According to the American Heart Association, approximately 5.7 million persons more than 20 years old have heart failure. It is estimated that by 2030, an additional 3 million people will experience heart failure as a result of improved life spans. One in 5 people with heart failure dies within 1 year of diagnosis. Heart failure was a contributing cause of 281,437 deaths in 2008.\(^1\) Annually, heart failure costs the United States $34.4 billion.\(^2\) Left ventricular assist devices (LVADs) have become more common as elective, permanent “destination therapy” for persons with heart failure who are ineligible for heart transplant either because of advanced age or other comorbid conditions.\(^3\) Destination therapy can be thought of as a definitive therapy that is potentially life-sustaining or life-prolonging for persons with advanced heart failure; the 2-year survival of patients treated with destination therapy is between 58% and 74%.\(^4\)

Approximately 5.7 million people in the United States experience heart failure, and about 670,000 new cases are diagnosed annually. Patients who are ineligible for heart transplant may benefit from a left ventricular assist device. These devices have provided patients with an increased life span, but eventually patients die of the underlying heart disease. This case study illustrates the appropriate use of palliative care teams to address preparedness planning and help decrease moral distress among nursing staff. (Critical Care Nurse. 2014; 34[2]:47-56)
LVADs used as destination therapy (DT-LVADs) are surgically implanted pumps that are attached from the left ventricle to the aorta and assist the heart in pumping blood throughout the body. This pump remains with patients throughout their lives or until they die. Potential benefits of DT-LVADs include a decrease in signs and symptoms of heart failure, reduction in hospital readmissions for heart failure, and improved quality of life when compared with medical therapy only. However, because of the physically compromised status of patients with heart failure, not all such patients benefit from the implantation of DT-LVADs. Situations in which the device offers little or no improvement in quality of life are the reverse of destination therapy and are referred to as “destination to nowhere.”

In this article, we examine the appropriate use of palliative care teams to address preparedness planning for patients with a DT-LVAD. A case study is presented, followed by a succinct review of related literature on DT-LVADs and palliative care. Nursing implications and suggestions for decreasing moral distress among nursing staff are explored.

Review of the Literature

The literature review covered the primary studies that demonstrated the benefits of surgical therapy.
The prevalence rate associated with development of aortic insufficiency after insertion of a Heartmate II is approximately 14%. From postoperative days 3 to 10, the patient became unresponsive to diuretic therapy and could not tolerate weaning trials because of pulmonary edema. On postoperative day 10, the patient became anuric and treatment with continuous venovenous hemofiltration was started on postoperative day 11. During the next week, the patient’s clinical situation did not improve, and it became clear that he was going to be dependent on both mechanical ventilation and dialysis and would require continuous nursing care in order to survive. When acute renal failure developed that required renal replacement therapy, the patient’s family agreed to a 10-day trial of dialysis therapy. The family was hopeful that the patient’s kidneys would show improvement during the treatment. The wife served as health care proxy and consulted with her 2 children about health care decisions.

After approximately 10 days of dialysis therapy, the patient showed no improvement in his weaning trials from the ventilator, remained anuric, and had a score of 7 on the Glasgow Coma Scale. At this point, the nursing staff discussed goals of care with CB’s wife. The nurses asked about what the patient would have wanted for himself if these situations occurred. The wife stated that he would not have wanted to live if he could not interact with his family, yet there was no advance directive. After discussion with her children, the wife chose comfort care measures only for CB. The attending surgeon would not honor this request as he thought that since the patient was able to survive the multiple operations, the patient should be given more time to see if any recovery was possible. Nursing staff contacted social workers to help assist the family in enacting comfort care measures.

After reviewing the case, social work consulted the ethics committee to discuss the disagreement surrounding goals of care between attending physician and family. Although no advance directive was in place, the ethics committee supported the spouse in her decision because the wife explained to the committee what she and her children thought was the best course of action. The chief of the medical staff assumed care of the patient at this point to help facilitate the spouse’s wish. A comfort care order was placed by the nurse practitioner on postoperative day 25. Treatment included no initiation of vasopressors and no further dialysis; the patient died on postoperative day 27.

The implantation of a DT-LVAD was a clinically appropriate treatment choice for a patient with New York Heart Association (NYHA) class IV heart failure and is well supported in the literature. Table 1 highlights the research relative to DT-LVADs, indicating that not only does the DT-LVAD increase 1-year survival compared with medical therapy alone but the second-generation Heartmate II improved 2-year survival rates compared with the first-generation device (Heartmate XVE). The results of these critical studies enabled the use of DT-LVADs to increase dramatically in the past 6 years. According to the Interagency Registry for Mechanical Circulatory Support (INTERMACS), the use of DT-LVADs has grown annually. In 2006, 15 DT-LVADs were implanted, and in 2012, more than 600 DT-LVADs were placed. Although DT-LVADs have provided some patients with better quality of life and an increase in life span, such is not always the case. Patients like CB in the case study, in whom multisystem failure or postoperative stroke with severe cognitive impairment develops, are examples of this situation. According to the INTERMACS Quarterly Statistical Report, the primary causes of reported deaths from June 2006 to March 2012 were multisystem failure (10.5%) and severe cognitive impairment (18.4%).

In 2005, the American College of Cardiology and American Heart Association released guidelines for the diagnosis and management of heart failure in adults. Updated in 2009, the guidelines supported the referral of all patients with heart failure for palliative care. The guidelines also supported the consideration of a DT-LVAD for patients with refractory end-stage heart failure and estimated 1-year mortality with medical therapy to exceed 50%.

To minimize the emotional complexities inherent in “destination to nowhere” situations, Bramstedt...
recommended that patients should be offered the opportunity to complete an advance directive before undergoing an LVAD insertion. An advance directive provides guidance to both the health care team and the patient’s family in the event of devastating complications such as multisystem failure, rendering continuing care futile. Although advance directives are offered to all patients, not all patients complete them. In this case study, CB had no advance directive. Consequently, CB’s family experienced emotional distress by making the decision to discontinue aggressive treatment and enact comfort care measures on his behalf. Although the family wanted their loved one to live, they knew that he would not want to live in his present condition. To facilitate advance directives, an interdisciplinary team comprising patients, patients’ families, cardiologists, cardiac surgeons, psychiatrists, psychologists, bioethics staff, social workers, and palliative care staff should fully discuss preoperative risk and expected postoperative course before insertion of a DT-LVAD.

### Palliative Care and Preparedness Planning

Palliative care aims to relieve suffering, improve quality of life, and provide support to patients and the family members or friends who care for them.\(^1\) It requires a holistic approach that addresses the emotional, physical, logistical, and spiritual needs of patients and their caregivers. Members of a palliative care team may include a variety of individuals, for example, physicians, physician assistants, nurse practitioners, nurses, clergy, social workers, respiratory therapists, and nursing assistants. Each member contributes to the group, and as a whole, aims to improve outcomes, including satisfaction with care among patients and their family members, improved management of symptoms, and patients’ well-being and dignity. Palliative care also provides emotional and spiritual support for patients and their caregivers and access to community support services. The World Health Organization recommends that palliative care not be reserved just for end-of-life circumstances but offered at earlier stages of illness while treatment continues to promote life.\(^2\) Palliative care may be viewed as the start of end-of-life care, whereas hospice would be reserved for patients whose prognosis would be 6 months or less.

The primary premise of a palliative approach to patient care is to promote patients’ well-being and dignity. Additional goals include satisfaction with care among patients and their family members, symptom management, direct communication with the health care team, and creation of shared decision making among patients, their families and caretakers, and members of the medical team.

Because staff in palliative care were not consulted before surgery, these palliative care goals were not met...

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**Table 1** Overview of research relative to destination therapy with a left ventricular assist device (LVAD)

<table>
<thead>
<tr>
<th>Reference</th>
<th>Sample</th>
<th>Setting</th>
<th>Design</th>
<th>Purpose</th>
<th>Findings</th>
</tr>
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<tbody>
<tr>
<td>Lietz(10) Rematch trial (2010)</td>
<td>New York Heart Association class IV heart failure symptoms; ((n = 129)); mean age, 68 y; left ventricular ejection fraction, 17%</td>
<td>20 US hospitals from May 1998-July 2001</td>
<td>61 patients randomized to medical therapy; 68 patients randomized for LVAD implantation</td>
<td>Determine if the LVAD population increased their 1-year survival compared with medical therapy only</td>
<td>Percentage of 1-year survival rate of LVAD population compared with medical therapy only 52% vs 25% (relative risk, 0.52; 95% CI, 0.34-0.78; (P = .001))</td>
</tr>
<tr>
<td>Slaughter et al,(5) Fang(11) Heartmate II Destination Therapy Trial (2009)</td>
<td>Patients with end-stage heart failure ineligible for heart transplant; ((n = 200)); mean age, 63 y; left ventricular ejection fraction, 17%</td>
<td>38 US hospitals from March 2005-May 2007</td>
<td>200 patients randomized in a 2:1 fashion; 134 patients received a continuous flow axial flow device Heartmate II LVAD; 66 patients received the Heartmate XVE LVAD</td>
<td>Determine if the second-generation destination therapy LVAD had overall survival improvement compared with the first-generation XVE LVAD</td>
<td>Patients with the Heartmate II LVAD had significantly improved 2-year survival compared with Heartmate XVE recipients (58% vs 24%; (P = .008))</td>
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*Left ventricular assist devices are commonly used as destination therapy that is potentially life-sustaining or life-prolonging for persons with advanced heart failure.*
Challenges in prognosticating heart failure may be aided by scoring systems designed to help grade the severity of illness. The most commonly used scoring systems for heart failure patients are the Heart Failure Survival Score (HFSS, predominately used for heart transplant) and the Seattle Heart Failure Model.13,17 These models could have been used with CB to help clinicians prognosticate survival. The Seattle Heart Failure Model provides an accurate estimate of 1-, 2-, and 3-year survival with the use of easily obtained clinical, pharmacological, device, and laboratory characteristics. According to that system, if CB’s survival was predicted at less than 2 years with LVAD implantation, then the health care team may have recommended palliative care at an earlier point in this illness.

Another challenge to improve use of palliative care among patients with heart failure lies in health care providers’ lack of knowledge regarding the contribution of palliative care to meeting overall goals for patient and family care. Health care providers, viewing death as a failure, may not view palliative care as an appropriate treatment for patients with heart failure, even when the disease is incurable.18 Strategies that nurses may use to facilitate palliative care consultations include staff development provided by palliative care staff on the team’s role in management of patients with heart failure and discussing the availability and options for palliative care. Resources are available from the End-of-Life Nursing Education Consortium (ELNEC), a national education initiative to improve palliative care to assist in development of nursing staff. This project provides nurses with training in palliative care so that they can teach this essential information not only to their peers but to all health professionals.19

In addition, the Improving Palliative Care in the Intensive Care Unit (IPAL-ICU) Project, cosponsored by the National Institutes of Health and the Center to Advance Palliative Care, is an important resource in the development of nursing staff regarding palliative care. The IPAL-ICU Project is a new initiative that focuses specifically on improving palliative care in the ICU, and shares resources including expertise, evidence, and tools to help clinicians across disciplines integrate intensive care and palliative care successfully.20 Expected goals from an initiative to improve ICU palliative care include increasing satisfaction and comprehension and decreasing levels of anxiety, depression, and posttraumatic stress disorder among patients’ family members. There should be less conflict in the ICU and timely implementation of care plans that are realistic, appropriate, and consistent with patients’ preferences. Finally, professional gratification for clinicians and a significant cost savings for the hospital are possible.21 The IPAL-ICU portfolio contains a reference library of publications relating to diverse aspects of ICU palliative care. In the improvement tools category, nurses and others can access tools such as templates for documentation of ICU family meetings and pocket cards to assist clinicians in conducting family conferences and managing pain. Other resources include professional education materials in a variety of formats—materials that clinicians can provide to patients and their families, such as a brochure guiding preparation for a family meeting.20

Palliative care aims to relieve suffering, improve quality of life, and provide support to patients and the family members or friends who care for them.
Preparedness planning is an area that is gaining interest among palliative care specialists who are involved with DT-LVADs. Preparedness planning helps patients and their loved ones consider quality of life, psychosocial considerations (eg, prior adherence to treatments and adequacy of support system), ethical issues (eg, how to address management of DT-LVADs, particularly in situations of disputed effectiveness), and caregiving concerns that they may encounter that could affect clinical outcomes and alter functional status. Preparedness planning begins with the introduction of advance-care directives and expands to specifics concerning LVADs. It is hopeful that before patients undergo a DT-LVAD, issues (such as the ones described in Table 2) are discussed and decided upon among patients, patients’ families, and the health care team. Having an understanding of what a patient’s wishes would be in a given situation may help clinicians and families to honor wishes more easily in those situations.

Swetz and colleagues conducted a retrospective chart review of 13 patients who received proactive palliative care consultation before DT-LVAD insertion at the Mayo Clinic, Minnesota. The researchers concluded that proactive consultation about palliative care between patients’ families and DT-LVAD implantation team members made postoperative care more clear and enabled adverse events to be handled more effectively.

**Moral Distress**

Epstein and Delgado state that, “moral distress occurs when one knows the ethically correct action to take, but feels powerless to take that action.” As a result of ineffective implementation of palliative care, the nursing staff caring for CB experienced moral distress over his postoperative course.

Based on their interactions with the patient’s family, nurses understood that the family’s wish for comfort care was the appropriate action to take, but the nurses were initially unable to act upon that understanding because of the power imbalance between surgeon and nursing staff. Staff nurses thought that the patient and family would endure excess suffering if they continued care as ordered by the attending physician. Discussions were held with the critical care team, including the intensivist, head nurse, social worker, and pastoral care staff, yet with no institutional support at first to change the clinical course, the nurses felt helpless. Eventually, the staff nurses consulted a social worker, which prompted involvement of the ethics committee. Although nurses can initiate an ethics consultation, the nurses chose to consult a social worker to offer more family support during this difficult situation. After the social worker spoke with the family and realized the difficulty that they had in making decisions surrounding goals of care, the social worker agreed with the nurses that an ethics consultation was warranted. Nursing staff were able to provide medication for pain and agitation to the patient and to provide emotional support to the family. In addition, staff nurses consulted pastoral care to help assist the family during this end-of-life process.

Measures that may be undertaken to help nurses work through moral distress include using professional and institutional resources such as the American Association of Critical-Care Nurses’ 4 A’s to Rise Above Moral Distress Handbook. The 4 A’s include ask, affirm, assess, and act. In the case study, the nurses could have supported each other by asking about feelings of distress or acknowledging signs of individual suffering among those providing care for CB. By affirming that the nurses experienced distress, a commitment could have been made to assess the moral distress by identifying personal, clinical, or environmental sources of distress, which would have focused attention on the disempowerment felt by nurses providing care for CB and his family. During the act stage, nurses created a plan, collaborated with the social work department, and then implemented the comfort care measures desired by CB’s family.

**Table 2** Topics to discuss regarding preparedness planning for a left ventricular assist device (LVAD) among patients, their families, and the health care team

| What to do if the LVAD fails and the patient requires an emergent operation |
| What to do if multorgan failure develops and the LVAD does not seem to be helping a “futile” situation |
| What to do if the LVAD device becomes infected |
| What to do if the patient has a postoperative stroke |
| What to do if a patient has a traumatic injury or a terminal malignant tumor and the LVAD is functioning properly |

Use of LVADs for destination therapy has increased dramatically in the past 6 years.
Health care organizations play a substantial role in addressing moral distress. Organizations can develop a systematic process for reviewing and analyzing the system issues that often result in moral distress and can develop plans to address those issues. Organizations can also create support systems that include employee assistance programs, protocols for end-of-life care, processes for critical stress debriefings, grief counseling, and use of an ethics committee to address issues that result in moral distress. It is imperative that nurses be assigned to institutional ethics committees with full participation in decision making. Approaching senior hospital administrators and the chief of surgery was another option that could have been used in an effort to gain support in implementing guidelines, policies, and procedures in the case of CB and for universal implementation of this process in the future.

Critical Care Nursing Implications

Critical care nurses bear the most responsibility related to the implementation of the patient care plan and have the most extensive and intimate involvement with patients and their families. Integrating palliative care in the ICU can be a challenge at first, but Nelson and colleagues20 outlined examples of practical steps that nurses can take to promote ICU palliative care within their units (Table 3).

Table 3: Steps that nurses may take to promote palliative care in intensive care units (ICUs)20

<table>
<thead>
<tr>
<th>Step</th>
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<tbody>
<tr>
<td>Take a leadership role within the interdisciplinary committee and/or work group that is responsible for planning and implementation of ICU palliative care improvement efforts.</td>
</tr>
<tr>
<td>Plan an active role in interdisciplinary team meetings to identify potential obstacles for ICU palliative care improvement and strategies for overcoming them.</td>
</tr>
<tr>
<td>Participate fully in regular interdisciplinary staff meetings to enhance teamwork, voice concerns, and foster a culture supporting ICU palliative care improvement.</td>
</tr>
<tr>
<td>Help to design and apply ICU work processes that systematically integrate palliative care, including processes for participation of nurses in interdisciplinary ICU family meetings.</td>
</tr>
<tr>
<td>Promote an expanded role for palliative care specialists in ICU clinical care and staff education.</td>
</tr>
<tr>
<td>Help to develop and implement a system for formal evaluation of ICU palliative care quality.</td>
</tr>
</tbody>
</table>

Conclusion

Although past studies5,10,11 have demonstrated that patients with end-stage heart failure may benefit from implantation of a DT-LVAD, this procedure is not without complications, and as a consequence, some adverse events (eg, those mentioned in the case study of CB), may lead patients to “destination to nowhere” situations. Critical care nurses are in a position to advocate not only for their patients but for patients’ family members too. Nurses should use the resources provided by the IPAL-ICU project and ELNEC to help providers integrate intensive care and palliative care together and, as a result of this initiative, hopefully decrease the occurrence of “destination to nowhere” situations. CCN

Financial Disclosures

None reported.

References


### Facts

- Left ventricular assist devices (LVADs) have become more common as elective, permanent “destination therapy” for persons with heart failure (HF) who are ineligible for heart transplant. Destination therapy can be thought of potentially life-sustaining or life-prolonging therapy for persons with advanced HF.
- LVADs used as destination therapy (DT-LVADs) are surgically implanted pumps that are attached from the left ventricle to the aorta and assist the heart in pumping blood throughout the body. This pump remains with patients throughout their lives or until they die.
- Potential benefits of DT-LVADs include a decrease in signs and symptoms of HF, reduction in hospital readmissions for HF, and improved quality of life when compared with medical therapy only.
- Not all patients benefit from the implantation of DT-LVADs. Situations in which the device offers little or no improvement in quality of life are referred to as “destination to nowhere.”

- The primary premise of a palliative approach to patient care is to promote patients’ well-being and dignity. Additional goals include satisfaction with care among patients and their family members, symptom management, direct communication with the health care team, and creation of shared decision making among patients, their families, and the medical team.
- One challenge to the use of palliative care among patients with HF lies in the fact that HF is difficult to prognosticate and courses of disease vary. HF is characterized by recurrent exacerbations, a high prevalence of sudden death, and difficulty with anticipating the terminal phase of this illness.
- Another challenge lies in health care providers’ lack of knowledge regarding the contribution of palliative care to meeting overall goals for patient and family care. Strategies that nurses may use to facilitate palliative care consultations include staff development provided by palliative care staff on the team’s role in management of patients with HF and discussing the availability and options for palliative care.
- Resources are available from the End-of-Life Nursing Education Consortium (ELNEC), a national education initiative to improve palliative care to assist in development of nursing staff. This project provides nurses with training in palliative care.
- In addition, the Improving Palliative Care in the Intensive Care Unit (IPAL-ICU) Project is an important resource in the development of nursing staff regarding palliative care. This project shares resources including evidence and tools to help clinicians across disciplines integrate intensive care and palliative care successfully.
- Critical care nurses bear the most responsibility related to the implementation of the patient care plan and have the most extensive and intimate involvement with patients and their families. Integrating palliative care in the intensive care unit can be a challenge at first. The Table outlines practical steps that nurses can take to promote intensive care unit palliative care within their units.

### Table

Steps that nurses may take to promote palliative care in intensive care units (ICUs)

- Take a leadership role within the interdisciplinary committee and/or work group that is responsible for planning and implementation of ICU palliative care improvement efforts.
- Plan an active role in interdisciplinary team meetings to identify potential obstacles for ICU palliative care improvement and strategies for overcoming them.
- Participate fully in regular interdisciplinary staff meetings to enhance teamwork, voice concerns, and foster a culture supporting ICU palliative care improvement.
- Help to design and apply ICU work processes that systematically integrate palliative care, including processes for participation of nurses in interdisciplinary ICU family meetings.
- Promote an expanded role for palliative care specialists in ICU clinical care and staff education.
- Help to develop and implement a system for formal evaluation of ICU palliative care quality.