# Coronavirus COVID-19

**BC Ministry of Health | BC Centre for Disease Control**

## Oxygenation & Intubation Threshold Guidance for Adults with Suspected COVID-19 in Rural Settings

The dominant respiratory feature of severe COVID-19 is arterial hypoxemia greatly disproportionate to abnormalities in respiratory system mechanics. This flowsheet is a concise approach for $O_2$ therapy and clinical indicators for potential rapid decline and/or need for intubation.

Striving to achieve oxygenation using a ladder approach is central to care. This process is resource-intensive, involving proning and turning of patients as well as close monitoring. Collaborative, team-based approaches will be necessary.

### Personal protective equipment (PPE) level (non-AGMP):

- Droplet & contact precautions
- Surgical face mask over nasal prong $0_2$ on patient for transport or if no closed care space available, provided patient closely monitored for respiratory distress or vomiting

Early confirmation of goals of care

Early CXR, POCUS, lab work

ABG if possible – compare with $SpO_2$ Venous gas useful for acid-base, $CO_2$

### Oxygenation ladder
****Try proning if needing ↑$O_2$****

1) **Nasal prongs/cannulae: 1-6 L/min**
2) **Simple face mask: 6-20 L/min**
3) **Non-rebreather: 10-15 L/min**
4) **Oxymask: 1-15 L/min (if available)**

Consider $SpO_2$ target 88-92%

Minimize flow titrated to $SpO_2$

Depending on resources and patient mobility, consider early proning if $0_2$ > 6L/ minute.

Assist the patient to move
- 30-120 minutes each position
- fully prone
- right side
- sitting up 30-60 deg
- left side

Monitor $SpO_2$ with each change

Pillows under torso to aid comfort when fully prone.

### Early ICU consultation & transport call

For transport, follow the local facility procedures. RUDi or ROSe virtual link can assist with decision making. Depending on patient severity and availability of HFNC for transport, patient may require early intubation for transfer – consider goals of care prior to commencing & discuss on PTN call. Decision re intubation now, or later, with transport team.

### 5) Trial of HFNC (e.g. Optiflow, Airvo)

Probably commits patient to intubation if being transferred, as per BCEHS. Discuss with patient and/or family prior to commencing

### PPE level (AGMP):

- Fit-tested N95 respirator, in addition to gloves, gown and eye protection
- Place in negative pressure isolation room if available
- Dedicated single room with closed door is an alternative

### Clinical features of severe COVID-19 disease:

- ↑↑ work of breathing, overt distress, impending exhaustion
- Hypoxemia refractory to increased FiO2
- Hypercarbia with associated acidosis

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

- Excessive work of breathing/exhaustion
- Co-existing shock, altered LOC, multi-system organ failure
- Failure of oxygenation

**Optimize physiology (e.g. haemodynamic or respiratory) Pre-intubation if possible**

Pressor – now/ready? Cautious fluids?

### Suggested initial generic labwork, if available:

CBC, lytes, BUN creat, lactate, venous gas, CRP, glucose, lipase, liver function, troponin, D-dimer, fibrinogen, LDH, ferritin, blood cultures, urine culture, NP swab

**Abbreviations:**

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|---|---|
| ABG | Arterial blood gas |
| AGMP | Aerosol Generating Medical Procedure |
| CXR | Chest X-Ray |
| FiO2 | Fraction of inspired oxygen |
| HFNC | High Flow Nasal Cannula |
| LOC | Level of Consciousness |
| ROSe | Rural outreach support |
| RUDi | Rural urgent doctor in-aid |
| POCUS | Point-of-Care Ultra Sound |
| PPE | Personal protective equipment |
| PTN | Patient transport services |
| Sp02 | Oxygen saturation |

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