oxygen therapies (Low flow)

- 1) Nasal prongs/cannulae: 1-6 L/min
- 2) Simple Face Mask: 6-10 L/min
- 3) Non-rebreather: 10-15 L/min
- 4) Oxymask: 1-15 L/min

Consider SpO₂ target 88-92%

Minimize flow titrated to SpO₂

Early ICU consultation

Including virtual or telemedicine consultation where applicable.

Consultation could include advice on treatment options, escalation of care, patient management, patient movement, including disposition and referral patterns/thresholds.

PPE level:

- Airborne precautions are indicated as treatment options include AGMPs
- Place in negative pressure isolation room if available
- Single isolation room with door closed also an alternative option

- 5) Trial of HFNC
- 6) Consider awake proning

Clinical features of severe COVID-19 disease:

- Assess work of breathing: accessory muscle use, abdominal breathing, overt distress
- Look for evidence of hypoxemia refractory to increased FiO₂
 - Hypercarbia with associated acidosis

Abbreviations:

AGMP = Aerosol Generating Medical Procedure CXR = Chest X-Ray HFNC = High Flow Nasal Canula

LOC = Level of Consciousness

POCUS = Point-of-Care Ultra Sound PPE = Personal Protective Equipment

WOB = Work of Breathing

Threshold to intubate should be guided by clinical judgement (not by FiO₂ alone):

- 1) Excessive WOB
- 2) Co-existing shock, altered LOC, multi-system organ failure
- 3) Failed trial of Low Flow Rx or of HFNC

References:

- 1. Martin TJ, Basing Respiratory Management of Coronavirus on Physiological Principles, AJRCCM, 2020 Apr 13, (ePub ahead of print)
- Yang X, et al., Clinical course and outcomes of critically ill patients with SARSCoV-2 pneumonia in Wuhan, China: a single-centered, retrospective, observational study. Lancet Respir Med. 2020 Feb 24. (ePub ahead of print)
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