

COVID-19: Withdrawal from Life Support in the ICU

Best Practice Guidelines

Background:

The goal of this guidelines is not to hasten nor to postpone death.¹ In other words, the goal is to provide adequate comfort avoiding inappropriate prolongation of the dying process.^{2 3}

The aim of these guidelines are to:

1. Provide guidance on the withdrawal from life support process
2. Facilitate quality comfort care during the dying process of COVID+ patients on life support
3. Attend to the needs of patients' loved-ones based on the most current CCHS visitation guidelines
4. Protect healthcare workers from contracting the infection and attend to their emotional needs

The principal clinical feature of patients with severe COVID disease is the development of ARDS. It is anticipated patients to have severe dyspnea and anxiety during withdrawal from life support. Higher doses of medications than usual are anticipated during this process to achieve comfort.⁴

The language used to describe and implement this care is important. It is not uncommon to call this process "withdrawing care". Best practice dictates referring to this process as "withdrawing life sustaining therapies". Throughout this document the word "family" refers to patient's loved-ones.

Family Visitation:

Depending on Operational level and PPE status, in-person visitation may be permitted as an exception. An alternative is to offer video-conference to loved-ones, considering that it may be more disturbing than helpful. Resources like Spiritual Care are available to support loved-ones virtually.

After Decision of Withdrawal from Life Support:

- 1) Consider using COVID Compassionate Weaning from Life Support – Roles and Checklist (Fig. 1)
- 2) Epic documentation:
 - a. Verify or update code status to DNR-CC
 - b. Consider using "COVID Comfort Care" order set
- 3) Update all team members involved in the care of the patient
- 4) Nursing to initiate [End of Life Comfort Care Protocol](#) (Code Calm - Purple Heart)
- 5) Formulate medical plan, considering minimizing number of caregivers in the room:
 - a. Withdrawal from Life Support order plan
 - b. Pharmacologic treatment plan
 - c. Weaning from mechanical ventilation plan
- 6) Hospice recommendations

Suggested Withdrawal from Life Support order

1. Assure patient is comfortable with symptom control
2. Discontinue: lab draws, radiologic studies, insulin, DVT prophylaxis, nutrition
3. Remove unnecessarily lines
4. Cancel alarms (leave telemetry on)
5. Deactivate VAD/ICD/PM
6. Discontinue CVVHD
7. Discontinue ECMO
8. Discontinue vasopressors/inotropics
9. Weaning from Mechanical Ventilation without extubation

Pharmacologic Treatment Plan

The aim of pharmacologic treatment is to control symptoms like dyspnea, agitation, anxiety, pain and respiratory secretions that impairs comfortable breathing. The pharmacologic treatment is carefully individualized, assuring the use of sedatives or opioids with the intent to relieve suffering, even if they might hasten death. It is not appropriate to administer sedatives or opioids in absence of discomfort.¹

Objective scales are used to assess and document symptoms, and also to guide the administration of drugs

1. Consciousness and confusion/delirium:
 - Glasgow Coma Score (GCS)
 - Confusion Assessment Method (CAM-ICU)
2. Pain:
 - Conscious patient: Self-reported visual analog scale
 - Unconscious patient: Nonverbal Pain Assessment Tool (Fig.2)⁵
3. Respiratory Distress:
 - Conscious patient: Self-reported visual analog scale
 - Unconscious patient: Respiratory Distress Observation Scale (Fig. 3)⁶
4. Agitation:
 - Richmond Agitation Sedation Scale (RASS)⁷

Conscious patient, (awake and oriented)

1. Achieve adequate dyspnea control
 - Assess dyspnea by self-reported visual analog scale
 - If the patient is on opioid infusion and dyspnea is controlled: continue the infusion
 - If the patient is on opioid infusion and dyspnea is not controlled, use PRN doses and titrate the infusion accordingly
 - If the patient is not on opioid infusion and has dyspnea, consider starting an infusion of opioids and titrate to minimal dose to achieve comfort
 - Consideration: Morphine has additive dyspnea relief effect compared with fentanyl
2. Achieve adequate level of analgesia
 - Assess pain by self-reported visual analog scale
 - If the patient is on opioid infusion and pain is controlled: continue the infusion
 - If the patient is on opioid infusion and pain is not controlled, use PRN doses and titrate the infusion accordingly
3. Achieve adequate level of anxiolysis/agitation control
 - Assess agitation by RASS
 - Achieve dyspnea and pain control before treating anxiety or agitation
 - Consider PRN doses of a short acting benzodiazepine (BZD) (eg. Lorazepam or Midazolam), haloperidol or Chlorpromazine despite adequate dyspnea and pain control for anxiety/agitation
 - Consider a titratable BZD infusion, only if requiring frequent PRN doses of benzodiazepines (Determine the initial infusion dose based on the hourly requirement of PRN doses)
 - Dexmedetomidine is an acceptable alternative, especially if patient was on it. ⁸

Disoriented or unconscious patient

1. Achieve adequate comfort dyspnea control
 1. Assess dyspnea by RDOS
 2. If the patient is on opioid infusion and dyspnea is controlled: continue the infusion
 3. If the patient is on opioid infusion and dyspnea is not controlled: give PRN pushes of opioids and titrate the infusion accordingly

4. If the patient is not on opioid infusion and has dyspnea, consider starting an infusion of opioids and titrate to minimal dose to achieve comfort
5. Consideration: Morphine has additive dyspnea relief effect compared with fentanyl
2. Achieve adequate pain control
 1. Assess pain by NPAT
 2. If the patient is on opioid infusion and pain is controlled: continue the infusion
 3. If the patient is on opioid infusion and pain is not controlled: give PRN pushes of opioids and titrate the infusion accordingly
 4. If the patient is not on opioid infusion and is in pain, consider starting an infusion of opioids and titrate to minimal dose to achieve comfort
3. Achieve adequate level of anxiolysis/agitation control
 1. Assess agitation by RASS
 2. Achieve dyspnea and pain control before treating anxiety or agitation
 3. Recommend against using sedative infusion routinely
 4. If the patient is not on a sedative infusion:
 - Disoriented or unconscious patients often do not require BZD for anxiolysis/agitation control if adequate pain/dyspnea control has been achieved
 - Consider using PRN pushes of a short acting BZD or haloperidol if patient is agitated despite addressing above issues
 5. If the patient is on a sedative infusion:
 - Titrate down the sedative infusion to discontinuation or the lowest dose (to avoid withdrawal) while increasing opioids as needed for comfort
 - Use PRN pushes of a short acting BZD or haloperidol if needed after sedative infusion is discontinued
 6. Dexmedetomidine is an acceptable alternative, especially if patient was on it. ⁸

For PRN doses, account for length of the tubing and flush the drugs with Normal Saline flush.

Ventilator Withdrawal

The process of terminal weaning from mechanical ventilation is individualized to keep patient comfortable.⁹ Usually the goal is to extubate the patient to room air to allow the patient to be free from an unnatural device. However compassionate extubation is not recommended for COVID patients because it is considered a procedure that generates aerosols.¹⁰

Before weaning from mechanical ventilation, the physician assesses and documents the patient has intact respiratory drive and acceptable muscle strength. If the patient has been on neuromuscular blockade, the team tests and documents paralysis has been reversed by observing spontaneous breathing and/or by obtaining a Train of Four $\geq 3/4$.⁹ If respiratory drive is suppressed by sedation, sedation should be held until spontaneous breathing is present before proceeding. It is important to optimize the patient before proceeding treating volume overload if present, and considering glycopyrrolate to decrease respiratory secretions.

Once patient has spontaneous breathing, ventilator support is decreased in step-wise fashion, giving time for the patient to adjust to each step, and receive medication if needed to assure comfort throughout the process. The first step is to decrease FiO₂ to 21%, followed by decreasing PEEP by 5 cm H₂O every 5 minutes, until 0 cm H₂O (or lowest PEEP setting machine allows) while titrating medications for symptom management. Next, decrease the respiratory rate to 4 breaths per minute. The Respiratory Distress Observation Scale is used to objectively assess respiratory distress and titrate medications to alleviate dyspnea. When patient is comfortable on FiO₂ 21%, PEEP of 0 and RR of 4, maintain the connection between the ventilator and the endotracheal tube or tracheostomy until death occurs (asystole on telemetry monitor). After death, turn off the ventilator, clamp endotracheal tube, disconnect ventilator, and remove endotracheal tube. Cap tracheostomy tube after removing ventilator with Universal 14mm redcap plug or Bacterial/Viral HMEF.

If the patient is expected to survive hours to days on above ventilator settings, it is recommended to place a hospice referral. Consider compassionate extubation taking high aerosolization risk precautions.

After death of the patient consider conducting "[The Pause](#)", to honor the patient and to honor the team outside the patient's room. The Pause App is available for Apple and Android devices. (Fig. 4)

Hospice Recommendations

After hospice consents are signed, symptomatic patients are admitted to hospice in the hospital. Home hospice is possible for patients with COVID. The hospice team will coordinate discharge home.

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Fig 1. COVID Compassionate Weaning from Life Support - Roles and Checklist



Cleveland Clinic



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Center for End of Life Care

COVID - Compassionate Weaning from Life Support

Roles

Physician/LIP

- Initiate COVID Comfort Care order set and assess for additional medication needs outside of the order set
- Update family about plan for withdrawal from life support. Provide information about timeline and process as needed.
- Deactivate assistive devices and other forms of life support (CRRT, PPM/ICD, ECMO, VAD)
- Identify unique patient and family needs that require additional psychosocial virtual support (Social Worker, Chaplain, Child-Life)

Nursing

- Ensure required medications are immediately available at the bedside for administration
- Identify patients with complex sedation/pain needs
- Coordinate medication administration with decrease in ventilator settings
- Identify unique patient and family needs that require additional virtual psychosocial support (Social Worker, Chaplain, Child-Life)
- Identify co-RN to assist with withdrawal from life support process

Respiratory Therapist

- Weaning from mechanical ventilation
- Maintain ventilator vs. compassionate extubation as discussed with the team
- After death, turn off the ventilator, clamp endotracheal tube, disconnect ventilator, and remove endotracheal tube. Cap tracheostomy tube after removing ventilator with Universal 14mm redcap plug or Bacterial/Viral HMEF.
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Critical Care Pharmacist

- Review comfort care medications and order set during the huddle
- Assist with complex needs prior weaning of life support for medication discontinuation and/or initiation (i.e. paralytics, higher than normal pain/sedation requirements)



COVID - Compassionate Weaning from Life Support Checklist

- Virtual or in-person family meeting
- DNR Status updated to DNR-CC
- LIP lead identified for escalation of concerns: _____
- LIP: deactivation/discontinuation of devices and medications as planned (i.e. ICD/PPM, CRRT,NMB)
- LIP orders "COVID Comfort Care Order Set" in Epic
- Social Work, Child-Life contacted/scheduled as indicated
- Spiritual care notified (if needed). All religious rite/practices honored per family request.
- Lifebanc Coordinator (7pm-7am) or Family Liaison (7am-7pm, main campus only) notified
- All team members present, request anticipated challenges
- LIP share with the team time line of steps for withdrawal from life support
 - If patient is expected to survive hours to days, consider hospice referral and compassionate extubation
- Address all patient symptoms/signs for comfort, all meds at bedside
 - Patient not paralyzed
 - Dyspnea (continuous and/or prn opioid for air hunger)
 - Pain (continuous and/or PRN)
 - Agitation/anxiety (continuous and/or PRN)
 - Secretions, nausea/vomiting (PRN)
- "Nursing End of Life Comfort Care" Protocol initiated (review protocol online via PPM)
 - Code Calm** activated-Purple Heart signage at patient's bed space
- Bedside monitor placed in Comfort Care Mode
- Conduct "[The Pause](#)" at time of death
- After death: turn off the ventilator, clamp endotracheal tube, disconnect ventilator, and remove endotracheal tube
- Provide post-mortem care (cover decedent with a sheet)
- Call loved-ones to inform time of death and next steps

RN: _____ PharmD: _____ LIP: _____

RT: _____ Others: _____

Fig 2. Nonverbal Pain Assessment Tool (NPAT-Adult)

NONVERBAL PAIN ASSESSMENT TOOL (NPAT-ADULT)				
Is patient able to make vocalizations or sound cues?				
YES	Score under the "YES" or "NO" column Add scores for total (range 0-10)			NO
SCORE	EMOTION	<i>An affective response to a situation</i>	EMOTION	SCORE
	0	Smiling, calm, relaxed, or none due to coma state or analgesia	0	
	1	Anxious, irritable, withdrawn; closes eyes; does not engage physical environment	1	
	2	Tearful, crying or uncooperative	2	
	MOVEMENT	<i>Change in placement and position of the body when not engaged in any care activities</i>	MOVEMENT	
	0	None; sleeping comfortably; no unusual movement or none due to coma state or analgesia	0	
	1	Restless or slow, decreased movement; reluctant to move; muscle tenseness	2	
	2	Rigidity, stiffening or increased motion, tossing, turning, flapping of arms	3	
	VOCAL CUES	<i>Nonverbal vocalizations or sound cues from patient</i>	VOCAL CUES	
	0	None	0	
	1	Whimpering, moaning, sighing		
	2	Screaming, crying out		
	FACIAL CUES	<i>Expressions on patient's face</i>	FACIAL CUES	
	0	Relaxed, calm expression or none due to coma state or analgesia	0	
	1	Drawn around the mouth and eyes; narrowed eyes	1	
	2	Wincing, grimacing; clenched teeth; tightened lips; furrowed brows	2	
	POSITIONING/GUARDING	<i>Body response implying a protection of the body from contact with an external stimulus</i>	POSITIONING/GUARDING	
	0	Relaxed body or none due to coma state or analgesia	0	
	1	Guarding, tense	2	
	2	Jumps when touched; clutching siderails; withdraws when touched	3	
	TOTAL			
	<i>Choose only ONE behavior per category</i>			

ADDENDUM 15.29A

Fig 3. Respiratory Distress Observation Scale (RDOS)

Respiratory Distress Observation Scale [®] (Margaret L. Campbell, PhD, RN 2/19/09)				
Variable	0 points	1 point	2 points	Total
Heart rate per minute	<90 beats	90-109 beats	≥110 beats	
Respiratory rate per minute	≤18 breaths	19-30 breaths	>30 breaths	
Restlessness: non-purposeful movements	None	Occasional, slight movements	Frequent movements	
Paradoxical breathing pattern: abdomen moves in on inspiration	None		Present	
Accessory muscle use: rise in clavicle during inspiration	None	Slight rise	Pronounced rise	
Grunting at end-expiration: guttural sound	None		Present	
Nasal flaring: involuntary movement of nares	None		Present	
Look of fear	None		Eyes wide open, facial muscles tense, brow furrowed, mouth open, teeth together	
Total				

Instruction for use:

1. RDOS is not a substitute for patient self-report if able.
2. RDOS is an adult assessment tool.
3. RDOS cannot be used when the patient is paralyzed with a neuromuscular blocking agent.
4. RDOS is not valid in bulbar ALS or quadriplegia.
5. Count respiratory and heart rates for one-minute; auscultate if necessary.
6. Grunting may be audible with intubated patients on auscultation.
7. Fearful facial expressions:



Cutoff of ≥4⁶

Fig 4. The Pause App



The Pause

The Pause is a practice implemented after the death of a patient, and offers closure to the medical team.



