

 <p>Henry Ford Health System</p>	<b>Policy Name/Subject:</b> HELIOS Withdrawal of Mechanical Ventilation	<b>Policy No:</b>
	<b>Document includes:</b> <input checked="" type="checkbox"/> Policy <input type="checkbox"/> Procedure <input type="checkbox"/> Other:	
	<b>Applies to:</b> <input type="checkbox"/> All HFHS <input type="checkbox"/> Business Unit: <input type="checkbox"/> Service Line: <input type="checkbox"/> Dept:	
	<b>Category:</b>	<b>Current Approval Date:</b>
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	<b>Last Revision Date &amp; Key Change(s):</b>	

**Policy**

The purpose of this document is to provide clinicians with guidelines to aid in the withdrawal of mechanical ventilation (WMV) in the dying patient who has a DNAR status. This guideline is to be used when death is the expected outcome of removal of mechanical ventilation. The patient may live for an indeterminate amount of time following ventilator withdrawal. It is important to remember that the withdrawal of the ventilator constitutes the removal of a technologic intervention and comfort care measures should be initiated/continued.

Comfort care involves discontinuing diagnostic or therapeutic procedures that do not contribute to the patient’s comfort at the end of life. In addition, comfort care ensures that adequate amounts of analgesia and symptom relief medication are given to control pain, dyspnea, anxiety, or other uncomfortable symptoms.

**Decision Making**

- A. The decision to withdraw mechanical ventilation must be made in accordance with the Withdrawal, Withholding or Termination of Life-Sustaining Medical Treatment policy.
- B. The prognosis, options and goals of care must be fully explored with the patient/legal surrogate/family and a consensus reached that WMV with expected death is the treatment course which is consistent with the patient/family’s wishes. The patient’s attending physician or physician representative, nurse, social worker, chaplain and palliative care/hospice representative may be included in the discussion. Related issues to be discussed prior to WMV include but are not limited to:
  - a. Withdrawal of artificial hydration/feeding
  - b. Withdrawal of blood pressure support
  - c. Withdrawal of the endotracheal tube after WMV and continued use of supplemental oxygen

**KEY POINT:** There is no compelling ethical or medical rationale for continuing any of these treatments once a decision has been made to WMV.

**Documentation**

- A. Documentation of the discussion held with the patient or patient’s surrogate decision maker leading up to WMV should be documented by the physician.
- B. An order must be written to discontinue the mechanical ventilation.
- C. Additional orders for post extubation care will be written using standards listed in the “Comfort Measures Order Set”.

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**Preparation**

- A. Notify a Respiratory Therapist of plan for removal of mechanical ventilation and collaborate to determine appropriate timing.
- B. Determine if family/surrogate would like a chaplain or other clergy to be present before or during WMV.
- C. Consider a hospice referral prior to WMV.
- D. Coordinate time with family and allow the family the option to be present.
- E. Ensure there is a DNAR order.
- F. Prepare family/patient for what may occur during withdrawal of mechanical ventilation including changes in breathing patterns and secretions. Explain how symptoms will be managed with medications and non-pharmacologic measures. Discuss potential outcomes of withdrawal of mechanical ventilation with families including death within minutes, death within hours to days, or stable cardiopulmonary function leading to a different set of care plans, including possible hospital discharge. Acknowledge uncertainty in prognostication.
- G. Discontinue interventions that do not provide comfort including:
  - a. Routine evaluations (e.g. blood draws and radiographs).
  - b. Medications (eg antibiotics, vasopressors), supportive measures (eg nutrition or iv fluids), and interventions (eg dialysis, restraints).
  - c. Routine monitoring of vital signs. Minimize monitor alarms and use the comfort care monitor screen when possible.
- H. Discontinue neuromuscular blocking agent prior to WMV. Document the return of neuromuscular function prior to WMV.
- I. Ensure that analgesics and sedatives are ordered. If there is uncertainty by the primary team regarding symptom management, please consider consultation of the Palliative Medicine Service. See section on symptom management below.
- J. Strongly consider the presence of physician or advanced practice provider at the time of extubation to help assess and manage symptoms.

**Symptom Management**

A. Pain: For patients not already on continuous sedation and pain regimens, hydromorphone or morphine may be used; only one type of regimen should be selected. Hydromorphone should be ordered using the PCA (2 mg/mL D5W) order set, whereas morphine can be provided as a drip (1mg/mL D5W in 100 mL bag) . Consider hydromorphone for patients in renal failure or who are expected to transition to hospice care. Administer initial hydromorphone dose of 0.5-2 mg IV bolus (or morphine 2-10mg IV bolus) then start a continuous infusion at 50% of the bolus dose/hr prior to extubation. Additionally, write for a prn IV bolus dose to address breakthrough pain/discomfort. Rapid dose escalation may be needed for refractory symptoms. Assess the patient’s current opioid requirements and level of comfort to help determine dosing.

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For patients already on continuous opioid infusions, consider using the existing opioid (eg fentanyl) rather than converting to another agent. Higher bolus and infusion doses may be appropriate for patient’s requiring frequent intermittent dosing or already on continuous sedation. Consider a Palliative Medicine Consult to ensure that dosing is appropriate in patients with complex or high opioid requirements.

**KEY POINT:** Consider hydromorphone for patients in renal failure. This avoids build up of metabolites and resultant side effects seen with morphine.

- B. Nausea: For patients with nausea or emesis, start haldol 1mg IV q4 hours as needed.
- D. Anxiety and agitation: Typical starting doses of Lorazepam are 1-2 mg IVP q2 hours. For patients already on continuous benzodiazepine infusions, consider using the existing benzodiazepine (eg midazolam) rather than converting to another agent.
- F. Management of airway secretions: For patient’s with secretions, start glycopyrrolate 0.4 mg IV q6 hours around the clock. Give first dose prior to extubation.

**KEY POINT:**  
Brain death patients will not need pre-medication.  
Comatose patients may not need pre-medication.

**Procedure**

- A. Patients, who are being administered neuromuscular blocking agent at the time of WMV, must have these agents stopped prior to removal of ventilatory support. Document the return of neuromuscular function before withdrawal can occur.
- B. Refer to RT policy for removal of mechanical ventilation

**KEY POINT:** Removal of mechanical ventilation does not always entail removal of the endotracheal tube. Certain conditions such as upper airway obstruction or secretion clearance may necessitate maintaining the endotracheal tube.

- C. Apply supplemental oxygen if chosen during planning discussion. Oxygen considerations:
  - 1. Oxygen may promote comfort in patients who can experience distress.
  - 2. Oxygen may prolong the dying process in patients who do not require it for comfort
- D. Assess patient for post extubation stridor. If stridor present consult with MD and/or RT for administration of racemic epinephrine or moist aerosol mask.

**Disposition:**  
Refer to comfort care order set for continuation of care guidelines. The patient who has undergone WMV as an end of life measure is a low priority for an ICU bed and may be

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transferred to a hospice or medical-surgical bed as appropriate. If patient transfers to a general practice unit, then orders will need to be rewritten per general practice unit policies.

**Reference(s)/Source(s)**

1. Removal of Mechanical Ventilation in the Dying Patient. Guidelines for physician staff. Froedtert Hospital, Milwaukee, Wisconsin. Palliative Care and Critical Care Committees.
2. Ventilator Withdrawal: It's not simply pulling the plug. Margaret Campbell, APRN, BC, FAAN. October 7, 2003.
3. How to Withdraw Mechanical Ventilation, A systematic review of the literature. Margaret Campbell, PhD, RN, FAAN. AACN Advanced Critical Care, Volume 18, #4 pp397-403, 2007.
4. Why Opioids and Sedatives May Prolong Life Rather Than Hasten Death After Ventilator Withdrawal in Critically Ill Patients. Bakker, Jansen, Lima & Kompanje. American Journal of Hospice and Palliative Medicine. Vol. 25, #2, April/May 2008. 152-154.
5. Information for Patients and Families About Ventilator Withdrawal, 2nd Edition. Von Gunten CF, Weissman DE. Fast Facts and Concepts. July 2005; 35. Available at: [http://www.eperc.mcw.edu/fastfact/ff\\_035.htm](http://www.eperc.mcw.edu/fastfact/ff_035.htm)

**Attachment(s)** - Only use attachments when links are not possible

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