Withdrawal of life support is an option for patients with prolonged mechanical ventilation when all attempts at weaning have failed and it is deemed futile to continue the therapy, when quality of life is unacceptable, or when it is perceived that the patient is suffering. The purpose of this article is to present the nursing aspects of managing an adult patient undergoing the withdrawal of mechanical ventilation as an end-of-life procedure. Withdrawal of mechanical ventilation is a complex and difficult process that requires meticulous planning and management. Conferences with the patient and the patient’s family are critical to addressing emotional support and ensuring that everyone understands the process and is provided an opportunity to gather information. Clear communication with patients and their families can ensure that the process goes smoothly. Having an organized approach can ensure that patients experience a peaceful death and staff experience closure regarding the event. (Critical Care Nurse. 2012;32[3]:14-24)
nursing practice. In this article, I discuss the practical nursing aspects of managing an adult patient undergoing the withdrawal of mechanical ventilation as an end-of-life procedure. A case study is presented to illustrate the concept of withdrawal of mechanical ventilation. The process of decision making and the process of withdrawing mechanical ventilation also are examined.

Case Study
Mr B was a 73-year-old obese man. He had a long history of chronic obstructive pulmonary disease associated with smoking 2 packs of cigarettes a day for 40 years. The week before his admission to the hospital, Mr B experienced a “flu-like” illness with fever, chills, malaise, anorexia, diarrhea, nausea, vomiting, and a productive cough with thick, brownish purulent sputum. He was initially admitted to the progressive care unit with respiratory insufficiency due to pneumococcal pneumonia. Mr B’s condition continued to deteriorate, and he was transferred to the intensive care unit for intubation and mechanical ventilation.

Acute respiratory failure developed due to the pneumonia. Mr B was intubated and started on mechanical ventilation. Tube feedings were started. For the next 7 days, Mr B was maintained on mechanical ventilation and aggressive treatment was initiated. On the seventh day after his admission to the intensive care unit, he was awake and alert and following commands appropriately. His lungs sounds were clear with minimal secretions and his body temperature was normal. The decision was made to wean Mr B off of mechanical ventilation. During the next several days, multiple attempts to wean Mr B were made. Unfortunately each attempt was unsuccessful, with no progress evident.

Mr B was diagnosed with ventilator dependence requiring prolonged mechanical ventilation. On the twelfth day of his admission, a percutaneous tracheostomy was performed and he was moved to the progressive care unit for long-term ventilator management. Mr B’s care was coordinated by an interdisciplinary weaning team that consisted of a physician; a clinical nurse specialist; a respiratory therapist; a dietitian; physical, occupational, and speech therapists; a case manager/discharge planner; a social worker; and a spiritual care advisor. A family conference was held with Mr B and his family (2 adult daughters and an adult son) to review the plan of care and clarify the goals of care. Mr B clearly indicated (and his family agreed) that he wanted to be weaned from mechanical ventilation. Each member of the team answered the patient’s and his family’s questions. After the conference, a collaborative weaning plan was implemented.

Discussion
Ventilator dependence is a secondary disorder that occurs when a patient requires assisted ventilation longer than expected given the patient’s underlying condition, and usually at least 1 weaning attempt has failed. Such dependence is the result of complex medical problems that do not allow the normal weaning process to take place in a timely manner.

Contributing Factors
A wide variety of physiological and psychological factors contribute to the patient’s requiring prolonged mechanical ventilation. Physiological factors include those conditions that result in decreased gas exchange, increased ventilatory workload, increased ventilatory demand, decreased ventilatory drive, and increased fatigue of respiratory muscles. Psychological factors include those conditions that result in loss of breathing pattern control, lack of motivation and confidence, and delirium. The development of mechanical ventilator dependence also is affected by the severity and duration of the patient’s current illness and any underlying chronic health problems.

Potential Outcomes
Three outcomes are possible for a patient who requires prolonged mechanical ventilation: successful weaning, incomplete weaning, or withdrawal of mechanical ventilation.

Successful Weaning. Weaning is deemed successful when a patient is able to breathe spontaneously for 24 hours without ventilatory support. Once this occurs, the patient may be extubated or decannulated at any time, although extubation is not necessary for weaning to be considered successful.
Incomplete Weaning. Weaning is deemed incomplete when a patient has reached a plateau (5 days at the same level of ventilatory support without any changes) in their weaning process despite management of the physiological and psychological factors that impede weaning. Thus the patient is unable to breathe spontaneously for 24 hours without full or partial ventilatory support. Once this occurs, the patient should be placed in a subacute ventilator facility or discharged home with ventilator support and home care nursing follow-up.9

Withdrawal of Mechanical Ventilation. When successful weaning is not achieved and incomplete weaning is not an acceptable outcome, the only remaining option is the withdrawal of mechanical ventilation. This may occur at the request of the patient, family, or surrogate decision maker, when it is deemed futile to continue the therapy, when quality of life is unacceptable, or when it is perceived that the patient is suffering.10 Determining the futility of further weaning is difficult as it depends on a variety of factors. MacIntyre et al11(p3947) suggest using the following principles: 1) treatable conditions that impede weaning have been removed/improved as much as possible; and 2) documented repeated failure to progress through a weaning protocol, even to reach modified goals (eg, nocturnal ventilation, invasive or non-invasive).

Withdrawal of mechanical ventilation is done to allow the patient’s underlying disease process to take its natural course and usually results in the patient’s death.12

Case Study
During the next 3 months, numerous attempts were made to wean Mr B off mechanical ventilation. The multidisciplinary team met each week to discuss his case and make adjustments to his plan of care. Unfortunately, successful weaning was not achieved. Mr B still required full ventilatory support 24 hours a day. He was, however, awake and alert and able to communicate with the team via note writing and use of a Passy-Muir valve.

A family conference was held to explain to Mr B and his family that he would require continuous mechanical ventilation for the rest of his life and that arrangements were to be made to place him in a subacute facility for ventilator-dependent patients. The physician spoke at length about the condition of Mr B’s lungs and that his disease was irreversible. At that time, Mr B asked if there were any other options. The case manager explained to him and his family about the possibility of being discharged home with continued mechanical ventilation or being transferred to a subacute facility. Mr B immediately ruled these options out as he did not wish to be a burden to his children, and their current living situations would not make this a practical option. He also did not wish to spend the rest of his life receiving mechanical ventilation in a subacute facility. The physician explained to him about withdrawal of mechanical ventilation and that it was his right to forgo life-sustaining treatment.

Mr B and his family asked for some time to discuss the different options among themselves. At that time, the physician and the clinical nurse specialist agreed to meet with Mr B and his family again in 1 week to assess the situation and to see if a decision had been reached. Each member of the team offered to meet with any member of the family to provide any further explanations if needed.

Discussion
When it becomes apparent that further attempts to wean the patient off of prolonged mechanical ventilation are not going to produce the desired outcome, it is critical that a conference with the patient and the patient’s family be held to explain the situation and to facilitate the decision-making process regarding other options.13 If the patient is unable to participate or lacks decision-making capacity because he or she is comatose or cognitively impaired, then the patient’s surrogate decision maker should be present to represent the patient’s interests instead. It is important to ensure that the surrogate decision maker understands that surrogates are supposed to represent what patients would have wanted to do had they been able to make the decision for themselves. If available, the patient’s advanced directive should provide the surrogate decision maker with a guide as to the patient’s wishes.14 If the patient is able to participate, he or she should be included in any discussion regarding the withdrawal of life-sustaining treatment.15

Before the Conference
Adequate preparation should be done before the conference to ensure that the conference runs smoothly and is of benefit to the
patient and the patient’s family.\textsuperscript{16,17} First, resolve any conflicts within the interdisciplinary team about the patient’s plan of care and progress toward goals. Ensure that all members are in agreement with the outcomes to be presented to the patient and the patient’s family.\textsuperscript{16} Second, gather information from the interdisciplinary team and bedside caregivers about the patient and/or the family’s coping mechanisms, decision-making style, and understanding of the present situation.\textsuperscript{17} Third, determine if the patient is going to participate. If the patient is going to participate, the conference should be held in the patient’s room. To minimize distraction and interruptions, the door to the patient’s room should be shut and a sign placed on the outside indicating that a conference is in progress.\textsuperscript{17} If the patient is not going to participate, the conference should be held in a private room away from distractions and interruptions.\textsuperscript{18} Ideally, everyone should be sitting around a table and not just one level, around a table or in a circle.\textsuperscript{16} Last, consult with the patient and the patient’s family to identify which family members should be and will be present at the conference. Encourage them to prepare questions for the team ahead of time.\textsuperscript{16}

\textbf{During the Conference}  

During the conference, it is important that the interdisciplinary team direct their full attention to the patient and/or family as this conveys a sense of “connection, understanding, respect, empathy, and compassion.”\textsuperscript{17(p20)} At the start of the conference, the leader of the interdisciplinary team should have everyone introduce themselves and explain what they do. It is important that everyone feel as comfortable as possible.\textsuperscript{16} To begin the discussion, it is essential to assess the patient’s and family’s prior knowledge of the patient’s illness, treatment, and prognosis.\textsuperscript{16} Open-ended questions, such as “Tell me what you have been told?” and “What is your understanding of the patient’s current condition?” can be used to facilitate obtaining this information. Honest and meaningful information should be provided to the patient and/or the family about various reasonable treatment options and the patient’s prognosis without discouraging hope. In this case, given Mr B’s prognosis, 3 options were discussed: discharge to a subacute facility with continued mechanical ventilator support, discharge to home with a ventilator, and withdrawal of ventilatory support. In this case, it was important for the patient and his family to understand that he would probably never be liberated from mechanical ventilation.

Simple, clear language should be used, and technical jargon and overly detailed explanations should be avoided. Provide time at the end of the conference to allow the patient and/or family members to absorb the information and ask questions. It is very important to take the time to listen to the patient and the patient’s family and allow them to express their feelings and emotions. Reiterate what they have said as a means of indicating that they are being heard and clarifying their understanding of the information provided.\textsuperscript{16,17} It is important to remember that one aim of the conference is to facilitate effective communication between the interdisciplinary team and the patient and/or family members. Ineffective communication can lead to distrust, anxiety, and guilt.\textsuperscript{18} It is equally important to remember not to pressure the patient and/or family into making a decision. The patient and family should be given time to think about their decisions and discuss them with each other.\textsuperscript{19}

The patient’s and/or family’s prior experiences with withholding and/or withdrawing life-sustaining treatments may have a marked influence upon their ability to make a decision. It is important to know if they have had a previous experience, and if so, how they feel about it and what was the outcome of that experience.\textsuperscript{13} If they have had a negative previous experience, it is important to explore what happened and why they perceived the experience as negative. Ask the family how this could be a better experience for them. Depending on what happened, it may be possible to point out to them how this experience would be different.

The amount of information provided to the patient and/or family about the withdrawal of mechanical ventilation will depend on what they want to know. At a minimum, they should be provided with an explanation of the withdrawal process and what to expect, such as “The life support machine will be slowly discontinued over an hour. During that time, we will continue to focus on making him comfortable.” In addition, they should understand that the patient may die quickly or last for several days. Reassure the patient and/or family that medications will be provided to the patient to facilitate comfort and that the patient will
be well cared for during the entire process. It is important to remember that this is a highly emotional time for all involved and time should be taken to address all concerns of the patient, family, and staff members. The patient and/or family should be asked about any specific spiritual and/or cultural preferences. If possible, these preferences should be addressed.  

Curtis et al20 conducted a qualitative study examining communication during family conferences in which end-of-life issues were discussed. They identified a number of missed opportunities or occurrences when the physician could have provided more support or more information to family. Three major themes emerged from the data: listening and responding to family members’ comments, acknowledging or addressing emotions, and explaining key tenets of medical ethics and palliative care.  

Examples of missed opportunities related to listening and responding to family members’ comments included failure to answer family members’ questions directly and failure to clarify the meaning and follow up on statements made by family members. Examples of missed opportunities related to acknowledging or addressing emotion included failure to acknowledge emotions or support family grief and failure to address or alleviate family guilt. Examples of missed opportunities related to explaining palliative care included failure to explore family members’ statements of patients’ treatment preferences, failure to explain the basis of surrogate decision making, and failure to affirm that the medical team would not abandon the patient in the process of transitioning to palliative care.  

Closing the Conference  
At the end of the conference, the discussion should be summarized, future actions should be identified, and a date for the next conference should be set. At that time, any additional resources (eg, ethics team or palliative care team) that are needed to facilitate having the patient and/or the family make a decision should be identified and arrangements should be made to have them meet with the patient and/or the family. The leader of the team should thank all the participants for attending and offer the family information on how to contact the team if further questions arise. Documentation of the outcome of the meeting should be entered into the patient’s medical record, including a list of participants, issues that were discussed, goals that were identified, and future plans. A summary of the important points regarding the patient care conference are provided in Table 1.  

Case Study  
The physician and clinical nurse specialist met with Mr B and his family 1 week later. At that time, Mr B stated that he did not wish to live the rest of his life with a ventilator and asked that he be weaned from mechanical ventilation. The physician explained to him and the family that he would probably die shortly after being weaned. Mr B stated that he did not want any more life-sustaining measures and that he understood that the most likely outcome would be death. The physician explained the process of withdrawing mechanical ventilation to the patient and family and answered all their questions. The physician explained that the amount of support that the patient was receiving from the ventilator to breathe would be slowly decreased over an hour. The family wanted to know how long the dying process would take. Although the family did not want Mr B weaned, they acknowledged that it was his decision and that they would respect his last wishes. Mr B’s only request was to be kept comfortable during the process. Mr B was reassured that during this time he would receive medication to keep him as comfortable as possible. The decision was made to wean him from the ventilator the following day. All curative treatments were discontinued. Mr B’s family was allowed to spend the night with him.  

Discussion  
Once the decision is made to terminate life-sustaining measures, all curative interventions should be discontinued, including dialysis, enteral and parenteral nutrition, blood transfusions, and antibiotics. All routine monitoring should also be stopped including monitoring of vital signs, pulse oximetry, electrocardiography, serial laboratory tests, and daily radiographic studies. All catheters, tubes, and drains should be removed except for an intravenous catheter for administering medications and the urinary drainage catheter (if present). The nasogastric tube should be left in place if vomiting is going to be an issue. The goal is to removal treatments that are no longer desired or indicated and that do not provide comfort to the
If paralytic agents are being used, they should be discontinued and the effects of the medication should be allowed to wear off.

Family members should be allowed unrestricted access to the patient and provided a place to sleep if they decide to spend the night with the patient. The family needs to understand that once the patient is withdrawn from ventilatory support, death may occur within several minutes, hours, or days. Unless the patient is brain dead, there is no way to predict when death will occur. Any decisions regarding organ and tissue donation should be finalized at this time.

Symptom Management

A number of symptoms are associated with withdrawal from mechanical ventilation, including pain, dyspnea, anxiety, delirium, postextubation stridor, and excessive pulmonary secretions. Dyspnea and pain can be assessed by using a scale of 0 (no dyspnea/pain) to 10 (severe dyspnea/pain) if the patient is able to respond. If the patient is unable to respond, the nurse can use the nonverbal pain scale and observe the patient for shortness of breath. Opioids, such as morphine, are used to manage pain and dyspnea/shortness of breath.
lorazepam are used to control anxiety and delirium. Bronchodilators such as albuterol and diuretics such as furosemide may also be used to control dyspnea. Postextubation stridor can be avoided by administering methylprednisolone 30 minutes before extubation. Excessive secretions in the oropharynx, hypopharynx, trachea, and upper airways can oscillate during inspiration and expiration, thus producing noisy respirations that are often referred to as the “death rattle.” These sounds can be extremely distressing to the family. In an effort to prevent this from happening, anticholinergic agents such as transdermal scopolamine, hyoscyamine, and hyoscine butylbromide can be administered to help control excessive secretions. In addition, gentle suctioning can be used to remove secretions.

Withdrawal of Mechanical Ventilation

Two methods are used to withdraw mechanical ventilation: terminal weaning and immediate withdrawal. Before withdrawal of mechanical ventilation is started, a continuous benzodiazepine infusion and/or a continuous opioid infusion should be administered. Any other life-sustaining treatments, such as use of vasopressors, pacemakers, or intra-aortic balloon pumps, should be discontinued. Pressure support and/or positive end-expiratory pressure should be discontinued, and the fraction of inspired oxygen should be reduced to 21%. If the patient shows signs of shortness of breath, pain, or anxiety, the sedative and/or narcotic infusions should be adjusted to relieve the patient’s symptoms. The patient should be bathed and groomed and the bed linens changed. The lights in the room should be dimmed and the door shut to minimize excessive noise. All unnecessary equipment should be removed from the room, and chairs should be provided for the family.

Terminal Weaning. The first method, which is often referred to as “terminal weaning” or “gradual ventilator withdrawal,” consists of gradually decreasing the rate on the ventilator until the rate is zero and the patient is no longer receiving any ventilatory assistance. This decrease may occur over a predetermined amount of time, such as 1 hour. The amount of time allotted should be long enough to allow management of the patient’s symptoms but short enough to avoid prolonging the dying process and causing the patient distress.

For example, the patient often may experience dyspnea as the ventilator rate decreases. An initial reaction may be to turn the ventilator rate back up or prolong the time between ventilator rate changes. Instead, additional medication to keep the patient comfortable should be given, thus treating the patient’s symptoms without slowing down the weaning process and prolonging the dying process. As each patient is different, the actual amount of time will vary. Once the patient is no longer receiving ventilatory assistance, mechanical ventilation is discontinued and the ventilator is removed from the patient’s room.

Immediate Withdrawal. The second method, which may be referred to as “immediate ventilator withdrawal,” consists of the immediate removal of ventilatory assistance and discontinuation of mechanical ventilation.

No evidence supports the use of one method over another. The patient’s and/or the family’s preference and the patient’s comfort should be the main factors guiding the decision.

Exubation. If the patient has an endotracheal tube, it may or may not be removed. The decision to remove the endotracheal tube depends on a variety of factors including the preference of the patient and/or the patient’s family. If the endotracheal tube is considered to be a source of distress to the patient, then removing the tube would be consistent with making the patient comfortable as he or she dies. However, removal of the endotracheal tube may result in airway collapse and excessive secretion accumulation, resulting in the death rattle. Thus, in some instances, it might be more appropriate and less distressing to the patient to leave the endotracheal tube in place.

If the endotracheal tube is to be removed, the patient should be suctioned down the tube and down the back of the throat before the tube is removed. Once the tube is removed, the patient’s face should be washed to remove any excess residue of the tape. The patient’s head should be positioned to facilitate airflow and minimize noisy respirations or other distressing sounds. If the patient has a tracheostomy tube, it is usually left in place. Regardless if the tube is left in or taken out, the patient should be placed on humidified room air to prevent the airway mucosa from drying out.

The nurse, respiratory therapist, and chaplain and/or social worker should be present during the withdrawal process. Ideally, the physician is also present during the entire process, but in reality the physician is usually only present at the beginning because of pressing...
issues with other patients. If the physician has to leave, he or she should wait until the patient’s symptoms are under control. After family members may or may not want to be present during the process. For those family members that do stay, they should be provided explanations about how the patient’s comfort will be ensured and what to expect as the patient transitions, such as “While the life support machine is slowly being discontinued, we will continue to focus on making him comfortable.” The patient’s breathing may become shallow and irregular with pauses. This change in breathing pattern can be extremely distressing to the family. They should be reassured that this is a normal part of the process. Terms such as “agonal breathing” or “agonal respirations” should be avoided as the family may interpret them to mean the patient is in agony. The family should be encouraged to talk to the patient and touch the patient. Tissues should be readily available. All alarms should be disabled as they are no longer required and can disrupt the dying process and distress the patient and/or the family. If the patient has any spiritual or cultural practices that they would like to have observed, care should be taken to accommodate these practices as appropriate. A summary of the important points related to the withdrawal process is provided in Table 2.

Table 2 Termination of ventilation

**Before withdrawal of mechanical ventilation**

<table>
<thead>
<tr>
<th>Before withdrawal of mechanical ventilation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discontinue all curative interventions, including dialysis, enteral or parenteral nutrition, blood transfusions, and antibiotics</strong></td>
</tr>
<tr>
<td><strong>Discontinue all routine monitoring, including vital signs, pulse oximetry, electrocardiography, serial laboratory tests, and daily radiographic studies</strong></td>
</tr>
<tr>
<td><strong>Remove all catheters, tubes, and drains except for 1 intravenous catheter for administering medications and the urinary drainage catheter (if present)</strong></td>
</tr>
<tr>
<td><strong>Leave the nasogastric tube in place if vomiting is going to be an issue</strong></td>
</tr>
<tr>
<td><strong>Discontinue paralytic agents and allow the effects of the medication to wear off</strong></td>
</tr>
<tr>
<td><strong>Allow family members unrestricted access to the patient and provide a place to sleep if they decide to spend the night with the patient</strong></td>
</tr>
<tr>
<td><strong>Ensure family members understand that once ventilatory support is withdrawn from the patient, death may occur within several minutes, hours, or days</strong></td>
</tr>
<tr>
<td><strong>Consult with physician regarding management of symptoms:</strong></td>
</tr>
<tr>
<td>Administer opioids for pain and dyspnea/shortness of breath</td>
</tr>
<tr>
<td>Administer bronchodilators and diuretics for dyspnea</td>
</tr>
<tr>
<td>Administer sedatives for anxiety, delirium, and dyspnea/shortness of breath</td>
</tr>
<tr>
<td>Administer anticholinergic agents for excessive secretions</td>
</tr>
<tr>
<td><strong>Discontinue any other life-sustaining treatments, such as vasopressors, pacemakers, or intra-aortic balloon pumps</strong></td>
</tr>
</tbody>
</table>

**Withdrawal of mechanical ventilation**

<table>
<thead>
<tr>
<th>Withdrawal of mechanical ventilation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bathe and groom the patient and change the bed linens</strong></td>
</tr>
<tr>
<td><strong>Remove all unnecessary equipment from the room</strong></td>
</tr>
<tr>
<td><strong>Dim the lights in the room and minimize excessive noise</strong></td>
</tr>
<tr>
<td><strong>Minimize alarms on any remaining equipment</strong></td>
</tr>
<tr>
<td><strong>Provide explanations to the family staying with the patient about the plan for withdrawal, how the patient’s comfort will be ensured, and what to expect as the patient transitions</strong></td>
</tr>
<tr>
<td><strong>Avoid terms such as “agonal breathing” or “agonal respirations” as the family may interpret them to mean the patient is in agony</strong></td>
</tr>
<tr>
<td><strong>Encourage the family to talk and touch the patient</strong></td>
</tr>
<tr>
<td><strong>Provide chairs for the family and have tissues readily available</strong></td>
</tr>
<tr>
<td><strong>Discontinue pressure support and/or positive end-expiratory pressure</strong></td>
</tr>
<tr>
<td><strong>Reduce the fraction of inspired oxygen to room air (21%)</strong></td>
</tr>
<tr>
<td><strong>Terminal weaning:</strong></td>
</tr>
<tr>
<td>Decrease the number of breaths on the ventilator over a predetermined length of time until the rate is 0</td>
</tr>
<tr>
<td><strong>Discontinue mechanical ventilation</strong></td>
</tr>
<tr>
<td><strong>Remove ventilator from room</strong></td>
</tr>
<tr>
<td><strong>Immediate withdrawal:</strong></td>
</tr>
<tr>
<td>Disconnect patient from ventilator</td>
</tr>
<tr>
<td>Remove the ventilator from the room</td>
</tr>
<tr>
<td>Remove endotracheal tube if it is a source of distress to the patient</td>
</tr>
<tr>
<td>Administer methylprednisolone 30 minutes before extubation</td>
</tr>
<tr>
<td>Suction the tube and back of the throat before removing the tube</td>
</tr>
<tr>
<td>Wash the patient’s face and remove any tape residue</td>
</tr>
<tr>
<td>Position the patient’s head to facilitate airflow and minimize noisy respirations or other distressing sounds</td>
</tr>
</tbody>
</table>
Case Study

The following day, the physician, clinical nurse specialist, nurse assigned to care for the patient, respiratory therapist, and chaplain assembled in the room at the appointed time. The physician interviewed Mr B to make sure he had not changed his mind and he reiterated how the process was to proceed. With the use of the Passy-Muir valve, Mr B was able to say goodbye to his family. His 2 daughters wanted to stay with him while his son wanted to wait in another area until the ventilator was removed. Mr B was given some intravenous lorazepam and a continuous infusion of morphine was started. Once the process was started, the physician left the room to attend to other patients. The respiratory therapist managed the ventilator, and the nurse assigned to Mr B managed his symptoms.

Mr B was gradually weaned from the ventilator over the course of 1 hour. As the ventilator rate decreased, Mr B started to become anxious and complain of dyspnea. The nurse assessed the patient’s dyspnea using a scale of 0 (no dyspnea) to 10 (severe dyspnea) and continued to titrate the morphine infusion to keep him comfortable. Additional intravenous lorazepam was given to control Mr B’s anxiety. The clinical nurse specialist and chaplain stayed with the family and offered them support. Once the ventilator rate was zero, the ventilator was discontinued. Mr B was placed on humidified oxygen via a tracheostomy collar and the ventilator was removed from the room. His son returned to the room. Mr B died 20 minutes later. The physician was notified and he returned to the room and pronounced the death. Mr B’s family was allowed to stay with him for the next 2 hours. The daughters assisted the nursing staff with postmortem care.

Discussion

Documentation

Physician orders for treating all potential symptoms need to be documented in the chart with appropriate parameters and clear indications indicated for each medication.22 Treece et al26 studied the use of a standardized physician order form for the withdrawal of life support. The results indicated that the staff found the form very helpful, and it ensured that all aspects of the process were addressed.

During the withdrawal process, the care provided to the patient and the patient’s family should be noted in the patient’s medical record. Documentation should include date and time of initiation, method of withdrawal, presence of members of the health care team and family members, provision of comfort measures and symptom management, and the patient’s outcome.27

Bereavement Debriefing

It is also important not to forget the members of the health care team who participated in the experience. They should be given an opportunity to process their responses to the patient’s death.28 One method is to have a formal debriefing session several days after the event. The purpose of the session is to focus on the emotional responses of the health care team and to allow them to reflect the experience and discuss their grief.28 Unfortunately, in Mr B’s case this did not occur, and several members of the health care team were left with no sense of closure regarding the event.

Conclusion

Withdrawal of life support is a complex and difficult process that requires continuous planning and management. Clear communication with the patient and the patient’s family can ensure that the process goes smoothly. Having an organized approach to withdrawal of life support can ensure that the patient experiences a peaceful death and that staff members experience closure regarding the event.

References


CNE Test  Test ID C1232: Withdrawal of Life-Sustaining Treatment: A Case Study

Learning objectives: 1. Identify the physiological and psychological factors that contribute to development of ventilator dependence and the 3 possible outcomes for patients who require prolonged mechanical ventilation  2. Describe the purpose of patient care conferences and the essentials to be accomplished before, during, and after the conferences  3. Discuss the nursing implications and practical aspects of caring for an adult patient undergoing withdrawal of mechanical ventilation as an end-of-life procedure

1. Which of the following should be accomplished before the family conference?  
   a. Assessment of the patient’s and family's knowledge of the patient’s illness, treatment, and prognosis  
   b. Determination of whether the patient and family have had previous experiences with withholding/withdrawing life-sustaining treatments  
   c. Preparation of patient and family member questions for the interdisciplinary team  
   d. Consultation with the patient’s family to review the understanding of the patient’s advanced directives

2. Ventilator dependence is a disorder usually associated with a minimum of how many failed weaning attempts?  
   a. Four  
   b. Three  
   c. Two  
   d. One

3. The amount of information provided to the patient and/or family about withdrawal of mechanical ventilation should depend upon which of the following?  
   a. Whether the patient is present  
   b. Their previous experience(s) with withholding/withdrawal life-sustaining treatments  
   c. What they want to know  
   d. The patient’s condition and circumstances

4. In preparation of withdrawal of mechanical ventilation, which of the following should be accomplished first?  
   a. Reduction of the fraction of inspired oxygen to 21%  
   b. Discontinuation of pressure support and/or positive end-expiratory pressure  
   c. Administration of anticholinergic medications  
   d. Initiation of a continuous opioid and/or benzodiazepine infusion

5. Methylprednisolone is administered prior to prevent which of the following?  
   a. Dyspnea/shortness of breath  
   b. Excessive secretions  
   c. Postextubation stridor  
   d. “Death rattle”

6. What should be done if the patient experiences dyspnea/shortness of breath as the ventilator rate is decreased during the withdrawal process?  
   a. Additional medication should be administered.  
   b. The ventilator rate should be increased.  
   c. The time between ventilator rate changes should be decreased.  
   d. The time between ventilator rate changes should be increased.

7. Which treatment item(s) could possibly remain in place throughout the entire process of life-support withdrawal?  
   a. Intravenous catheter  
   b. Intravenous catheter and urinary drainage catheter  
   c. Intravenous catheter, urinary drainage catheter, and nasogastric tube  
   d. Intravenous catheter, urinary drainage catheter, nasogastric tube, and endotracheal tube

8. Which of the following should be emphasized during explanation of the process of mechanical ventilator withdrawal?  
   a. The patient will be kept comfortable.  
   b. The patient will likely die within the first 24 hours.  
   c. It is not likely that a physician will be present during the process until it’s time to pronounce death.  
   d. Once the withdrawal process begins, the staff may not have time to answer family members’ questions and address their concerns.

9. Weaning is considered successful when the patient is able to do which of the following?  
   a. Breathe spontaneously for 24 hours  
   b. Be extubated after breathing spontaneously for 24 hours  
   c. Breathe spontaneously or with no more than partial ventilator support for 24 hours  
   d. Be extubated after breathing spontaneously or with no more than partial ventilator support for 24 hours

10. Delirium and conditions that result in loss of breathing pattern control are examples of which of the following?  
    a. Physiological factors that contribute to development of mechanical ventilator dependence  
    b. Physiological factors that cause development of mechanical ventilator dependence  
    c. Psychological factors that contribute to development of mechanical ventilator dependence  
    d. Psychological factors that cause development of mechanical ventilator dependence

11. Patients reach a plateau in their weaning process when they require the same level of ventilator support without any changes for what period of time?  
    a. Four days  
    b. Five days  
    c. Seven days  
    d. Ten days

Test answers: Mark only one box for your answer to each question. You may photocopy this form.

1. ❑ a  2. ❑ a  3. ❑ a  4. ❑ a  5. ❑ a  6. ❑ a  7. ❑ a  8. ❑ a  9. ❑ a  10. ❑ a  11. ❑ a
   ❑ b  ❑ b  ❑ c  ❑ c  ❑ d  ❑ d  ❑ b  ❑ b
   ❑ c  ❑ c  ❑ c  ❑ c  ❑ d  ❑ d  ❑ c  ❑ c  ❑ d  ❑ d
   ❑ d  ❑ d  ❑ b  ❑ b  ❑ c  ❑ c  ❑ a  ❑ a  ❑ b

Program evaluation

Objective 1 was met ❑ Yes ❑ No
Objective 2 was met ❑ Yes ❑ No
Objective 3 was met ❑ Yes ❑ No
Content was relevant to my nursing practice ❑ Yes ❑ No
My expectations were met ❑ Yes ❑ No
This method of CE is effective for this content ❑ Yes ❑ No
The level of difficulty of this test was: ❑ easy ❑ medium ❑ difficult
To complete this program, it took me ___ hours/minutes.

The American Association of Critical-Care Nurses is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center’s Commission on Accreditation. AACC has been approved as a provider of continuing education in nursing by the State Boards of Nursing of Alabama (#ABNP0062), California (#01036), and Louisiana (#ABN12). AACN programming meets the standards for most other states requiring mandatory continuing education credit for relicensure.
Withdrawal of Life-Sustaining Treatment: A Case Study
Kathleen M. Stacy

Crit Care Nurse 2012;32 14-24 10.4037/ccn2012152
©2012 American Association of Critical-Care Nurses
Published online http://ccn.aacnjournals.org/

Personal use only. For copyright permission information:
http://ccn.aacnjournals.org/cgi/external_ref?link_type=PERMISSIONDIRECT