Palliative Care in a Pandemic
A Retrospective Review of the Impact of Early Palliative Care Consultation During the Coronavirus Disease 2019 Pandemic

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During the coronavirus disease 2019 (COVID-19) pandemic, patients experienced rapid clinical decline requiring urgent conversations about their wishes for care. Palliative care advanced practice registered nurses developed a workflow to provide early palliative care consultation to every COVID-19 patient under investigation admitted to a 368-bed acute care hospital in the United States. A retrospective exploratory study was conducted on the initial surge from March 1 to May 31 of 2020. A nonrandomized 2-group design used descriptive and inferential statistics to compare elicitation of patient care preferences for patients who received early palliative care consultation with those patients who did not receive a palliative care consult. Early palliative care consultation resulted in a higher number of patients establishing a decision-maker (99%), changing code status (46%), changing goals of care (46%), and transitioning to comfort care (24%). In those patients not receiving palliative care, fewer patients established a decision-maker (10%), changed code status (7%), changed goals of care (4%), or transitioned to comfort care (3%). During the first COVID-19 surge, early palliative care consult performed by advanced practice registered nurses resulted in a higher number of patients establishing decision-makers and changing care preferences before decompensation due to COVID-19, thus helping patients avoid potential suffering caused by unwanted medical interventions.

KEY WORDS
COVID-19, early palliative care, goals of care, palliative care, pandemic

The coronavirus disease 2019 (COVID-19) pandemic has made an unprecedented impact on the health care system with the total cases in the United States reaching more than 33 million and total deaths approaching 593,000 per the Centers for Disease Control and Prevention, as of June 1, 2021. Reports suggest approximately 20% of patients infected with COVID-19 develop severe disease requiring hospitalization, with 25% requiring intensive care unit (ICU) admission. Advanced age and comorbidities are risk factors for a severe course, with death occurring 12 times more frequently than in patients without these risk factors. Dying in the hospital setting is associated with higher physical and emotional discomfort, lower quality of life, and prolonged grieving among families and caregivers. Dying during a pandemic carries additional suffering related to social isolation with limited health care worker interaction, and families prohibited to visit and spend precious time with their loved ones.

Early palliative care (PC) consultation has been shown to decrease length of stay, increase transition to do not resuscitate (DNR)/do not intubate, and decrease the utilization of resources including ventilators, tracheostomy placements, and decreased cost related to earlier transition to comfort care. An “early” PC consultation is defined in the literature as occurring within 72 hours of admission. This acute care hospital has a provider-initiated, consult-based PC service 7 days a week that is composed of 3 advanced certified hospice and PC advanced practice registered nurses (APRNs). The PC team is not currently interprofessional, relying on hospital chaplains for spiritual care support, with a goal to replace the previous PC social worker, which was placed on hold during the pandemic.

During the initial pandemic surge, the PC program referral volume increased by an average of 46.7%, with program penetration increasing by an average of 23.2%. The average time from referral date to PC consultation was 0.38 days. Coronavirus disease 2019 presented unique challenges with delays in receiving COVID-19 test results and patients rapidly decompensating necessitating urgent...
that goals of care not be addressed with the patient were patients or patients whose attending physician requested 72 hours of admission. The intervention period was the initial transition to comfort care, and discharge disposition, to determine whether early PC involvement impacted a patient's hospital course.

**METHODS**

**Study Design, Setting, and Study Population**

This was a retrospective exploratory study using a 2-group nonrandomized design with descriptive and inferential statistics that compared patient care preference elicitation between patients who received an early PC consult with patients who did not receive PC. The aim was to review outcomes including identifying a medical decision-maker, change in code status, change in goals of care, transition to comfort care, and discharge disposition, to determine whether early PC involvement impacted a patient's hospital course.

The hospital is a 368-bed acute care, not-for-profit hospital in an urban city and employs approximately 500 professional nurses. Two units were designated for COVID-19 patients, one in the ICU and one on the medical floor. The number of beds fluctuated depending on the COVID-19 PUI census with a maximum of 36 ICU beds and 24 medical beds.

**The Intervention**

On March 31, 2020, less than a month after the first COVID-19 patient was admitted, multiple patients decompensated on the COVID-19 medical unit requiring a rapid response to be called. The critical care and internal medicine physicians, along with the PC APRNs, met briefly to discuss the gap in early identification of patient wishes for care in COVID-19 PUIs. A collective decision was reached that every patient tested for COVID-19 would receive an automatic PC consult order upon admission to address goals of care.

To facilitate this new process, PC APRNs requested that the physicians initiate the PC consult order at the time of admission. Advanced practice registered nurses prioritized patients based on medical acuity and collaborated with internal medicine and ICU physicians to further delineate patient priority. This daily conversation facilitated obtaining a PC consult order on patients who did not receive an order on admission. See Figure for the comparison of PC workflow pre and post COVID-19.

The early PC workflow was implemented on March 31, 2020. Consults were completed by phone, via Zoom, or in person depending on patient needs. Families were included in conversations when possible, and interpreters were used when applicable. Palliative care APRNs assisted patients and families with the following elements of care: determining a decision-maker, discussing individually defined quality of life, and identifying values-based goals of care. Advanced practice registered nurses provided a medical update on the patient's current condition, discussed concerns for worsening condition and prognosis, and counseled patients and families on COVID-19 and ICU interventions including cardiopulmonary resuscitation, noninvasive positive pressure ventilation, mechanical ventilator, and tracheostomy. Advanced practice registered nurses discussed the option conversations; therefore, goals-of-care conversations were needed before receiving the COVID-19 test result. During a rapid response, crucial resources from the ICU including a critical care physician and an ICU charge nurse are called to the patient's bedside along with the internal medicine attending physician, nurses, and interdisciplinary team. Because of high patient volumes and acuity in the ICU, it was difficult for the rapid response team to repeatedly be pulled away throughout the day. Palliative care APRNs developed a strategy in collaboration with critical care and internal medicine physicians to provide early PC consultation to every COVID-19 patient under investigation (PUI) on the medical-surgical units and ICUs. Little is known regarding the impact of a PC consult during a pandemic, and COVID-19 is an area of rapidly emerging research.

The purpose of this study was to evaluate the impact of early PC consultation on patient care preference elicitation during a pandemic in the acute care setting by comparing outcomes of patients who received an early PC consult with patients who did not receive PC. The aim was to review outcomes including identifying a medical decision-maker, change in code status, change in goals of care, transition to comfort care, and discharge disposition, to determine whether early PC involvement impacted a patient's hospital course.

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of comfort care when appropriate for patients with a worsening condition, for those who did not wish to escalate their care to the ICU, or for those who elected a DNR.

During the initial pandemic surge, PC APRNs continued to manage end-of-life symptoms for all patients dying in the hospital. Patients dying from COVID-19 presented unique challenges related to the pandemic including isolation, inability to have loved ones by their bedside, and lack of hospice discharge options. The hospital, like many throughout the nation, enacted a visitation ban to decrease the potential spread of the COVID-19 virus. The PC team noted this visitor ban resulted in a great deal of emotional, social, and spiritual distress. Advanced practice registered nurses supported family interaction with patients via video technology and provided much needed emotional support to frightened patients. In addition, the PC team initiated spiritual care referrals for hospital chaplains to provide support and facilitation of patient contact with their spiritual care advisors. The COVID-19 medical unit was staffed primarily by orthopedic nurses who found assessment and interventions for rapid respiratory decompensation initially challenging. Their experience caring for patients at the end of life before COVID-19 was also limited. As a result, APRNs advocated for an oncology nurse trained in end-of-life assessment and management be assigned to every shift on the COVID-19 unit.

Statistical Analysis
Elicitation of patient care preferences for the early PC group and the non-PC group was derived and recorded from the patient's electronic health record (EHR). Care preferences for patients seen for an early PC consult were compared with those for patients who did not receive PC. Descriptive statistics and an independent t test assuming unequal variance (2-tailed, significance of .05) were used to analyze the data.

RESULTS
Coronavirus disease 2019 data indicated 511 patients were tested for COVID-19 between March 1 and May 31, 2020. One hundred eighty-five (185) patients were ineligible due to being treated and released from the emergency department or having received a PC consult order more than 72 hours after admission. One hundred seventy-four (174) COVID-19 PUIs received an early PC consult, and 152 COVID-19 PUIs were not seen by PC. There was a statistically significant difference in mean age and length of stay between the 2 groups. Most of the patients in the group not seen by PC were negative for COVID-19. See Table 1 for the comparison of age and length of stay and Table 2 for the results of the demographic comparison of sex, race/ethnicity, and COVID-19 test result.

The researchers hypothesized there would be a statistical difference in the outcomes between the COVID-19 PUIs who received an early PC consult and those who were not seen by PC. The P value ($\alpha = .05$) was calculated to determine the absolute difference in proportions between the 2 independent groups. The absolute difference between COVID-19 PUIs who received an early PC consult compared with those who did not receive PC was statistically significant for each of the 4 outcomes examined (Table 3).
Patients seen by PC were more likely to require resources at discharge such as home health care or transfer to a facility setting (Table 4). Implementation of the early PC workflow for COVID-19 PUIs resulted in all but 17 PUIs (5.2%) admitted during the first surge receiving a PC consult. Some of these patients may have been referred for PC, but the team was unable to complete consultation because of limited resources.

**DISCUSSION**

The population seen for an early PC consult demonstrated a higher percentage of positive COVID-19 test results, increased age, and incidence of ICU admissions. Age is the primary risk factor for developing COVID-19–related complications, and the higher age and likelihood of requiring ICU admission found in the group seen by PC were expected. Advanced practice registered nurses prioritized by acuity in collaboration with the interdisciplinary team, which may have resulted in de-prioritizing patients with lower acuity or lower suspicion of a positive COVID-19 test result. Patients seen by PC were more likely to require aggressive care in the ICU indicating increased severity of illness; thus, the finding that they were more likely to require additional resources at discharge including home health services or transfer to a facility setting is unsurprising.

The average length of stay was higher in the group seen by PC, which may indicate early PC involvement did not reduce length of stay, which has been a key success in other studies showing the value of an early PC consult; however, this cannot be concluded based on 2 groups that were not case matched or randomly assigned. Patients who transitioned to comfort care or hospice experienced novel obstacles in discharge planning because of fear of transmission; therefore, patients with COVID-19 during the initial surge who died were more frequently inpatient at the time of death.

Because of the chaos of the pandemic, there were times patients did not receive consult orders on admission. Implementing a PC consult order prompt into the EHR admissions order set when a COVID-19 test is ordered would be beneficial to streamline the process. The initial workflow to obtain PC consult order when not placed on admission included having a PC APRN round with the critical care physician in the COVID-19 ICU and with the internal medicine attending in the COVID-19 medical unit. As the pandemic worsened, it became clear that rounding with the physicians was not the best use of the APRNs’ limited time

### TABLE 1 Comparison of Age and Length of Stay

|                | PUIs, Early PC (n = 174) | PUIs, No PC (n = 152) | t     | df | P      |
|----------------|--------------------------|-----------------------|-------|----|--------|
| Age, y         | 71.5 29-97 17.0          | 58.6 18-98 19.7       | 6.22  | 298| <.0001 |
| LOS            | 7.3 0-78 8.9             | 6.2 0-99 10.3         | −4.48 | 299| <.0001 |

Abbreviations: df, degrees of freedom; LOS, length of stay; PC, palliative care; PUIs, patients under investigation; t, t test. Independent t test (2-tailed, significance of .05) was used.

### TABLE 2 Comparison of Other Demographics

|                | PUIs, Early PC (n = 174) | PUIs, No PC (n = 152) |
|----------------|--------------------------|-----------------------|
| Sex            |                          |                       |
| Female         | 89 51.1                  | 84 55.3               |
| Male           | 85 48.9                  | 68 44.7               |
| Race           |                          |                       |
| American Indian or Alaska Native | 3 1.7 | 1 0.67 |
| Asian          | 7 4                      | 1 0.67                |
| Black or African American   | 7 4 | 7 4.6 |
| Native Hawaiian | 1 0.05       | 0 0                    |
| Other          | 3 1.7                    | 0 0                   |
| White          | 128 73.6                 | 118 77.6              |
| Unknown or declined | 1 0.05 | 3 2                 |
| Ethnicity      |                          |                       |
| Hispanic or Latino | 24 13.8    | 22 14.5               |
| Non-Hispanic or Latino       | 150 86.2    | 130 85.5              |
| COVID-19 status  |                          |                       |
| Positive or presumed positive | 75 43.1  | 18 11.8              |
| Negative        | 99 56.9                  | 134 88.2              |

Abbreviations: COVID-19, coronavirus disease 2019; PC, palliative care; PUIs, patients under investigation.
because of patient volume and rapid nature of decline. A new process was established by which the APRNs reviewed charts in the morning and assigned priority based on vital signs, oxygen requirements, medical complexity, and code status. When comparing the 2 groups, younger patients, or those screened for COVID-19 before being admitted to an inpatient psychiatric unit, were less likely to receive a PC consult. These findings may reflect provider awareness that younger patients are less likely to decompensate, and asymptomatic patients who are emergently admitted for psychiatric care are less likely to be positive for COVID-19. The PC team was exposed to an unusual patient demographic during the COVID-19 pandemic, which required counseling patients who were otherwise healthy.

It would be interesting to explore feedback from the referring physicians regarding the impact of a PC consult on the patient's plan of care. Closer examination of the patient and family experience comparing those who received PC versus those who did not would help elicit the perceived value of PC for patients and families during a pandemic. In addition, learning more about the experience of the PC team members to better understand resiliency and

| TABLE 3 | Comparison of Palliative Care Outcomes |
|---------------------------------------|----------------------------------------|
|                                       | PUIs, Early PC (n = 174) | PUIs, No PC (n = 152) | z Score | P |
| Identification of decision maker      | 173 | 99.4 | 15 | 9.9 | −16.33 | 0 |
| Change in code status                 | 80 | 46 | 11 | 7.3 | −7.78 | 0 |
| Initiation of comfort care            | 80 | 46 | 5 | 3.3 | −8.76 | 0 |
| Change in goals of care               | 42 | 24.1 | 6 | 4.0 | −5.13 | 0 |

| TABLE 4 | Comparison of Discharge Dispositions |
|---------------------------------------|----------------------------------------|
|                                       | PUIs, Early PC (n = 174) | PUIs, No PC (n = 152) |
| Transferred to ICU during stay        | 50 | 28.7 | 24 | 15.8 |
| Died as inpatient                    | 30 | 17.2 | 5 | 3.3 |
| Died as inpatient with comfort care  | 29 | 16.7 | 5 | 3.3 |
| Died inpatient without comfort care  | 1 | 0.6 | 0 | 0 |
| Inpatient hospice                     | 10 | 5.7 | 0 | 0 |
| Inpatient rehabilitation facility     | 3 | 1.7 | 0 | 0 |
| Home without services                 | 83 | 47.7 | 101 | 66.4 |
| Home with home health                 | 15 | 8.6 | 11 | 7.2 |
| Home with hospice                     | 7 | 4 | 0 | 0 |
| Skilled nursing facility              | 20 | 11.5 | 11 | 7.2 |
| Long-term care acute                  | 2 | 1.1 | 1 | 0.7 |
| Transferred to different acute care hospital | 0 | 0 | 1 | 0.7 |
| Inpatient psychiatric facility        | 4 | 2.3 | 21 | 13.8 |
| Against medical advice or other       | 0 | 0 | 5 | 3.3 |

Abbreviations: PC, palliative care; PUIs, patients under investigation.
stress during the pandemic surge would be beneficial. Any team operating under this level of stress and volume during a pandemic lacks long-term sustainability without appropriate surge planning and staffing support.12

If an acute care hospital is unable to support the employment of PC providers, it would likely lead to more stress on the health care team, patients, and families, which may result in prolonged ICU admissions and care that could exceed patient care preferences. However, it is not always possible for some hospitals in rural areas to provide access to PC services. Whenever possible, PC providers are crucial members of a patient's interdisciplinary acute care team.

More research on the role of PC during a pandemic would be valuable to identify appropriate utilization of PC services, cost savings, and the impact on resource allocation. The referring providers at this hospital are well informed about the benefits of PC due to the strong relationships built in the hospital before the pandemic. It is not clear whether this study could be replicated in a different hospital culture. Specialized training in PC was essential and impacted the APRNs' ability to effectively complete timely values-based goals-of-care discussions in a high-stress environment. Providers who have not received specialty training, or do not routinely practice these conversations, may be at a disadvantage to effectively complete goals-of-care conversations. By moving between ICU and internal medicine floors, APRNs were knowledgeable on current COVID-19 treatment modalities, complications, prognosis, and the impact of interventions on an individual patient's quality of life. Advanced practice registered nurses have a unique scope of practice allowing them to provide medical updates, extensive counseling on ICU interventions, prognosis, and options for care. Therefore, PC teams with strong clinical backgrounds and provider relationships are most likely to be successful in implementing this workflow.

Limitations
The patient sample included all patients tested for COVID-19 and was not limited to only patients who tested positive. The intervention was completed with all PUIs because of delay in test results and rapid decompensation for those with COVID-19 necessitating conversations before receiving COVID-19 results. Patients who had no symptoms of COVID-19 but tested positive incidentally were included, such as during routine screening for psychiatric admission, elective surgeries, procedures, and transfer to outpatient facilities. Patients were not randomly assigned to the intervention and control groups, and the sample was not large enough to match the intervention and control groups by characteristics, which would have created a more rigorous study.

This study did not compare the comorbidity index or prognosis of the 2 groups. Data suggest that patients with higher comorbidity indices and worse prognoses were more likely to be referred to PC, but this cannot be confirmed. Palliative care APRNs triaged patients deemed to be at a lower risk, which may introduce study bias because it would indicate that more severely ill patients were in the intervention group seen by PC. Future studies could include randomized controlled trials and case matching with patient characteristics to strengthen the validity and generalizability of the results.

A challenge of this study was demonstrating the value of PC clinicians in eliciting values-based goals of care when choosing quantifiable outcome measures. It is certainly not the goal of PC to counsel families into electing for DNR or end-of-life/hospice care. A diverse patient population was not present, with more than three-quarters of the COVID-19 PUIs (75.6%) identifying as White or Caucasian. This is consistent with the all-cause hospital admission demographic data for the hospital service area (77.5% White) and the local city (80.9% White).13 The retrospective chart review used for data extraction is limited by the quality of the patient information available in the EHR, and the accuracy of the data extraction process was limited because it did not include a second review of the data.

CONCLUSION
In a sample of COVID-19 PUIs from an acute care hospital, patients who received an early PC consult by APRNs were more likely to identify a decision-maker, change their goals of care, and require more resources at discharge. Study findings suggest that an early PC workflow should be implemented as a standard of care for patients during a pandemic. Further research could examine provider, patient, and family feedback on the perceived value of PC, as well as more information on the impact on cost savings. Early PC consults are crucial to provide whole-person care during an unprecedented time of high fear, anxiety, and isolation. It is our hope that every patient has access to high-quality PC not only in a pandemic but also anytime there is a need in their health care journey.

CLINICAL IMPLICATIONS
The results suggest that early PC provided by APRNs during COVID-19 improves elicitation of a medical decision-maker, values-based goals of care, changes in code status, and transition to comfort care.

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