Emergency Management Of Dyspnea In Dying Patients

Abstract

Many terminally ill patients seek care in the emergency department. Understanding how to elicit goals of care from dying patients and initiate basic palliative measures is well within the scope of emergency medicine. While a wide variety of factors drive patients at the end of life into the acute-care setting, dyspnea is one of the most distressing symptoms experienced by dying patients, and it is a common reason for such patients to seek care. Many underlying disease states and acute illnesses account for shortness of breath at the end of life, and management tends to be symptomatic rather than diagnostic, particularly in those for whom comfort is the most important goal. Opioids are the most effective and widely studied agents available for palliation of dyspnea in this population, while adjuvant therapies such as oxygen, noninvasive positive pressure ventilation, and fans may also play a role. Other medications (eg, benzodiazepines and low-dose ketamine) may also be useful in select patients. The early involvement of palliative medicine specialists and/or hospice services for dying patients can facilitate optimal symptom management and transitions of care.

CME Objectives

1. Identify the elements of a patient’s history and physical examination that are signs of the dying process.
2. Tailor diagnostic studies and treatment in the ED to optimize patient comfort at the end of life.
3. Explain the mechanism and role of opioids in relief of acute dyspnea.
4. Describe the role of adjuvant therapies in the treatment of acute dyspnea, including benzodiazepines, antiserotonergic medications, and nonpharmacologic interventions.

Prior to beginning this activity, see the back page for faculty disclosures and CME accreditation information.

Authors

Ashley Shreves, MD
Assistant Professor, Department of Emergency Medicine, Brookdale Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY

Trevor Pour, MD
Department of Emergency Medicine, Icahn School of Medicine at Mount Sinai, New York, NY

Peer Reviewers

Gregory Luke Larkin, MD, MS, MSPH, FACEP
The Lion Foundation Professor and Chair, Emergency Medicine, The University of Auckland, Auckland, New Zealand

Knox Todd, MD, MPH
Professor and Chair, Department of Emergency Medicine, MD Anderson Cancer Center, Houston, TX

CME Objectives

Upon completion of this article, you should be able to:
1. Identify the elements of a patient’s history and physical examination that are signs of the dying process.
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Dhanadol Rojanasarttkul, MD
Attending Physician, Emergency Medicine, King Chulalongkorn Memorial Hospital, Thai Red Cross, Thailand; Faculty of Medicine, Chulalongkorn University, Thailand

Suzanne Peeters, MD
Emergency Medicine Residency Director, Haga Hospital, The Hague, The Netherlands
Case Presentation

On a quiet overnight shift, you receive a call from EMS. They are en route to your ED with a 55-year-old woman in respiratory distress. You walk to the resuscitation room and prepare for rapid sequence intubation, wondering what catastrophic event might have precipitated this patient’s respiratory failure. As the patient arrives, you notice that she is cachectic and pale, gasping for breath as she tries to pull off the nonrebreather mask on her face. Her distraught husband walks alongside the stretcher, stroking her hair and crying. The patient appears to be terminally ill, and when you ask her husband what’s going on, he says, “She has lung cancer. We just stopped chemo because it wasn’t working anymore. We’re supposed to get hospice, but it hasn’t been set up yet.” Meanwhile, the paramedics read her vital signs out loud: “temp 99°, heart rate 120, respiratory rate 40, pulse ox 90%, blood pressure 100/50.” You briefly wish that it was the middle of the day so your hospital’s newly formed palliative care service would be available. Faced with this clearly uncomfortable, dying patient, the traditional emergency medicine tools of endotracheal intubation and mechanical ventilation are clearly inappropriate, but what other medical strategies exist to help this distressed, symptomatic patient? You have read that patients often receive morphine at the end of life, but you don’t want to be accused of hastening anyone’s death. Her husband pleads, “Please help her, doctor. I can’t watch her suffer like this.” Despite your desire to do everything possible to make this patient comfortable, you reflect on the unique legal and ethical framework that surrounds care of the dying patient and want to ensure that you are doing the right thing.

Introduction

Dyspnea has been described by the American Thoracic Society as “a subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity.” Patients suffering from dyspnea or shortness of breath commonly seek care in the emergency department (ED). Anticipating the dangerous diagnoses lurking beyond this complaint and preventing the associated morbidity and mortality from such conditions has been the primary focus of emergency medicine. Astute management of the airway, breathing, and circulation (ABCs) is a core emergency medicine skill set. Early and aggressive control of derangements in a patient’s airway and breathing often necessitates use of medical devices such as endotracheal tubes, noninvasive positive-pressure ventilation (NIPPV), and mechanical ventilation. In contrast, when patients with dyspnea in the setting of a terminal condition seek care in the ED, the invasive airway and breathing devices familiar to the emergency clinician are often considered by the patients to be burdensome and unwanted. Nonetheless, these dying patients often have intense needs that require skilled medical interventions. Ensuring that such patients receive high-quality compassionate end-of-life (EOL) care is increasingly recognized as falling within the domain of emergency medicine.

Despite widespread and increasing utilization of hospice services and consistently stated preferences of most terminally ill patients to die in the home, many patients visit the ED at the EOL. High rates of ED utilization have been demonstrated in cancer patients, with up to one-third visiting the ED in the last 2 weeks of life. A similar trend has been observed in the elderly, with half of Medicare recipients visiting the ED in the last month of their lives. About half of the ED visits in this population are associated with a cancer diagnosis and an anticipated death. The current rise and predicted trends in geriatric visits to the ED suggest that providers will face EOL situations with increasing frequency.

There are a multitude of factors that drive patients who are at the EOL into the acute-care setting. Broadly speaking, in the cancer population, independent predictors of hospital versus home death include nonsolid tumor diagnosis, ethnic minority status, and high regional availability of hospitals and inpatient beds. At the patient level, however, it is often intense symptoms (particularly dyspnea) coupled with the unavailability of timely support in the outpatient setting that lead patients to the ED. While these visits are often prompted by an inability to manage distressing symptoms at home, emergency clinicians have expressed discomfort and demonstrated limited knowledge in tending to the nuanced needs of patients with recognized terminal conditions. It is not surprising, then, that the experience of dying patients in the ED is often poor.

Dyspnea is one of the most common symptoms that patients encounter at the EOL. In patients with terminal cancer, 70% to 80% experience dyspnea at some time during the last 6 weeks of life, and they commonly experience a significant increase in dyspnea in the last 2 weeks. In patients with noncancer terminal diagnoses such as chronic obstructive pulmonary disease (COPD) and congestive heart failure (CHF), the severity of dyspnea is highest, but it remains relatively stable until death. Of equal importance, dyspnea ranks as one of the most distressing symptoms to the patient and the family, leading to restrictions in quality of life and an increase in anxiety and fear.

Critical Appraisal Of The Literature

An electronic search was conducted utilizing PubMed, with the search terms dyspnea, breathlessness, air hunger, end-of-life, palliative, hospice, emergency, and opiate/opioid from 1981 until present. A
Cochrane Database search was also conducted using the search term dyspnea, which identified 17 systematic reviews. ED palliative care literature remains sparse and has largely been published within the last decade, while the literature base on inpatient palliative care and hospice care is significantly more robust. Additionally, the bulk of emergency medicine literature concerning EOL care focuses on models, perspectives, and education, while nearly the entirety of trial data are drawn from inpatient and hospice populations. As a result, much of the data presented in this issue are drawn from studies conducted outside of the emergency setting. Furthermore, limitations on the quality of evidence for various modes of treatment exist. These limitations arise from the paucity of true randomized controlled trials and the heterogeneity of both medication selection and dosing between currently existing trials. The recommendations made in this issue make reference to the quality of evidence, when appropriate, and recommendations based on expert opinion or current standard of practice are also noted.

Etiology And Pathophysiology

The neurologic basis of dyspnea is complex and remains poorly understood. Recent pathophysiologic studies indicate that the traditional, singular concept of breathlessness likely encompasses multiple distinct sensations and mechanisms that are well beyond the necessary scope of the emergency clinician. The practical understanding of dyspnea focuses on the brainstem respiratory complex: feedback, mediated by PaCO₂, PaO₂, and pH through direct action on medullary chemoreceptors, acts to regulate respiratory drive through rate and effort. Disruption in homeostasis in these variables, sometimes coupled with the psychogenic component of fear and anxiety, produces the dyspneic sensation. Interestingly, there is growing evidence that pain and dyspnea may share many common anatomic pathways, which has implications for treatment modalities.

The dying patient may present with a wide range of potential contributors to dyspnea, often complicated by both the presence of preexisting comorbid conditions with a superimposed acute illness. Table 1 lists the differential diagnosis for dyspnea, and it demonstrates significant overlap between categories and has a particular focus on cancer patients. The end result of these physiologic insults, whether they are mechanical, metabolic, or neuromuscular, is a failure to match ventilation with brainstem-mediated respiratory drive. Once this mismatch occurs, the cortical sensation of dyspnea is felt by the patient, often exacerbating his or her condition through panic and increased metabolic demand.

Prehospital Care

Patients who are at the EOL with dyspnea or who are in respiratory distress present a unique challenge in the prehospital setting, as decisions regarding the initiation of life-sustaining interventions must be made quickly and often with limited information. Further complicating the issue, the legal and ethical framework that dictates when, in whom, and under what circumstances life-sustaining care can be withheld in the prehospital setting varies significantly from state to state. While a rapid assessment of the patient’s goals of care would be an ideal precursor to the delivery of care in this setting, the legal fears, the culture of emergency medical services, and the ambiguity of advance directives serve as significant barriers to this process.

Nonetheless, many moments of acute crisis (in particular, respiratory distress and failure) can be anticipated in patients with terminal illness. For this reason, patients and families often make some treatment decisions in advance, perhaps documenting their preferences in the form of an advance directive. While directives can be either written or verbal, the fact that up to 70% of terminally ill patients do not have decision-making capacity at the EOL makes written documentation of prior wishes extremely valuable during periods of clinical decline. In a geriatric cohort at the EOL, two-thirds of subjects lacking decision-making capacity had advance directives, underscoring the need for emergency clinicians to assess for such documents, though the ability

<table>
<thead>
<tr>
<th>Table 1. Differential Diagnosis Of Dyspnea</th>
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<tr>
<td>• Airway obstruction: foreign body, aspiration, tumor burden</td>
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<td>• Anaphylaxis, angioedema</td>
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<td>• Asthma</td>
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<td>• Anemia: blood loss, nutritional deficiency, chemotherapy induced</td>
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<td>• Behavioral component: anxiety, panic attack</td>
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<td>• Chronic obstructive pulmonary disease</td>
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<td>• Deconditioning/cachexia</td>
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<td>• Decreased cardiac output: myocardial ischemia, arrhythmia, tamponade, hypovolemia</td>
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<tr>
<td>• Decreased chest wall compliance: hepatosplenomegaly, ascites, obesity, tumor burden</td>
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<td>• Diaphragmatic/respiratory muscle weakness: neuromuscular disorders, fatigue</td>
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<td>• Metabolic acidosis: renal failure, sepsis</td>
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<td>• Pneumonia</td>
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<td>• Pneumothorax</td>
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<td>• Pulmonary edema/congestive heart failure</td>
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<td>• Pulmonary effusion: malignant, infectious</td>
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<td>• Pulmonary embolism</td>
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<td>• Pulmonary hypertension</td>
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<tr>
<td>• Pulmonary fibrosis/interstitial lung disease: autoimmune, secondary to radiation or chemotherapy</td>
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<td>• Pulmonary receptor stimulation: environmental irritants</td>
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<td>• Ventilation/perfusion mismatch</td>
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for such documents to influence care in the prehospital setting varies according to state laws. For some patients, the existing advance directive may be limited to the designation of a healthcare proxy or healthcare power of attorney, allowing providers to identify the appropriate decision-maker for the patient. For other patients, a general guide to EOL care may exist in the form of a living will, while others may simply have an out-of-hospital “do not resuscitate” (DNR) order, which, unfortunately, only dictates whether a resuscitation should be attempted when the patient experiences a full cardiopulmonary arrest. (For a summary of advance directive terminology, see Table 2.)

The limitations of living wills and other forms of advance directives have been well described. Not surprisingly, many paramedics feel inadequately trained to interpret these complex (and often vague) documents. In recognition of the shortcomings of previously devised advance directives, states are increasingly adopting a portable advance directive called a POLST (physician orders for life-sustaining treatment) or MOLST (medical orders for life-sustaining treatment). (See Figure 1.) This bright pink document is specifically designed for rapid recognition and interpretation and is intended for use by emergency medical providers.

In contrast to the general preference statements contained in living wills, the POLST contains concrete physician orders that can guide use of interventions such as intubation, NIPPV, and intravenous (IV) fluids across all care settings. In Oregon, 100% of hospices report using the POLST advance directive for their patients at the EOL; in West Virginia, usage of the POLST advance directive is 85%. Furthermore, given the high degree of transitions of care experienced by patients in long-term care (ie, the nursing home setting), these patients have also been targeted for completion of a POLST. A recent study of California nursing homes revealed that > 80% had completed a POLST document for a resident. Previous studies have demonstrated that even when advance directives are completed in the nursing home, they are often inaccessible upon transfer to the acute care setting. Fortunately, the improved design and increased awareness surrounding the POLST advance directive holds great promise for improving access to EOL preferences across all settings. For these reasons, prehospital providers (as well as emergency clinicians) should be familiar with these forms.

As of September 2012, most states either had or were establishing POLST paradigm® programs. Detailed information about each state’s program can

<table>
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<tr>
<th>Term</th>
<th>Description</th>
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<tr>
<td>Advance directive</td>
<td>While legal specifics vary by state, an advance directive is any documentation provided by a patient that specifically lays out the patient’s future medical decisions and preferences that are to be used in the event that the patient is unable to communicate. “Advance directive” is a general term for any documentation used in this fashion, and it includes the living will, healthcare proxy, and durable power of attorney.</td>
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<tr>
<td>Physician orders for life-sustaining treatment (POLST)</td>
<td>These are specific medical orders, signed by a physician after a conversation with a patient or his surrogate/proxy decision-maker.</td>
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<tr>
<td>Do not resuscitate (DNR)</td>
<td>This is an order signed by a physician after a conversation with a patient or his surrogate/proxy decision-maker. DNR orders mandate that, in the event of cardiopulmonary arrest, the patient is not to receive cardiopulmonary resuscitation or advanced cardiac life support.</td>
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<tr>
<td>Do not intubate (DNI)</td>
<td>This is an order signed by a physician after a conversation with a patient or his surrogate/proxy decision-maker. DNI orders mandate that, under no circumstances, will the patient be intubated. This is independent of DNR orders. For example, a patient may wish to be intubated as part of a trial of critical care but may not wish to receive chest compressions in the event of cardiac arrest.</td>
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<tr>
<td>Living will</td>
<td>This is a legal document prepared by a patient that delineates the specific types of future treatment he wishes to receive in the event that he is unable to communicate these decisions due to a terminal illness or permanent unconsciousness. A living will may make specific mention of interventions such as dialysis, intubation, artificial nutrition, antibiotics, or central lines. State laws vary, and the legality of a living will in one state may not apply in another state.</td>
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<tr>
<td>Durable power of attorney for healthcare</td>
<td>This is a legal document prepared by a patient that identifies an individual to act as a future healthcare proxy decision-maker. It is employed in the event that the patient is unable to communicate his wishes. These documents often provide the opportunity to appoint a secondary (or backup) proxy if the primary individual is unable to fill this role. A proxy decision-maker is appointed to communicate the wishes of the patient in situations not previously described in a living will/advance directive; therefore, it is more flexible and usable in complex medical situations.</td>
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<tr>
<td>Healthcare proxy</td>
<td>This is an individual who is legally designated by a patient to make healthcare decisions in the event that the patient is unable to do so himself.</td>
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<tr>
<td>Healthcare surrogate</td>
<td>This is an individual identified, by law, as the decision-maker for a patient. This is typically the spouse, followed by adult children, then parents, and then siblings.</td>
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be found at http://www.polst.org. Of note, in many states, the POLST is the only legally recognized “do not intubate” order in the out-of-hospital setting, making it extremely relevant to the care of the dying patient with dyspnea.

For patients with goals consistent with a desire for all life-sustaining interventions, management of the dyspneic patient should be similar to any other patient in respiratory distress. In the dying patient with a clear advance directive (e.g., a POLST) that documents a desire for comfort-focused care, noninvasive therapies should be emphasized. Oxygen (in the form of a nasal cannula or nonrebreather mask) is a reasonable treatment to administer, as it is not excessively burdensome and may relieve dyspnea in some patients at the EOL. Similarly, bronchodilators should be considered in the presence of wheezing or if there is a suspicion for obstructive lung disease.

**Emergency Department Evaluation**

**History**

**Is this patient dying?**

Because the management of dyspnea at the EOL is distinct from the management of dyspnea in patients not at the EOL, it is important to recognize which patients with dyspnea are on a dying trajectory. This can be particularly challenging in the ED, as there may be limited access to the patient’s medical records, coupled with the fact that some emergency clinicians may not be trained in the skills of prognostication. Nonetheless, a basic understanding of the dying trajectories experienced by most patients can aid emergency clinicians in contextualizing acute dyspnea presentations.

In most patients (except those who experience sudden death), the end of life is typically accompanied by a significant decline in function. The pattern of decline varies by disease type. For example, cancer patients usually maintain relatively good function until the last months of life, at which point there is often a dramatic and steady decline in function. Asking how much a patient with advanced cancer can still do for himself or herself (particularly, how much time is being spent in bed) can provide important insight into the patient’s overall prognosis. Once solid tumor cancer patients are significantly disabled and spending over 50% of their time in bed, they typically have a prognosis of < 8 weeks. While performance status has consistently been found to be the most important prognostic indicator in cancer patients, other important predictors of limited survival include dyspnea, dysphagia, dry mouth, anorexia, and cognitive impairment.

Narrowing the focus to a cohort of advanced cancer patients presenting to the acute-care setting with dyspnea, the most important predictor of imminent death (survival < 2 wk) was a history of uncontrolled progressive disease (relative risk, 22). Seeking this information from the patient, primary care doctor, or medical chart can be very useful.

For patients with advanced dementia, however, function is typically poor for an extended period

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**Figure 1. Sample POLST From Oregon**

Used with permission of Oregon Health & Science University, Center for Ethics in Health Care.
leading up to death, so this background information is less helpful in understanding whether a patient in the ED is on a rapid dying trajectory. Predicting death in patients with underlying organ failure (eg, COPD, CHF, liver failure, or end-stage renal disease) can be the most complex, as an acute decompensation treated with aggressive medical interventions is often followed by recovery, even in those with advanced disease (although patients rarely return to their previous level of function). For these patients, disease-specific scoring systems exist that can help guide long-term prognostic estimates, but they are less helpful in the ED setting.

Assessing Goals Of Care
Ultimately, even for patients with serious illnesses in whom invasive interventions may significantly extend life, the overall management strategy should be dictated by the patient’s goals, preferences, and values. Taking a careful history that elucidates these features ensures that patients receive compassionate, appropriate care at the EOL. Assumptions should not be made regarding treatment preferences simply because patients are seeking help in the acute-care setting.

Goals that patients and families endorse at the EOL vary, and they often differ from goals that physicians would prioritize. Management of pain and symptoms, preparation for death, achieving a sense of completion, being involved in treatment decisions, and being treated as a “whole” person have been rated as the factors most important to patients with life-limiting illnesses. While exploring and addressing all the needs of a terminal patient are beyond the scope of emergency medicine, simple communication strategies can ensure that patients do not receive burdensome care inconsistent with their values.

In the context of a terminal illness, patients and families should never be asked, “Do you want everything done?,” since the meaning of “everything” varies considerably between lay people and health professionals. Furthermore, requests by families that “everything” be done rarely means that they would desire all possible interventions, regardless of how burdensome, in order to prolong life. Patients and families have limited knowledge about the implications of medical treatments. It has been demonstrated that few patients understand that a “successful” resuscitation is typically followed by mechanical ventilation, and most patients have a poor understanding of mechanical ventilation, with many believing that patients are fully communicative while receiving ventilator support. Asking a patient or family, “Do you want to be intubated?” assumes that they appreciate the consequences of this intervention, but few do. If the most important goals for a dying patient are to have a “natural” death that is free of machines and does not prolong the dying process, or for the patient to have the best chance of dying outside the hospital environment, the use of advanced airway management in the acutely dyspneic patient would, typically, be precluded.

Various pathways for determining patient goals have been described, but in the resource-limited setting of the ED, it has been recognized that this process must be streamlined. A tool proposed for assessment of emergency provider EOL communication skills offers a useful guide to the conversation with patients and families at the EOL. The mnemonic SILVER (seeking information, life values, educates/extends care, responds) encompasses the essential components of a goals-of-care discussion for the emergency clinician. (See Table 3.)

As in the prehospital setting, for patients who no longer have the ability to communicate their wishes, efforts should be made to review previously completed advance directives. For dying patients arriving to the ED acutely ill with hemodynamic instability, the POLST can be a particularly useful document, as it includes specific medical orders about life-sustaining interventions (eg, intubation, IV fluids, and antibiotics), and it can guide care in patients with terminal illnesses. In patients transitioning from an institutional environment, the presence of an advance directive should be actively investigated, as completion of such documentation is common in these settings.

Table 3. SILVER Mnemonic For Improving End-Of-Life Communication

<table>
<thead>
<tr>
<th>Seeks Information</th>
<th>Elicits information regarding baseline level of function and behaviors/symptoms suggesting progressive decline</th>
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<tr>
<td></td>
<td>Elicits information regarding current diagnosis, prognosis, and treatment plan</td>
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<td></td>
<td>Elicits information regarding key players in decision-making, including family (healthcare agents) and healthcare workers</td>
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<td></td>
<td>Elicits information regarding previous end-of-life discussions, including advance directives</td>
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<tr>
<td><strong>Life Values</strong></td>
<td>Elicits information regarding the patient’s personality and overall approach to life</td>
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<td></td>
<td>Elicits information regarding how the patient views death and dying</td>
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<tr>
<td><strong>Educates/Extends Care</strong></td>
<td>Provides information regarding the patient’s disease process, current condition, and treatment options</td>
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<td></td>
<td>Explains how end-of-life decisions will impact further treatment</td>
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<tr>
<td><strong>Responds</strong></td>
<td>Solicits questions from family and offers continued support and availability for further information</td>
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History Of Present Illness

Reconciling the patient’s underlying terminal diagnosis with his goals of care and acute presentation can be challenging. In particular, determining whether to choose a symptom-focused treatment approach versus a problem-focused treatment approach will, occasionally, depend on the underlying etiology of the patient’s dyspnea. Largely, however, recognizing that the patient is dyspneic in the setting of an EOL trajectory is more important than differentiating among all of the possible causes of the dyspnea.

Patients may use a variety of terms in describing dyspnea, and some language may be suggestive of a specific underlying pathology. The report of “air hunger” correlates with the presence of hypercapnia, while those with obstructive disease (either from asthma or COPD) often report chest tightness as part of dyspnea. In a study of 261 patients with dyspnea from either cancer (including those with primary or metastatic lung involvement) or cardiopulmonary processes, it was noted that the statement, “I cannot get enough air” was common to all patient groups who were short of breath. Of note, qualitative descriptors of dyspnea could not adequately discriminate between cancer patients presenting with dyspnea from different etiologies (e.g., pulmonary effusion, lung collapse, or tumor mass burden). In contrast, in those with nonmalignant cardiopulmonary disease, specific patterns were observed between the qualitative descriptors and the underlying diagnosis. “Tight/constricted” was associated with asthma/COPD and those with pleural effusions and patients with interstitial lung disease identified with the words “rapid/heavy,” “enough air,” and “out of breath.”

In therapy studies, dyspnea is, typically, measured similar to pain, using a visual analog scale that relies on patient self-reports of shortness of breath. On a 100-mm scale, patients are asked to rate the severity of their dyspnea, with 100 representing the worst possible breathlessness. For awake, verbal patients in the ED setting, a similar approach can be taken, in which patient self-reports can guide initiation and titration of treatments. In the unconscious patient, family or caregiver reports of changes in breathing patterns, gasping, or labored breathing can be presumed to indicate dyspnea, although in the obtunded or semiconscious patient it is sometimes impossible to know the degree to which outward signs of distress are perceived and thus contributing to suffering.

Prior to arrival in the ED, many patients with a terminal diagnosis are already receiving symptom-focused care in the outpatient setting. This may include the use of opioids for pain and/or dyspnea. In these patients, it is useful to determine the amount and type of opioid used in the previous 24 hours, as this will ensure adequate and appropriate dosing of medications in the ED.

Hospice is frequently the main provider of care for patients at the EOL. Patients and families often notify their respective hospice organization upon calling 911; however, given the circumstances surrounding these events, sometimes that extra call is not made. Because the hospice organization will have extensive information regarding the patient’s clinical history and current medication regimen, it is essential to know whether they are involved and to notify them if they are. In addition, hospice organizations have 24-hour staffing capabilities, so they may be able to send a hospice nurse to the ED to assist with symptom management and coordination of care.

Physical Examination

Is this patient dying?

An important part of the examination of the terminally ill patient with acute dyspnea focuses on determining where the patient resides on the dying trajectory, as this information will inform diagnostic and treatment strategies and help patients and families formulate realistic goals.

There are few studies that have explicitly characterized the physical examination findings of patients at the EOL. In addition, the existing literature has primarily focused on cancer populations. Nevertheless, there are some useful findings that can inform prognostication at the EOL. (See Table 4.) In a cohort of cancer patients seeking care in an ED for acute dyspnea, vital sign derangements were associated with imminent death (survival ≤ 2 wk). Specifically, tachypnea and tachycardia were predictive of imminent death, with a relative risk of 13 and 5, respectively. In a cohort of 374 patients with advanced cancer admitted to hospice-like programs, hypotension, tachycardia, and the presence of delirium/drowsiness on examination were all independently predictive of survival < 10 days. In one of the only studies to specifically examine cancer patients in the last hours to days of life, the presence of a death rattle correlated with a median survival of 23 hours, respirations with mandibular movements a survival of 2.5 hours, and cyanosis to extremities a survival of 1 hour. In this study, changes in the

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<th>Table 4. Prognostic Signs In The Dyspneic Patient At The End Of Life</th>
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<td>Findings that may suggest prognosis of hours to days:</td>
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<td>• Death rattle</td>
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<tr>
<td>• Respirations with mandibular movements</td>
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<tr>
<td>• Cyanosis to extremities</td>
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| Findings that may suggest prognosis of days to weeks: |
| • Tachypnea |
| • Tachycardia |
| • Hypotension |
| • Delirium/drowsiness (particularly if recent change) |
level of alertness were also observed as patients approached the very end of life. One week before death, the percentage of patients who were awake/drowsy/comatose was 56%/44%/0%, respectively. In contrast, on the last day of life, 92% of patients were either drowsy or comatose.52

**Focused Examination**
As suggested previously, the most important measure of dyspnea in the dying patient is the patient’s own self-report of shortness of breath. Unfortunately, though, many patients retain limited communication at the EOL, so physical examination findings of dyspnea must be used to guide management. Nonverbal signs that emergency clinicians typically correlate with respiratory distress include gasping; accessory muscle use; and rapid, shallow respiration. These signs may indicate dyspnea and, thus, suffering for the dying patient. In the nonverbal patient, facial expressions such as grimacing suggest pain and/or discomfort.

Emergency clinicians are highly skilled at performing chest auscultation and determining the pathologies suggested by abnormal breath sounds, and careful auscultation can yield further diagnostic clues about the underlying etiology of the patient’s symptoms. Wheezing suggests an obstructive process such as asthma or COPD, though this finding may also be present in those with pulmonary edema. Decreased or absent breath sounds would be indicative of an effusion or pneumothorax. Crackles typically suggest the presence of pulmonary edema.

In patients presenting with marked skin pallor, anemia may be a contributor to dyspnea. In addition, cyanosis would suggest hypoxia as an underlying cause, though this would be detected at triage by a low pulse oximetry reading.

**Advance Directives**
While it would be ideal to directly engage the patient in a discussion about his treatment preferences in the setting of a dying trajectory, many patients lose decision-making capacity at the EOL.29 This creates a challenge for emergency clinicians who must then navigate the world of surrogate decision-makers and advance directives, in an attempt to ultimately honor patient autonomy while respecting legal parameters. The search and appraisal of advance directives in the ED parallels the process outlined in the Prehospital Care section (pages 3-5). As previously mentioned, the legal and ethical framework for EOL decision-making varies by state.27 The most useful directive for emergency clinicians is a POLST, as this will include information about the specific treatment decisions that are most commonly encountered in the dying patient. In the absence of a POLST, a living will can provide information about general treatment preferences that the patient desires, though the language of living wills can occasionally be vague and confusing. Unfortunately, previously completed DNR orders are often relied upon to dictate overall treatment plans in patients at the EOL,53 though this advance directive is actually quite limited in scope and should only be used to determine whether a resuscitation should be attempted in the setting of a full cardiopulmonary arrest.

All states allow for some degree of surrogate decision-making in the event that the patient has lost decision-making capacity. If the patient has not designated a specific person to make decisions, the surrogate is determined by the established legal hierarchy, with the patient’s spouse at the top of the list, followed by adult children, parents, siblings, grandchildren, and then close friends. Some patients may have chosen someone in advance to make healthcare decisions for them and document this preference in the form of a healthcare power of attorney or healthcare proxy. In these cases, this person becomes the legal decision-maker, above all “natural” surrogates, when the patient can no longer make decisions for himself or herself. It is important for both emergency clinicians and all surrogate decision-makers to remember that their role as a surrogate is to be a voice for the patient. They should be guided by the previously expressed wishes of the patient, and when that is not available, the principle of substituted judgment, meaning that they must try to determine, to the best of their ability, what decision the patient would make if he or she were able. If the patient’s family and friends are unsure what decision the patient would make, the physician should help guide them to make decisions in accordance with what would be in the best interest of the patient.

In some cases, advance directives are not present, an appropriate surrogate decision-maker is not immediately apparent, and/or the appropriate decision-maker is not able to be contacted. In such situations, the presumption should typically be that life-sustaining therapies are desired, and management should be dictated accordingly.

**Diagnostic Studies**
An appraisal of all the possible tests available in the workup of the dyspneic patient is beyond the scope of this review. Because the invasiveness of the workup initiated in the ED will largely depend on the patient’s goals of care, the goals of care should be addressed early and often. An intervention as simple as IV placement can be considered burdensome for the patient who chooses comfort as the top priority. Reflexive ordering of laboratory tests and imaging studies should be avoided in this population. Instead, studies should be carefully considered and should be performed only if they have the ability to
meet the explicit goals outlined by the patient and/or the family.

**Laboratory Testing**

There is no evidence to guide the ordering of blood tests (such as complete blood count, basic metabolic panel, and venous blood gas) in this population of patients. If IV access is being obtained in order to deliver parenteral medicines, obtaining blood tests creates minimal extra burden for the patient.

If the goals of the patient are consistent with receiving interventions such as blood transfusions, assessing for anemia via a complete blood count can be an easy and practical test. A venous gas revealing severe acidosis may help explain a patient’s dyspnea, either by showing hypercapnia or a normal \( \text{PaCO}_2 \) in which case, the patient’s tachypnea might be compensatory to an underlying metabolic acidosis.

**Electrocardiogram**

The presence of an arrhythmia (particularly severe tachycardia) may contribute to or cause dyspnea. An electrocardiogram is a relatively noninvasive test and may have utility in the patient in whom vital-sign derangements are extreme and presumed to be the cause of the patient’s dyspnea rather than a reflection of the dying process.

**Radiographs**

Like an electrocardiogram, a chest x-ray is relatively easy to obtain and causes minimal burden to the patient, and it may reveal useful information that can guide appropriate therapy beyond opioid administration in the dyspneic patient at the EOL. Pleural effusions, pneumothoraces, pulmonary infiltrates, and vascular congestion are all easily identifiable problems that typically receive targeted therapies.

**Ultrasound**

Emergency physicians have become adept at the use of bedside ultrasound. As a diagnostic tool, it may prove particularly useful in the dying population, as it is noninvasive and can be performed quickly at the bedside, potentially allowing for the identification of easily treatable conditions. Recent studies have demonstrated that, for patients in the ED with acute dyspnea, pulmonary ultrasound can aid in differentiating cardiogenic versus pulmonary etiologies and may even allow for more accurate diagnosis of pleural effusions, pneumothoraces, and lung consolidation when compared to chest radiography.\(^{54,55}\) Ultrasound’s ability to both detect and aid in the treatment of pericardial effusions has also been well documented.\(^{56}\)

**Telemetry**

Acutely ill patients presenting to the ED are frequently placed on cardiac monitors. In patients at the EOL, particularly those who are actively dying, vital signs commonly fall outside of normal ranges and worsen as they approach death. This anticipated process will trigger the ringing of loud and disruptive alarms in patients on a cardiac monitor. Because patient symptoms and clinical appearance—rather than vital signs—guide management in the dying patient, the utility of this distracting equipment should be carefully considered, and cardiac monitoring should be discontinued if it serves no useful purpose.

**Treatment**

Treatment will vary, depending on the etiology of the patient’s dyspnea, the prognosis, and the goals of care. When comfort is the highest priority, management typically becomes more symptom-focused rather than problem-focused; as a result, management is fairly consistent across many disease types and patient populations.

**Opioids**

At the EOL, opioids are the mainstay of treatment for symptomatic breathlessness. Opioids have been shown in both clinical and laboratory settings to significantly reduce dyspnea.\(^{57,58}\) The mechanism by which opioids act to alleviate dyspnea is complex, largely theoretical, and likely multifactorial. One theory postulates that there is a direct central nervous system effect to modulate the perception of dyspnea, similar to the action of opioids on pain perception.\(^{59}\) Opioids are also known to act on brainstem reflexes to reduce the reaction and subsequent compensatory physiologic changes associated with chemoreceptor activation from elevated \( \text{PaCO}_2 \) (ie, an increase in ventilation).\(^{60,61}\) By buffering this response to hypercapnia, an increased tolerance may be achieved in dyspneic patients. There is also limited evidence that opioids may have peripheral action through local receptors in the alveoli, resulting in similar physiologic changes when administered in a nebulized form.\(^{52}\) Finally, the emotional component of dyspnea may be a target for therapy, as opioids seem to contribute to anxiolysis in dyspneic patients, independent of their ability to lessen measured discomfort.\(^{58}\)

To date, selection of a particular opioid, the dosing regimen, and the route of administration have not been adequately delineated through high-quality clinical trials, particularly in the acute setting. The major obstacle in conducting these studies is heterogeneity of subjects and difficulty enrolling large numbers of patients without confounders (such as existing opioid use). A systematic review by Jennings et al has somewhat limited applicability to the acute care setting, as the majority of the studies examined patients with stable COPD, but it did include 18 high-quality studies that showed dyspnea
relief with opioids (9 oral/parenteral and 9 nebulized). Nonetheless, the results suggest a significant improvement in self-reported symptoms with both oral and parenteral formulations of opioids, but nebulized formulations performed no better than placebo. Regarding the latter finding, the authors do point out that the placebo nebulized saline may not be a true placebo and could improve dyspnea through tactile stimulation or by breaking up secretions. This finding is consistent with other recent literature that indicates that nebulized forms of opioid administration do not outperform placebo, although Charles et al performed a randomized controlled trial comparing nebulized and systemic hydromorphone to a nebulized saline placebo and found meaningful improvement in symptoms, with no significant difference between the 3 treatments. This trial lends further evidence to the theory that nebulized saline alone may be an actual treatment option for dyspnea.

The choice of opioid is essentially based on provider preference and department availability, since there are no clinical trials to support use of one form over another. This becomes evident in the literature, as most studies of dyspnea relief involve a different (though often equivalent) regimen. For example, oral dihydrocodeine, oral morphine, subcutaneous morphine, and IV morphine have all been examined in the acute setting, with positive results. In patients with renal impairment, caution has traditionally been exercised with the use of morphine, given concerns about toxic metabolite accumulation that may put patients at increased risk for neurologic side effects (ie, myoclonus). In reality, this concern is largely theoretical, as studies have not been able to consistently demonstrate any association between renal dysfunction and toxicity in patients receiving morphine. Regardless, if morphine is selected in patients with renal dysfunction, lower starting doses and less-frequent dosing intervals are typically advised in order to account for impaired metabolism.

While most emergency clinicians have considerable experience administering opioids for pain, there is often less familiarity and comfort using opioids for the relief of dyspnea. Dosing should follow the general rule of “start low and go slow.” In the palliative care literature, a wide range of doses are used to achieve symptomatic relief. In 1 small trial, patients needed a mean dose of 2.5 mg of oral hydromorphone (approximately 0.4 mg IV) to achieve comfort. In another trial, a mean initial oral morphine dose of 9.4 mg ± 8.8 mg (approximately 0.8 mg IV) was administered, with doses escalated in a stepwise manner until the desired effect was achieved. In the ED, it is reasonable (particularly in opioid-naive patients) to use starting doses of 1 to 2 mg of IV morphine and 0.2 to 0.4 mg of IV hydromorphone. Repeated doses can be safely given 10 minutes after IV administration if the desired effect has not been achieved. (See the Clinical Pathway.)

For opioid-tolerant patients, an appropriate starting dose is roughly 10% of the total daily opioid dose the patient is receiving. If the IV route is to be used, a table including equianalgesic doses of opioids is often needed to convert between IV and PO routes and among the various available opioid formulations. (See Table 5.) For example, a patient taking oral hydromorphone 8 mg every 4 hours around the clock and an extra 4 mg twice daily for breakthrough pain is using about 56 mg of oral hydromorphone daily. As illustrated in Table 5, the equivalent IV hydromorphone dose would be about 11 mg in 24 hours. If this patient presents to the ED with severe dyspnea needing symptom relief, an appropriate starting IV hydromorphone dose would be 10% of the 11-mg total daily dose, meaning the patient would initially be given 1 mg of IV hydromorphone (roughly equivalent to morphine 7 mg). In patients on complicated and/or high-dose opioid regimens, consultation with a palliative care specialist can be helpful to ensure appropriate starting doses and titration of medications.

In the verbal, interactive patient, the objective of treatment should be the subjective relief of dyspnea, as reported by the patient. Objective findings (eg, respiratory rate or oxygen saturation) may be misleading and should only be used if the patient is unable to effectively communicate. In the noncom-

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**Table 5. Opioid Conversion Table**

<table>
<thead>
<tr>
<th>Opioid Agonist</th>
<th>Dose (mg)</th>
<th>PO/Rectal Dose Ratio</th>
<th>Duration of Effect (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>10</td>
<td>30</td>
<td>1:3</td>
</tr>
<tr>
<td>Long-acting morphine</td>
<td>_</td>
<td>30</td>
<td>_</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>_</td>
<td>30</td>
<td>_</td>
</tr>
<tr>
<td>Oxycodone</td>
<td>_</td>
<td>20</td>
<td>_</td>
</tr>
<tr>
<td>Long-acting oxycodone</td>
<td>_</td>
<td>20</td>
<td>_</td>
</tr>
<tr>
<td>Oxymorphone</td>
<td>1</td>
<td>10</td>
<td>1:10</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>1.5</td>
<td>7.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Fentanyl</td>
<td>0.2 (200 mcg)</td>
<td>_</td>
<td>_</td>
</tr>
</tbody>
</table>

**Note:** If converting between opioids when pain is well controlled, decrease the dose of the new opioid by 25% to 50% to allow for incomplete cross-tolerance. Be prepared to titrate up rapidly for analgesia in the first 24 h. If pain is not controlled, you may choose not to decrease the dose.

**Abbreviations:** IV, intravenous; IM, intramuscular; PO, by mouth; SQ, subcutaneous.
Clinical Pathway For Management Of Dyspneic Patients At The End Of Life

Patient with dyspnea at the end of life

- Comfort is an important goal for patient
- Prognosis is weeks or longer
- Patient desires easily reversible conditions to be treated

Consider basic tests:
- CBC (anemia)
- Chest x-ray (pneumonia, vascular congestion, pleural effusion) (Class III)

If no easily reversible problem is identified, proceed with symptom-focused care

- Comfort is the only goal for the patient
- Prognosis is hours or days

- Administer morphine 1 mg IV or 5 mg PO
- If renal impairment, consider hydromorphone 0.2 mg IV or 1 mg PO (Class I)
- Consider the addition of oxygen via nasal cannula (Class III), particularly for oxygen-dependent patients
- Consider the addition of low-dose lorazepam (1 mg PO or IV) in patients with strong anxiety component to dyspnea (Class II)
- Consider use of a hand-held fan, when available (Class II)
- If consistent with overall goals, NIPPV may be beneficial in select patients (Class III)

Improvement? (From patient self-report or relaxation of facial muscles, reduced respiration rate, and/or reduced accessory muscle use)

Yes

- Order effective dose as standing medication to be given every 4 h
- Order same medication to be available as needed every hour, at half the effective dose (Class II)

Total dose needed to achieve relief is the effective dose, to be given every 4 h

No

Double dose and administer 10 min after first dose; repeat until effective dose found (Class II)

Order same medication to be available as needed every hour, at half the effective dose

Class Of Evidence Definitions

Each action in the clinical pathways section of *Emergency Medicine Practice* receives a score based on the following definitions.

**Class I**
- Always acceptable, safe
- Definitely useful
- Proven in both efficacy and effectiveness

**Level of Evidence:**
- One or more large prospective studies are present (with rare exceptions)
- High-quality meta-analyses
- Study results consistently positive and compelling

**Class II**
- Safe, acceptable
- Probably useful

**Level of Evidence:**
- Generally higher levels of evidence
- Nonrandomized or retrospective studies: historic, cohort, or case control studies
- Less robust randomized controlled trials
- Results consistently positive

**Class III**
- May be acceptable
- Possibly useful
- Considered optional or alternative treatments

**Level of Evidence:**
- Generally lower or intermediate levels of evidence
- Case series, animal studies, consensus panels
- Occasionally positive results

**Indeterminate**
- Continuing area of research
- No recommendations until further research

**Level of Evidence:**
- Evidence not available
- Higher studies in progress
- Results inconsistent, contradictory
- Results not compelling


Abbreviations: CBC, complete blood count; IV, intravenous; NIPPV, noninvasive positive-pressure ventilation; PO, by mouth.
municative patient, an assessment should, ideally, incorporate the judgment of both the family and treating physicians.

**Do opioids hasten death?**

In sufficient doses, opioids have the ability to induce respiratory depression and even cause apnea. For this reason, clinicians commonly fear administering these drugs to patients already exhibiting signs of respiratory compromise. Given that the PaCO₂ response curve is shifted to provide a reduced ventilatory response to hypercapnia and hypoxia, it is understandable that providers are wary. However, while some studies have shown transient PaCO₂ rises after opioid administration, multiple studies have demonstrated that, when opioids are carefully administered and target symptomatic relief of dyspnea, changes in arterial oxygenation and carbon dioxide are not observed.

Ultimately, to answer the question of whether opioid administration shortens survival in dying patients with dyspnea, a randomized trial would need to be performed. Given the nature of the subjects in question and the ethical implications of withholding a known palliative intervention for symptomatic, dying patients, this is unlikely to be feasible in design.

Consequently, indirect evidence exists that refutes the claim that opioid use hastens death in those at the EOL. Morita et al examined opioid and sedative dosing in the last 48 hours of life of 100 admitted hospice patients. There was a wide range of doses used in this cohort, with some patients receiving more than 600 mg of oral morphine in the 48 hours preceding death and others receiving less than a third of these doses, and yet no association could be found between survival and the amount of opioids administered. Furthermore, Portenoy et al reported on a cohort of 725 hospice patients receiving opioids at the EOL and also found that opioid dosing contributed to very little of the variability observed in the survival of patients. Another similar study in the outpatient dying population corroborates these findings.

**Benzodiazepines**

Benzodiazepines may also play a role in the relief of dyspnea, although evidence for this drug class is much weaker than for opioids. These drugs are often used when anxiety is suspected as a major source of a patient’s dyspnea, but routinely administering a benzodiazepine is not currently standard practice. A Cochrane review by Simon et al that examined 7 trials and included a total of 200 patients concluded that there was a slight (but statistically insignificant) benefit for the use of benzodiazepines in the relief of dyspnea, with a small overall effect size. In a small, uncontrolled study including patients with dyspnea believed to have a strong anxiety component, combination therapy of opioids and lorazepam (1 mg by mouth) decreased the intensity of dyspnea with no adverse effects on oxygenation or ventilation. With limited evidence for efficacy but no evidence for harm when used in small doses, judgment should dictate when these medications are used in conjunction with opioids for the acutely dyspneic patient.

**Nonpharmacologic Therapies**

Two major nonpharmacologic therapies to be considered in the ED are supplemental oxygen and hand-held fans.

Abernethy and colleagues recently completed a multicenter double-blind randomized controlled trial comparing oxygen versus room air delivered through a nasal cannula in patients with life-limiting illnesses. Out of 239 nonhypoxemic patients, there was no significant difference in subjective reporting of relief in either group at the end of 1 week. Clemens et al found that, when opioids and supplemental oxygen as dyspnea therapies were prospectively compared in hospitals and nursing homes, opioids worked significantly better. Of equal significance in this study, there was no correlation between oxygen saturation and intensity of dyspnea. A systematic review further corroborates these findings. It is important to note, however, that the Abernethy study was aimed at potentially reducing the unnecessary cost and burden of home oxygen and was conducted in outpatients with clinically significant dyspnea. In the ED, there is minimal additional burden or cost to providing oxygen, particularly when it is delivered via nasal cannula; therefore, it is reasonable that dyspneic patients (particularly those with hypoxia) receive a trial of supplemental oxygen therapy. If no improvement is noted and/or the delivery mechanism becomes burdensome for the patient, this intervention can be discontinued.

Regarding bedside or hand-held fans, the limited research done to date suggests that this simple tool may play a role in dyspnea management. The few studies that have been performed indicate that fans aimed at the face of the dyspneic patient relieve dyspnea to a significant degree. The physiology of this response is poorly understood, but it is theorized to be secondary to either cooling of the oral mucosa or cooling of the trigeminal nerve distribution and subsequent reflex improvement in breathlessness. Given that fans are inexpensive, are portable, and appear to have a moderate evidence base, they should be provided to the dyspneic patient when available.

The significant anxiety and stress caused by dyspnea is often compounded by the existential distress experienced in patients approaching the EOL. While it may be beyond the scope and practice of the emergency clinician to address the spiritual suffering of such patients, social workers and chaplaincy services are available in many hospitals and should be involved in ED care, where feasible.
**Secretion Management**

Severe dyspnea may be complicated by heavy secretions in the upper airway. As patients become progressively weaker at the EOL, they are no longer able to swallow secretions in the oropharynx. The sound created when air travels over pooled secretions in the posterior pharynx is known as the death rattle. The presence of a death rattle typically signifies that someone is in the active dying phase, correlating with a prognosis of hours to days. While the sound does not indicate patient discomfort, it can be extremely distressing for family members; therefore, treatment of this condition is often desired. Suctioning, repositioning, and administering pharmacological antisecretory medications have all been investigated. Nonetheless, there is limited evidence at this time to support any treatment modalities for this condition. A 2008 Cochrane review of interventions for noisy breathing at the EOL included only 1 placebo-controlled study of sufficient quality. While it demonstrated that use of hyoscine hydrobromide (scopolamine, a muscarinic antagonist) reduced secretions and death rattle compared to placebo, the difference was not significant. Subsequently, a large prospective randomized trial was performed comparing atropine, scopolamine, and hyoscine butyl-bromide. Out of 333 subjects, many experienced improvement over the study period, with no differences found between treatment arms. Approximately 40% of patients had a reduction in death rattle to a “nondisturbing” intensity within 1 hour of treatment initiation, though without a placebo group, estimating the true treatment effect of these agents is not possible. Nonetheless, if simple repositioning does not alleviate noisy breathing, a trial of pharmacologic agents is reasonable. The most commonly used medications include glycopyrrolate, atropine, and scopolamine. Glycopyrrolate is administered parenterally in doses of 0.2 mg every 6 hours. One to 2 drops (approximately 0.5 mg/drop) of the 1% ophthalmic preparation of atropine can be given orally every 2 to 4 hours, or atropine can be given parenterally in doses of 0.2 to 0.4 mg IV. Scopolamine is available via a patch, which can be appealing given its ease of use, though onset of action will be delayed by 6 to 8 hours through the transdermal route.

**Special Circumstances**

NIPPV is routinely used in the ED to manage dyspnea secondary to conditions like CHF and COPD. While its effectiveness at reducing the need for intubation and mortality has been well demonstrated in subjects experiencing an acute decompensation from these chronic diseases, its role in the treatment of dyspnea in patients at the EOL is less well defined. In a small prospective study of patients with advanced solid organ malignancies and either hypoxic or hypercapnic respiratory failure, the use of NIPPV was associated with an improvement in oxygenation and dyspnea scores, with > 50% of the cohort recovering from the episode and leaving the hospital alive. In 40% of patients, however, NIPPV was unable to improve respiratory function, and most of those patients ultimately died within a few days. NIPPV can be physically uncomfortable and can create a sense of suffocation for many patients. In addition, it generates a loud and distracting noise and can act as a barrier for patient and family interaction at the EOL. For all of these

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**Time- And Cost-Effective Strategies**

- When time allows, search for advance directives before initiating treatments in the ED. Committing time to communication up front can save an enormous amount of time and resources later in the patient’s clinical course. Even when the ED is very busy and hectic, sometimes only 10 to 15 minutes of focused, informed conversation is all that is needed to elucidate important patient treatment goals, obviating the need for costly, unwanted therapies.
- Call family members. It can feel time-consuming to track down contact numbers and make phone calls, but speaking with family may provide insight into the patient’s overall clinical condition and alert the clinician to advance directives.
- When in doubt, consult palliative care. Most hospitals now have some type of palliative care service (although they may not be available 24 hours a day). Sometimes a more lengthy discussion is needed between patient, family, and healthcare providers to discuss prognosis and realistic treatment options. Emergency clinicians do not typically have the time to have these more-involved conversations, but this does not mean that the default should always be to “do everything” and admit to the ICU. Often, the palliative care team can take the time necessary to determine appropriate goals of care.
- Call hospice. Since they already have the tremendous support network in place outside the acute care setting, early involvement of the hospice team can often help a patient avoid hospital admission. A hospice nurse may be able to see the patient in the ED to assist with symptom management, arrange for short-term bedside nursing care in the patient’s home, or facilitate transfer to an inpatient hospice facility if home is no longer a viable option.
reasons, the benefits of NIPPV have to be weighed carefully against the burdens in this population, with individual patient goals determining whether a time-limited trial is attempted.

Controversies And Cutting Edge

One additional pharmacologic intervention for dyspnea that has promising, but insufficient, data is ketamine. In 1987, Bourke et al showed that ketamine at high doses not only binds opioid receptors, but it also decreases the central compensatory response to hypercapnia. While more clinical investigation is necessary, ketamine may be a promising therapy in the coming years.

Disposition

The ultimate setting to which patients with acute dyspnea transition will depend on a multitude of fac-

Risk Management Pitfalls For Dyspneic Patients At The End Of Life

(Continued on page 15)

1. “I don’t want to do anything aggressive to her because she’s DNR.”
Remember that DNR does not mean “do not treat.” This order only applies to care that is delivered when the patient has experienced a full cardiopulmonary arrest. Many patients who elect to be DNR would like other treatments (such as IV fluids and even intubation), particularly in the setting of a reversible process.

2. “The person at the bedside seems to know the patient well, so I’ll just let him make all of the decisions.”
Physicians should make reasonable efforts to determine who the patient’s legal and appropriate decision-makers are. In some states, healthcare providers are protected from civil and legal liability if they are determined to have navigated this process in good faith.

3. “The family says they want everything done. It seems like a strange decision given the patient’s prognosis, but it’s not for me to explore this further. I will assume that means they want her to be intubated and that they want a central line placed so that vasopressor therapy can be initiated.”
Patients and families often say they want “everything” without fully understanding what this means or the implications of certain treatment decisions (such as intubation). It is better to ask them what they are hoping for, in light of the patient’s condition, and then make treatment recommendations that allow their goals to be met.

4. “I can’t give morphine to a patient in respiratory distress. I don’t want to be accused of euthanizing anyone!”
Opioids are the first-line treatment for dyspnea at the EOL. They are safe and effective when used in appropriate doses to target symptoms. Withholding this widely accepted palliative intervention is inappropriate, particularly in patients endorsing comfort as their primary goal.

5. “How was I supposed to know the patient had a POLST designating his care to be focused on ‘comfort measures only?’ I assume if he’s coming to the ED, he must want something more.”
Healthcare providers should be diligent in searching for previously completed advance directives, particularly in patients transitioning from the nursing home environment, as advance directives are now widely employed in this setting. Many patients develop significant symptoms at the EOL, and not all nursing homes and/or families are prepared to manage the complex needs of such patients (particularly in the absence of hospice services).

6. “The patient is dying and the family says she only wants comfort-focused care, but I have religious objections to just allowing a patient to die. I’m going to intubate her and let the team upstairs sort this out.”
One of the most important ethical principles that should guide physician behavior is that of patient autonomy. Patients have a legal and ethical right to determine what happens to their bodies. Particularly in the setting of a terminal illness, it is reasonable and normal that patients and families may decide to forgo life-sustaining treatments and focus on maximizing quality of life. If the physician caring for the patient has ethical objections to such decisions, he or she is obligated to find another physician who can honor the wishes and needs of the patient.
tors. Some patients approach the ED at the very end of their life and spend their last hours in that setting. For these patients, care should be taken to create an environment that is quiet, respectful, and supportive. Simple actions that can be very meaningful include placing the patient in a private room, when available, and ensuring adequate seating for family members. In addition, ensuring that the entire staff understands the nature of the patient’s condition and the overall goals of treatment safeguards against unnecessary and burdensome interventions such as repeated vital sign checks and laboratory draws.

Some patients may be stable enough to transition out of the ED, but for a variety of reasons (such as overwhelming symptom burden or inadequate social support) they cannot transition back home. Increasingly, hospitals are developing inpatient hospice and/or palliative care units, which are ideal settings for the dyspneic patient at the EOL. These units are often staffed by specialized personnel with advanced palliative care training. Families report the highest quality of EOL care for their loved ones when it is delivered in this setting, even when compared to an inpatient setting that includes a palliative care consultation.

8. “This patient is here all the time for respiratory failure secondary to her COPD, and yet she keeps smoking. This feels futile and like a total waste of resources. I refuse to intubate her this time.”

Patients have a right, within reason, to determine what happens to their bodies. Particularly in the setting of an organ-failure diagnosis like COPD, short-term periods of critical care may result in significant improvement in the patient’s condition and allow the patient to recover with a reasonable quality of life. In the context of medical ethics, justice is an important ethical principle that pertains to the equitable distribution of resources. Decisions regarding justice should largely be made at the policy level, while individual physician-patient encounters should largely be guided by the principles of autonomy, beneficence, and nonmaleficence.

9. “The patient clearly said he didn’t want to be intubated, but he’s too sick to communicate now, and his daughter is telling me to do everything. I don’t want to get sued.”

The entire role of surrogate decision-makers is generally to promote patient autonomy and specifically to make decisions that the patient cannot make for himself or herself. If the patient has already clearly made a decision and it has been witnessed and well documented, surrogate decision-makers do not have the legal or ethical right to override that decision.

10. “The patient is in respiratory distress but is DNR/DNI. I can’t just do nothing, so I’ll put him on BiPAP® until he passes away.”

NIPPV can be an important intervention for patients with acute dyspnea, particularly in those with underlying diagnoses such as COPD and CHF. For patients who are DNR/DNI, NIPPV might facilitate recovery from an acute decompensation, even for patients with dyspnea approaching the EOL. Nonetheless, some patients are not interested in artificially prolonging the dying process and/or find the NIPPV delivery system burdensome, rendering this an inappropriate intervention. In others, after a time-limited trial of NIPPV, it becomes apparent that the patient is on an irreversible dying trajectory. For such patients, NIPPV is likely burdensome, causing feelings of suffocation and discomfort at the EOL.
offer comparable care; however, actual enrollment in hospice is a necessary precursor and sometimes a barrier. While hospice enrollment in the ED has been increasingly described and is certainly achievable, time and resources may be limiting factors.86

When and where available, consultation of the inpatient palliative medicine service can ensure that patients receive optimum care at the EOL. In a large, urban ED with a well-developed palliative care service, it was demonstrated that, while most patients receiving an inpatient palliative care consult arrived through the ED, only a minority of these consults were initiated by emergency clinicians.87 There are likely many opportunities for early palliative care involvement.

When adequate symptom control is achieved and going home is a desired option, patients meeting hospice eligibility and endorsing goals consistent with hospice care strongly benefit from enrollment. A referral to hospice can ensure that patients and their families continue to receive the expert, coordinated, supportive care necessary at the EOL. This process can be initiated from the ED setting.86 Typically, it takes hospice 24 to 48 hours to arrive at the patient’s residence and formally enroll him or her, so ensuring that patients have the medical and social support necessary during the interim time period is critical to a successful transition.

**Summary**

Dyspnea is a common and distressing symptom encountered by patients at the EOL. Many will seek relief and support in the ED setting, making it critical for the emergency clinician to know the essential palliative interventions available to such patients. Prior to the initiation of diagnostic or therapeutic interventions in patients with life-limiting illnesses, careful communication should be used to clarify the goals of care, as this will ensure that these patients avoid burdensome, invasive interventions when they are unnecessary.

While the contributors to and the pathophysiology of dyspnea at the EOL are complex, symptom-focused therapy is rather consistent across disease states. Opioids are the mainstay of treatment for dyspnea management in the terminally ill, although time-limited trials of NIPPV and oxygen play a role in certain patient populations. Emergency clinicians should feel confident in the safety profile of opioids for patients at the EOL; when used carefully and appropriately, studies demonstrate that these medications do not hasten death.

Emergency clinicians should be familiar with the basic disposition options available to patients at the EOL. Where available, palliative care consult services should be involved early and often, as they can improve symptom management and facilitate care transitions for these patients. Increasingly, hospitals are incorporating inpatient palliative care and hospice units into their facilities, and these can be ideal settings for terminally ill patients with dyspnea. Emergency clinicians may initiate home hospice referrals from the ED and may increasingly be expected to do so as pressures mount to limit admissions. Emergency clinicians’ familiarity with this process may allow many patients to receive the EOL care and support they need in the comfortable and familiar environment of their own homes.

**Case Conclusion**

After an assessment of the patient and review of her chart through the electronic medical record, you become concerned that this patient may be in the last days to weeks of her life. A brief discussion with the patient revealed that she is confused and too distressed to participate in decision-making, so you took the husband to a quiet corner of the ED to talk. When you asked, “What have the doctors told you about your wife’s condition?” the husband responded by saying, “She’s dying. I know. But I can’t manage this at home.” You validated his concerns and decisions about calling EMS and then asked, “Knowing that her time is short, what would your wife tell us is most important to her right now?” Her husband explained that she would want him by her side and that she “doesn’t want to suffocate.” You assured him that you will do your very best to support these goals. You found a quiet, private room in the ED and had the patient transported there. A chair was placed next to the bed so that the husband could be by his wife’s side. The patient already had IV access that was obtained in the prehospital setting, so the parenteral route could be used to deliver medications. Her husband reported that “she takes a Percocet® every now and then, but that’s it,” so you considered her relatively opioid-naïve. You ordered morphine 1 mg IV. After this, her respiratory rate declined from 40 to 35 breaths per minute, but it still appeared labored. You administered 2 mg, and then 4 mg, in 10-minute time intervals. After this last dose, the patient’s respiratory rate decreased to 20 and her face appeared relaxed, with her accessory muscles no longer visible with breathing. Her oxygen saturation increased from 90% to 99% with 3 L oxygen via nasal cannula. You and the husband decided to continue oxygen delivery, with a plan to reassess the utility of this intervention in the morning. You placed a call to the palliative care consult service. Although they were not in-house, they said they would see your patient in the morning, and they agreed with your treatment decisions. They made a plan to transfer the patient to the palliative care unit in the morning, when a bed would be available. When you updated the patient’s husband regarding the plan, he said, “Thank you. I really appreciate everything you’ve done. She looks so peaceful.”
### References

Evidence-based medicine requires a critical appraisal of the literature based upon study methodology and number of subjects. Not all references are equally robust. The findings of a large, prospective, randomized, and blinded trial should carry more weight than a case report.

To help the reader judge the strength of each reference, pertinent information about the study will be included in bold type following the reference, where available. In addition, the most informative references cited in this paper, as determined by the authors, are noted by an asterisk (*) next to the number of the reference.

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CME Questions

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1. Approximately what percentage of patients with terminal cancer will experience dyspnea in the last 6 weeks of life?
   a. 25%
   b. 50%
   c. 75%
   d. 100%

2. A 91-year-old male patient with stage IV lung cancer presents to your ED with mild shortness of breath. He reports acute and chronic back pain, decreased appetite, and spending almost his entire day in bed, due to profound weakness. What is the most important prognostic element of the history?
   a. Decreasing performance status
   b. Worsening pain
   c. Shortness of breath
   d. Decreased appetite

3. Which of the following choices is the most important element in determining an overall management strategy for a patient at the EOL in the ED?
   a. Patient goals, preferences, and values
   b. Physician gestalt
   c. Prognosis
   d. Availability of life-extending interventions
4. According to the SILVER mnemonic for improving EOL communication, which of the following is an example of a good early question to ask when assessing a patient's goals of care?
   a. “Do you want everything done?”
   b. “How much of the day do you spend in bed?”
   c. “Do you want to be intubated?”
   d. “Are you DNR/DNI?”

5. Which of the following physical examination findings correlates with the shortest median time of survival?
   a. Delirium
   b. Death rattle
   c. Respirations with mandibular movements
d. Cyanosis to extremities

6. During a busy ED shift, you have been treating a verbal hospice care patient with IV hydromorphone for dyspnea relief. After her third dose, you reassess. What should be your objective of treatment?
   a. Decrease in respiratory rate and tachycardia
   b. Overall improvement in patient appearance, as judged by the physician
   c. Subjective report of improvement by the patient
d. Increase in oxygen saturation and decrease in measured PaCO₂

7. In which of the following scenarios should you consider benzodiazepines as an adjunct for dyspnea relief at the EOL?
   a. You suspect that anxiety is playing a significant role in the subjective sensation of breathlessness.
   b. You are beginning to see respiratory rate depression with opioids, and your patient continues to report shortness of breath.
   c. There is no role for benzodiazepines for dyspnea treatment.
   d. Benzodiazepines should be administered concurrently with opioids in all patients with dyspnea at the EOL.

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**Target Audience:** This enduring material is designed for emergency medicine physicians, physician assistants, nurse practitioners, and residents.

**Goals:** Upon completion of this article, you should be able to: (1) demonstrate medical decision-making based on the strongest clinical evidence; (2) cost-effectively diagnose and treat the most critical ED presentations; and (3) describe the most common medicolegal pitfalls for each topic covered.

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