PALLIATIVE CARE NETWORK OF WISCONSIN

FAST FACTS AND CONCEPTS #33
VENTILATOR WITHDRAWAL PROTOCOL

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Introduction This is the first part of a three-part series on withdrawing ventilators in patients expected to die. *Fast Fact* #34 will review use of sedating medication for ventilator withdrawal and *Fast Fact* #35 will review information for families.

Once it is decided that further aggressive medical care is incapable of meeting the desired goals of care for a ventilator-dependent patient, discussing ventilator withdrawal to allow death is appropriate (see *Fast Fact* #16). Such a decision is never easy for family members, doctors, nurses, and other critical care staff. All members of the care team should be involved and apprised of the decision-making process and have the opportunity to discuss the plan of care.

Options for Ventilator Withdrawal Two methods have been described: immediate extubation and 'terminal weaning.' The clinician's and patient's comfort, and the family's perceptions, should influence the choice. In immediate extubation, the endotracheal (ET) tube is removed after appropriate suctioning. Humidified air or oxygen is given to prevent the airway from drying; comfort medications are administered. This is the preferred approach to relieve discomfort if the patient is conscious, the volume of secretions is low, and the airway is unlikely to be compromised after extubation. In terminal weaning, the ventilator rate, positive end-expiratory pressure (PEEP), and oxygen levels are decreased while the endotracheal tube is left in place. Terminal weaning may be carried out over a period of as little as 30 to 60 minutes (see reference 3 for a protocol). If the patient survives they can be extubated with ongoing symptomatic care. If it is decided to leave the endotracheal tube in place (to, for instance, ensure the patency of the upper airway) a Briggs T-piece can be placed.

Prior to Immediate Ventilator Withdrawal

1. Encourage family to make arrangements for special music or rituals or support during and following the procedure. (See *Fast Fact* #35).
2. Counsel families on potential outcomes following withdrawal.
3. Document clinical findings, discussion with families/surrogates, and goals of care.
4. Ensure that all monitors and alarms are turned off. Ensure that respiratory therapy or nursing staff is assigned to override alarms that cannot be turned off.
5. Remove restraints and unnecessary medical paraphernalia.
6. Turn off blood pressure support and paralytic medications; discontinue other life-sustaining treatments (e.g. artificial nutrition/hydration, antibiotics, dialysis).
7. Maintain intravenous access for administration of sedating medications.
8. Clear a space for family access to the bedside. Invite family into the room if they wish to be present. If the patient is an infant or young child, offer to have the parent hold the child.
9. Establish adequate symptom control prior to extubation (See *Fast Fact* #34).
10. Have a syringe of an additional sedating medication at the bedside (midazolam, morphine, or lorazepam) to use in case distressing tachypnea or other symptoms.

At the time of ventilator withdrawal

1. Once you are sure the patient is comfortable, set the FiO_2 to 21% (room air); observe for signs of respiratory distress; adjust medication as needed to relieve distress before proceeding further.
2. If the patient appears comfortable, prepare to remove the ET tube; try a few minutes of "no assist" ventilation before the ET tube is removed.
3. A nurse or respiratory therapist should be stationed at the opposite side of the bed with a washcloth and oral suction catheter.

4. When ready to proceed, deflate the ET tube cuff. If possible, someone should be assigned to silence, turn off the ventilator, and move it out of the way. Once the cuff is deflated, remove the ET tube under a clean towel which collects most of the secretions and keep the ET tube covered with the towel. If oropharyngeal secretions are excessive, suction them away.
5. The family and the nurse should have tissues for extra secretions, and for tears. The family should be encouraged to hold the patient's hand and provide assurances to their loved one.
6. Be prepared to spend additional time with the family discussing questions concerns. After death occurs, encourage the family to spend as much time at the bedside as they require; provide acute grief support and follow-up bereavement support

References

1. Marr L, Weissman DE. Withdrawal of ventilatory support from the dying adult patient. J Supp Onc. 2004; 2:283-288.
2. Adapted from: Emanuel LL, von Gunten CF, Ferris FF, eds. Module 11: Withholding and Withdrawing Therapy. *The EPEC Curriculum: Education for Physicians on End-of-life Care.* Chicago, IL: The EPEC Project; 1999. http://www.EPEC.net.
3. Rubenfeld GD, Crawford SW. Principles and practice of withdrawing life-sustaining treatment in the ICU. In *Managing Death in the Intensive Care Unit*. Curtis JR and Rubenfeld GD, eds. New York, NY: Oxford University Press; 2001: pp127-147.

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