

# Self-Assessment for Competency and Educational Needs of Osteopathic Physician Trainees Regarding Pediatric Palliative Care

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## Abstract

**Background:** There is lack of a standardized residency curriculum for the emerging field of Pediatric Palliative Care (PPC). Available evidence suggests that few resident physicians acquire the requisite knowledge and essential skills needed to develop competency in PPC during their postgraduate education and training<sup>[1]</sup>.

**Methods:** A pediatric end-of-life resident physician assessment survey was utilized to evaluate self-reported competence and concerns / interests about PPC.

**Results:** Self-reported competence increased with each year of residency training. With regards to their communication skills, only 40 % of the residents felt competent to perform with minimal supervision or independently as compared to 65 % when it comes to their symptoms management skills. Residents also felt less prepared with the psychosocial aspects of caring for pediatric patients (e.g., when to initiate hospice referral, communicating to the family the shift from curative to comfort care measures, discussing *donotresuscitate* orders, conducting family conferences for end-of-life decisions, using adjuvant analgesics, and giving bad news to the patient or family members).

**Conclusion:** The survey results showed differing levels of competence among pediatric interns and residents. The feedback from this study further supports that not only is PPC in postgraduate medical training necessary, it should also address the full experience of the terminally-ill pediatric patient, encompassing both physical and non-physical (psychosocial) aspects.

**Keywords:** Pediatric palliative care

## Introduction

The importance of Pediatric Palliative Care (PPC) has been emphasized in the Institute of Medicine landmark report, *When Children Die*, which outlined the need for significant improvement in the palliative, end-of-life, and bereavement care received by this population<sup>[2]</sup>. PPC includes any intervention that focuses on reducing the morbidity of illness, slowing the progression of disease, and improving the quality of life at any stage of disease<sup>[3]</sup>. PPC is different than adult palliative care because children die from illnesses characterized by prognostic uncertainties and variable lengths of survival. Furthermore, PPC is family-centered, not patient-centered; psychosocial and developmental needs of children are unique and children are often dependent on their parents, which can complicate medical decision making<sup>[4,5]</sup>. Such care includes the family and extends into the domains of physical, psychological, social and well-being<sup>[6]</sup>. In 2006, with accreditation of fellowship training programs by Accreditation Council of Graduate Medical Education (ACGME), the American Board of Medical Specialties initiated a pathway which established a subspecialty board of Hospice and Palliative Medicine. In theory, palliative specialists are invaluable resources in the care of children with life-threatening illnesses. In practice, PPC is usually provided by physicians who are not specialized in the field<sup>[7]</sup> because formal consultation for palliative care specialist is not always available at every institution, especially in the field of PPC. Thus, PPC education has the potential to improve the quality of care by training resident physicians

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how to facilitate decision making and planning for future care; efficiently anticipate, assess, and manage the child's symptoms; and provide appropriate bereavement to the family.

Sullivan and colleagues completed one of the first large scale study to evaluate the status of medical education and post-graduate training regarding end-of-life care. Incorporating data generated from medical students, residents, and faculty, Sullivan *et al.* found attitudes to be very favorable, but there were notable trainee-reported deficits in such areas as addressing patients' thoughts and fears, addressing spiritual and cultural issues, managing one's feelings about a patient's death, and helping families with bereavement<sup>[8]</sup>. While the ACGME has mandated some instruction for residents in the care of terminally-ill patients, a clinical experience is currently "desirable" but not completely mandated<sup>[9]</sup>. Therefore, few medical schools and even fewer residency training programs require courses and / or clinical experiences in end-of-life care. Medical students and resident physician trainees frequently do not feel prepared to discuss end-of-life issues with their patients and physician surveys have time and again demonstrated a desire for ongoing education in this area<sup>[10,11]</sup>. Understanding competencies and acknowledging concerns / interests among resident physicians regarding PPC topics are essential for curriculum development. To date, there has been no formal study to examine PPC education from the perspective of osteopathic physician trainees in Oklahoma. In this study, we aimed to explore resident physicians' competencies and to assess their concerns / interests regarding pediatric palliative care.

## Methods

A survey instrument was developed to assess resident physicians' self-reported competencies regarding pediatric palliative care topics. The survey was adapted from a palliative medicine comfort-confidence assessment originally developed by Weissman *et al.*<sup>[1]</sup>. The survey was divided into two domains (see attached *Appendix*). Domain I is a self-assessment of personal competency levels comprising sixteen common end-of-life communication and management topics. Competencies were assessed using a 1-4 Likert scale (1 = need further basic instruction, 2 = competent to perform with close supervision, 3 = competent to perform with minimal supervision, and 4 = competent to perform independently). Only (3) and (4) ratings were considered to represent "competence". For each of the competency levels, the mean level of preparedness was calculated. A single sample *t-test* was performed on each mean to examine whether the competency mean score was significantly above or below 2.5 (the midpoint on the scale between prepared and unprepared). In Domain II, participants were provided with a list of ten common pediatric end-of-life topics and were asked to rate their interests in these topics also using a 1-4 Likert scale (1 = least needed, 2 = somewhat needed, 3 = moderately needed, and 4 = highly needed). The survey was administered during a joint academic session for interns and resident physicians from both pediatric residency programs (OSU and OU) in Tulsa, Oklahoma.

## Results

A total of twenty Oklahoma State University (OSU) and The

University of Oklahoma (OU) pediatric resident physicians completed this survey. Of the 20 resident physicians who participated, 8 were PGY-1, 4 were PGY-2, and 8 were PGY-3. The survey took approximately 10 minutes to complete.

Descriptive statistics were performed on the scalar data. For each category of competency listed in Domain I, the Mean (*M*) and Standard Deviation (*SD*) were calculated. A single sample *t-test* was performed on each Mean (*M*) to examine whether the competency mean value was significantly above or below 2.5 (the midpoint on the scale between "competence" and "lack of competence"). The Confidence Interval (*CI*) indicates a range that would encompass the true Mean (*M*) 95 % of the time, if we were to repeat this survey.

Resident physicians indicated feeling high levels of competence in 3 of the 16 pediatric palliative care topics covered in Domain I. Competencies that reached *significance* included:

- giving bad news to a patient or family member [*M* = 2.90, *SD* = 0.89, 95 % *CI* = (2.52, 3.28)],
- assessment and management of constipation at end-of-life [*M* = 2.71, *SD* = 0.96, 95 % *CI* = (2.30, 3.12)], and
- use of adjuvant analgesics [*M* = 2.48, *SD* = 0.93, 95 % *CI* = (2.07, 2.87)].

Categories that reached *significance* for "lack of competence" included:

- management of terminal delirium, agitation, anxiety [*M* = 1.57, *SD* = 0.75, 95% *CI* = (1.25, 1.89)], and
- terminal dyspnea [*M* = 1.90, *SD* = 0.94, 95% *CI* = (1.50, 2.30)]. In general, interns (PGY-1) indicated a need for supervision for all PPC topics but specifically felt least competent when it comes to discussing treatment withdrawal, initiating DNR orders, giving bad news to a patient or family member, and conducting a family conference. Senior resident physicians (PGY-2 and PGY-3) likewise reported a lack of competence with regards to the psychosocial aspects of caring for the terminally-ill pediatric patient:
- when to initiate home hospice referral,
- communicating to the family the shift in treatment from curative to comfort care measures,
- discussing DNR orders,
- conducting family conferences for end-of-life decisions,
- using adjuvant analgesics, and
- giving bad news to the patient or family member.

Pain assessment and management, ethics (e.g., do not resuscitate orders, treatment withdrawal), and management of terminal delirium, agitation, anxiety were the top three requested PPC topics in Domain II. Management of nausea / vomiting and assessment of constipation at end-of-life were the least requested PPC topics. All of the resident participants expressed interests in the areas where they perceived lack of competence (or lack of preparedness) and would like for these PPC topics to be included in future education programs.

## Discussion

A review article highlighted six major challenges facing PPC:

- defining PPC,
- understanding the needs of PPC,

- integrating culture and spirituality into PPC,
- reducing suffering and promoting hope/healing,
- acknowledging professionals’ responses and need for support, and
- integrating knowledge of PPC into basic curricula and training programs<sup>[6]</sup>.

This study mainly emphasized the 6th challenge and supported the need for developing and integrating PCC education into postgraduate curricula in Oklahoma. The same sentiments have been echoed in various surveys collected in the United States, Canada, and other countries in Western Europe – all of which indicated that education in palliative care, especially in bereavement care, remains sporadic and fragmented<sup>[8]</sup>. Moreover, clinicians worldwide are aware of these challenges and often request education and training in PPC as a way of coping with the stress that accompanies caring for dying children and their families<sup>[12]</sup>.

As PPC becomes more integrated into healthcare systems, it must correspondingly be incorporated into postgraduate medical education programs. PPC is relatively a young field in the United States and much remains undiscovered<sup>[13]</sup>. As a result, assessment tools to evaluate PPC curricula and alternative methods of teaching that facilitate learning in this field are only starting to be developed<sup>[14,15]</sup>. This pilot study demonstrated that a brief survey instrument can be utilized to assess pediatric resident physicians’ competencies and concerns / interests regarding PPC. Not surprisingly, the results showed that senior residents (PGY-2 and PGY-3) had a greater sense of competence and less concerns than interns (PGY-1). Although the results indicated that increased level of training and years of experience led to improved self-reported competence; it could not, however, directly measure resident physicians’ clinical performance with end-of-life care. Correlating residents’ levels of competence with actual clinical performance would be the next step in program evaluation.

The most striking survey finding was the general high degree of concerns / interests among all resident participants regarding pain assessment and management, medical ethics (e.g., discussing DNR orders, initiating treatment withdrawal), and management of terminal delirium, agitation, anxiety. This is directly shown through the perceived lack of competence (or lack of preparedness) and personal comfort levels regarding pediatric end-of-life care in this survey. It’s noteworthy to mention that we did not ask follow-up questions as to why the residents felt unprepared to address these particular areas of pediatric end-of-life care. However, we suspect that even a seasoned resident physician who has acquired the essential knowledge and skills in PPC may still fail to use this information effectively. This is due to a lack of comfort with the ethics / legality of treatment withdrawal and / or lack of confidence in his / her personal ability to provide pain/delirium/anxiety management. Hence, comprehensive training in PPC cannot be focused solely on the acquisition of knowledge and skills that will enable physicians to act appropriately; it also must address personal values, morals, beliefs, and attitudes.

There are proposed educational strategies for practical implementation of pediatric palliative care curriculum into training (Table 1). These strategies include:

- courses / lectures offered through undergraduate curricula,
- postgraduate education and specialist training programs,
- postgraduate longitudinal training,
- workshops, seminars, or training programs for skilled professionals, and
- curriculum<sup>[6]</sup>.

Although residency programs might inform and familiarize their trainees with PPC issues, we strongly believe the best strategy to implement PPC is through a supervised postgraduate clinical curriculum with concomitant increased exposure to professional / personal experience. A structured PPC clinical rotation and curriculum led by a multidisciplinary team would be the most ideal solution. This rotation would theoretically allow the pediatric trainee physician ample opportunities to function in a consultant capacity within the multidisciplinary team that includes spiritual care, nursing, and other healthcare providers. Moreover, this rotation should promote a process of reflection and exploration of personal experiences, attitudes, and responses to death and dying because effective PPC education has to have three integrated aspects:

- theoretical knowledge,
- practical skills, and
- a moral attitude that comprises a capacity to respond to others humanely<sup>[6]</sup>.

**Table 1:** Educational strategies for pediatric palliative care

Courses or lectures offered through undergraduate curricula <sup>[16]</sup>	Block and Billings have co-directed a course for first and second year medical students called “Living with life-threatening illness”. Volunteer patients, all with life-threatening illnesses, serve as teachers in the course, teaching the medical students important lessons about the power of listening and bearing with suffering.
Postgraduate education and specialist training programs <sup>[17]</sup>	In a longitudinal study, Vazinari and colleagues identified that pediatric house officers begin their training feeling uncomfortable with death and dying issues, it takes 4 years before they change their attitude and feel comfortable with coping with issues in PPC. The authors concluded that it is through supervised clinical practice and increased professional/personal experience that contribute to the pediatricians’ preparedness and comfort.
Postgraduate longitudinal training	There are specialist registrar programs in the United Kingdom for pediatricians who wish to specialize in PPC. There are year-long pediatric palliative medicine fellowship programs in the United States.
Workshops, seminars, or training programs for skilled professionals	Seminars and workshops are available for skilled professionals lasting from a few days to 2 weeks of intensive training in large/small groups.
Curriculum <sup>[18,19]</sup>	1) The ChiPPS Project (Children’s Project on Palliative/Hospice Services) sponsored by the National Hospice and Palliative Care Association; 2) IPPC (The Initiative for Pediatric Palliative Care) sponsored by the Education Development Center

Assuming, then, that PPC is successfully integrated into postgraduate training at our institution, pediatric end-of-life education would still need to be provided longitudinally in other clinical settings. The reason is that learning experiences which occur outside the context of a course or clinical curriculum may offer valuable opportunities for resident physicians to develop the competencies required to be fully present and accompany the patient and their family through the illness<sup>[20]</sup>. Some innovative learning approaches have encouraged trainees to spend time with dying pediatric patients and families, and later reflect on, record, and discuss their experiences, which has proved to be promising in PPC education and training<sup>[16]</sup>. The main idea is to keep educational initiatives in PPC grounded within the context of relationships between children, their families, and healthcare providers. While recognizing the complexities associated with implementation of a PPC curriculum into our postgraduate education program, we remain optimistic that PPC has much to contribute to the care of seriously ill children and their families in our community.

## Conclusion

This study is one of the first to examine the perspectives of pediatric residents and interns regarding PPC. Furthermore, the results will inform future curriculum development in PPC for pediatric residents. The survey highlighted similar findings as the one published by Sullivan et al. That educational practices and institutional culture in U.S. medical schools do not support end-of-life care[...] and attention to both curricular and cultural change are needed to improve end-of-life care education<sup>[8]</sup>. Although more research is needed to replicate these findings at other institutional settings, the results suggested that postgraduate training is not preparing our future pediatricians to feel competent in many of the areas of PPC which both physician trainees and patients agree are crucial. As pediatricians, we should take a leadership role in advancing end-of-life education and advocating clinical practice that addresses the full experience of the patient, both physical and non-physical aspects.

## Conflict of interest

The authors have no conflict of interest, financial or other interests to declare

## Appendix

### A Survey Instrument to Measure Physicians' Self-Confidence and Concerns about End-of-Life Clinical Skills

Purpose of the survey instrument:

1. Assess pediatric resident physicians' self-confidence in the performance of end-of-life clinical skills.
2. Assess pediatric resident physicians' interest(s) in learning about end-of-life clinical topics.

### Domain I

Please rank your degree of competence with the following patient / family interactions and patient management topics, using the following scale:

- 1 = Need further basic instruction
- 2 = Competent to perform with close supervision/coaching
- 3 = Competent to perform with minimal supervision
- 4 = Competent to perform independently

- \_\_\_ conducting a family conference to discuss important end-of-life decisions
- \_\_\_ giving bad news to a patient or family member
- \_\_\_ discussing DNR orders
- \_\_\_ discussing home hospice referral
- \_\_\_ discussing a shift in treatment approach from curative to comfort care
- \_\_\_ discussing treatment withdrawal
- \_\_\_ perform a basic pain assessment
- \_\_\_ use of oral opioid analgesics
- \_\_\_ use of parenteral opioid analgesics
- \_\_\_ use of adjuvant analgesics (e.g., tricyclics, anticonvulsants)
- \_\_\_ assessment and management of terminal delirium, agitation, anxiety
- \_\_\_ assessment and management of terminal dyspnea
- \_\_\_ assessment and management of nausea/vomiting
- \_\_\_ assessment and management of constipation at the end-of-life
- \_\_\_ talking to children in age-appropriate manner
- \_\_\_ developing family-centered goals of care

### Domain II

Please indicate which of the following topics you would like to have included in future education programs:

- 1 = least needed
- 2 = somewhat needed
- 3 = moderately needed
- 4 = highly needed

- \_\_\_ pain assessment and management
- \_\_\_ assessment and management of nausea / vomiting
- \_\_\_ assessment and management of terminal delirium, agitation, anxiety
- \_\_\_ assessment and management of terminal dyspnea
- \_\_\_ assessment and management of opioid related constipation
- \_\_\_ end-of-life communication skills – giving bad news, running a family conference discussing prognosis
- \_\_\_ hospice care: the who, why, when, and where
- \_\_\_ end-of-life ethics: DNR orders
- \_\_\_ use of intravenous hydration and / or non-oral feeding in end-of-life care
- \_\_\_ Spirituality in end-of-life care – role of the physician

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