

# Early Impacts of COVID-19 on Select Hospices: Operations, Care Delivery, and Service Utilization



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## Abstract

**Objective:** The COVID-19 public health emergency (PHE) has important implications for health care service delivery. Little is understood about how the PHE impacted community-based hospice providers and service delivery to hospice-eligible beneficiaries. The aim of this study was to describe hospice response to the PHE and correlated impacts on beneficiary receipt of hospice support services delivered to hospice-eligible beneficiaries participating in the Centers for Medicare & Medicaid Services (CMS) Medicare Care Choices Model (MCCM), a national model testing the provision of certain hospice-like supportive services with concurrent usual care among seriously ill, community-residing Medicare beneficiaries that have not elected to receive hospice care. **Methods:** We employed descriptive analysis using concurrent qualitative and quantitative data sources, consisting of provider surveys, beneficiary-level encounter data submitted by hospices, and Medicare administrative claims describing beneficiary service utilization. The sample included both hospice providers (N = 82) and beneficiaries (N = 2294) voluntarily participating in MCCM. **Results:** Nearly all participating MCCM hospices adopted operational changes to address their staff and beneficiaries' safety during the COVID-19 PHE. We report changes to service delivery, including declines in total encounters as well as service modality, and the types of services provided. **Conclusions:** While the analyses reported indicate that seriously ill Medicare beneficiaries participating in MCCM were directly impacted by the PHE, we are still unclear whether changes in the service modality and encounters by provider type and the decline in average service counts per beneficiary are driven more by hospices or by beneficiary decisions to minimize exposure. Future research should attempt to disentangle these factors.

## Keywords

COVID-19, hospice care, seriously ill population, service delivery, public health emergency

## Introduction

The novel Coronavirus SARS-CoV-2 (COVID-19) emerged in the United States in early 2020 and spread quickly across the country. On January 31, 2020, the Health and Human Services Secretary declared a public health emergency (PHE) for the entire nation.<sup>1</sup> In an announcement on March 11, 2020, the World Health Organization declared COVID-19 a pandemic, most severely impacting older adults (65 and older) and people with pre-existing health conditions.<sup>2,3</sup> In the period following the declaration of the PHE, traditional health care services delivery, including palliative and end-of-life care, quickly evolved as providers adapted to ensure their ability to provide needed care while limiting COVID-19 exposure. These organizational adaptations to COVID-19, have led to changes in how beneficiaries receive and access timely and appropriate services.<sup>4</sup> Additionally, beneficiary decisions to seek care have altered in response to provider changes and due to their own concerns about virus exposure. By June 30,

2020, an estimated 41% of U.S. adults delayed or avoided medical care, including emergency and routine care because of COVID-19-related concerns. Avoidance of emergency care was more prevalent among unpaid caregivers for adults, persons with underlying medical conditions, Black adults, Hispanic adults, young adults, and persons with disabilities.<sup>5</sup>

The overall impact of COVID-19 on health care operations has led to various policy and service delivery changes across

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the hospice industry. Flexibilities in service delivery afforded by the Federal government are driving many of the new approaches to care delivery. In addition to emergency declaration waivers to allow broader access to telehealth services,<sup>6</sup> the Centers for Medicare & Medicaid Services (CMS) has provided flexibility during the PHE for COVID-19 retroactive to March 1, 2020 and continuing for hospices specifically by waiving requirements on non-core services (e.g., physical therapy, occupational therapy, speech-language pathology) and adjusting timelines on comprehensive assessments from every 15 to every 21 days.<sup>7</sup>

Palliative care has been directly impacted by COVID-19.<sup>8-11</sup> Community-based hospice providers had to adapt to ensure beneficiaries continued to have access to services. In a qualitative study of palliative care providers representing over 40 countries, the authors reported that COVID-19 impacted staff ability to work and provide care, as well as impacted their own well-being, resulting in stress and burnout. Furthermore, social distancing precautions led to a lack of physical presence, impacting the level of care provided to beneficiaries and their families.<sup>12</sup> This study examines how hospice providers participating in the Medicare Care Choices Model (MCCM) adapted as COVID-19 spread in the U.S. and how service delivery changed, using quantitative and qualitative data from MCCM, a supportive care model implemented by CMS where hospice-eligible Medicare beneficiaries can access hospice-like support services concurrently with usual care.

**Table 1.** Characteristics of Participating MCCM Hospices (N = 65) and Beneficiaries (N = 2294).

	N, %
Hospice characteristics	
Ownership type	
For-profit	11, 16.9%
Non-profit	54, 83.1%
Geographic location	
Urban	60, 92.3%
Rural	5, 7.7%
Affiliation	
Free-standing	41, 63.1%
Part of health system	23, 35.4%
Average beneficiary enrollment per hospice; mean (SD); min-max	35.3 (70.2); 1-464
Beneficiary characteristics	
Average age in years; mean (SD); (min-max)	79.5 (10.1); (25-105)
Sex: male	1,066, 46.5%
Race: white	1,978, 86.2%
Qualifying primary diagnosis	
Cancer	1,249, 54.5%
Congestive heart failure (CHF)	648, 28.3%
Chronic obstructive pulmonary disorder (COPD)	443, 19.3%
HIV/AIDS	*, <1%

SD: standard deviation; Min: minimum; Max: maximum.

\*Cell size is too small to report.

## Methods

### Study Design

This study draws on data gathered as part of the implementation of the MCCM, a model administered by the CMS Innovation Center. MCCM, operational from January 1, 2016 through December 2021, was established under the authority of Section 1115A of the Social Security Act and tested a supportive care model for select hospice-eligible Medicare fee-for-service beneficiaries, to improve care coordination, beneficiary satisfaction, and quality of care, as well as to reduce overall Medicare expenditures. MCCM allowed beneficiaries that chose to enroll in the model to continue to receive usual care while receiving hospice-like support services (e.g., care coordination, pain management, and other symptom control).<sup>13</sup> Additional details on the model and eligibility criteria can be found elsewhere.<sup>14</sup>

This was a retrospective observational study of Medicare beneficiaries enrolled in MCCM through participating Medicare-certified hospices between October 1, 2019 and September 30, 2020. Medicare beneficiaries who met eligibility criteria<sup>15</sup> and were enrolled for at least one day in the model during this study period were included in the analytic sample.

### Data Collection

Data for this study come from three unique sources. All hospices participating in MCCM, regardless of current status of enrolled beneficiaries, participated in a biannual web-based survey to better understand implementation activities, challenges, best practices, and approaches to delivering care. Survey data for this study come from the survey fielded in July 2020, designed to reflect activity for the period from January to June 2020 (Q1 and Q2 2020). A commercially-available survey software was used to collect the qualitative data. Reminders were sent at two weeks and one week prior to the deadline to encourage participation. This survey was fielded as part of usual monitoring of the model and includes recurring questions about model operations and implementation activities and also includes special topics. The fielded survey used in this analysis included questions on how hospices adapted operations, staffing, and training in light of the PHE. In addition, there were 65 hospices with at least one beneficiary enrolled for at least one day during the study period who submitted service data for enrolled MCCM beneficiaries via a custom web-based data collection tool. Data included baseline demographic and other information about beneficiary characteristics, ongoing service utilization data, and discharge data. These data include detail on individual service encounters, including how services were delivered (e.g., in-person, via phone, etc.), who provided the services (staff role/licensure), and what types of services were delivered specifically within MCCM. Lastly, we utilized Medicare administrative data matched 1:1 to primary data to gather additional utilization data outside of MCCM to better understand other service use, including emergency department (ED) use and inpatient admissions for the MCCM-enrolled population.

**Table 2.** MCCM-Participating Hospice Survey Responses Regarding Experience with and Changes to Business Operations due to COVID-19 (N = 67).

	N, %
Hospices reporting increase in the use of phone or other telehealth modalities in place of in-person visits	56, 83.5%
Hospices reporting 1 + COVID-19 positive referrals at time of survey	41, 61.2%
Hospices reporting focus on acquisition of additional protective personal equipment (PPE)	28, 41.7%
Hospices reporting COVID-19 specific training for staff	20, 29.9%

### Data Analysis

Qualitative data were analyzed using a modified grounded theory approach. We initially used open coding to identify emergent themes with more focused coding for theory development to understand operational changes made by these hospices in response to the PHE. Descriptive analyses were performed on quantitative data sources (primary data and claims-based data) by Calendar Year (CY) quarter (Q4-2019 = October 1, 2019-December 31, 2019; Q1-2020 = January 1, 2020-March 31, 2020; Q2-2020 = April 1, 2020-June 30, 2020; and Q3-2020 = July 1, 2020-September 30, 2020). We employed a Generalized Linear Model (GLM) approach to test for trend over time in the mean number of encounters, location of encounters, provider type delivering services, and types of services provided over the four quarters of the study period. The trend analysis was conducted to better understand whether observed differences in how, by whom, and what services were provided over time were statistically significant.

### Results

The study sample includes 2249 beneficiaries enrolled in MCCM for at least one day during the study period (October 1, 2019 – September 30, 2020, see Table 1). In total, 82 hospices were engaged in MCCM, however, the beneficiaries included in the analytic sample came from a subset of 65 hospices that had at least one enrolled beneficiary during the study period. Among these hospices with enrolled beneficiaries, the majority (83.1%) were non-profit hospices and 92.3% were operating in urban areas. Nearly 59% were free-standing hospices. The average number of beneficiaries enrolled by hospices was 35.3 beneficiaries (range: 1 to 464 beneficiaries).

The average age of the study sample was 79.5 years (range: 25-105), 46.5% were male, and 86.2% were white (Table 1). Over half of the study sample had a qualifying diagnosis of cancer (54.5%), 28.3% had congestive heart failure, 19.3% had chronic obstructive pulmonary disease, and less than 1% had a diagnosis of HIV/AIDS. Enrollment by quarter declined during the study period from 1,546 beneficiaries in Q4-2019 to 1,248 beneficiaries in Q3-2020.

Tables 2 and 3 report data and themes derived from the hospice survey fielded shortly after the start of the PHE. The survey was administered to 82 participating hospices, regardless of beneficiary enrollment status. A total of 67 hospices provided a response, resulting in a response rate of 81.7%. There was not a 1:1 relationship between hospices responding to the survey and contributing data on beneficiaries for the quantitative analyses. Of the 67 responding hospices, 55 also had at least one beneficiary enrolled during the study period. Nearly all responding hospices reported one or more operational change because of COVID-19 and local stay-at-home/social distancing measures (see Table 2). By the end of Q2-2020, nearly two-thirds (61.2%) of hospices reported receiving at least one referral for someone who was positive for COVID-19. Regardless of whether they had beneficiaries who tested positive for COVID-19, most hospices (83.5%) made operational changes to mitigate risk for both staff and beneficiaries by shifting service delivery to the phone or other telehealth modalities in place of in-person service delivery. Approximately 41.7% of hospices placed a heavy focus on the acquisition of additional personal protective equipment (PPE) for their staff when seeing beneficiaries in person. Nearly 30% of hospices reported providing COVID-19 training for staff, focused on infection control, use of telehealth modalities, and/or COVID-19 screening protocols. For 41% of hospices, conducting an effective telehealth visit was a new skill set for hospice staff and some hospices offered additional training for staff in order to maximize the use of technology and virtual resources to maintain communication and support for beneficiaries.

MCCM hospices were asked to provide examples of COVID-19 procedures or “promising practices” implemented locally to support their beneficiaries and/or staff. There were six dominant themes identified from the qualitative data responses (Table 3). The most common theme was around telehealth use; 47 hospices increased use of technology to engage enrolled beneficiaries. Efforts ranged from increasing the use of phone visits to providing technology such as tablets for beneficiaries so that they could participate in video visits. Some hospices adopted new screening protocols for COVID-19 beneficiaries and staff; increased use of PPE for staff and provided PPE to beneficiaries; increased focus on person-centered planning, including COVID-focused goals of care conversations and advance care planning; and limited in-person visits when either the beneficiary or another household member was positive for COVID-19.

In addition to reporting on the operational changes adopted by participating hospices, we used quantitative data reported by hospices to examine trends in how MCCM encounters were delivered and by whom. Table 4 details the number of encounters provided overall for MCCM beneficiaries and total beneficiaries enrolled by quarter as well as the average number of encounters per beneficiary. In addition, data reflect the number and proportion of total encounters provided by care setting and by team members for each study quarter. Because MCCM enrollment declined quarter by quarter, so did the total number of encounters. Analysis of the average

**Table 3.** COVID-19 Procedures and Practices in MCCM-Participating Hospices.

Theme	Selected Hospice Practices and Procedures
Telehealth (N = 47)	<ul style="list-style-type: none"> <li>Hospices increased use of video visits and/or phone calls in place of in-person visits for certain MCCM services, including assessments and updating plans of care. One hospice noted that their <i>“social workers and chaplains made multiple telehealth visits, above the standard, to stay connected with their beneficiaries during a difficult time of feeling alone and isolated.”</i></li> <li>One hospice developed a triage system to govern the appropriateness of in-person visits versus telephonic visits for beneficiaries.</li> <li>One hospice provided loaner iPad devices and instructions for application-facilitated virtual visits.</li> <li>One hospice established <i>“best practice guidelines and targeted mentoring to improve clinicians’ ability and comfort with the use of phone and virtual visits.”</i></li> </ul>
Screening protocols (N = 27)	<ul style="list-style-type: none"> <li>Some responding hospices implemented screening protocols or developed screening tools performed telephonically that ask referred or enrolled beneficiaries a series of COVID-19 symptom questions prior to scheduled in-person visits.</li> <li>Some responding hospices implemented self-screening for employees daily, testing for employees exposed to positive beneficiaries, and required self-quarantine of exposed employees, if necessary.</li> </ul>
Increased use of PPE (N = 24)	<ul style="list-style-type: none"> <li>Hospices secured additional PPE, required appropriate PPE, such as masks, eye protection, gown, and gloves for all beneficiaries’ visits, and deployed PPE training for staff.</li> <li>Hospices shipped additional PPE to beneficiaries’ homes, if necessary.</li> </ul>
Goals of care conversations and advance care planning (N = 16)	<ul style="list-style-type: none"> <li>Hospices noted increased emphasis on goals of care conversations that focused on beneficiary wishes specific to COVID-19 and hospitalizations in response to local hospital policies not allowing visitors.</li> <li>One hospice noted <i>“beneficiaries are more willing and ready to fill out advance care documents.”</i></li> </ul>
Limiting in-person visits (15 responses)	<ul style="list-style-type: none"> <li>Some responding hospices limited services provided by select team members including massage therapists, music therapists, chaplains, and social workers.</li> </ul>
Visiting COVID-19 positive beneficiaries or household members (N = 10)	<ul style="list-style-type: none"> <li>MCCM staff continued in-person visits, as necessary, with COVID-19 positive beneficiaries. One hospice clarified that <i>“if in-person visits are determined to be important or valuable by the clinician, beneficiary, or family, staff follow strict protocols for screening self, beneficiary, and family, and determine appropriate use of PPE while in the beneficiary and family environment.”</i></li> <li>One hospice required an alert in a beneficiary’s chart to notify on-call staff of a COVID-19 positive beneficiary.</li> <li>MCCM hospice staff continued in-person visits for beneficiaries living in a home with a COVID-19 positive household member. Staff utilized appropriate PPE and requested the COVID-19 positive household member to move to another room during time spent in the home.</li> </ul>

number of encounters per beneficiary indicates that beneficiaries received fewer services in the last two quarters of the study period compared to the first two quarters. The number of total encounters per beneficiary (across all modalities) averaged 10 per quarter prior to the start of the PHE; from Q1-2020 to Q2-2020, we observed an 18% decline in the average number of encounters per beneficiary. Over half of encounters still occurred in person over time but the proportion of in-person encounters declined from 76.0% in Q4-2019 to 52.6% in Q2-2020, increasing to 65.1% in Q3-2020. Conversely, the proportion of telephone encounters increased from 21.5% in Q4-2019 to 45.3% in Q2-2020, declining to 32.3% in Q3-2020.

A larger proportion of encounters were provided by the hospice RN/LPN than any other team member in Q4-2019 (28.6%); however, by Q3-2020, this proportion declined to 21.8% (trend is significant,  $p < 0.0001$ ). Over that same

period, the proportion of services provided by the RN care coordinator increased from 23.8% in Q4-2019 to 31.1% in Q3-2020 (trend is significant,  $p = 0.0393$ ).

As noted in Table 3, qualitative data suggested that at least some providers increased the availability of social workers and chaplains to combat social isolation. However, the service data indicate that the trend in services provided by social workers did not significantly change over the study period. Chaplain services did increase slightly as a proportion of encounters delivered in Q2-2020 ( $p = 0.0235$ ).

The hallmark of MCCM services is anchored in care coordination, including advance care planning, supportive listening, symptom management, emotional and spiritual supports, patient and family education, and ongoing assessment to refine service plans and coordinate with other providers. We further examined changes in the types of services provided. Table 5 details the proportion of beneficiaries who had one

**Table 4.** Characteristics of MCCM Beneficiary Encounters with Hospices, by Calendar Year Quarter (Q).

	Q4, 2019	Q1, 2020	Q2, 2020	Q3, 2020	p-value
Total encounters	15,652	15,346	11,251	9,863	
Total enrolled beneficiaries	1,546	1,535	1,373	1,248	
Mean encounters per beneficiary (SD)	10.1 (10.5)	10.0 (10.7)	8.2 (9.6)	7.9 (9.9)	<0.0001
Location of encounters					
In person (home or community)	11,895, 76.0%	11,343, 73.9%	5916 52.6%	6,420, 65.1%	0.0009
By phone	3,369, 21.5%	3,698, 24.1%	5,096, 45.3%	3,181, 32.3%	<0.0001
By video-conference	, <1%	, <1%	89, 0.8%	138, 1.4%	n.s.
Other <sup>a</sup>	388, 2.5%	305, 2.0%	150, 1.3%	124, 1.2%	<0.0005
Team member providing service during encounter					
Hospice RN/LPN	4,675, 28.6%	4,699, 29.3%	3,016, 26.2%	2,152, 21.8%	<0.0001
Nursing aide	4,195, 25.6%	4,479, 28.0%	2,641, 23.0%	2,393, 24.2%	n.s.
RN care coordinator	3,895, 23.8%	3,487, 21.8%	3,247, 28.2%	3,081, 31.1%	0.0393
Social worker	2,578, 15.8%	2,421, 15.1%	1,895, 16.5%	1,809, 18.3%	n.s.
Chaplain	605, 3.7%	636, 4.0%	504, 4.4%	340, 3.4%	0.0235
Other <sup>b</sup>	423, 2.6%	304, 1.9%	194, 1.7%	121, 1.2%	0.0008

RN: Registered nurse; LPN: licensed practical nurse; n.s.: not significant at  $p < 0.05$ .

\*Cell sizes too small to report.

<sup>a</sup>“Other” locations include phone calls for administrative/non-clinical purposes, e-mail, and mail communications.

<sup>b</sup>“Other” Team Members Include Nurse Practitioners, Hospice Physicians, Volunteers, Pharmacists, Music/art/Massage/pet/Other Therapies, and Nutritional/Bereavement/Other Spiritual Counselors.

or more of each of the services offered by MCCM, by quarter. The most common service to be delivered to beneficiaries was supportive listening, followed closely by assessment. We observe a significant and declining trend in the proportion of beneficiaries that had at least one visit with supportive listening in each quarter across the study period ( $p = 0.0016$ ). Anecdotally, MCCM hospices noted that the most common reason that the comprehensive re-assessment was not completed as expected was beneficiary refusal (a beneficiary has the right to refuse any in-person or virtual encounter in the MCCM model for any reason). After the start of the PHE, some beneficiaries may have been more likely to refuse an in-person visit out of concern for COVID-19 exposure or were otherwise unwilling to respond to the hospice (data not shown).

We also observed significant declines in education over the study period as well as a decline in services focused on shared decision making (with a small increase in the last quarter for this service). We cannot determine whether these declines were driven by beneficiary preferences to minimize COVID-19 exposure or limits on staff availability to make home visits.

## Discussion

The aim of MCCM is to support continued in-home care and coordination to avoid higher cost services. MCCM services are available 24/7 to ensure that patient/family education and symptom management can occur to avoid unnecessary ED and inpatient use. While most services listed in Table 5 are provided by the hospice, ED visits and inpatient admissions are also tracked because the beneficiaries enrolled in MCCM have the

option to pursue usual care alongside their MCCM supportive services. Although ED and inpatient utilization are overall very low in this population, the proportion with one or more ED visits or inpatient admissions significantly declined over the study period. This pattern aligns with other studies that documented declines in ED utilization following the start of the PHE.<sup>16</sup> Some beneficiaries may have chosen to avoid or delay going to the ED, particularly if the need was not immediately urgent or life-threatening.<sup>5</sup> Inpatient admissions declines were likely driven in part by hospital decisions to pause elective admissions due to COVID-19 in the period immediately following the declaration of the PHE.

Among MCCM participating hospices, COVID-19 required significant changes to operational policies and service delivery modalities to ensure the safety of hospice staff and beneficiaries. Nearly all hospices studied were directly impacted by the PHE. Qualitative data reveal intentional changes in hospice operations and policies adopted to avoid the risk for infection among staff and potential exposure to or from enrolled beneficiaries. Quantitative data also reveal a correlation between the start of the PHE and service delivery changes. Perhaps most important was the decline in average service delivery; hospices were not providing the same quantity of services for MCCM-enrolled beneficiaries after the start of the PHE compared to the period prior.

Total enrollment declined during the study period. In a study conducted in Toronto, the authors reported that palliative care teams observed declines in their clinical caseloads.<sup>17</sup> Despite the decrease and stabilization of COVID-19, some of the palliative care teams did not return to their normal caseloads. Further, in-person visits declined by about half over the study period and at the same time, the number of telephonic visits increased substantially compared to historical patterns.

**Table 5.** Service delivery by hospice providers to MCCM beneficiaries, by calendar year quarter (Q).

	Q4, 2019 (N = 1,546)	Q1, 2020 (N = 1,535)	Q2, 2020 (N = 1,373)	Q3, 2020 (N = 1,248)	p-value
Total enrolled beneficiaries	1,546	1,535	1,373	1,248	
Beneficiaries in receipt of I + services during quarter (N, %)					
Supportive Listening	1,223, 79.1%	1,172, 76.4%	960, 69.9%	784, 62.8%	0.0016
Assessment <sup>a</sup>	1,150, 74.4%	1,086, 70.8%	803, 58.5%	726, 58.2%	n.s.
Education	1,002, 64.8%	1,003, 65.3%	821, 59.8%	713, 57.1%	0.0056
Symptom management	810, 52.4%	794, 51.7%	658, 47.9%	603, 48.3%	n.s.
Case management	696, 45.0%	655, 42.7%	544, 39.6%	451, 36.1%	n.s.
Counseling	607, 39.3%	529, 34.5%	418, 30.4%	402, 32.2%	n.s.
Shared decision making	595, 38.5%	594, 38.7%	507, 36.9%	490, 39.3%	<0.0001
Care coordination	376, 24.3%	315, 20.5%	217, 15.8%	201, 16.1%	n.s.
Personal care	250, 16.2%	280, 18.2%	186, 13.6%	177, 14.2%	n.s.
Family conference	243, 15.7%	215, 14.0%	181, 13.2%	167, 13.4%	n.s.
Transitional planning	185, 12.0%	175, 11.4%	138, 10.1%	140, 11.2%	n.s.
Homemaker services	109, 7.1%	99, 6.5%	62, 4.45%	72, 5.8%	n.s.
Medication administration	120, 7.8%	87, 5.7%	57, 4.2%	50, 4.0%	0.0035
Wound care	44, 2.9%	42, 2.7%	30, 2.2%	28, 2.2%	n.s.
Bereavement support	18, 1.2%	26, 1.7%	26, 1.9%	27, 2.2%	0.0098
Beneficiaries with I + ED visits	175, 11.3%	154, 10.0%	91, 6.6%	85, 6.8%	0.0188
Beneficiaries with I + inpatient admissions	172, 11.1%	146, 9.5%	83, 6.1%	74, 5.9%	0.0148

ED: emergency department; n.s.: not significant.

<sup>a</sup>Assessment includes initial assessments and first comprehensive assessments for newly-enrolled beneficiaries and subsequent comprehensive assessments for already-enrolled beneficiaries.

Video-conference visits only appeared to be part of the delivery practice in some hospices after the declaration of the PHE. The numbers are small but suggest an increasing trend; more data are needed to determine if this service modality will be more regularly used among providers. Similar findings were observed in an Italian study on preparedness and the impact of COVID-19 on palliative care, which reports that participating hospices implemented policy changes including staffing changes, changes to admission criteria, and use of telephone support for families.<sup>18</sup> We also observed a sizeable reduction in inpatient admissions and ED visits, which may reflect both the beneficiary's choices and hospital policies.

### Strengths and Limitations

This study represents a contemporary consideration of important issues facing health care providers that are responding to the PHE. This study considers a cohort of seriously ill beneficiaries and uses a unique dataset that has not yet been used to analyze such questions. The analysis of both qualitative and quantitative data offer a more comprehensive picture of the impact of the PHE on care delivery than could be understood from either data source on its own.

This study has several limitations. First, the sample of hospices does not reflect the entirety of community hospice providers; these hospices elected to participate in MCCM and are not generally representative of the characteristics of all hospice providers. For example, 16.9% of MCCM-participating hospices are for-profit, compared to 69.5% of all Medicare-certified hospices.<sup>11</sup> We cannot differentiate which of our observations on

hospice operations stemming from our analysis of survey themes are solely related to MCCM participation although we surmise that operational changes made by the hospice likely impacted all hospice staff and beneficiaries and not just the staff and beneficiaries participating in MCCM.

Second, the study reports changes in practice; however, the observational data limit our ability to make causal statements about the underlying reasons for the trends observed. Qualitative data suggest that at least some of the changes in service delivery observed may reflect changes in operations and policies driven by hospices to continue providing safe and effective supportive care for beneficiaries through the PHE. Beneficiary choice may also be driving changes in service delivery patterns. Our data cannot differentiate how much each of these forces may have contributed to the trends observed.

Third, hospices self-report most of the data that were used for this analysis and we cannot objectively validate their data. Although hospices are required to submit MCCM-related data to CMS on a monthly basis, there are no penalties for late submission of data, which could lead to differences in service delivery characteristics reported unrelated to the PHE. Fourth, we observe a drop in ED visits and inpatient admissions derived from claims data but due to claims runout issues with administrative data, our reporting of data at this time may slightly undercount utilization in the last quarter of data included in the study.

### Conclusions

This study demonstrates that the declaration of the PHE resulted in important changes in MCCM service delivery that impacted

the quantity and types of services provided, with a greater focus on support through telehealth modalities and focus on assessment/ACP services. In particular, the increased focus on technology forced providers to engage beneficiaries differently than they would if in person and resulted in acknowledgement of the value of those technologies and training on telehealth assessment skills. One implication for palliative care from this study is that we may observe an increase in demand for training and the uptake of technology, especially if the flexibilities around telehealth established during the PHE approved by the federal government are made permanent. Palliative care service delivery, like other care delivery, will need to balance considerations for the safety of staff and beneficiaries.

Although this study clearly documents changes in hospice practice and service delivery for a subset of beneficiaries served by hospices under MCCM, more research may be warranted to understand whether the changes in the service modality and providers and the decline in average service counts per beneficiary are driven more by the provider or beneficiary preferences.

Among hospices included in this study, COVID-19 required important and significant practice and operational changes to ensure the safety of staff and MCCM beneficiaries. COVID-19 may have also served as a barrier to service delivery. Key metrics such as utilization of telehealth and declines in ED visits and inpatient admissions in this population suggest that the behaviors adopted early on to avoid increased risk for infection are enduring.

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### Author Contributions

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### Ethical Approval

This manuscript utilizes data collected as part of ongoing implementation of a federally-supported project and were not collected for research purposes. This study was exempt from review by an Institutional Review Board.

### Informed Consent

Informed consent was captured at the site of care.

### Trial Registration

Not applicable, because this article does not contain any clinical trials.

### Supplemental material

Not applicable.

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