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Jan Shoenberger, *University of Southern California, Los Angeles*

Sangeeta Lamba, *Rutgers-New Jersey Medical School*

Rebecca Goett, *Rutgers-New Jersey Medical School*

[Paul L. DeSandre](#), *Emory University*

Kate Aberger, *St. Joseph's Healthcare System*

Suzanne Bigelow, *Providence Regional Medical Center Everett Everett WA.*

Todd Brandtman, *Adventist Health Feather River*

Garrett K. Chan, *University of California at San Francisco*

Robert Zalenski, *Wayne State School of Medicine*

David Wang, *Scripps Health*

Only first 10 authors above; see publication for full author list.

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Development of Hospice and Palliative Medicine Knowledge and Skills for Emergency Medicine Residents: Using the Accreditation Council for Graduate Medical Education Milestone Framework

Jan Shoenberger, MD, Sangeeta Lamba, MD, MSHPEd, Rebecca Goett, MD, Paul DeSandre, DO, Kate Aberger, MD, Suzanne Bigelow, MD, Todd Brandtman, MD, Garrett K. Chan, PhD, RN, Robert Zalenski, MD, David Wang, MD, Mark Rosenberg, DO, MBA, and Karen Jubanyik, MD

ABSTRACT

Objectives: Emergency medicine (EM) physicians commonly care for patients with serious life-limiting illness. Hospice and palliative medicine (HPM) is a subspecialty pathway of EM. Although a subspecialty level of practice requires additional training, primary-level skills of HPM such as effective communication and symptom management are part of routine clinical care and expected of EM residents. However, unlike EM residency curricula in disciplines like trauma and ultrasound, there is no nationally defined HPM curriculum for EM resident training. An expert consensus group was convened with the aim of defining content areas and competencies for HPM primary-level practice in the ED setting. Our overall objective was to develop HPM milestones within a competency framework that is relevant to the practice of EM.

Methods: The American College of Emergency Physicians Palliative Medicine Section assembled a committee that included academic EM faculty, community EM physicians, EM residents, and nurses, all with interest and expertise in curricular design and palliative medicine.

Results: The committee peer reviewed and assessed HPM content for validity and importance to EM residency training. A topic list was developed with three domains: provider skill set, clinical recognition of HPM needs, and logistic understanding related to HPM in the ED. The group also developed milestones in HPM-EM to identify relevant knowledge, skills, and behaviors using the framework modeled after the Accreditation Council for Graduate Medical Education (ACGME) EM milestones. This framework was chosen to make the product as user-friendly and familiar as possible to facilitate use by EM educators.

Conclusions: Educators in EM residency programs now have access to HPM content areas and milestones relevant to EM practice that can be used for curriculum development in EM residency programs. The HPM-EM

From the Keck School of Medicine of the University of Southern California (JS), Los Angeles, CA; Rutgers-New Jersey Medical School (SL, RG), Newark, NJ; Emory University School of Medicine (PD), Atlanta, GA; St. Joseph's Healthcare System (KA, MR), Paterson, NJ; Providence Regional Medical Center Everett (SB), Everett, WA; Adventist Health Feather River (TB), Paradise, CA; University of California at San Francisco (GKC), San Francisco, CA; Wayne State School of Medicine (RZ), Detroit, MI; Scripps Health (DW), San Diego, CA; and Yale University School of Medicine (KJ), New Haven, CT.

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Supervising Editor: Wendy C. Coates, MD.

Address for correspondence and reprints: Jan Shoenberger, MD; e-mail: shoenber@usc.edu.

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skills/competencies presented herein are structured in a familiar milestone framework that is modeled after the widely accepted ACGME EM milestones.

Caring for patients with life-limiting illness is a routine part of the daily practice of emergency medicine (EM) physicians. Palliative care is composed of an interdisciplinary team that aims to provide relief to patients as well as their families from the symptoms of life-limiting illness throughout the course of disease. Many patients in the emergency department (ED) have palliative care needs and many EM physicians feel their palliative care related knowledge base and skill set could be improved upon.¹⁻³

The terms “primary palliative care” or “primary-level skills” are often used to describe the skills that frontline providers, such as emergency physicians, possess and employ in caring for seriously ill patients. Examples of these skills include basic management of pain (and/or other symptoms) and basic discussions such as code status. The term “secondary palliative care” refers to the specialized, advanced skill set that is developed through fellowship training and may be needed in more challenging circumstances such as complex ethical issues or symptoms that are refractory to standard therapies.⁴ Table 1 further outlines these terms and how they can be applied.⁴ The majority of EM physicians neither have received formal training in palliative medicine nor have they received focused palliative care skills training in residency. A recent study surveying residency program directors in the United States revealed that nearly two-thirds (64%) of those surveyed identified palliative care competencies as important for residents to learn.⁵ Another study of EM residents in New York revealed that only half had completed any training in palliative care prior to residency yet 71% agreed or strongly agreed that palliative care was an important competency for emergency physicians.⁶ In addition, palliative care training in medical school curricula has been identified as inadequate in multiple studies.^{7,8}

In 2008, the first hospice and palliative medicine (HPM) examination was administered to eligible applicants, including those with certification by the American Board of Emergency Medicine (ABEM). There are now almost 150 ABEM diplomates with subspecialty certification in HPM.⁹ In 2012, the American College of Emergency Physicians (ACEP) began a palliative medicine section for interested members to collaborate and explore the intersection of HPM and EM. In 2013, a subcommittee on palliative care curriculum development was formed. The aim of the committee

was to develop a framework for a curriculum in primary palliative care that was specifically EM relevant (HPM-EM). This involved identifying a list of EM-relevant HPM content topics followed by identifying the necessary milestones in HPM-EM within a suggested competency assessment tool. The committee decided to model a tool after the widely accepted milestones in EM developed by the Accreditation Council for Graduate Medical Education (ACGME). Milestones are assessable accomplishments and behaviors that occur during the process of education. Milestones aim to identify specific knowledge, skills, attitudes, and behaviors that can be used as outcome measures within general competencies.¹⁰ These milestones were formulated in conjunction with the ABEM and were introduced to residency programs in 2013.^{10,11} Milestones were developed and introduced throughout training programs in all specialties starting in 2013 through implementation of the Next Accreditation System.¹² Our overall objective was to develop HPM milestones within a competency framework that is relevant to the practice of EM. These HPM-EM milestones are expected to set the stage for the future implementation of an integrated HPM-EM curriculum for EM residency training similar to established EM-related disciplines such as ultrasound.¹³

METHODS

Committee Composition

In 2013, the Palliative Medicine Section of the ACEP assembled a committee to develop a consensus document on HPM-EM curriculum development. The section chair and chair-elect first identified a member with dual HPM-EM as well as medical education expertise to lead the committee (SL). The leadership group then recruited members with established dual EM-HPM expertise (small cohort who were well known nationally since subspecialty recognition in 2008) as well as those with passion or expressed interest in HPM-EM clinical practice or curriculum development. Although the section leaders remained as serving committee members (due to their HPM-EM expertise), all of the committee work including organization, vision, product finalization was under the direction of the committee chair (with support of members). The committee included academic EM faculty (JS, KJ, PD, RG, SL), practicing community EM

Table 1
HPM Topics Relevant to EM Practice

<i>Domain 1: provider skill set (primary level)</i>	
1. Pain control	
a. Chronic pain	
b. Malignant and nonmalignant pain	
2. Treating other distressing symptoms (e.g., nausea/vomiting, dyspnea)	
3. Difficult communication	
a. Delivery of bad news (e.g., prognosis and death telling)	
b. Conflict resolution (e.g., between family members)	
4. Goals of care discussions	
a. Assisting families with decision making	
b. Assisting patients with decision making	
5. Caregiver support	
6. Noninitiation or stopping of nonbeneficial interventions	
7. Treating common end-of-life symptoms	
8. Care for the imminently dying (expected death within hours to days) or recently deceased patient and their family members	
9. Bereavement and grieving	
10. Family witnessed resuscitation	
11. Caring for patients under hospice care	
12. Coping and self-care	
13. End-of-life management in a mass casualty incident/event	
<i>Domain 2: recognition of HPM needs in ED patients</i>	
1. Trajectories of dying	
a. Terminal illness	
b. Organ failure	
c. Frailty	
d. Sudden death	
2. Prognostication	
3. Screening for palliative care needs	
a. Identifying patients who may benefit from HPM specialist referral	
b. Identifying the imminently dying patient (expected death within hours–days)	
4. Rapid palliative care assessment	
a. Aligning diagnostics and therapeutics to patient goals	
b. Functional, psychosocial, and spiritual assessment	
c. Assessing for and initiating hospice referrals	
d. Toolkits to help identify patient needs for appropriate referrals/resources	
e. Caregiver burden	
5. Complications of cancer	
a. Disease complications (e.g., spinal cord compression, hypercalcemia)	
b. Treatment complications (e.g., pancreatitis, tumor lysis, neutropenia, acute renal failure)	
6. Ethnic, spiritual, and cultural issues around end-of-life and death	
<i>Domain 3: logistic understanding related to HPM in the ED</i>	
1. Advance directives	
a. Physician order for life-sustaining treatment (POLST)	
b. Medical order for life-sustaining treatment (MOLST)	
c. Five wishes	
2. Ethical and legal issues	
a. Decision-making capacity	
b. Futility	

(Continued)

3. Multidisciplinary team and support systems (understanding team roles and system resources)

- a. Spiritual care
- b. Social care
- c. Hospice care eligibility
- d. Continuing care (e.g., inpatient/outpatient)
- e. Importance of local or community support systems

4. Transitions across care settings, e.g., inpatient vs. home hospice, palliative care unit

HPM = hospice and palliative medicine.

physicians (SB, TB, MR, KA), an EM resident (DW), and an EM nurse (GC). All 11 expert panelists possessed interest/expertise in both EM education and HPM. The panel also included EM residency and palliative medicine fellowship leadership and faculty with dual EM and HPM board certification. Of note, the committee included one current residency program director (JS), one current HPM fellowship director (PD), and several other members who were active faculty members in either or both EM residency and HPM fellowship training programs. This expert consensus group was composed of members who were not only members of the ACEP Palliative Medicine Section but also members of various national organizations including the Society for Academic Emergency Medicine Palliative Medicine Interest Group, American Academy of Emergency Medicine Palliative Care Interest Group, American Academy of Hospice and Palliative Medicine, and Council of Emergency Medicine Residency Directors.

Committee Process

We used a modified nominal group expert consensus process.¹⁴ Sections/tasks were equally distributed among members (see Phase 3 described below) with semistructured rounds of edits with peer feedback. Face-to-face meetings were held for final revisions to the document. The committee retained its structure with no attrition or addition of members throughout the HPM-EM milestone development process. The committee convened via a 60-minute conference call that occurred monthly for approximately 2 years (March 2014–July 2015). Notes and minutes were recorded by the chair and an ACEP staff liaison. The committee goal was to develop HPM milestones within a competency framework that is relevant to the practice of EM and, ultimately, a work product that would be recognizable and useful for residency programs. The identified HPM-EM knowledge, skills, and attitudes would also serve as a useful outline for future curriculum development for EM residents as well as

practicing emergency physicians. The development of a HPM-EM milestone product occurred in four major expert consensus process phases: 1) identification of the HPM domains and topics relevant to EM training via literature review, 2) expert consensus decision on a competency/milestone framework and mapping of domains/topics, 3) development of HPM-EM milestones using the framework of the widely accepted ACGME EM milestones, and finally 4) face-to-face meetings to finalize the document.

Phase 1: Identification of Domains and HPM-EM Content Topics

Phase 1 involved the identification of HPM domains and content topics needed in the practice of EM. It was critical that the process involve a de novo creation of relevant content topics by literature review and consensus from educational leaders in the field of EM and HPM, as there is no standardized HPM curriculum for EM. In addition to literature review, the committee reviewed core EM textbooks through 2014,^{15,16} emergency medicine and palliative care clinical practice guidelines,^{17–20} palliative care perspectives within adjoining disciplines (pediatrics, internal medicine, family medicine),^{21–25} geriatrics and EM,^{26–40} as well as expert advisory panel discussion. Twenty-three content topics under three domains were agreed upon and were used extensively in the subsequent development of the HPM-EM milestones.⁴¹ These are outlined in Table 1.

Phase 2: Finalizing the Framework (and Mapping Content)

Phase 2 involved a review of the six ACGME core competencies: patient care (PC), medical knowledge (MK), practice-based learning and improvement (PBLI), interpersonal and communication skills (ICS), systems-based practice (SBP), and professionalism (P) as well as the related 23 current ACGME EM subcompetencies (e.g., PC1, SBP2). Each subcompetency identifies developmental milestones (Level 1–novice to Level 5–expert or aspirational) for EM residency training.^{10,11} We decided to first map each HPM-EM domain/content topic identified in Phase 1 to one of the 23 EM subcompetencies and then develop the HPM-EM milestones for each.

Phase 3: Development of the HPM-EM Milestones

We used integrated palliative care concepts to develop HPM-EM level 1 to 5 milestones for each of the 23

subcompetency areas of EM. Members of the committee were assigned one or two EM subcompetencies to develop HPM-EM milestones using the previously mapped HPM-EM domains and topics (sample shown in Table 2). Each 1-hour monthly conference call would aim to discuss the draft and seek group consensus on one milestone at a time. Mirroring the language of the original EM milestones as much as possible was a priority. Group discussions focused on the progression of skill set acquisition and elements of the skill set. The committee chairperson would record the group's discussion and consensus into a single document that would be subsequently reviewed and edited by the committee members. Following the monthly conference call and group discussions, the milestone author would make further edits and revisions, resubmitting to the group for comment and editing.

Phase 4: Finalizing the HPM-EM Milestone Document

The ACEP Palliative Medicine Section general membership provided informal feedback on relevance, importance, and descriptors for some subcompetency milestones, for example, PC8 and ICS2. These peer comments were obtained via small group and large group discussions during the section meetings held at the annual ACEP Scientific Assembly (2015–2016). Following these meetings, the committee edited the milestones based on the feedback received. The committee also held face-to-face meetings during the ACEP annual meetings (2015 and 2016) to review the HPM-EM milestone draft document and eliminate redundancies and address gaps. There was significant overlap in some of the mapped HPM domains/topics across subcompetencies. For example, the topics of difficult conversations and goals of care mapped to multiple subcompetencies such as PC1 (emergency stabilization), PC7 (disposition), and PC10 (airway management); however, the best fit was determined to be in subcompetency ICS1 (patient-centered communication).

All documents related to the milestone project were maintained on a central electronic database (Basecamp, Chicago, IL) for real-time access and collaborate editing by all group members. The work in this manuscript did not require review or approval by the institutional review board.

RESULTS

The committee identified HPM topics relevant to the clinical practice of emergency medicine grouped into

Table 2
Emergency Stabilization (PC1) Milestone

	Level 1	Level 2	Level 3	Level 4	Level 5
1. Emergency stabilization (PC1): prioritizes critical initial stabilization action and mobilizes hospital support services in the resuscitation of a critically ill or injured patient and reassesses after stabilizing intervention.					
ACGME Milestone	Recognizes abnormal vital signs	Recognizes when a patient is unstable requiring immediate intervention. Performs a primary assessment on a critically ill or injured patient. Discerns relevant data to formulate a diagnostic impression and plan.	Manages and prioritizes critically ill or injured patients. Prioritizes critical initial stabilization actions in the resuscitation of a critically ill or injured patient. Reassesses after implementing a stabilizing intervention. Evaluates the validity of a DNAR order.	Recognizes in a timely fashion when further clinical intervention is futile. Integrates hospital support services into a management strategy for a problematic stabilization situation.	Develops policies and protocols for the management and/or transfer of critically ill or injured patients.
HPM-EM milestone		Identifies symptom distress in the critically ill patient.	Manages symptoms in the critically ill and/or actively dying patient.	Initiates appropriate hospice or palliative care services for critically ill patients unlikely to survive.	Develops protocols to improve appropriate use of interventions in critically ill and actively dying patients.
Mapped domains/topics:		Identifies underlying end stages of a terminal illness in a critically ill patient.	Recognizes patients who are likely or unlikely to survive critical interventions.	Understands and uses prognostic tools appropriately in decision making and communicating with family.	
<i>Provider skill set:</i>			Recognizes that a patient is approaching the end of disease (dying) trajectory.	Recognizes and discusses initiating and/or stopping nonbeneficial interventions.	
— Treating distressing symptoms			Accurately interprets existing advanced directives (including POLST/MOLST) and recognizes the impact on critical interventions.		
— Care for the imminently dying					
— Noninitiation or stopping of nonbeneficial interventions					
— Difficult communication					
— Goals of care					
<i>Recognition of HPM needs:</i>					
— Trajectories					
— Prognostication					
— Screening for palliative care					
— Rapid palliative care assessment					
<i>Logistical Understanding</i>					
— Advance directives					
— Ethical issues: decision-making capacity, futility					
— Multidisciplinary teams/support systems					
— Transitions of care					

DNAR = do not attempt resuscitation; HPM = hospice and palliative medicine; MOLST = medical order for life-sustaining treatment; POLST = physician order for life-sustaining treatment.

Table 3
Integrated HPM-EM Milestones

Level 1	Level 2	Level 3	Level 4	Level 5
1. Emergency stabilization (PC1)—prioritizes critical initial stabilization action and mobilizes hospital support services in the resuscitation of a critically ill or injured patient and reassesses after stabilizing intervention.				
Identifies symptom distress in the critically ill patient. Identifies when a critically ill patient with a terminal illness is in the end stage of their disease.	Manages symptoms in the critically ill and/or actively dying patient. Recognizes patients who are likely or unlikely to survive critical interventions. Recognizes that a patient is approaching the end of disease (dying) trajectory. Accurately interprets existing advanced directive (including POLST/MOLST) and recognizes the impact of these documents on critical interventions.	Initiates appropriate hospice or palliative care services for critically ill patients unlikely to survive. Understands and uses prognostic tools appropriately in decision making. Recognizes and discusses initiating and/or stopping nonbeneficial interventions.	Develops protocols to improve appropriate use of interventions in critically ill and actively dying patients.	
2. Performance of focused history and physical examination (PC2)—abstracts current findings in a patient with multiple chronic medical problems and, when appropriate, compares with a prior medical record and identifies significant differences between the current presentation and past presentations.				
Identifies underlying palliative care needs in a patient with a chronic illness.	Describes where on the trajectory of serious illness the patient is presenting.	Integrates into the treatment plan existing advance directives or orders for life-sustaining treatments. Initiates goals-of-care discussions with patient/family as indicated.	Synthesizes essential data and incorporates patient's goals of care to determine the potential benefit or nonbenefit of various diagnostic and treatment options.	Identifies difficult-to-manage symptoms and terminal presentations consistent with last hours of living based on H&P findings.
3. Diagnostic studies (PC3)—applies the results of diagnostic testing based on the probability of disease and the likelihood of test results altering management.				
Recognizes that diagnostic studies may sometimes be burdensome or nonbeneficial to a subset of seriously ill patients with advanced disease.	Determines the necessity of diagnostic studies after assessing the patient's/family's preferences and goals of care and determines the risks, benefits, and alternatives to those diagnostic studies. Prioritizes when to order and when not to order diagnostic tests based on the patient's stage of illness and their goals of care gathered through a rapid palliative care assessment.	Effectively negotiates decision making with patients and families regarding risks, benefits, and alternatives when diagnostic testing may not be indicated or be nonbeneficial.		

(Continued)

Table 3 (continued)

	Level 1	Level 2	Level 3	Level 4	Level 5
4. <i>Diagnosis (PC4)</i> —based on all of the available data, narrows and prioritizes the list of weighted differential diagnoses to determine appropriate management.	Constructs a list of potential diagnoses based on chief complaint and an initial assessment that includes potential psychological, social, emotional, or spiritual factors.	Uses all available medical, psychological, social, and spiritual information to develop a list of ranked differential diagnoses including those with the greatest potential for distressing symptoms. Correctly identifies “reversible vs. not reversible” conditions in seriously ill patients with advanced disease. Includes and documents all the pertinent medical, psychological, social, and spiritual information in the medical decision-making process to support particular differential diagnoses.	Synthesizes and incorporates all of the available medical, psychological, social, and spiritual data as well as the patient/family’s goals of care and patient’s quality of life to determine appropriate management.		
5. <i>Pharmacotherapy (PC5)</i> —selects and prescribes appropriate pharmaceutical agents based on relevant considerations such as mechanism of action, intended effect, financial considerations, possible adverse effects, patient preferences, allergies, potential drug–food and drug–drug interactions, institutional policies, and clinical guidelines and effectively combines agents and monitors and intervenes in the advent of adverse effects in the ED.	Knows the different classifications of pharmacologic agents and their mechanism of action for managing common palliative care symptoms such as pain, dyspnea, delirium, nausea, and constipation.	Applies medical knowledge for selection of appropriate agent for first-line treatments for common palliative care symptoms such as pain, dyspnea, delirium, nausea, and constipation.	Considers alternate and synergistic therapeutic classes to treat refractory symptoms (e.g., use of haloperidol or diphenhydramine for resistant nausea) with attention to mechanisms of action and adverse side effects.	Adjusts medication for symptom control based on risks imposed by patient’s age, comorbidities, ability to access medications financially, and previous treatment failures. Optimizes interventions to assure patient goals are prioritized and risks of accelerating interventions are clear within the ethical construct of “double effect.”	Participates in developing institutional policies and order sets on pharmacotherapies for treating refractory palliative care symptoms within the context of ethical and professional responsibilities for optimal patient care.
6. <i>Observation and reassessment (PC6)</i> —reevaluates patients undergoing ED observation (and monitoring) and using appropriate data and resources and determines the differential diagnosis, treatment plan, and disposition.	Recognizes the need, timing, and method of repeat evaluation of pain and/or other symptoms after therapeutic interventions.	Monitors that necessary therapeutic interventions and appropriate communications are performed during a patient’s ED stay to achieve adequate pain and symptom control.	Evaluates through appropriate communications and physical monitoring the effectiveness of therapies targeted at controlling pain and other symptoms with monitoring and communications at appropriate intervals during patient stay in the ED.	Considers additional diagnoses and therapies (including pharmacologic and nonpharmacologic interventions) for pain and symptom relief for a patient under observation and changes treatment plans accordingly. Identifies contributing psychological, spiritual, and social factors that impact the treatment plan and disposition and communicates critical information to patients and family.	Develops and adapts protocols for adequate symptom management and ensures critical communication delivery in the ED/observation unit.

(Continued)

Table 3 (continued)

Level 1	Level 2	Level 3	Level 4	Level 5
<p>7. Disposition (PC7)—establishes a comprehensive disposition plan that uses appropriate consultation resources, patient education regarding diagnosis, treatment plan, medications, and time- and location-specific disposition instructions.</p>				
<p>Describes basic resources available for care of the palliative care patient in the ED.</p>	<p>Describes basic resources available for care of the palliative care patient in the ED as well as the institutional and community level. Identifies patients with unmet palliative needs using a rapid palliative assessment.</p>	<p>Effectively assesses prognosis and hospice eligibility based on Medicare criteria for common diseases (cancer, dementia, COPD, CHF, etc.). Recognizes and intervenes appropriately in patients who are in the last hours of living and too unstable to leave the ED. Accesses available resources (including palliative care consultation or hospice referral when appropriate) for an optimal disposition based on medical condition and goals of care of patient. Can engage in goals of care discussions with patients and families to determine appropriate level of care for patients with life-limiting illness. Correctly assigns admitted patients to an appropriate level of care (including ICU/telemetry/floor/observation unit/inpatient hospice/palliative care unit).</p>	<p>Uses available resources for appropriate disposition based on patients wishes and medical information. Engages patient and/or surrogate to effectively implement a discharge plan that is based on the patient's goals of care. Assigns admitted patients to an appropriate level of care and effectively coordinates care needs for patients discharged home or to other facilities including home hospice, long-term care facilities, or inpatient hospice units.</p>	<p>Works within the institution to develop optimal disposition protocols and pathways such as a palliative care unit, observation unit, or transfer to hospice for patients with palliative or hospice needs that maximize resource utilization.</p>
<p>8. Multitasking (task-switching) (PC8)—employs task switching in an efficient and timely manner to manage the ED</p>				
<p>Manages a single patient with palliative care needs amid distractions.</p>	<p>Task switches between different patients with palliative care needs and acute care needs.</p>	<p>Employs task switching in an efficient and timely manner that prioritizes the treatment goals in critically ill patients to assure appropriate and timely interventions that are in context with patient/family goals of care.</p>	<p>Employs task switching in and efficient or timely manner by engaging appropriate resources such as palliative care team, social workers, and chaplains to assure that physical, psychosocial, and spiritual needs of multiple patients are met simultaneously.</p>	<p>Employs task switching in an efficient and timely manner to manage ED in high-volume situations or surge situations including mass casualty incidents where the care of patients in the last hours of living is managed with interventions that are in accordance to patient/family goals of care.</p>

(Continued)

Table 3 (continued)

	Level 1	Level 2	Level 3	Level 4	Level 5
	<p>9. General approach to procedures (PC9)—performs the indicated procedure on all appropriate patients (including those who are uncooperative, at the extremes of age, or hemodynamically unstable and those who have multiple comorbidities, poorly defined anatomy, high risk for pain or procedural complications, or sedation requirement), takes steps to avoid potential complications, and recognizes the outcome and/ or complications resulting from the procedure.</p>				
	<p>Performs preprocedural assessment on patients with life-limiting illness by understanding and adequately negotiating with patient or surrogate and family to determine need for invasive procedure.</p> <p>Recognizes the balance of risks, benefits, and alternatives of a procedure within the context of the patient/family's goals of care.</p>	<p>Prepares for potential complications and establishes strategies consistent with goals of care to ongoing interventions through appropriate negotiations with patient/surrogate and family prior to the initiation of a procedure.</p>	<p>Performs palliative procedures in a safe and timely manner to limit discomfort in patients with serious or life-limiting illnesses.</p>	<p>Performs palliative procedures in a safe and timely manner to limit discomfort in patients with serious or life-limiting illnesses.</p>	<p>Establishes and teaches protocols in ED for hospice and palliative care patients requiring procedural interventions, such as intermittent palliative paracentesis.</p>
	<p>10. Airway management (PC10)—performs airway management on all appropriate patients (including those who are uncooperative, at the extremes of age, or hemodynamically unstable and those who have multiple comorbidities, poorly defined anatomy, high risk for pain or procedural complications, sedation requirement), takes steps to avoid potential complications, and recognizes the outcome and/ or complications resulting from the procedure.</p>				
	<p>Describes and recognizes patients who should not be intubated based on advance directives and goals of care.</p>	<p>Employs appropriate methods such as noninvasive ventilation when goals of care preclude intubation.</p>	<p>Engages in shared decision making with patients, families, and health care team when intubation and mechanical ventilation are not beneficial.</p> <p>Discusses time-limited intubation trial and outcomes to monitor the success or nonsuccess of the intubation trial.</p> <p>Exhibits clear mastery of communication with patients, family, and health care team while initiating or stopping nonbeneficial interventions including noninvasive and invasive mechanical ventilation support and cardiopulmonary resuscitation.</p>	<p>Engages in shared decision making with patients, families, and health care team when intubation and mechanical ventilation are not beneficial.</p> <p>Discusses time-limited intubation trial and outcomes to monitor the success or nonsuccess of the intubation trial.</p> <p>Exhibits clear mastery of communication with patients, family, and health care team while initiating or stopping nonbeneficial interventions including noninvasive and invasive mechanical ventilation support and cardiopulmonary resuscitation.</p>	<p>Engages in shared decision making with patients, families, and health care team when intubation and mechanical ventilation are not beneficial.</p> <p>Discusses time-limited intubation trial and outcomes to monitor the success or nonsuccess of the intubation trial.</p> <p>Exhibits clear mastery of communication with patients, family, and health care team while initiating or stopping nonbeneficial interventions including noninvasive and invasive mechanical ventilation support and cardiopulmonary resuscitation.</p>
	<p>11. Anesthesia and acute pain management (PC11)—provides safe acute pain management, anesthesia, and procedural sedation to patients of all ages regardless of the clinical situation.</p>				
	<p>Describes various types of pain (i.e., neuropathic, visceral) and the varying pharmacologic approaches to pain control.</p> <p>Distinguishes between the opioid-naïve vs. opioid-tolerant patient.</p>	<p>Distinguishes between the treatment approaches for an opioid-naïve vs. opioid-tolerant patient.</p> <p>Performs effective acute pain management in the opioid-naïve patient.</p>	<p>Performs effective acute pain management in the opioid-tolerant patient including conversion of oral to parenteral opioid medications and seeking alternate pain management strategies.</p>	<p>Performs effective acute pain management in cancer pain emergencies.</p>	<p>Develops pain management protocols/care plans for patients with palliative care needs (for example, malignant pain or chronic pain).</p>

(Continued)

Table 3 (continued)

Level 1	Level 2	Level 3	Level 4	Level 5
<p>12. <i>Other diagnostic and therapeutic procedures—goal-directed focused ultrasound (diagnostic/procedural) (PC12): uses goal-directed focused ultrasound for the bedside diagnostic evaluation of EM conditions and diagnoses, resuscitation of the acutely ill or injured patient, and procedural guidance.</i></p>				
Recognizes the value of ultrasound as a noninvasive diagnostic modality in patients who do not desire invasive procedures or tests.	Recognizes the value of limited ED POCUS echocardiography in pronouncing death.	Manages the value of limited ED POCUS echocardiography in pronouncing death.	Recognizes the value of limited ED POCUS echocardiography in pronouncing death.	Recognizes the value of limited ED POCUS echocardiography in pronouncing death.
<p>13. <i>Other diagnostic and therapeutic procedures: wound management (PC13)—assesses and appropriately manages wounds in patients of all ages regardless of the clinical situation.</i></p>				
Identifies wounds that result from immobility or chronic disease (e.g., stages of decubiti, weeping edema, malignant wounds).	Manages wounds that result from immobility or chronic disease. Educates patients and caregivers on outpatient basic management of chronic wounds. Identifies early wounds or conditions that may require intervention to prevent or delay further progression of a wound (e.g., prevention of decubiti).	Manages wounds that result from immobility or chronic disease. Educates patients and caregivers on outpatient basic management of chronic wounds. Identifies early wounds or conditions that may require intervention to prevent or delay further progression of a wound (e.g., prevention of decubiti).	Achieves hemostasis and implements appropriate treatment in an ulcerating malignant wound. Recognizes inevitable death secondary to exsanguinating hemorrhage from an incurable wound.	Achieves hemostasis and implements appropriate treatment in an ulcerating malignant wound. Recognizes inevitable death secondary to exsanguinating hemorrhage from an incurable wound.
<p>14. <i>Other diagnostic and therapeutic procedures: vascular access (PC14)—successfully obtains vascular access in patients of all ages regardless of the clinical situation.</i></p>				
Describes the indications, contraindications, anticipated undesirable outcomes, and complications for vascular access modalities including subcutaneous delivery of medications and hydration.	Describes the indications, contraindications, anticipated undesirable outcomes, and complications for vascular access modalities including subcutaneous delivery of medications and hydration.	Describes the indications, contraindications, anticipated undesirable outcomes, and complications for vascular access modalities including subcutaneous delivery of medications and hydration.	Able to perform the subcutaneous infusion of fluids and medication when appropriate.	Teaches advanced vascular access techniques including subcutaneous infusion of fluids and medication including hypodermoclysis.
<p>15. <i>Medical knowledge (MK)—demonstrates appropriate medical knowledge in the care of EM patients.</i></p>				
			Demonstrates awareness of fellowship training for subspecialty certification (e.g., HPM)	
<p>16. <i>Professional values (PROF1)—demonstrates compassion, integrity, and respect for others as well as adherence to the ethical principles relevant to the practice of medicine.</i></p>				
Demonstrates caring, honesty, genuine interest, and tolerance when caring for patients with life-limiting illnesses.	Demonstrates compassion, integrity, respect, sensitivity, and responsiveness when delivering bad news and having goals-of-care discussions with patients and families.	Exhibits tolerance and appreciation for cultural differences when goal setting and caring for patients with life-limiting illnesses. Consistently manages own values and beliefs to optimize relationships and medical care when caring for patients at end of life.	Develops and applies a consistent and appropriate approach to evaluating appropriate care, possible barriers, and strategies to intervene that consistently prioritize the patient's and family's values and goals in all relationships and situations.	Actively participates in organizational strategies to protect and maintain professional and bioethical principles such as serving as a member of the hospital bioethics consult team or teaching bioethics to trainees.

(Continued)

Table 3 (continued)

	Level 1	Level 2	Level 3	Level 4	Level 5
17. Accountability (PROF2)—demonstrates accountability to patients, society, profession, and self.				Recognizes that caring for seriously ill and terminal ill patients can impact physician wellness. Identifies strategies such as debriefing to address self-care and physician wellness.	
18. Patient-centered communication (ICS1)—demonstrates interpersonal and communication skills that result in the effective exchange of information and collaboration with patients and their families.		Elicits caregivers' reasons (in addition to patient concerns) for seeking health care and expectations from the ED visit.		Uses flexible communication strategies (including multidisciplinary team members as needed) to communicate bad news including death disclosure, errors, unexpected outcomes, and other challenges while caring for patients with life-limiting illnesses and those at the end of life.	Teaches communication skills such as goals of care discussions and delivering bad news and death disclosure.
19. Team management (ICS2)—leads patient-centered care teams, ensuring effective communication and mutual respect among members of the team.	Participates as a member of the ED team caring for patients with hospice and palliative care needs.	Communicates the needs of a palliative care patient to emergency physicians and other health care colleagues.	Initiates contact and involves palliative/hospice care teams as well as other health care teams to optimize care for patient in the ED.	Exhibits clear mastery of communication while initiating or stopping nonbeneficial interventions including cardio pulmonary resuscitation. Uses flexible communication strategies to resolve specific ED challenges and team conflicts when caring for palliative care patients.	Participates in and leads ED-based palliative care initiatives. Seeks training in palliative care education and skills outside the standard EM curriculum
20. Practice-based performance improvement (PBL)—participates in performance improvement to optimize ED function, self-learning, and patient care.	Describes basic principles of evidence-based medicine in a subset of seriously ill patients for which aggressive ED treatment is not always appropriate.	Performs follow-up on seriously ill patients paying attention to their preferences for life-sustaining treatment to provide care consistent with their wishes.	Performs self-assessment to identify areas for self-improvement in dealing with seriously ill such as recognizing their emotional, psychological, or spiritual needs as well as special considerations for pain, dyspnea, and symptom management.	Applies performance improvement methodologies to consistently provide a level of care aligned with patient wishes and also ensuring that appropriate referrals are made for support and symptom management.	Teaches other health care providers about evidence-based palliative care. Participates in process improvement plans to optimize palliative care in the ED.
21. Patient safety (SBP1)—participates in performance improvement to optimize patient safety.		Recognizes safety issues for the palliative care patient both while in the ED and when transitioning patient to other care settings (e.g., prevention of decubitus ulcers).	Appropriately uses multidisciplinary team/support systems to optimize patient safety in the ED and when transitioning the patient to other care settings (e.g., home care and physical therapy).		

(Continued)

Table 3 (continued)

	Level 1	Level 2	Level 3	Level 4	Level 5
22. <i>Systems-based management (SBP2)—participates in strategies to improve healthcare delivery and flow and demonstrates an awareness of and responsiveness to the larger context and system of health care.</i>	Describes members of a multidisciplinary palliative care team (e.g., palliative care physician, nurse specialist, social worker, pharmacist, chaplain.).	Mobilizes institutional resources to assist in the care of the patient with palliative care needs (palliative care team, hospice liaison, social worker, chaplain, etc.).	Demonstrates the ability to call effectively on other resources in the system such as community-based programs, visiting nurses, and hospice care to provide optimal health care for the patient with palliative care needs.	Coordinates system resources to optimize care for a patient with palliative care needs given their complicated medical situations (e.g., calling hospice liaison, consulting with palliative care team or multiple treating specialists).	Develops internal and external departmental solutions to optimize care for the palliative care patient in the ED such as hospice consultation in ED and palliative care–related protocols.
	23. <i>Technology (SBP3)—uses technology to accomplish and document safe health care delivery.</i>	Uses the EHR to identify advance directives or prior advance care plan discussions.	Ensures that medical records are complete for seriously ill patients with documentation of appropriate surrogate decision maker and advance care plans.	Recognizes the possibility of lack of accurate documentation such as code status, advance directives, and goals of care. Verifies accuracy and updates documentation regarding code status, surrogate decision makers, and advance care plans.	Recommends system redesigns to include templates for improved documenting goals of care and advance directives as well as the physical, psychosocial and spiritual needs.

CHF = congestive heart failure; COPD = chronic obstructive pulmonary disease; HER = electronic health record; H&P = history and physical examination; HPM-EM = hospice and palliative medicine in emergency medicine; ICU = intensive care unit; MOLST = medical order for life-sustaining treatment; POCUS = point-of-care ultrasound; POLST = physician order for life-sustain-

ing treatment. three domains: 1) provider skill set, 2) recognition of HPM needs in ED patients, and 3) logistic understanding related to HPM in the ED (Table 1). Some provider skill set domain (Domain 1 as listed in Table 1) topics are likely already covered in many EM residencies; pain control and delivering bad news are two examples. Other topics may be covered in some residencies, including treating other distressing symptoms and goals of care discussions. Many of the provider skill set topics, however, would likely be novel additions to EM residency didactic programs, including noninitiation of nonbeneficial interventions, caring for patients under hospice care and end-of-life management in a mass casualty incident.

The committee identified six broad topics in the recognition of HPM needs domain (Domain 2 as listed in Table 1). Clinically recognizing disease prognosis and death trajectories as well as identifying the imminently dying patient were considered important since poorly informed physicians limit their ability to provide optimal, or even adequate, information to patients or families who may need to make difficult decisions. Early screening and rapid palliative care assessment are emerging topics with a growing body of evidence-based research related to using toolkits and other skills to identify patients appropriate for palliative or hospice care.^{42–44} The topic of the ethnic, spiritual, and cultural aspects around end-of-life care and death were considered essential to introduce to residents, accepting that not many EM residencies provide their trainees with what is known about best practices. Finally, although complications of cancer may be included in didactics, many programs may not address a palliative approach to management of serious complications if a patient declines aggressive care.

Four HPM topics under the domain of logistic understanding were identified (Domain 3 as listed in Table 1). Although the majority of EM residency programs provide some training about advance directives, their transient nature and differences in space and time make this topic essential when discussing care of the seriously ill. Ethical and legal issues including decision-making capacity are particularly relevant in those seriously ill and at end of life. To fully address the complex psychosocial needs of the seriously ill patients and their families, it is important that EM physicians engage multidisciplinary team members (social workers, case managers, family/bereavement support, chaplain, etc.) and understand the unique aspects of disposition and transitions across care settings for

patients at end of life, e.g., hospice (home vs. inpatient), palliative care unit, or long-term care placement.

Phase 2 of the project resulted in the mapping of HPM topics to each EM subcompetency followed by the development of HPM-EM milestones (Table 2, Table 3). The HPM-EM milestones were developed based on the original intent of the subcompetency and how it applies to palliative care in the ED setting. For example, as demonstrated in PC1, the emergency stabilization subcompetency, as the learner's knowledge base and skills grow to level 3 in the HPM-EM milestones, he/she is able to recognize when a patient is on an end-stage (dying) trajectory and can use tools relating to prognostication to assist in that determination. In addition, the learner demonstrates the ability to call upon the resources of the health care system to best manage the patient's condition and needs as is outlined in the original EM milestone (Table 2).

The HPM-EM integrated milestones often build upon the EM milestones. An example is the PC11 subcompetency related to anesthesia and acute pain management. The original EM milestone focuses on indications and contraindications of various medications and agents. The integrated HPM-EM milestone explores this in more depth as it relates to patients at the end of life needing aggressive and sophisticated pain management. The HPM-EM milestones progress from level 1, where the learner is able to describe different types of pain (i.e., neuropathic, visceral), through level 3, where the learner demonstrates the ability to manage acute on chronic pain in an opioid-tolerant patient, including conversion of oral to parenteral opioid medications and considering alternative pain management strategies (Table 3, PC11).

DISCUSSION

It is critical that EM residency graduates complete their residencies prepared to care for patients who are seriously ill with advanced disease processes and those where palliative care is the focus and quality of life remains the patient's primary goal. They will likely care for patients with issues in many of the 23 subtopics in the three identified HPM domains every week in the clinical practice of EM. Although up to 67% of hospitals have the availability of palliative care services, there is significant variation based on hospital size, region of country, and profit status.⁴⁵ In addition, most palliative care teams have little ability to provide

round-the-clock services or in the ED on an emergent or urgent basis. More than half of all patients visit an ED in their last month of life.⁴⁶ Therefore, it is essential that emergency physicians have specific knowledge and skills in HPM to support their patients for optimal care. This document is a first step in defining HPM-EM integrated content topics as well as HPM-EM curricula similar to those that exist for other disciplines such as ultrasound, trauma, and geriatrics in EM.

Currently, most EM residency training programs tailor the vast majority of their formal didactic teaching to the content of the ABEM Board Certification examinations as dictated in *The Model of Clinical Practice of Emergency Medicine*, which "serves as the basis for the content specifications for all ABEM examinations."⁴⁷ In the 2016 version of the model, hundreds of topics germane to the practice of emergency medicine are outlined over 48 pages; however, few are directly related to HPM skills and knowledge. Specifically, the Model only lists "delivering bad news" and "end of life and palliative care" with subtopics that include "advanced directives, coordination with hospice and organ donation."⁴⁸

The strength of the HPM-EM milestone document comes from the range of EM-palliative care and medical education experts who contributed to its development. Some members of the committee have established national expertise in medical education (undergraduate and graduate medical education) while others have extensive clinical experience in ED palliative care, a young and growing subspecialty. Many members possessed skills in both areas. By utilizing the currently accepted EM milestones as a framework for developing the HPM-EM milestones, the committee intended to provide a document that translates easily to an EM educator who is not palliative medicine trained. Given that only about 150 of the more than 5000 academic emergency physicians (<2%) are dually trained in HPM and EM, it is imperative that non-dual-trained EM educators be provided guidelines to help their learners develop these skills.

The list of content and topic areas that have now been developed by the expert committee can be used by EM educators to develop content and curricula to teach and assess these domains. A repository of curricula with learning objectives, simulated scenarios, and assessment tools related to specific topics such as the delivery of difficult news in the ED or the trauma setting already exist on free online educational portals

such as American Association of Medical Colleges MedEdPORTAL^{49–53} Similarly, Fast Facts and Concepts is another educational resource in palliative care. Fast Facts provides concise, practical, peer-reviewed, and evidence-based summaries on key palliative care topics important to clinicians and trainees caring for patients facing serious illness. Approximately 10 Fast Facts that are applicable to a core curriculum in emergency medicine can be accessed on the “core curriculum” section on the Palliative Care Network of Wisconsin website (online access is free with requested password).^{54–57} Another resource is the Education in Palliative and End-of-Life Care for Emergency Medicine. This is a project supported by the National Institutes of Health (NIH) that aims to teach clinical competencies in palliative medicine to emergency medicine clinicians. The program offers a “become an EPEC trainer” course as well as curricular materials and these have been used in residency programs.^{58,59} Finally, VITALTalk is a nonprofit organization that began from NIH-funded research regarding teaching aimed at improving clinician communication skills. VITALTalk’s website offers free resources that can help educators teach communication skills as well as in-person courses that are opportunities for faculty development.⁶⁰

In addition, the HPM-EM milestones help map out the expected progression intended to help teach and assess HPM-EM skills progression within the expectations and skill set of a developing emergency physician. Future directions include seeking broad-based feedback from EM residency program directors, presenting key HPM-EM domains/topics for the updates to the ABEM Model of Clinical Practice of Emergency Medicine, and finally the development of tools to support the education and assessment methods to guide EM educators in assessing HPM-EM milestones. While there is value to the proposed HPM-EM milestone framework, their validity, utility, and practicality would benefit from assessments using a pilot study in selected programs.⁶¹

LIMITATIONS

By choosing to utilize the ACGME EM milestone document as the foundation for the HPM-EM milestones created by the committee, some curricular areas that relate to palliative care skill development were not explored in adequate depth or at all. Specific skills related to management of symptom crisis in certain clinical scenarios are not well assessed or explored in

the current framework. For example, managing specific symptoms at the end of life such as management of refractory nausea/vomiting does not clearly fit into the previously established EM milestones and thus is not mentioned in the current milestone document. In addition, milestones were not distributed widely for review by multiple residency directors though solicitation of feedback is planned for the future. Another limitation to the methodology includes the fact that the Delphi method was not used.

CONCLUSIONS

These novel hospice and palliative medicine in emergency medicine integrated milestones developed by an expert panel provide a framework for emergency medicine residency directors and educators to use to assess knowledge, skills, attitudes, and behaviors as they relate to hospice and palliative medicine in emergency medicine practice. The identified hospice and palliative medicine in emergency medicine content and topic list will aid emergency medicine educators in developing relevant educational content. Modeled after the widely used and validated Accreditation Council for Graduate Medical Education emergency medicine milestones, the hospice and palliative medicine in emergency medicine milestones are expected to be easily understood and utilized by emergency medicine educators.

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