CCRC

OSLER COVID CLINICAL RESPONSE COMMITTEE

Non-invasive Ventilation and High Flow Nasal Cannula **13 April 2020**

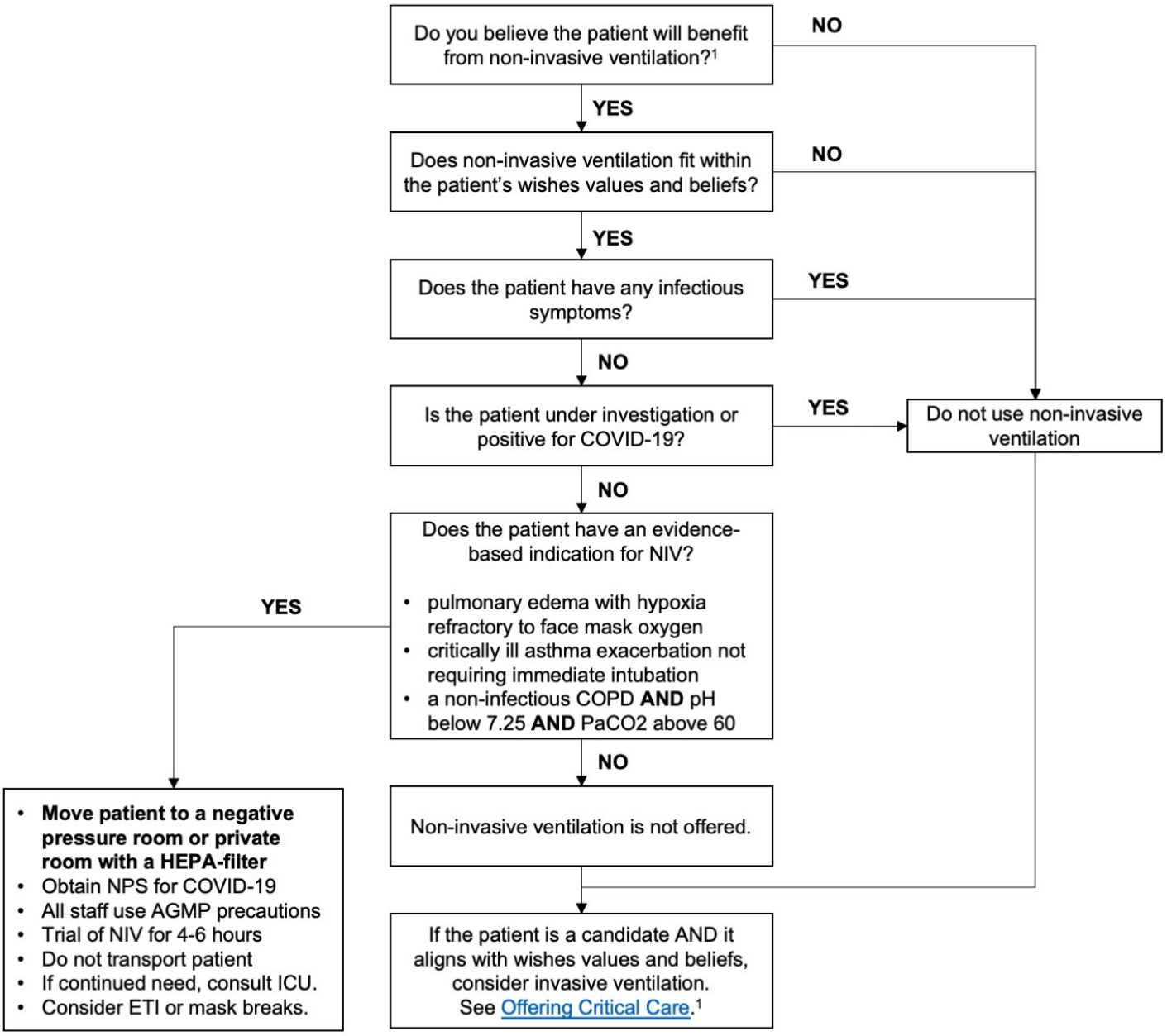
15 May 2020

The COVID Clinical Response Committee (CCRC) has been asked to comment on the use of non-invasive ventilation and high-flow nasal cannula. Many of us are faced with questions about the use of non-invasive ventilation daily.

1. **Any use of non-invasive ventilation (NIV = CPAP or BiPAP) or high flow nasal cannula (HFNC) is considered an aerosol-generating medical procedure (AGMP).**
2. **Every use of NIV or HFNC (including home NIV) requires the following mandatory precautions:**
    a. **All patients must receive a nasopharyngeal swab (NPS) for COVID-19 regardless of symptoms at initiation.**
    b. **Use should be in AIIR (airborne infection isolation room) or NRPR-HEPA (negative relative pressure room with HEPA-filter), if available. The patient will not be transported while on these therapies.**
    c. **AGMP (Airbourne/contact/droplet) precautions must be undertaken for all staff entering the room.**
    d. **If HFNC is in use, the patient should wear a surgical mask if possible.**
3. **NIV is currently <u>not permitted</u> for use in any patients with suspected or confirmed COVID.**
4. **NIV may be used for evidence-based indications for a brief period of time in the ED (typically 4-6 hours) which include only (please review flow-chart below):**
    a. **Cardiogenic pulmonary edema without suspicion of infection**
    b. **Critically ill asthmatic not requiring immediate intubation**
    c. **Non-infectious exacerbation of chronic obstructive pulmonary disease (COPD).**
5. **If the patient cannot be liberated from NIV following initial therapy (4-6 hours), critical care consultation is indicated.**
6. **If the patient is a candidate for intubation (i.e. it is on offer), high-flow nasal cannula (HFNC) may be used for COVID pneumonia if ordered by a critical care physician.**
7. **Home CPAP or BiPAP therapy:**
    a. **Many patients can have home CPAP or BiPAP suspended for 3-4 days without harm.**
    b. **If the hospital stay is longer or there are questions, we recommend a respirology consultation and a COVID swab be performed.**
    c. **If the patient requires ongoing therapy, they require the same precautions as above.**
    d. **If the patient has two negative swabs 14 days apart with continued therapy, they may be converted to a room with contact/droplet precautions after Infection Prevention and Control (IPAC) consultation.**
8. **We recommend IMT and CCRC both investigate the utility of helmet-based non-aerosol generating non-invasive therapy as a way to mitigate the potential for harm.**

This decision will be revisited as requested as needed.

Non-invasive Ventilation (NIV) (CPAP / BiPAP)



[1]See Offering Critical Care. If the patient will not benefit from a therapy, it should not be offered. NIV is not offered for palliative purpose (to relieve symptoms only) if the goal is patient comfort. There is no good evidence for this and a narcotic-based symptom strategy is preferred.

Ethical Foundations

This Policy is informed by the following ethical principles and values, recognizing there are inherent tensions between these principles that require careful balancing and discernment.

1. **Beneficence and appropriate care for patients:** Patients rely on healthcare providers to propose treatments that are evidence-based, and that minimize harms and maximize benefits. Even in a pandemic or outbreak situation, every effort should be made to propose treatment within the standard of care to promote optimal outcomes for patients.
2. **Protection of healthcare providers:** Duty of care ensures that healthcare providers will provide vital treatment to patients in need and reciprocity ensures that healthcare providers are protected appropriately when providing those treatments. This is crucial support in the context of a pandemic. When we protect the health and well-being of our health care providers we ensure our capacity to protect our patients and community. Standards of care will vary according to the current context and we rely on expert judgement and scientific evidence to minimize the risk of infection to healthcare providers and others.
3. **Preservation of PPE:** Personal Protective Equipment is essential to protect healthcare providers while they meet their duty of care to patients in the context of a pandemic. PPE supplies will always be conserved and when necessary and in Stage 2 of the PPE Ethical Framework risk assessment will direct the use of PPE towards protect healthcare professionals providing high-risk procedures and the minimization onward transmission.
4. **Balancing consistency and emerging evidence/innovation:** In an evolving and dynamic situation like a pandemic, guidelines that support consistent practice are essential to ensure trust, support efficiency and minimize conflict. However, new evidence will be emerging constantly that may challenge the established guidelines. In addition, the clinical experience of frontline staff may help to refine and enhance the standard of care. This should be evaluated systematically.

The ethical foundations were developed in Hamilton (SJHH/HHS) and approved by MAC in Hamilton on April 2, 2020. They were adapted for the Osler Context.

Rationale

1. Non-invasive ventilation (NIV) and High-Flow Nasal Cannula (HFNC) may increase the dispersion of the virus and are highly discouraged due to possible increased risk of transmission.
2. Outside of COPD exacerbation or acute cardiogenic pulmonary edema or critically ill asthmatic, NIV is associated with a high failure rate and the need for emergent intubation in the setting of ARDS or hypoxemic respiratory failure.
3. Negative pressure rooms and single rooms with HEPA-filters are in short supply. Both types of rooms are frequently required for aerosol-generating medical procedures (AGMP) in the setting of COVID-19.