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# Virtual Interinstitutional Palliative Care Consultation during the COVID-19 Pandemic in New York City

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## Abstract

**Context:** Amid the COVID-19 surge in New York City, the need for palliative care was highlighted. Virtual consultation was introduced to expand specialist-level care to meet demand.

**Objectives:** To examine the outcomes of COVID-19 patients who received virtual palliative care consultation from outside institutions.

**Design:** This is a retrospective case series.

**Setting/Subjects:** Subjects were 34 patients who received virtual palliative care consultation between April 13, 2020, and June 14, 2020.

**Measurements:** Follow-up frequency and duration, code status change, withdrawal of life-sustaining treatment (LST), and multidisciplinary involvement.

**Results:** Twenty-eight patients (82.3%) were in the intensive care unit and 29 patients (85.3%) were on at least two LSTs. Fifteen patients (44.1%) died in the hospital, 9 patients (26.4%) were discharged alive, and 10 patients (29.4%) were signed off. The median frequency of visits was 4.5 (IQR 6) over 11 days follow-up (IQR 17). Code status change was more frequent in deceased patients. LSTs were withdrawn in eight patients (23.5%).

**Conclusions:** Virtual palliative care consultation was feasible during the height of the COVID-19 pandemic.

**Keywords:** COVID-19; digital health; palliative care; telehealth

## Introduction

**B**ETWEEN MARCH AND APRIL 2020, New York City was the epicenter of the COVID-19 pandemic in the United States with >156,000 confirmed cases.<sup>1</sup> This resulted in a marked increase in critically ill hospitalized patients, which required redefining the intensive care unit (ICU) model of care, including the creation of temporary ICUs, utilization of operating rooms, redeployment of clinicians, and restructuring of ICU care teams.<sup>2,3</sup> Inevitably, the need for palliative care increased to assist families with medical decision making, symptom management, and clarifying goals of care.

The Adult Palliative Care Service at Columbia University Irving Medical Center (CUIMC)/NewYork Presbyterian (NYP) responded to this surge by deploying our palliative care team in the emergency department<sup>4</sup> and creating an inpatient palliative care unit.<sup>5</sup> However, this unprecedented

increase in demand outpaced the palliative care team's ability, even with assistance from our redeployed psychiatry team.<sup>6</sup> In response to this extraordinary need, we rapidly developed and utilized a virtual palliative care consultation model in collaboration with volunteer palliative care specialists from the medical institutions of University of California, San Francisco (UCSF), Stanford, and Dartmouth.<sup>7</sup>

Virtual palliative care, the application of telehealth technologies to palliative care, is a rapidly developing instrument to help address challenges and barriers to our specialty, including geography, clinician staffing, and outreach to underserved populations.<sup>8</sup> In the context of the COVID-19 pandemic, the rapid implementation of virtual palliative care within an institution has been reported recently.<sup>9,10</sup> However, the details of virtual palliative care consultations by specialists in different institutions have not been described in the literature.

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This study aims to describe the characteristics and clinical outcomes of patients involved in our virtual palliative care consultation model during the COVID-19 pandemic. We hypothesized that it was feasible to provide palliative care consultation for patients and their families virtually from outside institutions.

## Methods

This retrospective observational cohort study was conducted at an urban quaternary care academic medical center in New York, New York. The development and implementation of the virtual consultation model have been described elsewhere.<sup>7</sup> Patients for virtual consultations were selected by home institution palliative care clinicians. In general, patients were intubated and sedated or otherwise unable to participate in a conversation, so that virtual consultants were able to communicate with family members who were also unable to visit the patient due to policies restricting visitation. In addition, the reason and focus for consultation were primarily assisting with the goals of care rather than symptom management or transition planning, which typically require an in-person assessment. All virtual consultation was done either by phone or videoconference.

The inclusion criteria for this analysis were patients who received a virtual consultation by volunteer, highly experienced, and board-certified hospice and palliative care medicine physicians from UCSF, Stanford University, and Dartmouth-Hitchcock between April 13, 2020, and June 14, 2020. We followed up on those patients until June 24, 2020. Columbia University institutional review board approved this study and waived the need for informed consent.

Deidentified demographic data were collected from the medical record. To examine the feasibility of virtual palliative care consultation, we reviewed the frequency of palliative care visits and the duration of follow-up as primary outcomes. The frequency of palliative care visits was defined by the number of consultation/progress notes by the virtual consultants. Secondary outcomes included code status changes, life-sustaining treatment (LST) at the end of follow-up, withdrawal of LSTs, involvement of a multidisciplinary approach (social work, chaplaincy, or child life program support). LST was defined as mechanical ventilation, vasopressors, and renal replacement therapy. Furthermore, patients were divided into three groups based on their clinical course (deceased in the hospital, discharged alive, and signed off), and each outcome was compared among groups.

## Results

A total of 34 patients were included in this analysis. Patient demographics and clinical characteristics are reported in Table 1. The median time interval between admission and initial consultation was 24 days (IQR 14.3). The majority of patient referrals were from the ICU (82%), and at the initial consultation, these patients were receiving at least two forms of LST. Initial code status was full code in 30 patients (88.2%).

At the end of the consultation, 15 patients (44.1%) died in the hospital, 9 patients (26.4%) were discharged alive, and 10 patients (29.4%) were signed off. The clinical outcomes are summarized in Table 2. Overall, 198 virtual visits were made: 178 (89.9%) by phone and 20 (10.1%) by videoconference.

TABLE 1. DEMOGRAPHIC AND CLINICAL CHARACTERISTICS

	All (n = 34)
Age, median (IQR)	67 (12.8)
Male, n (%)	18 (52.9)
Ethnicity, n (%)	
White	8 (23.5)
African American	1 (2.9)
Hispanic/Latino	22 (64.7)
Asian	0 (0)
Unknown	3 (8.8)
Primary language, n (%)	
English	12 (35.2)
Spanish	22 (64.7)
Living situation before admission, n (%)	
Home	29 (85.2)
Long-term care facility	5 (14.7)
Functionally independent, n (%)	21 (61.7)
No. of comorbidities, n (%)	
0	4 (11.7)
1–2	18 (52.9)
>2	12 (35.2)
Documented AD or MOLST, n (%)	5 (14.7)
Days before PC consultation, median (IQR)	24 (14.3)
Code status at initial consultation, n (%)	
Full	30 (88.2)
DNR	4 (11.7)
Decision-making capacity at initial consultation, n (%)	3 (8.8)
Location of initial consultation, n (%)	
ED	1 (2.9)
Medical floor	5 (14.7)
Intensive care unit	28 (82.3)
Life-sustaining treatments	
Mechanical ventilation	30 (88.2)
Renal replacement therapy	12 (35.2)
Vasopressors	28 (82.3)

AD; DNR, do-not-resuscitate order; ED, emergency department; IQR, interquartile range; MOLST, Medical Orders for Life-Sustaining Treatment; PC, palliative care.

The median duration of follow-up was 11 days (interquartile range [IQR] 17) and the median frequency of palliative care visits was 4.5 (IQR 6). Videoconference was used in eight patients (23.5%). There were variations in the median duration of follow-up among groups; it was 5 days (IQR 7.5) in patients who died, 13 days (IQR 27) who were discharged alive to rehabilitation or long-term care facilities, and 18 days (IQR 11) for patients who were signed off.

Virtual consultants collaborated with home institution-based palliative care interdisciplinary support staff (chaplains, social workers) in 10 patients (29.4%) and it was more frequent in patients who died. Code status was changed in 15 patients (44.1%). Change in code status was more frequent in patients who died (12 patients, 80%), and less frequent in patients who remained alive (3 patients, 15.8%). LSTs were withdrawn in eight patients (23.5%) and all of them died.

## Discussion

In this study, we reviewed the clinical outcomes of patients involved in our novel virtual palliative care consultation

TABLE 2. CLINICAL OUTCOMES

<i>Clinical outcomes</i>	<i>All (n=34)</i>	<i>Died (n=15)</i>	<i>Discharged alive (n=9)</i>	<i>Signed off (n=10)</i>
Palliative care visit frequency, median (IQR)	4.5 (6)	3 (7.0)	5 (7.0)	6.5 (6.3)
Use of videoconference, <i>n</i> (%)	8 (23.5)	3 (20.0)	3 (33.3)	2 (20.0)
Duration of follow-up, days, median (IQR)	11 (17)	5 (7.5)	13 (27)	18 (11)
Use of multidisciplinary support, <i>n</i> (%)	10 (29.4)	10 (66.7)	1 (11.1)	5 (50)
Code status changed, <i>n</i> (%)	15 (44.1)	12 (80.0)	2 (22.2)	1 (10)
LST at the end of follow-up, <i>n</i> (%)				
Mechanical ventilation	11 (32.4)	5 (33.3)	3 (33.3)	3 (30)
Renal replacement therapy	2 (5.9)	2 (13.3)	0 (0)	2 (20)
Vasopressors	4 (11.8)	4 (26.7)	0 (0)	1 (10)
Withdrawal of LSTs, <i>n</i> (%)	8 (23.5)	8 (53.3)	0 (0)	0 (0)

LST, life-sustaining treatment.

model during the COVID-19 pandemic. To our knowledge, this is the first such study. The included patients' demographic characteristics appear to be consistent with those of critically ill patients with COVID-19 previously reported, those at the highest risk of death, and those requiring ICU level of care.<sup>11</sup> According to the report from our institution, Hispanic/Latino was 62% among patients who were critically ill with acute hypoxemic respiratory failure,<sup>12</sup> and that seems to be reflected in our cohort. As described previously,<sup>7</sup> we utilized this virtual palliative care consultation model for patients who could not communicate so that direct communication with patients was not needed and for patients whose clinical situations were relatively complicated so that we could maximize the expertise of experienced palliative care clinicians. Accordingly, our patients mostly had chronic critical illness,<sup>13</sup> that is, respiratory failure requiring prolonged dependence on mechanical ventilation as long as three weeks. Also, many patients required additional LSTs, such as renal replacement therapy or vasopressors.

The most important finding in this study is that it was feasible to provide palliative care consultations virtually by providers from across the United States in the peak weeks of the COVID-19 surge. Despite the concerns of consultants' availability (virtual consultants were volunteering their time in addition to their duties in their home institutions) or institutional, cultural, and legal differences regarding palliative care,<sup>7</sup> palliative care consultation was provided to these 34 seriously ill patients under very challenging circumstances. Positive effects of using telemedicine to deliver palliative care have been reported previously,<sup>14</sup> but those studies are mainly in the community setting, where patients are at home. Menon et al. reported palliative care consultation for critically ill patients in the ICU of rural hospitals who otherwise require transfer to urban tertiary care centers.<sup>15</sup> Family meetings before transfer through teleconferences seemed to help clarify goals of care.<sup>14</sup> Another academic institution in New York City during the surge of COVID-19 cases in March and April 2020 developed a 24/7 palliative care helpline, where palliative care specialists covered six hospitals.<sup>10</sup> Although this program provided consultations for 873 cases over four weeks, their focus was more toward emergency departments for crisis response. We do not have the data regarding how family members perceived this virtual consultation model. Also because this is a retrospective case series, we cannot measure how virtual palliative care im-

acted clinical outcomes in each case. But our data suggested families of critically ill patients with COVID-19 received specialist-level palliative care virtually four to five times over the 11-day period.

Interestingly, we observed certain tendencies associated with the provision of palliative care depending on the clinical course. For deceased patients, code status was changed in most patients and a decision to withdraw LSTs was made in half of those patients, and the follow-up period was relatively short. This suggests that palliative care consultation may have helped guide the decision making at the end of life.<sup>16</sup> For patients who survived, code status change was much less frequent and the follow-up duration was longer. This suggests that the decreased use of LSTs was due to improvement in the patients' clinical condition. Palliative care consultations in these cases were more geared toward providing psychosocial support to the family.

One of the expected challenges in this virtual consultation model was to provide interdisciplinary palliative care, given that the virtual consultants were all physicians. When needed, virtual consultants requested help from social workers or chaplains from home institutions. This interdisciplinary approach occurred more frequently in the deceased patients than in patients who survived, especially patients who were discharged alive. It is true that the demand for social workers or chaplains also was far greater than the resources available so that we could not provide needed psychosocial support to all those who may have benefited from it, but it is also possible that families might have needed less support when their loved one's clinical condition was improving. Further research should explore the effectiveness of technology-based interventions such as online or teleconference support groups and mobile applications that can provide needed support for family caregivers.<sup>8</sup>

There are several limitations in this study. First, this is a retrospective study in a single institution. Ours was a unique situation wherein New York City was heavily impacted with the COVID-19 surge early on in the pandemic, while the other regions were not. This limits the generalizability of our observations. Second, we do not have data on the experience of the virtual consultants who volunteered their time in addition to their duties in their home institutions. Because this is a novel intervention in an unprecedented situation, their perspectives in terms of challenges or lessons learned would be very informative. This is an area deserving further study.

In conclusion, virtual palliative care consultation is a promising resource that can help safeguard our health system's ability to address unmet palliative care needs for critically ill patients, especially during a global pandemic.

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### Author Disclosure Statement

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