

Systems Barriers to Assessment and Treatment of COVID-19 Positive Patients at the End of Life

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Abstract

The Novel Coronavirus SARS-CoV-2 (COVID-19) pandemic is changing how we deliver expert palliative care. We can expect many to die prematurely secondary to COVID-19 across the United States. We present a case of how several hospital systems-based interventions, intended to slow viral spread and to protect health care workers, have inadvertently created barriers to routine palliative interventions in this patient population. Isolation of patients, limitation of visitors and interdisciplinary support, and changes in nursing and provider assessment have all had their impact on how we deliver palliative care. These barriers have altered many aspects of our established workflow and algorithms for care, including changes in communication, goals of care discussions, how providers and nurses are monitoring for symptoms, and end-of-life monitoring. These challenges required real-time solutions such as technology utilization, proposing a change in medical delivery systems, and reducing redundancy to preserve personal protective equipment. To continue to deliver quality care for this patient population, palliative medicine must adapt quickly.

Keywords: COVID-19; palliative care; patient isolation; symptom assessment; symptom management; system barriers

Key Message

We present a case that illustrates how safety precautions implemented for COVID-19 have created unique barriers to assessing and treating symptoms in this patient population at the end of life and changes made within our system to overcome these barriers.

Introduction

THE NOVEL CORONAVIRUS SARS-CoV-2 (COVID-19), at the center of the world's attention, is creating significant changes to how we deliver palliative medicine. The true case-rate mortality remains unknown, but we are already witnessing a high burden of morbidity and mortality from this virus.^{1,2} Although hospital systems across the world are increasing capacity to take care of critically ill COVID-19 patients, the palliative care field is also adapting quickly to facilitate care for those dying of this disease. Palliative medicine has risen to the task by creating care plans, disseminating resources, and facing this crisis together.³⁻⁷

Virginia Commonwealth University Health System (VCUHS) is a tertiary referral center located in Richmond, Virginia. The inpatient palliative care system at VCUHS consists of an 11-bed inpatient unit with specialized palliative providers and nursing care as well as a robust consult service. The following case describes the systems-based challenges we encountered for our first COVID-19 patient and the changes made to our established algorithms, workflows, and practice patterns to continue to deliver high-quality palliative care at the end of life (EOL).

Case Presentation

Mr. V is an 82-year-old man who presented to the hospital with complaints of weakness, nausea/vomiting, decreased appetite, and watery stools. He had been experiencing one week of mild shortness of breath and nonproductive cough, but no fevers, chills, or myalgias. On admission vital signs were stable, laboratory test results were within normal limits except for acute renal failure. His chest radiograph showed mild bi-basilar atelectasis. He was admitted to the general

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Accepted April 27, 2020.

TABLE 1. OUTLINE OF CLINICAL COURSE: HOSPITAL DAY 7–11

<i>HD</i>	<i>Events</i>
7	Worsening respiratory status
8	Worsening renal failure (determined not to be a candidate for dialysis) Palliative care team consulted Patient made DNR/DNI through teleconference with primary team, medical power of attorney, and patient Comfort care established as primary goal of care Patient started on a fentanyl PCA device: CB only as patient becoming more delirious
9	Fentanyl PCA CB titrated, basal fentanyl added Telemetry monitoring discontinued for patient comfort
10	Dyspnea refractory to titration of fentanyl PCA dosing Patient given trial dose of midazolam Started on midazolam PCA with clinician boluses, basal added later that day
11	Midazolam PCA basal titrated and symptoms controlled Patient died comfortably on HD 11

CB, clinician bolus; DNI, do not intubate; DNR, do-not-resuscitate order; HD, hospital day; PCA, patient-controlled analgesia.

medicine service and found to be COVID-19 positive. Despite medical interventions our patient had a slow decline in his clinical status from hospital day (HD) 1 through HD 6 followed by a more rapid decline during days 7 through 11 as outlined in Table 1. Palliative Care was initially consulted on HD 8.

Discussion

COVID-19 is a highly infectious pathogen and, to that end, strict infection control protocols have been put in place hospital-wide to mitigate the risk of spread, including to health care providers.⁸ In addition, the United States has had a widely publicized shortage of personal protective equipment (PPE).⁹ Ways to increase PPE supply and conserve existing PPE stocks are a large part of the decision making for the care of COVID-19 patients. Unintended consequences related to patient isolation and preservation of PPE are at the core of several systems-based barriers to delivery of palliative care highlighted in this case.

Barriers to communication

Out of necessity, the COVID-19 pandemic has driven a move toward telemedicine at hospitals across the United States. Owing to limiting visitors in the hospital we have quickly adapted new protocols for having inpatient discussions about goals of care (GOC). Although less than ideal, we are fortunate that technology-mediated conversation has proved an adequate substitute for in-person GOC discussion when needed.¹⁰ This is not a new concept, as involving family and loved ones by phone or video has been in use before the current pandemic, although at a much lower frequency. In our case Mr. V was able to use video technology to include his girlfriend in a GOC discussion with the medical staff in a more meaningful and interactive way than a phone call alone.

Barriers to psychosocial/spiritual care

Limitation of visitors, and the psychosocial and spiritual toll on patients and loved ones enduring isolation at the EOL, cannot be underestimated. Typically, our patient and family members have multiple touch points throughout the day with our interdisciplinary team (including the chaplain, social worker, and psychologist), as well as with our “dogs-on-call” services, and our volunteer services. All of these have been sharply curtailed or suspended as the hospital shuts down what are considered nonessential activities. Care teams will need to quickly adapt to create meaningful interactions with patients and between families in new and creative ways.¹¹ For Mr. V the team was able to set up a video chat with his significant other and his pastor. Determining alternative ways to deliver these services to patients and families, while abiding by hospital infection control standards, is important in making these last moments of life meaningful.

Barriers to monitoring symptoms

When taking care of hospitalized patients, we often rely significantly on patients’ family/friends for collateral information, including symptom assessments. In addition to family support, under normal circumstances, our nurses check on patients as frequently as once every hour to bolus symptom-alleviating medication. As COVID-19 patients are isolated and may become increasingly somnolent secondary to disease progression, it becomes difficult to routinely assess these patients for increasing symptoms. In addition, due to efforts to conserve PPE, care teams are limiting the number of times they go into a patient’s room, which can hamper symptom assessment.

Mr. V had increasing tachypnea that was refractory to repeat opiate boluses. Given the higher risk to nursing staff to assess Mr. V’s symptoms and bolus accordingly, the decision was made to start low-dose basal fentanyl on a patient-controlled analgesia device to assure that his tachypnea was well managed. Anticipating that this might be an issue moving forward with other patients, we discussed alternative strategies for delivering opiates with pharmacy and nursing. A proposed change in the medication delivery pump to allow for a longer intravenous line was devised so that the pump could remain in the corridor for nursing to use as needed without re-entering the room. Our hospital system has since installed windows in solid doors on certain units and provided smart phones that automatically answer on the patient side when dialed to further improve assessment of patients’ symptoms while allowing for PPE preservation and limiting nursing and provider need to enter the room.

Barriers to monitoring for EOL

Historically patients transitioning to comfort-focused care at the EOL are taken off all monitoring to limit distressing alarms and to minimize discomfort. In retrospect for our case it may have been helpful to leave telemetry and pulse oximetry in place as an option for monitoring symptoms (respiratory rate), as well as cessation of respirations and heart rate. However, there is an assumption that we will soon be at capacity for telemetry beds and need them for acutely ill patients rather than actively dying ones. Installation of door

windows and automatically answering phones located in rooms may assist with this monitoring going forward.

An additional concern related to EOL care is the need to reduce redundancy of health care worker exposure and PPE usage during this process. Before COVID-19, all death assessments had to be done by a physician (except for patients on inpatient hospice). Our service was able to work with nursing administration to implement a protocol for any bedside nurse caring for COVID-19 patients to complete the death assessment and pronounce the patient.

Barriers to accessing trained palliative care professionals

Currently VCUHS is cohorting COVID-19 in specific clinical areas. Mr. V was unable to transfer to the palliative care unit due to this. Given his refractory dyspnea, a continuous benzodiazepine infusion was recommended. The nursing staff on his unit were unfamiliar with palliative sedation and uncomfortable with a continuous benzodiazepine infusion. Our team considered scheduling lorazepam at the same time intervals nursing was already entering the room for assessments; however, a palliative unit nurse was able to provide in-service training to the nurses on the medicine unit and Mr. V was started on a midazolam continuous infusion with improvement in his symptoms.

Conclusion

The COVID-19 global pandemic is changing how we deliver expert palliative care. As we continue to see a large number of patients dying prematurely secondary to COVID-19, we will face challenges that are unique to this situation but offer an opportunity for continued growth. The barriers we faced taking care of Mr. V are not necessarily unique to our hospital system and we need to think of innovative strategies to overcome these barriers and disseminate the knowledge so hospitals can make change in real time. With many experiences being shared across the United States and globally, we can continue to deliver aggressive symptom management at the EOL despite these new and unexpected barriers.

Acknowledgments

Human experimentation guidelines of the U.S. Department of Health and Human Services and those of the authors' institutions were followed in the conduct of this research.

We thank all our patients who we will care for during and after this pandemic.

Author Disclosure Statement

The authors have no commercial associations that might create a conflict of interest.

Funding Information

No funding was received.

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