



# Hospice and Palliative Care for Patients in the Intensive Care Unit: Current Status in Countries Other than Korea

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Although most patients prefer dying at home, patients whose condition rapidly becomes critical need care in the intensive care unit (ICU), and it is rare for them to die at home with their families. Therefore, interest in hospice and palliative care for patients in the ICU is increasing. Hospice and palliative care (PC) is necessary for all patients with life-threatening diseases. The following patients need palliative care in the ICU: patients with chronic critical illnesses who need tracheostomy, percutaneous gastrostomy tube, and extracorporeal life support; patients aged 80 years or older; stage 4 cancer patients; patients with specific acute diseases with a poor prognosis (e.g., anoxic brain injury and intracerebral hemorrhage requiring mechanical ventilation); and patients for whom the attending physician expects a poor prognosis. There are two PC models—a consultative model and an integrative model—in the ICU setting. Since these two models have advantages and disadvantages, it is necessary to apply the model that best fits each hospital's circumstances. Furthermore, interdisciplinary decision-making between the ICU care team and PC specialists should be strengthened to increase the provision of hospice and palliative care services for patients expected to have poor outcomes and their families.

**Key Words:** Palliative care, Hospice care, Intensive care units, Quality of life

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## INTRODUCTION

According to a study conducted by the Robert Wood Johnson Foundation ICU End-of-Life Peer Group, among 552,157 deaths in six states of the United States (Florida, Massachusetts, New Jersey, New York, Virginia, and Washington) in 1999, 38.3% of deaths occurred in the hospital and 22.4% of deaths took place after an individual entered an intensive care unit (ICU). Therefore, the authors of the study expected that limited ICU resources could be better utilized by providing high-quality end-of-life care in addition to life-sustaining

treatment, considering the increase in the number of elderly patients [1]. In 2013, Teno et al. conducted an analysis of a random sample comprising 20% of deaths in Medicare beneficiaries aged 65 years or older using data from the Centers for Disease Control and Prevention and reported that the rates of using acute care hospitals at the time of death decreased from 32.6% in 2000 to 26.9% in 2005 and 24.6% in 2009, while the rates of using hospice increased from 21.6% to 32.3% and 42.2%, respectively. However, the proportion of deaths where the ICU was used in the last month before death slightly increased (24.3%, 26.3%, and 29.2%, respectively), suggesting

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that further research is necessary to determine whether this phenomenon increases the quality of life [2].

## WHY PALLIATIVE CARE IS NECESSARY IN THE ICU

In general, a high proportion (27~75%) of patients in the ICU have distressful symptoms, and delirium occurs in about 30%. In addition, since 57% of families of patients in the ICU experience traumatic stress and 70~80% experience depression, patients in the ICU and their families need palliative care (PC) more than any other patients [3]. However, ICU clinicians lack awareness of the necessity or usefulness of PC services and incorrectly perceive that PC is only necessary for patients in whom active treatment is unnecessary (i.e., patients near death). A lack of PC specialists is another barrier to PC for patients in the ICU. As with other patients, the main goal of PC in the ICU is improving patients' and caregivers' satisfaction by focusing on symptom management and relief and increasing the use of hospice resources. Specifically in the ICU, PC should be conducted with the aim of reducing ICU readmission, preparing formal advance directives, alleviating burnout and moral distress of ICU clinicians, and saving resources

in the medical system. PC referral is appropriate in cases where ICU care lasts more than 4 to 14 days; patients who have life-limiting illnesses and need tracheostomy, percutaneous gastrostomy tube, and extracorporeal life support; patients aged 80 years or older; patients who have medically critical comorbidities or functional decline; patients who have life-threatening chronic or incurable diseases such as metastatic cancer, advanced respiratory, cardiac, or renal diseases, or amyotrophic lateral sclerosis; patients who have acute diseases such as anoxic brain injury after cardiac arrest and intracerebral hemorrhage requiring mechanical ventilation; patients in whom the attending physician expects a poor prognosis; and patients whose family members or caregivers request PC [4].

## PC MODEL IN THE ICU

Nelson et al. conducted the Improving Palliative Care in the ICU (IPAL-ICU) project to enhance PC services in an ICU setting [5]. This study manually selected articles related to PC in the ICU setting, developed a consensus report through an expert Advisory Board, and reported two models: a consultative model and an integrative model. A consultative model effectively deploys PC consultants to ICU patients who are expected

**Table 1.** Advantages and Disadvantages of the Main Models for Integrating Palliative Care in the Intensive Care Unit (ICU).

Model	Consultation by palliative care service	Integration by critical care team in daily ICU practice
Advantages	<ul style="list-style-type: none"> <li>• Expert input from interdisciplinary team of specialists</li> <li>• Expertise already exists, additional training unnecessary</li> <li>• Empirical evidence of benefit</li> <li>• Continuity of care before, during and after ICU</li> <li>• Facilitation of transfer out of ICU for end-of-life care, if appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• Availability of palliative care for all ICU patients and families</li> <li>• Palliative care service not required</li> <li>• Clearly acknowledges importance of palliative care as core element of intensive care</li> <li>• Systematization of ICU work processes promotes reliable performance of palliative care</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>• Requires palliative care service with adequate staffing and other resources</li> <li>• Palliative care clinicians may be seen as “outsiders” in ICU</li> <li>• Consultants may lack familiarity with biomedical and nursing aspects of critical care</li> <li>• Activities of palliative care and ICU teams may overlap and/or conflict</li> <li>• Consultants must rapidly establish effective relationship with patients/families</li> <li>• Fragmentation of care may be compounded</li> <li>• ICU team may have less incentive to improve palliative care knowledge and skills</li> </ul>	<ul style="list-style-type: none"> <li>• Requires education of ICU clinicians in palliative care knowledge and skills</li> <li>• Depends on commitment of critical care clinicians and supportive ICU culture</li> <li>• Requires dedication of staff and other resources that may be lacking in ICU</li> <li>• Requires handoff to new team for post-ICU palliative care for patients who cannot benefit from or no longer need the ICU</li> </ul>

Source: Nelson JE, Bassett R, Boss RD, Brasel KJ, Campbell ML, Cortez TB, et al. Models for structuring a clinical initiative to enhance PC in the intensive care unit: a report from the IPAL-ICU Project (Improving PC in the ICU). *Crit Care Med* 2010;38:1765-72.

to have poor outcomes. In this model, the ICU care team and PC team exist separately and PC services are provided through consultation. Meanwhile, in an integrative model, the PC team is embedded in the ICU team and PC principles are applied to daily practice. The advantages and disadvantages of the consultative and integrative models are presented in Table 1.

Since both models have advantages and disadvantages, the choice of which model to use should be made depending on each institution's circumstances. In other words, available personnel for the PC service, the ICU team's knowledge of PC, and the possibility of effective collaboration with the ICU team should be evaluated. Moreover, it is necessary to evaluate whether the ICU team will accept the PC team's treatment recommendations for patients in the ICU and to develop the most suitable model by convening committees representing stakeholders [5].

## PROSPECTIVE MULTICENTER PC STUDIES IN ICU PATIENTS

Lautrette et al. conducted a prospective multicenter randomized clinical study on family members of 126 patients who died in 22 ICUs in France. The primary goal was to compare the Impact of Event Scale (IES) related to Post-Traumatic Stress Disorder (PTSD), and the secondary goal was to compare the Hospital Anxiety and Depression Scale (HADS) between patients who had a general family meeting and those who had an end-of-life family conference with detailed guidelines [6]. PTSD-related symptoms and the HADS score were investigated via a phone interview 90 days after the patient's death. The intervention group had longer conferences (median, 30 minutes [interquartile range [IQR], 19~45 minutes] vs. 20 minutes [IQR, 15~30 minutes],  $P < 0.001$ ), spent more time talking (median, 14 minutes [IQR, 8~20 minutes] vs. 5 minutes [IQR, 5~10 minutes]), had a statistically significantly lower IES (27 vs. 39,  $P = 0.02$ ), and were less likely to have PTSD-related symptoms (45% vs. 69%,  $P = 0.01$ ). The intervention group also showed a lower median HADS score (11 vs. 17,  $P = 0.004$ ) and was less likely to have anxiety (45% vs. 67%,  $P = 0.02$ ) or depression (29% vs. 56%,  $P = 0.003$ ). This prospective randomized study verified that a family conference with a proactive communication strategy and a detailed bereavement brochure

helped family members of patients who died in ICU have longer family conferences, spend more time talking with family members, and experience a reduced burden of bereavement.

Carson et al. conducted a study among 365 patients who were on mechanical ventilation for more than 7 days and their families in 4 ICUs in the United States. This study investigated the HADS score and PTSD-related Impact of Event Scale-Revised (IES-R) of family members after 3 months of the intervention. The control group was provided daily brochures and had regular family meetings with the ICU team, and the intervention group had at least two family meetings with a PC specialist. The study participants were blindly allocated to the two groups [7]. At 3 months of the intervention, there was no significant difference in HADS scores between the two groups (12.2 [95% CI, 11~13.4] vs. 11.4 [95% CI, 10.1~12.6],  $P = 0.34$ ), and the PTSD related IES-R was higher in the intervention group (25.9 [95% CI, 22.8~29] vs. 21.3 [95% CI, 18~24.6],  $P = 0.0495$ ). There was also no significant difference in the median number of hospital days (19 days vs. 23 days,  $P = 0.51$ ) and 90-day survival (hazard ratio, 0.95 [95% CI, 0.65~1.38],  $P = 0.96$ ) between the two groups. Unlike the study of Lautrette et al., family meetings with the PC team did not decrease the HADS score or the PTSD-related IES-R, but rather increased PTSD-related symptoms. Carson et al. presented four reasons for these findings. First, in the control group, the ICU team may have provided high-quality communication and emotional support, leading to high satisfaction among the families. Second, in the intervention group, ICU clinicians did not directly participate in two family meetings with the PC team; thus, important information on the patient's care might have been missing, resulting in an insufficient improvement in families' satisfaction. Third, according to a Cochrane review, it was reported that early intervention paradoxically increased PTSD, so two family meetings with the PC team might have increased families' PTSD-related symptoms. Finally, two family meetings with the PC team might have been insufficient to reduce families' burden.

## CONCLUSION

Although PC is crucial in the ICU setting considering the seriousness of patients' diseases, many aspects of PC are difficult

to apply due to the special circumstances of the ICU. There are two PC models—a consultative model and an integrative model—in the ICU setting. Since these two models have distinct advantages and disadvantages, it is necessary to apply the model that best suits each hospital’s circumstances. Furthermore, close collaboration between the ICU care team and PC specialists can increase PC services for patients expected to have poor outcomes and their families.

## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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