Although far less common than proportionate palliative sedation (PPS), palliative sedation to unconsciousness (PSU) may be the only effective symptom management option for a very small subset of dying patients.

There are several possible indications for rapid PPS and PSU, including, but not limited to, patients who are near death from an irreversible condition and are experiencing refractory agitated delirium, intractable pain, severe dyspnea and massive hemorrhage.

In practice, there may not always be a clear line between rapid PPS and PSU in the management of severe physical symptoms. Clinical intentions are often complex and multilayered, and may not be the best way to distinguish these practices.

An institutional policy guiding PSU and more aggressive end-of-the-spectrum PPS can help keep these practices safe, effective and appropriate.

If standard sedative medications such as benzodiazepines are ineffective for palliative sedation, consider barbiturates or anesthetic agents.

Potentially inappropriate requests for PSU or PPS for suffering that is predominantly psychological and/or existential should trigger additional evaluation for and treatment of previously unrecognized symptoms, especially depression, anxiety and other forms of psychological, spiritual and existential suffering.

Some emergent symptoms (e.g., massive hemorrhage, airway obstruction or severe agitated delirium) can be predicted. An anticipatory, future PSU plan can be developed to manage these symptoms if and when they occur. Such plans may allay fear and enhance the patient’s quality of life for the time that remains.

SUMMARY  

Background: Despite state-of-the-art palliative care, some patients will require proportionate palliative sedation as a last-resort option to relieve intolerable suffering at the end of life. In this practice, progressively increasing amounts of sedation are provided until the target suffering is sufficiently relieved. Uncertainty and debate arise when this practice approaches palliative sedation to unconsciousness (PSU), especially when unconsciousness is specifically intended or when the target symptoms are more existential than physical. Methods: We constructed a case series designed to highlight some of the
common approaches and challenges associated with PSU and the more aggressive end of the spectrum of proportionate palliative sedation as retrospectively identified by palliative care consultants over the past 5 years from a busy inpatient palliative care service at a tertiary medical center in Rochester (NY, USA). Results: Ten cases were identified as challenging by the palliative care attendings, of which four were selected for presentation for illustrative purposes because they touched on central issues including loss of capacity, the role of existential suffering, the complexity of clinical intention, the role of an institutional policy and use of anesthetics as sedative agents. Two other cases were selected focusing on responses to two special situations: a request for PSU that was rejected; and anticipatory planning for total sedation in the future. Conclusion: Although relatively rare, PSU and more aggressive end-of-the-spectrum proportionate palliative sedation represent responses to some of the most challenging cases faced by palliative care clinicians. These complex cases clearly require open communication and collaboration among caregivers, patients and family. Knowing how to identify these circumstances, and how to approach these interventions of last resort are critical skills for practitioners who take care of patients at the end of life.

Background
Research in palliative sedation has suffered from a lack of clear definition, which has led to confusion about what exactly is being done and how often [1]. A previous article distinguished three types of palliative sedation: ordinary sedation, proportionate palliative sedation (PPS) and palliative sedation to unconsciousness (PSU) [2]. The American Academy of Hospice and Palliative Medicine (AAHPM) has since endorsed this terminology [101], while others dispute its necessity, preferring to view all palliative sedation as part of a single continuum [3].

Ordinary sedation aims to relieve a symptom without impairing consciousness, as in the use of intermittent low-dose lorazepam to treat anxiety or the use of zolpidem for sleep. While sedation is part of ordinary medical practice (and is not the focus of this report), more severe, end-of-spectrum PPS and PSU are last-resort options used to relieve intense, refractory symptoms in dying patients. PPS involves the continuous use of potentially escalating doses of sedating medications (typically benzodiazepines) to relieve symptoms of physical or – more controversially – existential distress. Impaired consciousness, potentially to the level of unconsciousness, is intended as the only remaining means for relieving this distress. As potential side effects of treatment, the sedated patient may not be able to eat, drink or manage secretions. These side effects might forseeably hasten death by a small amount, but this end point is generally not intended. With PPS, the minimum amount of sedating medication needed to provide relief of suffering is used, and consciousness is preserved as much as possible. In PSU, by contrast, unconsciousness is the intended end point because the symptoms being treated are so extreme, refractory to treatment and/or unacceptable to the patient that the clinician and patient/surrogate may reasonably assume that nothing less will relieve them. With PSU, medication is started and rapidly titrated over a period of minutes to hours until the patient is unarousable and appears comfortable. Other life-sustaining therapies are nearly always discontinued. While PPS has broad public, professional, legal and ethical support [1,4–6,102,103], PSU remains ethically controversial [3], especially when the suffering patient expresses a desire for a hastened death or when PSU is requested as a means to escape suffering that is primarily existential [3,4,7–9,102].

In part because definitions of palliative sedation are frequently unclear, estimates of its prevalence in the palliative care and hospice settings range from 0 to 52% of terminally ill patients [1]. A recent retrospective study conducted in a palliative care unit after the implementation of an institutional palliative sedation policy covering both PPS and PSU found an overall prevalence of 15%, although the two types of sedation were not distinguished [10]. The same study also found that delirium was by far the most common indication (82%), with dyspnea (6%), bleeding (4%) and seizures (2%) also noted. Interestingly, no patients were sedated for uncontrolled pain, nor were any sedated for suffering that was primarily existential. A recent systematic review of the literature on palliative sedation also found that the most common indications for PPS across available studies are delirium, dyspnea and uncontrolled pain [1].
There are little or no data regarding the independent prevalence of PSU as distinct from PPS. We have not attempted to quantify the relative prevalence of these two practices at our hospital, in part because the range of practices potentially considered to be PPS is very broad if one includes mild levels of sedation toward the very end of life. Our experience is that PPS cases using this broad definition occur on a weekly basis, whereas PPS cases that result in heavy sedation are much more rare and cases of PSU occur at most one or two times each year.

The purpose of this manuscript is to present cases in the borderland between PPS and PSU to better understand their application and distinctions in real practice. We will also explore potentially controversial cases where PSU was directly requested in order to provide some real-life texture to the discussion surrounding these practices.

Methods
Strong Memorial Hospital is a 750-bed tertiary care center located in Rochester (NY, USA). It has had a Palliative Care Consultation Service since 2002 with inpatient, outpatient and home consultations available. In the period between 2005 and 2009, the service saw approximately 4000 new inpatient palliative care consultations, averaging approximately 800 per year. There are two inpatient palliative care consultation teams on service at any given time. These teams are made up from a pool of ten board-certified palliative care physicians and two nurse practitioners, working with trainees (fellows, residents and medical/nursing students) and supported by other members of a multidisciplinary team (e.g., palliative care nurses, chaplains, social workers and massage therapists). The overall hospital death rate of the patients seen in consultation was approximately 50% during the period of consultation.

We constructed a case series from a convenience sample of cases of palliative sedation that occurred between the years 2005 and 2009 at our institution by asking members of the palliative care and ethics teams to submit all cases of more aggressive end-of-the-spectrum PPS and/or cases of PSU that they could recall in that timeframe for review. We also consulted quality improvement records, since all cases of PSU at our institution require a quality of care review under the oversight of the Palliative Care Program Director. We created ten case reports, from which we selected four to illustrate some of the challenges in the borderland between PPS and PSU. Two additional cases illustrated interesting subsets of these approaches: Anticipatory Planning for Sedation – where PSU as a potential emergent intervention is planned; and Rejected Requests for Total Sedation – where a patient or family member requests PSU for reasons not felt by the team to be clinically indicated or ethically supportable.

Cases
- **AA: intensive progressive PPS to treat severe intractable symptoms after a patient loses capacity**

AA was a 36-year-old woman with a history of post-traumatic stress disorder, anxiety and depression who had already undergone extensive chemotherapy and radiation therapy for metastatic non-small-cell lung cancer when she was hospitalized with dyspnea, fatigue, weakness and dysphagia associated with esophageal candidiasis. At the time of consultation, the palliative care team noted that she explicitly declined to discuss end-of-life issues and also said, “I don’t want to be told if I’m not going to get better”. AA lived at home with her teenage son. Her mother and boyfriend were her primary sources of support. After admission, her symptoms of dysphagia, dyspnea and pain were initially well controlled. Although dyspnea was her chief complaint, the team felt that unacknowledged anxiety was also a major symptom. The patient wanted “something to be found so it [could] be fixed”. A CT scan of her chest showed worsening disease and signs of pneumonia and airway obstruction that was not amenable to stenting or other aggressive interventions. Her respiratory failure worsened rapidly, requiring high-flow oxygen, antibiotics and a low-dose morphine drip. While trying to avoid violating her expressed wishes not to be told about her prognosis, the palliative care team made more attempts to determine the patient’s wishes regarding code status and other aggressive therapy. Shortly thereafter she developed an agitated delirium and clearly lost decision-making capacity. Lorazepam was only partially effective, and her family requested that she be “made comfortable”. After extensive family discussion, her code status was changed to do-not-resuscitate (DNR)/do-not-intubate (DNI) and a lorazepam drip was started to treat her agitated delirium and associated anxiety. Over the following days both her morphine and lorazepam drips were...
BB: intensive PPS rapidly resulting in unconsciousness to treat a mix of physical & existential suffering in a patient with fluctuating capacity

BB was a 71-year-old man with a history of large-cell non-Hodgkin’s lymphoma that had been diagnosed 2 years earlier. He also suffered from longstanding but stably treated depression, anxiety and insomnia as well as chemotherapy-related neuropathic pain and pancreatic insufficiency. He had an extensive history of chemotherapy and immunomodulatory therapy including an allogenic stem cell transplant. He was admitted for induction chemotherapy to treat a secondary acute myelogenous leukemia diagnosed a month earlier. During this induction he experienced complications of febrile neutropenia, for which he was started on a variety of intravenous antibacterial and antifungal antibiotics. BB began to complain of abdominal pain associated with typhlitis, for which he initially received intermittent hydromorphone. He became delirious, with occasional hallucinations, and received increasing amounts of haloperidol. After discussion with the patient and his family, code status was changed to DNR/DNI. A hospice evaluation was arranged 4 days prior to death and all noncomfort-oriented measures were stopped. Palliative care was consulted on the day prior to death to assist with management of pain, dyspnea, delirium, anxiety and existential distress. At that time BB was fluctuating in cognition, and was clearly distressed when alert. During one of his more lucid moments he stated “I am dying…I can’t do this!”. Despite the primary team’s best efforts, his family felt that he had had no peaceful moments for the past few days. He was placed on a hydromorphone drip for pain and dyspnea. Given the failure of around-the-clock haloperidol and intermittent lorazepam to ease his agitation, a lorazepam drip was also started and rapidly titrated until BB appeared comfortable, which in his case required unconsciousness. He died peacefully later that night.

The words ‘proportionate palliative sedation’ might suggest a gradually escalating process that provides the minimum sedation necessary to control the patient’s symptoms. Such slowly progressive increments are not always appropriate to manage severe uncontrolled symptoms at the end of life. When suffering is severe and overwhelming to the patient, a proportionate clinical response can be quite aggressive, with rapid dose increments until suffering is adequately treated. In BB’s case, several days of more conservative measures had made no measurable progress in controlling his mixed severe physical and existential symptoms. It made little sense to his family; his medical team to increase doses so slowly solely to preserve consciousness that was filled with suffering. Although rapid in escalation, treatment of this kind is still proportionate to the patient’s severe symptoms. Similar to ventilator withdrawal protocols, the physician titrating the sedation remains readily accessible to order bolus sedative dosing at short, regular intervals until the patient is comfortable, accepting unconsciousness if it is necessary to relieve...
symptoms. The amount of drug needed to sedate the patient is then used to estimate a continuous hourly rate.

**CC: PSU for severe intractable pain**

CC was a 30-year-old US-born man of Southeast Asian descent with a history of Ewing’s sarcoma with a left scapular mass, bilateral lung metastases, tibial fracture and extensive paraspinal disease rendering him bedbound. When palliative care was consulted for pain and symptom management, he had already been in the hospital for 3 months. He had received extensive chemotherapy and radiation during which he developed a painful rectal fistula, bacteremia and a left hip fracture that required surgical rod placement. CC was very mistrustful of caregivers and established rapport only after weeks of exposure to the consistent nonjudgmental presence of two nurse practitioners. Shortly after starting second-line chemotherapy, CC’s pain worsened dramatically, thereafter proving extremely difficult to treat. Over time he required multiple opioid medications eventually including simultaneous extremely high doses of methadone and fentanyl. At various times during the 4 months preceding his death, he also received dexamethasone, gabapentin, intermittent lorazepam, pamidronate and pregabalin, and was evaluated for nerve blocks, none of which fully relieved his symptoms. Despite the aggressive disease-directed therapy he requested, CC’s cancer progressed and he suffered multiple infections and deterioration of pulmonary function. CC frequently had trouble with delirium, which complicated discussions of his goals of care. Nevertheless, as his curative treatment options were exhausted, he was able to express his frustration at the unfairness of his situation and repeatedly told his caregivers that he saw his disease as a punishment for his being “a screw-up”. As his pain worsened, a ketamine drip was added to his regimen. Despite rapid titration of this medication, his pain remained uncontrolled and he and his family requested PSU. After extensive discussion, including the possibility that sedation might shorten his life by a small amount, a midazolam drip was started and rapidly increased to achieve deep sedation. All caretakers, including nursing staff and covering physicians, were fully informed about the underlying decision-making and purpose of the treatment. CC subsequently appeared comfortable to his family and the care team. He died 2 days later.

Palliative sedation to unconsciousness is rarely indicated exclusively for uncontrolled pain because even extreme pain can generally be controlled by state-of-the-art palliative care. In some unusual cases, however, no combination of analgesic medications and other interventions is sufficient. While there are always more esoteric approaches available (in this case, huge doses of both traditional and nontraditional analgesics [ketamine] were used), there comes a point where the likelihood of success with further interventions is too low to justify the ongoing suffering endured by the patient. At our hospital we have created a clinical practice guideline for performing PSU that embodies many of the principles endorsed by the American Medical Association (AMA), AAHPM, Hospice and Palliative Nurses Association (HPNA), National Hospice and Palliative Care Organization (NHPCO) and the European Association for Palliative Care (EAPC) (4,11,101,103,104). The policy is summarized in Box 1 and available as an appendix online (see online at www.futuremedicine.com/doi/suppl/10.2217/pmt.10.1). Critical elements include the informed consent of either the patient or his surrogate and documentation of all the reasons for the PSU, including the nature of the suffering and the alternative treatments attempted. A palliative care consultation is required to ensure that other less aggressive palliative options have been tried or considered. If appropriate, acute pain, ethics and chaplain...

**Box 1. Palliative sedation to unconsciousness: key policy points.**

**Must have:**
- Do-not-resuscitate/do-not-intubate order
- Consent (written or verbal) of patient/surrogate
- Documentation of
  - Nature of intractable suffering
  - Alternative treatments tried
  - Consultations obtained
- Palliative care consultation

**Process:**
- Transfer patient to private room
- Discuss decision with nursing staff
- Initiate infusion, bolus and titrate drip
- Provider must be present for 30 min or until adequate sedation is achieved
- Reassess at least every 15 min
- Monitor patient sedation and family coping at least every 4 h
- Continue to provide all other usual symptom management and monitoring

This text box is a summary of our specific local policy at the University of Rochester. The complete policy is available as an electronic appendix (see online at www.futuremedicine.com/doi/suppl/10.2217/pmt.10.1). Several organizations including the American Medical Association (AMA), National Hospice and Palliative Care Organization (NHPCO) and the European Association for Palliative Care (EAPC) have published the more general principles and frameworks upon which this policy was built. For details, please see their respective references (4,11,102).
consultations should be considered. Sedative medication administration (typically midazolam or lorazepam) is initiated with bolus dosing before a continuous infusion is started. A physician must be immediately available until adequate sedation is achieved. A table of recommended initial doses of sedative medications is provided in the guideline. Additionally, these patients are nearly always transferred to the Palliative Care service.

As is common in such cases, in addition to his intense physical pain, CC also experienced a large amount of existential distress. His medical team made efforts to treat these symptoms in parallel with his pain, although only with partial success. While PSU probably helped to minimize his existential symptoms, it was not the primary indication for which PSU was undertaken in this case.

**DD: adding an anesthetic because high doses of opioids & benzodiazepines were ineffective**

DD was a 26-year-old woman with a history of medulloblastoma, meningioma and osteosarcoma admitted with subacute onset of back and knee pain, leg weakness, bowel and bladder dysfunction, and double vision. Despite rapidly escalating doses of hydromorphone delivered by patient-controlled analgesia, her pain was very difficult to control. As a result of persistent pain as well as anxiety, she required general anesthesia in order to tolerate an MRI. After the scan she was kept intubated out of concern for hypoxia and possible aspiration. During this period, she was maintained on opioid and benzodiazepine drips. The MRI demonstrated CNS spread of her metastatic disease to the spinal canal, brain, kidney and thyroid gland. She was started on dexamethasone and received two palliative spinal radiation treatments before the burden of administering them was determined to outweigh any potential benefits. Palliative care was consulted. DD’s mother felt strongly that DD would “want pain control at all costs, even if it means that she will be asleep”. After extensive discussion with her mother, DD was transitioned to a hospice plan of care. She was extubated, made DNR/DNI and transferred to the palliative care service. At this point she required very high-rate continuous drips of intravenous fentanyl and midazolam. Attempts to reduce her midazolam drip rate resulted in periods of clear discomfort without significant cognitive clearing. Indeed, both fentanyl and midazolam needed to be further escalated to achieve and maintain comfort. Methadone was added to attempt opioid rotation. On the night before she died, and after spending 28 days on the sedating drip of midazolam, DD became tachypneic and had a frothy, bloody discharge from her mouth. Her increasing distress failed to respond to boluses of her current medications, and she was therefore placed on a propofol drip. She died peacefully later that day.

Rarely, even high doses of benzodiazepines in conjunction with aggressive narcotic therapy will be insufficient to produce adequate sedation in a patient undergoing PSU. This case illustrates how an ongoing case of PPS can rapidly transition to PSU when a highly symptomatic complication abruptly arises. Under these circumstances, phenobarbital or anesthetics such as propofol and ketamine are considered because the current sedative medication is becoming ineffective. In this case DD’s team chose to use propofol because its rapid onset (30 s) allows for quick titration in an acutely suffering patient [12]. As noted previously, at our institution we have a clinical practice guideline covering PSU (Box 1). This policy provides dosing information for propofol. Additionally, in our palliative care unit, the nursing staff has been trained in the use of propofol. Nevertheless, because its use is uncommon, we always review indications and risks of true anesthetics such as propofol when needed.

**EE: plan & promise for PSU for an anticipated severe symptom crisis situation in the future**

EE was a 56-year-old man with a history of end-stage liver disease secondary to alcohol abuse, chronic hepatitis C infection and presumed hepatocellular carcinoma who was admitted via helicopter ambulance to the ICU with severe hematemesis. He initially requested aggressive medical management, and electively suspended his initial preference for DNR/DNI in order to be intubated and sedated for airway protection during esophageal endoscopy. During the procedure he underwent sclerotherapy and placement of a Blakemore balloon for tamponade of active bleeding. He remained intubated and sedated with midazolam and morphine drips until the Blakemore tube could be removed. Palliative care was consulted to confirm his goals of care and to help with planning for extubation. His family was clear in their belief that he would want to be extubated and given aggressive comfort measures as needed. He was given a bolus
FF: a rejected request for PSU for primarily psychological & existential symptoms

FF was a 52-year-old woman with depression, anxiety, opioid dependence on methadone maintenance, HIV/AIDS and Parkinsonian progressive neurologic decline including weakness, spasms and chronic pain who was admitted from the Infectious Disease clinic for worsening pain and failure to thrive. In speaking with the palliative care team upon admission, she also complained of fatigue, nausea, clumsiness, tremor and constipation. She was unable to walk or perform most activities of daily living. In the month prior to admission, she had restarted her antiretroviral medications, but her husband reported that more recently she had been considering a hospice plan of care. On admission, antiretroviral medications were stopped at her request. In talking with her team she said “I want to sleep and I hope I don’t wake up”. She was started on dexamethasone and eventually methylphenidate to help with energy and appetite, and given haloperidol for nausea. Her home fluoxetine was continued, as were her baclofen, carbidopa/levodopa and clonazepam. Her home methadone dosing was maintained and a hydromorphone patient-controlled analgesia was initiated in place of her usual methadone PRNs. She was seen by psychiatry and a chaplain, from whom she requested a prayer that she might “die quickly”. She frequently described her pain as “more than physical”. She said her current state was “unbearable” and would be even if her physical pain were gone. She wondered if there was an afterlife. She struggled to explain her situation to her daughter, who lived out of town. Finally, she requested medication “to put [her] to sleep and never wake up”. After clarifying her wishes, the palliative care team remained troubled by this request and asked for an ethics consultation. The ethics team felt that: “It cannot be said that all options have been tried to
manage her depression and her physical pain. She is only beginning to experience the effectiveness of the pain medications she is getting here in the hospital and psychiatry has yet to try other combinations to treat her depression. The patient does not believe it is possible for her to feel less depressed, which seems a good indicator of the depth of her illness”. FF, however, continued to refuse any modification of her antidepressant regimen. Her pain began to be better controlled with further adjustments in her medication regimen. She was able to express enjoyment in several activities, such as a weekend visit of her daughter. Carbamazepine was started as an adjunctive treatment for neuropathic pain and spasms. Her methadone was increased while her hydromorphone was tapered and she was seen by our massage therapist. FF reported that her pain was nearly gone and that she was less sleepy. She was discharged home with hospice services.

When FF asked for medication “to put [her] to sleep and never wake up”, it was unclear if she was requesting PSU or some form of euthanasia. As euthanasia and physician-assisted suicide are illegal in New York State, our palliative care team focused on PSU as a potential legal option. As noted above, there has also been some debate over whether palliative sedation of any kind should be offered to those whose suffering is primarily existential. At the level of national and international organizations, the NHPCO takes a position of “studied neutrality” on this issue and the EAPC cautiously endorses it, subject to a set of “special guidelines” [4,11]. At present, our palliative care program joins the AMA in not supporting PSU for suffering that is primarily psychological or existential, in part because such requests may be more the result of undertreated depression than the underlying illness [104]. As clarified by the ethics team, there was still much that could be done to address FF’s pain and depression. In addition to the techniques we employed, other interventions such as short-term psychotherapies (e.g., supportive/expressive/existential therapy, dignity therapy), meditation and hypnosis might also be helpful, depending on the patient’s needs and capabilities [8]. Both ethics and palliative care consultation should always be considered for complex palliative sedation cases, especially if there is doubt about the appropriateness of a patient’s request. As with all such requests, clinicians must investigate the patient’s underlying motivation, and respond with other viable treatments when possible.

Additional commentary
Our ethics consultation service has reviewed and denied other requests for PSU for suffering that was primarily psychological. In one case, an elderly man with dementia had become more agitated, had attacked his wife and was undergoing psychiatric hospitalization. His daughters requested that he receive PSU, but the man still was able to enjoy eating and visits with his grandson. The ethics team believed the patient and his family were suffering as a result of his illness, but that further treatment for the agitation was warranted and that either PPS or PSU would have been disproportionate. In another case, a mother requested PSU for her middle-aged daughter who had had lifelong depression and had twice attempted suicide in the past 6 months, and the ethics team recommended further treatment for her depression. Our ethics committee has not made a formal policy recommendation about the appropriateness of PPS or PSU for predominantly psychological or existential suffering. In cases of severe psychological suffering without physical distress, the Ethics Consultation Service has thus far recommended against PPS or PSU, and suggested further input from psychiatry and chaplaincy services.

Conclusion
Although the vast majority of dying patients who require sedation as a last-resort option respond to PPS, our clinical experience is that there are a relatively small number for whom a gradual approach is insufficient. These infrequent patients who require rapidly escalating PPS and/or PSU are among the most clinically and ethically challenging cases we face. Indeed, their very rarity makes it hard for even palliative care practitioners to develop a deep experience or comfort level in managing them.

Palliative sedation to unconsciousness involves immediate maximal sedation, straight from “0 to 10” on a ten-point sedation scale with ten being total unconsciousness. Most PPS cases, by contrast, occur as a gradual process of titration (from 1 to 2 to 3 to...) over days or even weeks, and most never need more than mild levels of sedation. There are some patients, however, who must be sedated potentially to the point of unconsciousness because lesser levels of sedation do not sufficiently relieve suffering. Sometimes this process can occur over days, but other times the level of distress demands that it occur much more rapidly. Clinical intention in these latter cases is rarely
The borderland between proportionate palliative sedation & palliative sedation to unconsciousness

Future perspective

Given the lack of clarity sometimes surrounding PSU and aggressive PPS, further definition of both the role and the application of these practices would be beneficial. For their more challenging cases of palliative sedation, individual institutions should obtain formal palliative care and ethics consultations. They should also conduct formal reviews of these cases to help their clinicians develop greater comfort and skill in handling these relatively rare events. This knowledge will hopefully lead to the development of formal policies that both define the circumstances necessitating these practices and the practical details of performing them, thereby improving safety, efficacy and appropriateness. Using a common methodology, a rigorous multicenter study would help to better define the prevalence of cases at various points along the spectrum from low-intensity PPS, to more aggressive end-of-the-spectrum PPS, to PSU, allowing other institutions a benchmark to measure their own practices. Such a study could also more thoroughly examine the mix of severe physical, psychosocial and existential suffering for which these forms of heavy sedation are requested and used.

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No writing assistance was utilized in the production of this manuscript.

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