

# Evaluation of the Medicare Care Choices Model



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# List of Acronyms and Abbreviations

CAHPS®	Consumer Assessment of Healthcare Providers and Systems	HCC	Hierarchical condition category
Caregiver survey	Caregiver Experience of Care Survey	HIV/AIDS	Human immunodeficiency virus/acquired immunodeficiency syndrome
CCN	CMS Certification Number	MCCM	Medicare Care Choices Model
CHF	Congestive heart failure	MHB	Medicare hospice benefit
CMS	Centers for Medicare & Medicaid Services	24/7	Twenty-four hours a day, seven days a week
COPD	Chronic obstructive pulmonary disease		

# Executive Summary



Under current Medicare policy, beneficiaries who elect the Medicare hospice benefit (MHB) must forgo coverage for non-hospice services intended to treat their terminal condition. Due in part to this policy, fewer than half of all beneficiaries elect MHB at the end of life. Of those who do choose hospice, many elect MHB less than a week before death—too late to experience the full benefit of hospice care. In 2016, the Center for Medicare & Medicaid Innovation at the Centers for Medicare & Medicaid Services (CMS) implemented the Medicare Care Choices Model (MCCM).

## Three Key Findings

- ❖ MCCM led to a 25 percent decrease in total Medicare expenditures, which generated \$21.5 million in net savings between January 1, 2016 and September 30, 2019, largely by reducing inpatient care through increased use of MHB by the 3,603 Medicare beneficiaries who enrolled in the model and died during this period.
- ❖ Beneficiaries in MCCM elected MHB nearly a week earlier and at a rate that was 20 percentage points higher than the comparison group.
- ❖ MCCM hospices provided high-quality care to most enrollees, and most caregivers were highly satisfied with the care received through the model and transitions to MHB. At the same time, the documentation of comprehensive assessments and advance care planning discussions varied widely across hospices.

MCCM tests the impact of giving eligible beneficiaries the option to receive supportive services from participating hospices while continuing to receive treatment for their terminal condition. Medicare beneficiaries who enroll in MCCM receive care coordination and case management, nursing and medical social services, hospice aide care, volunteer services, and bereavement counseling for enrollees and their caregivers. A side-by-side comparison of MCCM, MHB, and the Medicare home health benefit is in **Appendix Section A**.

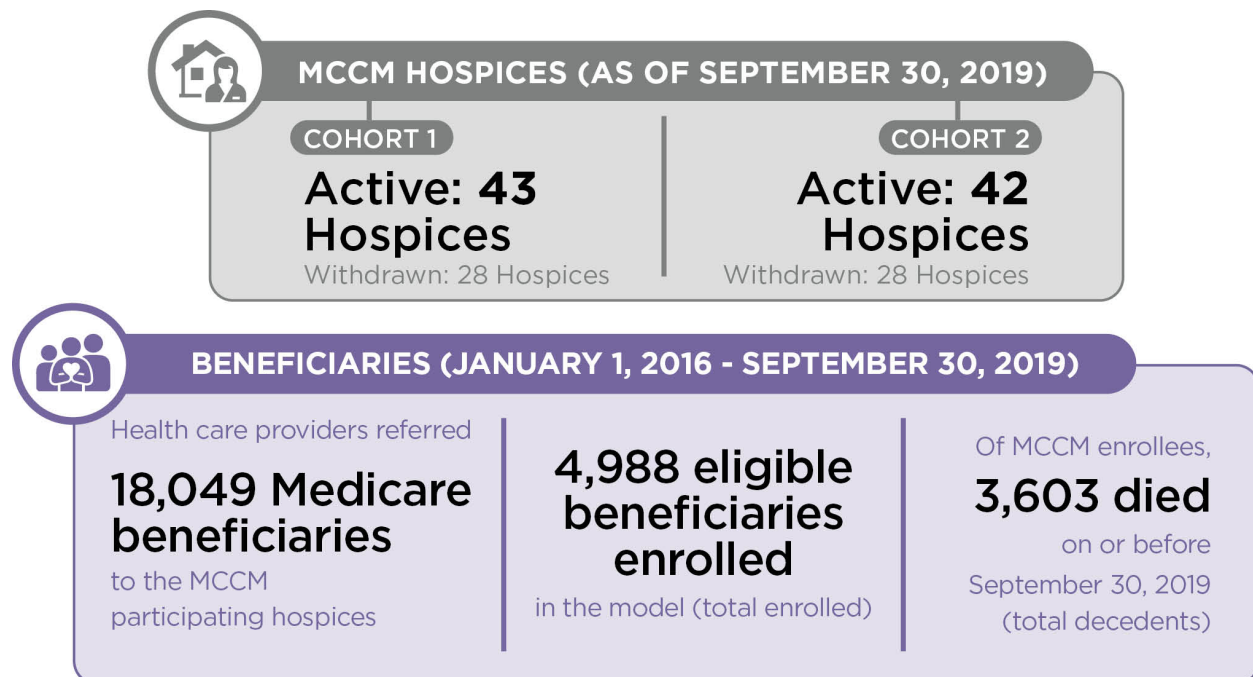
Medicare beneficiaries are eligible for MCCM if they have one or more of the following diagnoses: cancer, congestive heart failure, chronic obstructive pulmonary disease, or human immunodeficiency virus/acquired immunodeficiency syndrome. Another requirement is a prognosis of six months or less to live if the disease runs its expected course.

Beneficiaries also must be enrolled in Medicare Parts A and B and must have had at least 3 Medicare-covered office visits and 1 hospital encounter during the 12 months before enrollment. A hospital encounter can be an emergency department visit, observational stay, or inpatient admission. Beneficiaries must live in a traditional home (not a long-term care facility), and must not have elected MHB in the past 30 days.

Hospices participating in MCCM receive \$400 per-beneficiary, per-month to cover supportive services and care coordination activities they provide to MCCM beneficiaries (\$200 if enrolled less than 15 days during the first month). CMS randomized participating hospices into two cohorts: cohort 1 implemented the model beginning on January 1, 2016 and cohort 2 began on January 1, 2018.

As of September 30, 2019, 85 hospices (60 percent of the 141 participating hospices) remained in MCCM. **Exhibit ES.1** shows cumulative MCCM participation and enrollment.

### **Exhibit ES.1 Overview of Cumulative MCCM Participation and Enrollment**



Sources: MCCM portal data and Medicare enrollment data, January 1, 2016-September 30, 2019.

The percentage of referred beneficiaries eligible for MCCM and the percentage of enrollees grew significantly between 2016 and the first three quarters of 2019. This increase reflected the relaxation of MCCM-eligibility requirements in 2016, the start of cohort 2 in 2018, and refined marketing practices. Out of the 85 active hospices, nine enrolled half of all beneficiaries served by the model.

This report provides further information on the services hospices provided MCCM beneficiaries, the experiences that MCCM beneficiaries and their caregivers reported, the quality of MCCM care, and the frequency of transitions from MCCM to MHB. The report also provides updated information about the health status of MCCM enrollees and the care they received before MCCM enrollment, CMS payments to hospices, and the effect of MCCM on the use of Medicare-covered services and Medicare expenditures. Below we summarize important findings from each section of Annual Report 3.

### ***What Are the Pathways to MCCM Enrollment?***

**Marketing MCCM.** MCCM hospices worked throughout the model performance period to identify MCCM-eligible beneficiaries and increase enrollment, in part by developing marketing materials that drew distinctions between the goals of MCCM and MHB, and clarified the model's eligibility requirements.

**Health and functional status before MCCM enrollment.** In the 12 months before they enrolled in MCCM, beneficiaries had high rates of chronic illnesses in addition to the 4 MCCM-qualifying diagnoses. Less than 20 percent of beneficiaries were functionally independent at MCCM enrollment, while almost 50 percent needed some assistance. At enrollment, 77 percent lived with another person who presumably helped the enrollee live in a traditional home, as required for MCCM eligibility.

**Use of Medicare-covered services before MCCM enrollment.** In the 12 months before they enrolled in MCCM, beneficiaries used Medicare-covered services at higher rates, with use becoming more frequent closer to enrollment as their illnesses worsened. Over 60 percent of beneficiaries had an inpatient admission during the 90 days before MCCM enrollment. About 70 percent had one or more ambulance transports, emergency department visits, observational stays, and/or inpatient admissions during this time. Fewer than 2 percent of beneficiaries used no services during the 90 days before enrollment in the model. The last paid claims before MCCM enrollment were indicative of beneficiaries' urgent need for medical care: an emergency department visit without an inpatient admission (15 percent), an emergency department visit with an inpatient admission (27 percent), an ambulance transport (8 percent), and/or an observational stay (1 percent).

**Potential importance of hospital-focused referral networks.** The frequency and sequencing of hospital encounters that we observed were indicative not only of high medical need at the end of life but also the frequent use of hospital care in the one to three months before enrollment. These patterns suggest that hospitals may have played an important role in the referral of beneficiaries to MCCM. The potential advantages of hospital-focused referral networks are that their members may be familiar with beneficiaries' health status, have access to medical record documentation that supports certification of a six-month terminal illness, and enables verification of the use of physician visits and hospital care during the year before enrollment, as required for MCCM eligibility.

## ***How Does MCCM Affect Transitions to MHB?***

***Reasons enrollees left MCCM.*** Over 79 percent of the beneficiaries who enrolled in MCCM and subsequently left, stated that electing MHB was their reason for MCCM discharge. Only 12 percent of enrollees died while enrolled in the model, and less than 5 percent of enrollees left for other reasons.

***Timing of transitions to MHB.*** Overall, 84 percent of MCCM decedents transitioned to MHB after an average of 14 weeks (99 days) in MCCM and about 7 weeks (46 days) before death. Less than 10 percent of enrollees transitioned to MHB during the last 2 days of life. On average, MCCM decedents with a diagnosis of cancer transitioned to MHB 87 days after enrolling in the model, which was 26 days sooner than enrollees with a diagnosis of chronic obstructive pulmonary disease and 33 days sooner than enrollees with congestive heart failure. This difference could arise because beneficiaries with cancer were more seriously ill when they enrolled in MCCM, and may reflect the unpredictable disease trajectory of these other illnesses.

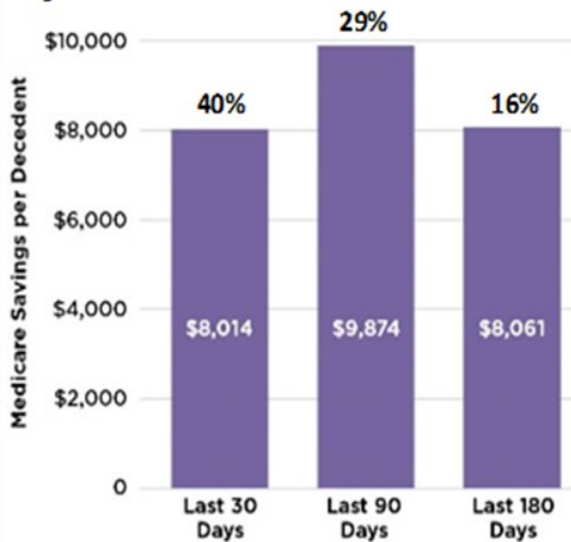
***Caregiver perceptions of MCCM.*** Caregivers of MCCM enrollees who transitioned to MHB reported experiences of care in MHB that were generally similar to those reported by caregivers of comparison beneficiaries with regard to how well the MCCM hospice team communicated with caregivers, provided help in a timely manner, treated the beneficiary with respect, provided emotional and spiritual support, and trained family members/caregivers to care for the beneficiary. The exception was care for pain in MHB, which caregivers perceived was worse for enrollees who transitioned to MHB from MCCM.

## ***How Does MCCM Affect Utilization of Care and Medicare Expenditures?***

***Net savings to Medicare due to MCCM.*** The extent to which MCCM enrollment decreases utilization of care and Medicare expenditures at the end of life is a key focus of this evaluation. For MCCM to result in net savings for Medicare, the model needs to reduce total Medicare expenditures enough to cover the per-month payments to MCCM hospices. We estimated that MCCM reduced total Medicare expenditures by approximately \$26 million, while CMS paid out \$4.6 million in per-beneficiary, per-month payments to MCCM hospices for 3,603 decedents enrolled between January 1, 2016 and September 30, 2020. The difference in these values amounts to total net savings of \$21.5 million. These results imply a 25 percent net reduction, or \$5,962 per decedent.

**MCCM effects on total per-decedent Medicare expenditures.** Gross Medicare savings during the last 90 days of life was \$9,874 per decedent, representing a spending reduction of 29 percent compared to a group of similar beneficiaries residing in MCCM hospice markets during the baseline period, as shown in **Exhibit ES.2**.

**Exhibit ES.2 Per Decedent Savings from MCCM Was Greatest During the Last 90 Days of Life**



Sources: Medicare Enrollment Database and Master Beneficiary Summary File, January 1, 2012-September, 30, 2019.

Notes: This exhibit shows estimates of the impact of MCCM on Medicare expenditures for 3,603 MCCM enrollees who died on or before September 30, 2019. Percent savings equals the impact estimate divided by expenditures for similar beneficiaries residing in MCCM markets during the baseline period.

The magnitude of these savings was substantially larger than per-decedent savings during the last 30 and 180 days of life of \$8,014 (40 percent) and \$8,061 (16 percent), respectively. This implies that the period around the last 90 days of life may be a “sweet spot” when there is enough time to educate Medicare beneficiaries about the potential benefits of MHB and enroll them, before the time when inpatient care begins to increase at the end of life.

**Drivers of MCCM impacts.** Virtually all of the estimated impact of MCCM on total spending during the last 30 days of life was attributable to reductions in inpatient spending for enrolled decedents who transitioned to MHB. MCCM decedents were 20 percentage points more likely than comparison decedents to enroll in MHB. This difference represents a one-

third increase relative to the comparison group. MCCM decedents who transitioned to MHB were enrolled in MHB an average of a week longer than the comparison group. When including beneficiaries who enrolled in MCCM more than a year before death to our analytic sample, we found that MCCM decedents transitioned two weeks earlier on average than comparison decedents. Total estimated expenditure reductions during the last 30 days of life were \$9,268 for the 84 percent subgroup of decedents who transitioned to MHB and \$346 for those who remained enrolled in MCCM.

### **How Does MCCM Affect the Quality of Care Experienced by MCCM Enrollees and Their Caregivers?**

**Assessing patient needs, screening, and managing symptoms.** CMS expected MCCM hospices to assess symptoms of shortness of breath, pain, emotional concerns, and bowel obstruction soon after enrollment; and at least once every 15 days thereafter. The goal is to identify symptoms and address them effectively. MCCM hospices documented an average of two monthly assessments for each enrollee, consistent with expected practice. Participating hospices documented symptom screenings for the majority of enrollees. Rates of symptom

relief among those with documented screenings exceeded 90 percent. Caregivers likewise reported that enrollees received timely attention and adequate pain relief.

However, there is room for improvement: MCCM hospices documented only 1 of 2 types of assessments during the first 5 days of enrollment for 28 percent of enrollees and no assessments for 9 percent of enrollees. To address this issue, CMS has been working with the MCCM implementation contractor to communicate MCCM reporting requirements and make it easier to correct portal data. MCCM hospices documented the administration of twice-monthly assessments to only half of MCCM enrollees. While we do not know how many undocumented assessments were actually performed, they may be difficult to administer to enrollees who continue to receive life-prolonging treatment.

**Shared decision making.** Hospice staff perceived shared decision making as important and a way to promote the effectiveness of MCCM care. About 90 percent of caregivers for MCCM decedents who transitioned to MHB indicated that the transition happened at the right time, beneficiaries or caregivers were involved as much as they wanted to be in the MHB decision, and the beneficiary made the decision free of pressure from the MCCM team. These results show that MCCM is achieving its goal of facilitating person-focused transitions to MHB through shared decision making.

**Advance care planning.** Having discussions about advance care planning is one indicator of whether MCCM hospices are engaging in shared decision making with enrolled beneficiaries. Overall, hospices documented advance care planning with an average of 68 percent of enrollees. However, hospices varied widely in the percentage of enrollees with a documented advance care planning discussion. For example, 4 hospices documented advance care planning discussions with more than 90 percent of enrollees, while 15 hospices documented these discussions with less than 50 percent of enrollees.

**Bereavement counseling.** Documentation of bereavement services suggests that the practice is rare, with hospices reporting only 321 encounters with 206 (4 percent) enrollees. A variety of qualified staff including nurses, care coordinators, social workers, clergy, and bereavement counselors performed the documented services.

### **Evaluation Limitations**

**Representativeness of MCCM hospices and enrollees.** MCCM is a voluntary model and we know that participating hospices differ in ways from those that did not volunteer with regard to geography, size, and operational characteristics, as described in **Appendix Section F.2**. Likewise, MCCM decedents were more likely to live in urban areas and less likely to be dually eligible for Medicare and Medicaid compared to MCCM-eligible decedents living in comparison market areas. These differences are shown in **Appendix Section F.3**. Findings in this report may therefore not be generalizable to all Medicare hospices and beneficiaries who are seriously ill with MCCM diagnoses.



**Focus on decedents.** The sample for the impact analyses we present in this report includes only decedents. Estimating impacts for a cohort of decedents allowed us to account for important, but unobserved, characteristics associated with both disease trajectory and end-of-life outcomes. Thus, the findings we present in **Section 4** do not provide a full picture of enrollee experiences in the model and resulting outcomes (e.g., total time in MCCM, services received, metrics related to death, cumulative costs), and do not account for the effects of MCCM on post-enrollment survival time.

**Accounting for unobserved variation in disease trajectories.** We used a stratified approach to weighting the comparison group that allowed us to account for important, but unobserved, decedent-level characteristics associated with both disease trajectory and end-of-life outcomes, as described in **Appendix Section F.3**. Because this method assesses health status at similar points in time relative to the date of death for MCCM and comparison decedents, our method represents an improvement over methods that randomly assign pseudo enrollment dates to comparison group members. Even so, the predictive power of the detailed set of health status measures we used to weight comparison decedents may not fully control for unobserved differences between MCCM and comparison decedents that affect utilization and expenditure outcomes, such as beneficiary preferences and clinical characteristics, quality of care, and access to care.

**Similarity of MCCM and comparison decedents.** This report presents estimates of the impact of MCCM on utilization and Medicare expenditures in **Section 4** based on cumulative experiences of MCCM decedents relative to those of a comparison group of Medicare decedents who resided in market areas served by a group of matched hospices. We used statistical modeling to ensure the similarity of the decedent groups based on demographics, use of Medicare-covered services, and the presence of serious illness and frailty at the end of life. Nonetheless, there may be important, but unobserved, differences between MCCM and comparison decedents on factors that influence end-of-life outcomes, such as quality of care and preferences for life-prolonging treatment.

**Accuracy and completeness of the MCCM portal.** Hospices report a variety of data used to conduct this evaluation in the MCCM portal, including referrals, beneficiary characteristics, enrollment duration, and quality of care, as described throughout this report. Although the capabilities of the portal improved over time, missing information and changes over time in the content of MCCM service and activity data limited our ability to provide a complete, longitudinal picture of enrollees' experiences receiving care from MCCM hospices.

# 1. Introduction and Background



Terminally ill beneficiaries and their caregivers face a difficult choice when considering the Medicare hospice benefit (MHB). Current Medicare policy requires that beneficiaries electing MHB forgo non-hospice services intended to treat their terminal condition. Due in part to this policy, fewer than half of all beneficiaries elect MHB near their end of life, and those that do are often too far along in their disease trajectory to experience the full benefit of hospice care. Prior research has shown that individuals who continue to receive treatment for their terminal condition—while also receiving hospice services to increase comfort—reported improved quality of life and greater satisfaction with their health care, lower costs, and less-aggressive medical treatment at the end of life.<sup>1,2,3,4,5,6,7,8,9,10,11</sup>

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  - <sup>6</sup> Krakauer, R, Spettell, CM, Reisman, L, Wade, MJ. (2009). Opportunities to improve the quality of care for advanced illness. *Health Affair*, 28, 1357-1359.
  - <sup>7</sup> Spettell, CM, Rawlins, WS, Krakauer, R. (2009). A comprehensive case management program to improve palliative care. *J Palliat Med*, 12, 827-832.
  - <sup>8</sup> Morrison, RS, Dietrich, J, Ladwig, S. (2011). Palliative care consultation teams cut hospital costs for Medicaid beneficiaries. *Health Affair*, 30, 454-463.
  - <sup>9</sup> Penrod, JD, Deb, P, Dellenbaugh, C. (2010). Hospital-based palliative care consultation: Effects on hospital cost. *J Palliat Med*, 13, 973-979.
  - <sup>10</sup> Brody, AA, Ciemens, E, Newman, J, Harrington, C. (2010). The effects of an inpatient palliative care team on discharge disposition. *J Palliat Med*, 13, 541-548.
  - <sup>11</sup> Morrison, RS, Penrod, JD, Cassel, JB. (2008). Cost savings associated with US hospital palliative care consultation programs. *Arch Intern Med*, 168(16), 1783-1790.

In 2014, the Center for Medicare & Medicaid Innovation in the Centers for Medicare & Medicaid Services (CMS) launched the Medicare Care Choices Model (MCCM). MCCM tests the effects of allowing eligible beneficiaries the option to receive supportive care services from participating hospices, while continuing to receive coverage for treatment of their terminal condition through fee-for-service Medicare. The model focuses on Medicare beneficiaries who are eligible for MHB but unwilling to forgo curative care and have (1) cancer, congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), or human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS); and (2) a prognosis of six months or less to live if the disease runs its expected course.

CMS contracted with Abt Associates to conduct a mixed-methods evaluation of MCCM. This third MCCM evaluation report (Annual Report 3) builds upon data and findings presented in 15 months of experience through September 30, 2019, to answer four questions:

- What are the pathways to MCCM?
- What do we know about transitions from MCCM to MHB?
- How does MCCM impact utilization of health care and Medicare expenditures?
- How does MCCM affect quality-of-care experiences of enrollees and caregivers?

This report also presents updates of selected information on the characteristics of hospices and beneficiaries in the model, as well as supportive services hospices provided to MCCM enrollees.

The report presents new information on the health status of MCCM enrollees and the Medicare-covered services they used before MCCM enrollment, impacts of MCCM on utilization and Medicare expenditures, and net savings of MCCM to Medicare. The report concludes with a discussion of the implications of evaluation findings for the concurrent delivery of supportive care through hospices and life-prolonging treatment to Medicare beneficiaries.

### 1.1 OVERVIEW OF MCCM

MCCM tests whether delivering selected supportive services through hospices to beneficiaries, while continuing to receive treatment for their terminal illnesses through fee-for-service Medicare, can:

- Increase access to supportive services provided by hospices
- Improve beneficiary and caregiver satisfaction with care
- Enhance quality of care and quality of life for enrollees and caregivers
- Reduce Medicare expenditures.

Under MCCM, participating hospices may provide services for routine home care and at-home respite care delivered by professional care providers, chaplains, volunteers, and others.<sup>12</sup> CMS expects that care delivered through the model is consistent with the six hallmarks of hospice care, which include care coordination and case management; twenty-four hours a day, seven days a week (24/7) access to the hospice team; person- and family-centered care planning; shared decision making; symptom management; and counseling.<sup>13</sup>

### 1.1.1 Eligibility Requirements

Medicare beneficiaries must meet the following eligibility criteria to enroll in MCCM<sup>14</sup>:

- Has been enrolled in Medicare fee-for-service Part A and Part B as their primary insurance for the past 12 months
- Has a six-month or less prognosis documented with a certification of terminal illness<sup>15</sup>
- Has a diagnosis of cancer, CHF, COPD, or HIV/AIDS<sup>16</sup>
- Has had at least 1 hospital encounter in the last 12 months
- Has had at least 3 office visits with any Medicare provider (defined as the person's primary care or specialty provider) in the last 12 months
- Has not elected MHB or the Medicaid hospice benefit in the last 30 days
- Has lived in a traditional home continuously for the last 30 days
- Resides within the service area of the participating hospice.

CMS adopted these criteria to promote the model's evaluability. Requiring that providers include qualifying MCCM diagnosis codes on certifications of terminal illness and that beneficiaries utilize hospital and office visits facilitate the identification of a comparison group that is similar to MCCM enrollees in terms of their severity of illness and utilization of Medicare-covered services. Requiring that enrollees have Medicare Part A and B coverage as a primary payer and are not enrolled in a Medicare Advantage Plan ensures that the

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<sup>12</sup> A list of MCCM service providers can be found in **Appendix Exhibit 1.20**

<sup>13</sup> Descriptions of each of the hallmarks can be found in **Appendix Section A.2.**

<sup>14</sup> CMS. (2019). *MCCM Resource Manual*. November.

<sup>15</sup> To be eligible for MCCM, the referring provider must attest in writing that the referred beneficiary is terminally ill with a life expectancy of six months or less if the terminal illness runs its normal course, and provide a brief narrative description of the clinical findings to support the attestation. The attestation must be signed by both the referring provider and the MCCM hospice director.

<sup>16</sup> Referring providers attest to 1 of these illnesses by including 1 of roughly 1,600 International Classification of Disease 9/10 MCCM-qualifying diagnosis codes on their Certification of Terminal Illness form.

evaluation fully accounts for utilization of care and accurately estimates the model's cost impacts. Finally, requirements related to living arrangements and prior hospice use reduce the potential for confounding MCCM outcomes with differences in organization and delivery of care across settings.

Participating hospices implement the model for three to five years depending on their cohort; with the model scheduled to operate through December 31, 2021.<sup>17</sup> Hospices participating in the model receive a \$400 per-beneficiary, per-month payment to provide MCCM services, which include symptom and treatment support, care coordination, case management, and advance care planning for MCCM enrollees.<sup>18</sup> The per-beneficiary, per-month payment covers all MCCM service costs that the hospice provides to the beneficiary in a given month. If the beneficiary enrolls in the model for fewer than 15 days during the first month of enrollment, the MCCM hospice receives only \$200 for that month.

Beneficiaries who enroll in MCCM retain the option to elect MHB at any time, if they wish to receive the full array of hospice services beyond those offered under the model. MCCM enrollees are also eligible for Medicare home health care. A side-by-side comparison of MCCM, MHB, and the Medicare home health benefit can be found in **Appendix Section A.3**.

### 1.1.2 Hospice Participants

In 2015, CMS selected 141 geographically diverse hospices to participate in the model from those that had applied, as shown in **Exhibit 1.1**. CMS randomly assigned the selected hospices to one of two cohorts. Cohort 1 hospices started enrolling Medicare beneficiaries in the model on January 1, 2016, and cohort 2 hospices began enrolling beneficiaries on January 1, 2018.

#### STORIES FROM THE FIELD



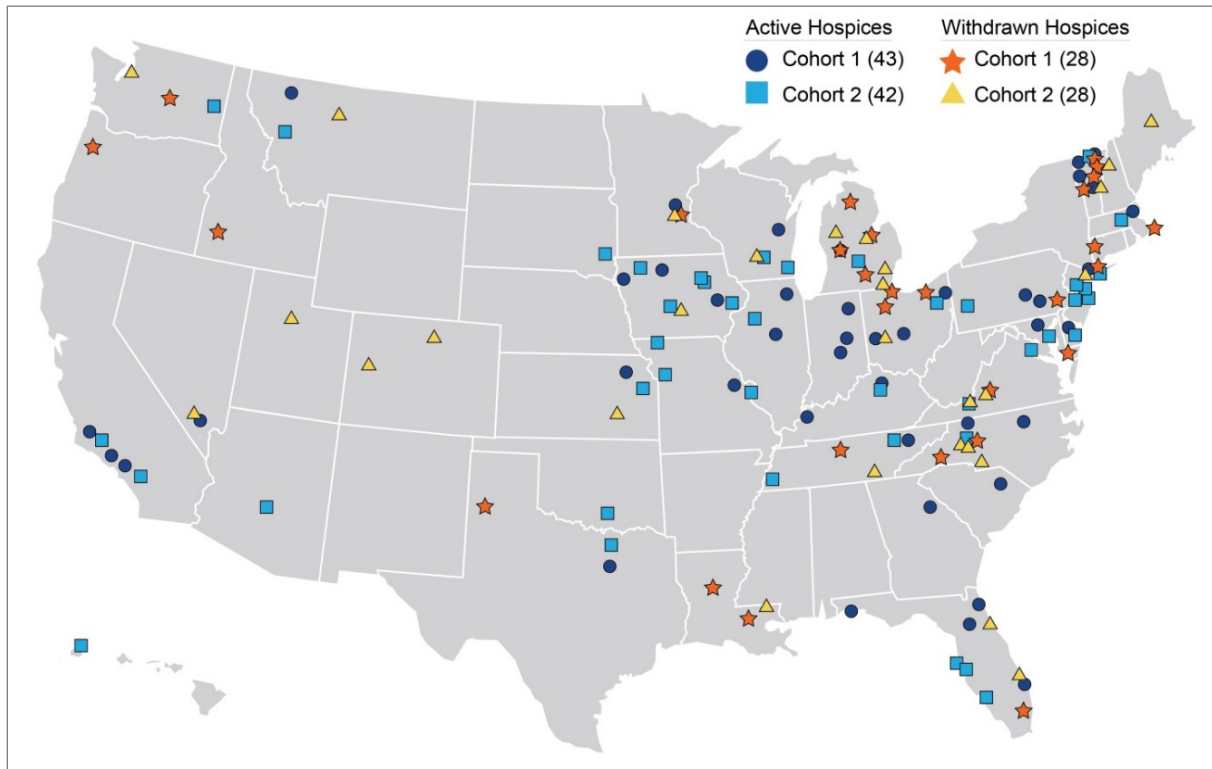
#### Reasons that hospices withdrew from MCCM in 2017 and 2018

- Administrative costs and reporting requirements
- Low MCCM payments
- Overlap with other hospice programs
- Lack of leadership buy-in
- Stringent eligibility requirements, including the ineligibility of Medicare-managed care enrollees.

—Reported by staff members from withdrawn MCCM hospices

<sup>17</sup> An extension to MCCM announced on June 25, 2020 added one year to the model period of performance. MCCM is now scheduled to continue through December 31, 2021.

<sup>18</sup> **Appendix Section I.5** presents updated information on the provision of services to MCCM enrollees.

**Exhibit 1.1 Location of MCCM Hospices**

Source: Implementation contractor's October 2019 report of hospice participation.

Note: This exhibit presents hospices actively participating in the model as of September 30, 2019.

A total of 85 hospices (60 percent of the initial 141 participating hospices) remained in MCCM as of September 30, 2019. Active MCCM hospices were more likely than other hospices in the United States to be non-profit, large in terms of the number of enrollees, founded during the 1980s, operate in the Northeast and Midwestern regions of the country, and facility-based; and to care for white beneficiaries and have shorter MHB length of stays.<sup>19</sup>

Before the official start of model operations on January 1, 2016, 12 of the original 141 hospices withdrew. After the launch, 5 withdrew during 2016, 20 withdrew in 2017, 13 withdrew in 2018, and 6 withdrew during the first 3 quarters of 2019. Of the 56 that withdrew, 44 hospices had never enrolled a beneficiary into the model. Active MCCM

<sup>19</sup> See **Appendix Exhibit F.2** for additional comparisons of MCCM hospices and other hospices in the United States.

hospices had longer MHB lengths of stay and operated in market areas where use of Medicare-covered services and Medicare expenditures were generally higher.<sup>20</sup>

### **1.1.3 Enrollment in MCCM**

A total of 4,988 eligible beneficiaries enrolled in MCCM between January 1, 2016 and September 30, 2019. Of these MCCM enrollees, 3,603 died on or before September 30, 2019 (total decedents). Enrollment trends and additional information on referrals and eligibility appear below.

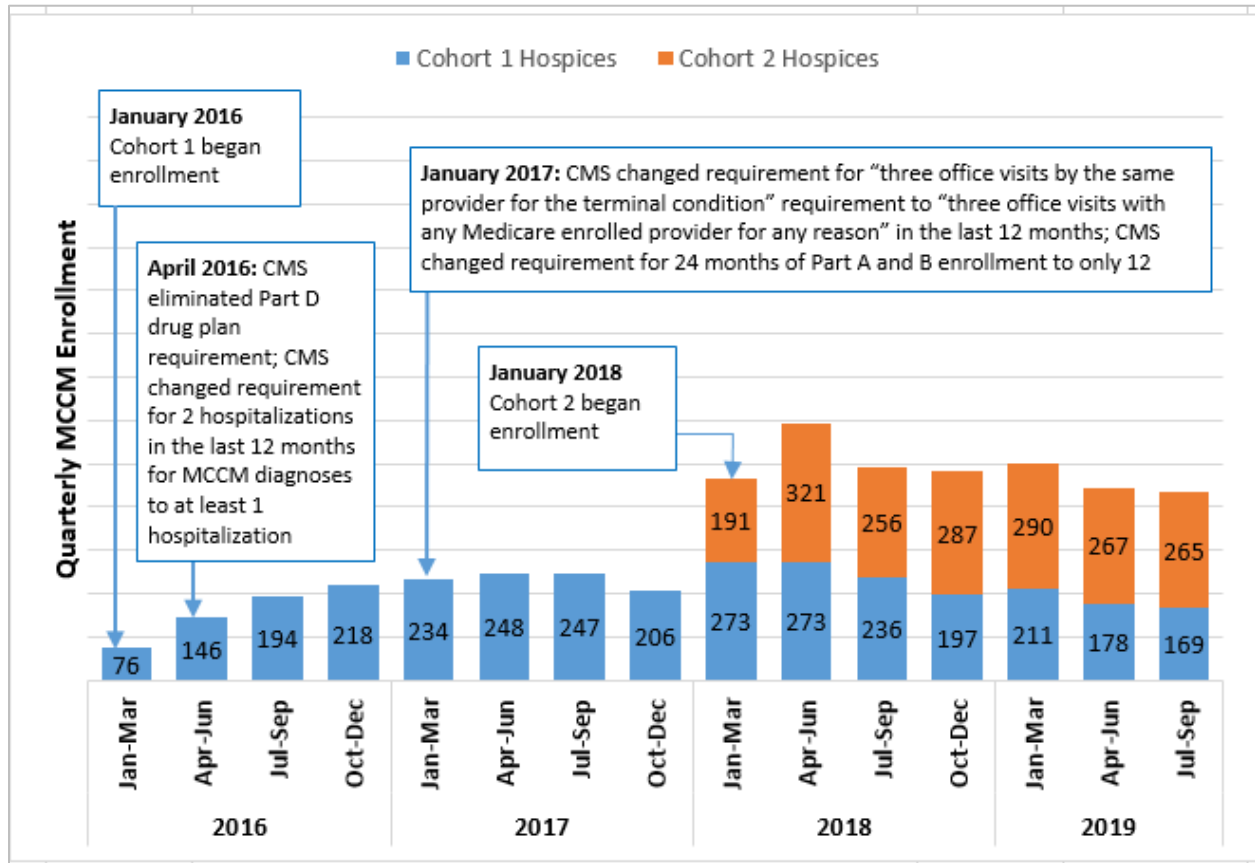
#### **Enrollment Trends**

MCCM enrollment increased steadily between 2017 and 2018, and began trending down in 2019, as shown in **Exhibit 1.2**. CMS relaxed several eligibility criteria during the first year of model implementation. These changes may have contributed to higher enrollment in cohort 2 hospices, starting in 2018. Enrollment declined from April 1, 2019 to September 30, 2019, compared with 2018 levels, particularly in cohort 1.

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<sup>20</sup> Hospices that withdrew from the model were similar to those that are currently active in terms of a variety of characteristics, including ownership, size, age, location, and religious affiliation. Additional information on characteristics of active and withdrawn hospices can found in **Appendix Exhibit I.27**.

**Exhibit 1.2 MCCM Enrollment Was Associated with Changes in Eligibility Requirements and the Start of Cohort 2 Enrollment**



Sources: MCCM portal data, January 1, 2016-September 30, 2019.

**Referrals, Eligibility, and Enrollment to Date**

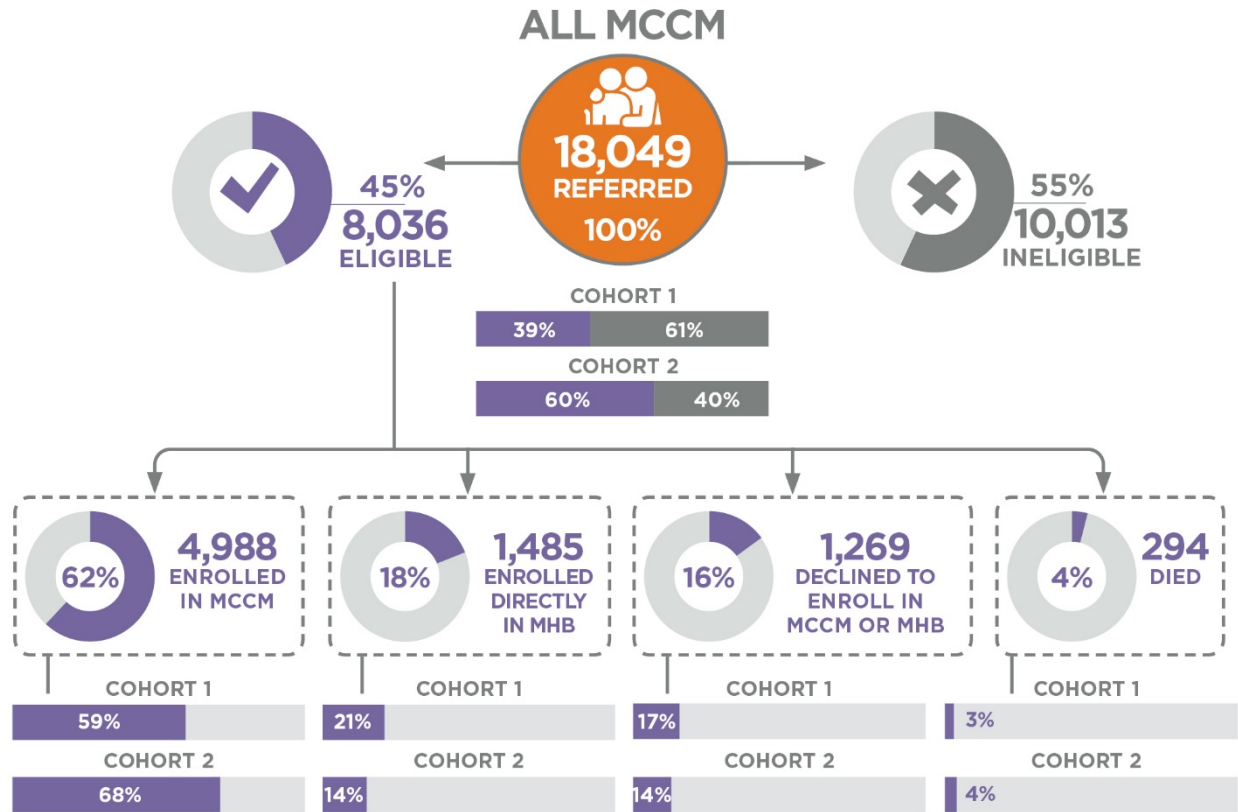
Providers referred 18,049 Medicare beneficiaries to MCCM hospices through September 30, 2019, as shown in **Exhibit 1.3**. Of those referred, only 45 percent met all MCCM-eligibility requirements. A much higher proportion of beneficiaries screened by cohort 2 hospices were eligible for MCCM (60 percent versus 39 percent for cohort 1), which may reflect the timing of the changes CMS made to the eligibility criteria prior to cohort 2 implementing the model.

Cohort 1 hospices had a higher rate of eligible beneficiaries enrolling directly in MHB: 21 percent versus 14 percent for cohort 2. This may be because cohort 1 hospices faced stricter MCCM-eligibility criteria (as discussed above), and referred beneficiaries who were ineligible because of the restrictions had only MHB as an option. Beneficiaries referred to cohort 2 hospices were more likely to be eligible, and could then choose between MCCM and MHB.

Finally, of the 8,036 eligible referrals, 1,269 beneficiaries (16 percent) declined to enroll in either MCCM or MHB, and 294 (4 percent) died before making an enrollment decision.



**Exhibit 1.3 Majority of Beneficiaries Found Eligible for MCCM Enrolled in MCCM or the Medicare Hospice Benefit**



Sources: MCCM portal data, January 1, 2016-September 30, 2019.  
MHB = Medicare hospice benefit.

The percentage of referred beneficiaries who were eligible for MCCM grew from 36 to 54 percent between 2016 and the first three quarters of 2019, as shown in **Exhibit 1.4**. Over the same time period, the percentage of eligible referrals enrolling in the model increased from 55 to 68 percent, while the percentage of referrals enrolling directly in MHB or declining to enroll in either MCCM or MHB declined accordingly.

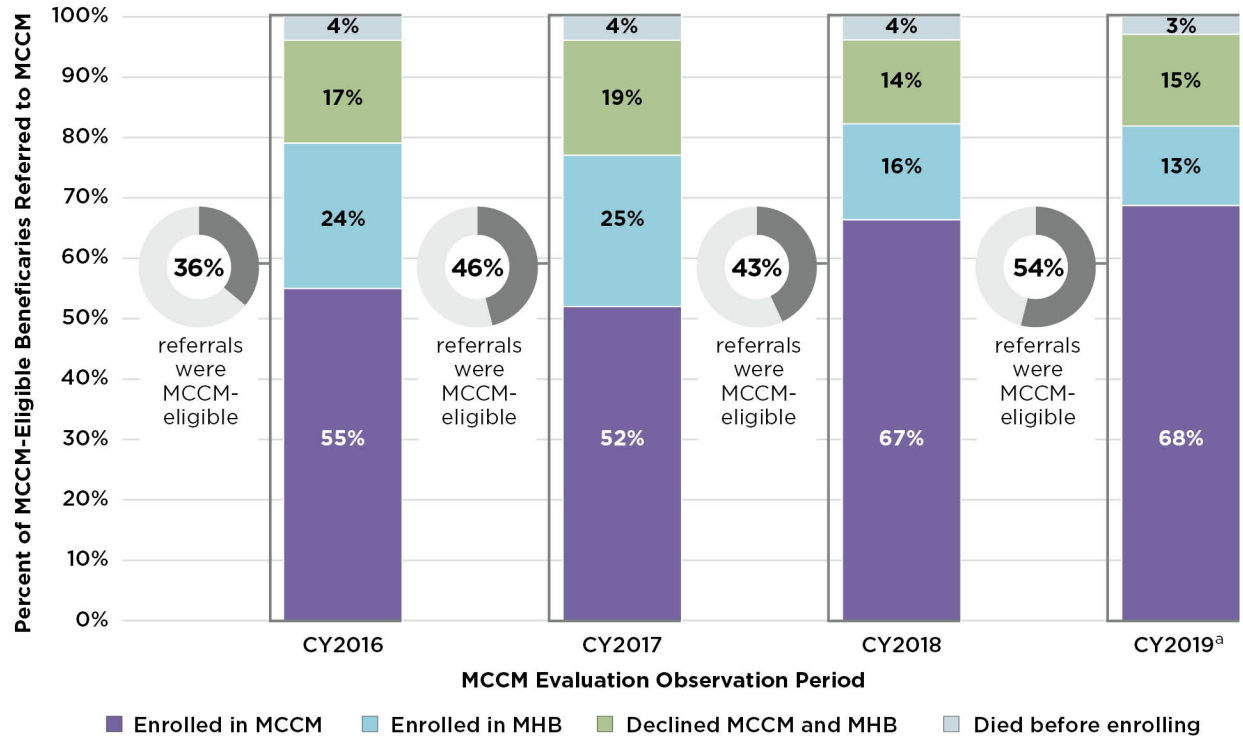
During 2018 and 2019 when both cohorts were operational, the percentage of eligible referrals to cohort 2 hospices was roughly 25 percentage points higher than the share referred to cohort 1 hospices, but the percentage that enrolled in MCCM was similar.<sup>21</sup>

Between 2016 and the first 3 quarters of 2019, the percentage of eligible referrals to cohort 1 hospices that enrolled in MCCM increased from 55 percent to 69 percent, while the

<sup>21</sup> **Appendix Exhibit I.1** shows the percentage of referrals eligible for MCCM by cohort.

percentage that enrolled directly in MHB declined from 17 percent to 14 percent.<sup>22</sup> We saw a similar trend for cohort 2 hospices between 2018 and the first three quarters of 2019.

**Exhibit 1.4 Majority of Eligible Beneficiaries Enrolled in MCCM**



Sources: MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit shows the disposition of 8,036 eligible referrals to MCCM from community providers: enrolled in MCCM, enrolled in MHB, declined MCCM and MHB, and died before enrolling by year (2016-2019). There were 1,147 referrals in CY2016, 1,845 referrals in CY2017, 3,054 referrals in CY2018, and 1,989 referrals through quarter 3 of CY2019. There were 1,147 eligible referrals in 2016, 1,842 eligible referrals in 2017, 3,045 eligible referrals in 2018, and 1,989 eligible referrals in 2019 (as of September 30, 2019). Information about MCCM referrals and enrollment by cohort is in **Appendix Exhibits I.1 and I.2**.

<sup>a</sup> CY2019 includes data from the nine-month period between January 1, 2019 and September 30, 2019.

CY = calendar year, MHB = Medicare hospice benefit.

The growth in the eligibility and enrollment of referred beneficiaries over time may reflect hospice efforts to adapt their marketing practices and referral networks to align with MCCM-eligibility requirements and beneficiary preferences for life-prolonging care.

Despite enrollment growth, most MCCM hospices we interviewed in 2017 and 2019 continued to struggle with MCCM enrollment, particularly in regions with high Medicare

<sup>22</sup> **Appendix Exhibit I.2** shows the disposition of MCCM-eligible referrals by cohort.

managed care penetration, even after relaxation of eligibility requirements.<sup>23</sup> For example, a cohort 2 hospice told us that more than 30 percent of the beneficiaries referred to them were ineligible for MCCM due to having Medicare managed care coverage, and another hospice explained that Medicare managed care plans cover 80 percent of beneficiaries with cancer.

### *Concentration of Enrollment across MCCM Hospices*

In Annual Report 2, we reported that just 8 hospices had enrolled 51 percent of MCCM beneficiaries by May 31, 2019. For this report, we further explored the degree of enrollment concentration with updated data. Of the initial 141 hospices participating in MCCM, 52 (37 percent) never enrolled a Medicare beneficiary into the model. Most of these hospices withdrew from the model; however, eight hospices with zero MCCM enrollment remained in the model as of September 30, 2019. Qualitative data collected between 2017 and 2019 suggest that hospices with no or very low enrollment may have remained in the model because MCCM allowed them to offer a diverse array of services to seriously ill Medicare beneficiaries, which may have also included palliative care through Medicare Part B and MHB.

Among the 89 hospices that enrolled at least 1 beneficiary in the model, we found that MCCM enrollment remains highly concentrated in a small number of hospices, as shown in **Exhibit 1.5**, such that:

- Nine hospices (10 percent of participating hospices) enrolled 54 percent of all MCCM beneficiaries.
- Twenty-two hospices (25 percent of participating hospices) enrolled 75 percent of all MCCM beneficiaries.
- Twenty-three hospices (25 percent of participating hospices) enrolled 1 percent of all MCCM beneficiaries.

We also assessed the associations between enrollment concentration and hospice characteristics such as size, ownership, and location. Despite the high concentration of enrollment in a small number of MCCM hospices, the number of beneficiaries enrolled by MCCM hospices was not strongly associated with hospice characteristics. The exceptions were that MCCM hospices in the top enrollment quartile were more likely to be located in urban areas and enroll somewhat fewer minorities.<sup>24</sup> Because healthcare is generally more accessible in densely populated areas, hospices in urban areas may be able to enroll more

<sup>23</sup> We briefly describe our qualitative data collection in **Section 1.2.1** and **Appendix Section C.5**. Detailed descriptions can be found in **Annual Report 2, Appendix Section G**.

<sup>24</sup> Data showing the characteristics of markets and MHB enrollees served by MCCM hospices by cumulative market quartile are shown in **Appendix Exhibit I.26**.

MCCM-eligible referrals who have used hospital- and office-based care during the previous year, as required by CMS for MCCM eligibility.

**Exhibit 1.5 Nine Hospices Enrolled over 50 Percent of MCCM Enrollees**

Enrollment Characteristics	Total MCCM Enrollment, All Hospices (n = 89)	Quartiles of Cumulative MCCM Enrollment				Top 10 <sup>th</sup> Enrollment Percentile (n = 9)
		Lowest (n = 23)	Low-Middle (n = 22)	High-Middle (n = 22)	Highest (n = 22)	
Number of currently active hospices	77	19	15	21	22	<b>9</b>
Enrollment range	1-564	1-6	7-28	28-59	60-564	<b>130-564</b>
Average enrollment	56	3	14	39	170	<b>298</b>
Cumulative enrollment	4,983	62	318	862	3,741	<b>2,683</b>
Percentage of cumulative enrollment	100.0%	1.2%	6.4%	17.3%	75.1%	<b>53.8%</b>

Sources: MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit shows enrollment characteristics for 89 of the 141 MCCM hospices that enrolled 1 or more Medicare beneficiaries between January 1, 2016 and September 30, 2019. The exhibit shows hospices grouped into quartiles and the top decile based on cumulative enrollment size since January 1, 2016.

## 1.2 EVALUATION OVERVIEW

The conceptual framework described in **Appendix Section A** depicts the various hospice and beneficiary factors that influence MCCM implementation and the outcomes that are the focus of this evaluation. To answer the MCCM evaluation research questions listed in **Appendix Section B**, we analyzed characteristics and experiences of participating hospices, enrolled beneficiaries, and the subgroup of enrolled beneficiaries who died during the relevant study period, relative to a carefully constructed comparison group.

In this section, we describe the evaluation data used to generate the findings presented in this report. We also summarize the methodologies we used to estimate impacts of MCCM on utilization and Medicare expenditures, and calculate net costs savings. We discuss the limitations of our approach in **Section 1.3**.

### 1.2.1 Methodology for Estimating MCCM Impacts

We used the difference-in-differences method to estimate the impacts of MCCM on utilization of Medicare-covered services and Medicare expenditures at the end of life. This quasi-experimental approach identifies the average effect of an intervention when the random assignment of beneficiaries is not possible. The method measures the difference in outcomes between decedents in the model and comparison decedents before and after implementation of MCCM, and uses a variety of covariates to control for time-invariant

differences between these two groups that may be correlated with utilization and expenditure outcomes. Estimating impacts for decedents allowed us to account for important, but unobserved, characteristics associated with both disease trajectory and end-of-life outcomes.<sup>25</sup>

The sections below provide a high-level description of our impact-estimation approach and methodology for calculating net cost savings. We describe the approach in detail in **Appendix Section F**.

**Overview**

The difference-in-differences approach compares utilization and expenditure outcomes of MCCM decedents to those of comparison group members<sup>26</sup> before and after implementation of the model, as described in **Exhibit 1.6**.

**Exhibit 1.6 Comparison Decedents Were Drawn from Market Areas Served by MCCM Participating Hospices and Matched Comparison Hospices**

Time Period	Market Areas of MCCM Participating Hospices	Market Areas of Matched Comparison Hospices
Baseline period before MCCM implementation (January 1, 2014 to December 31, 2015)	<i>Baseline period for MCCM markets: Medicare beneficiaries who died during the baseline period and resided in market areas of MCCM participating hospices in the CY of their death.</i>	<i>Baseline period for comparison markets: Medicare beneficiaries who died during the baseline period and resided in market areas of matched comparison hospices in the CY of their death.</i>
Performance period after MCCM implementation (January 1, 2016 to September 30, 2019)	<i>Performance period for MCCM markets: Medicare beneficiaries who enrolled in MCCM and died during the performance period. This is the intervention group.</i>	<i>Performance period for comparison markets: Medicare beneficiaries who died during the performance period and resided in market areas of MCCM hospices in the CY of their death.</i>

CY = calendar year.

In order to isolate the effect of MCCM on utilization and expenditure measures, the comparison group must be as similar as possible to MCCM enrollees, with the exception that they were not enrolled in the model. To ensure similarity between the two groups, we needed to address two challenges that we discuss in the paragraphs below.

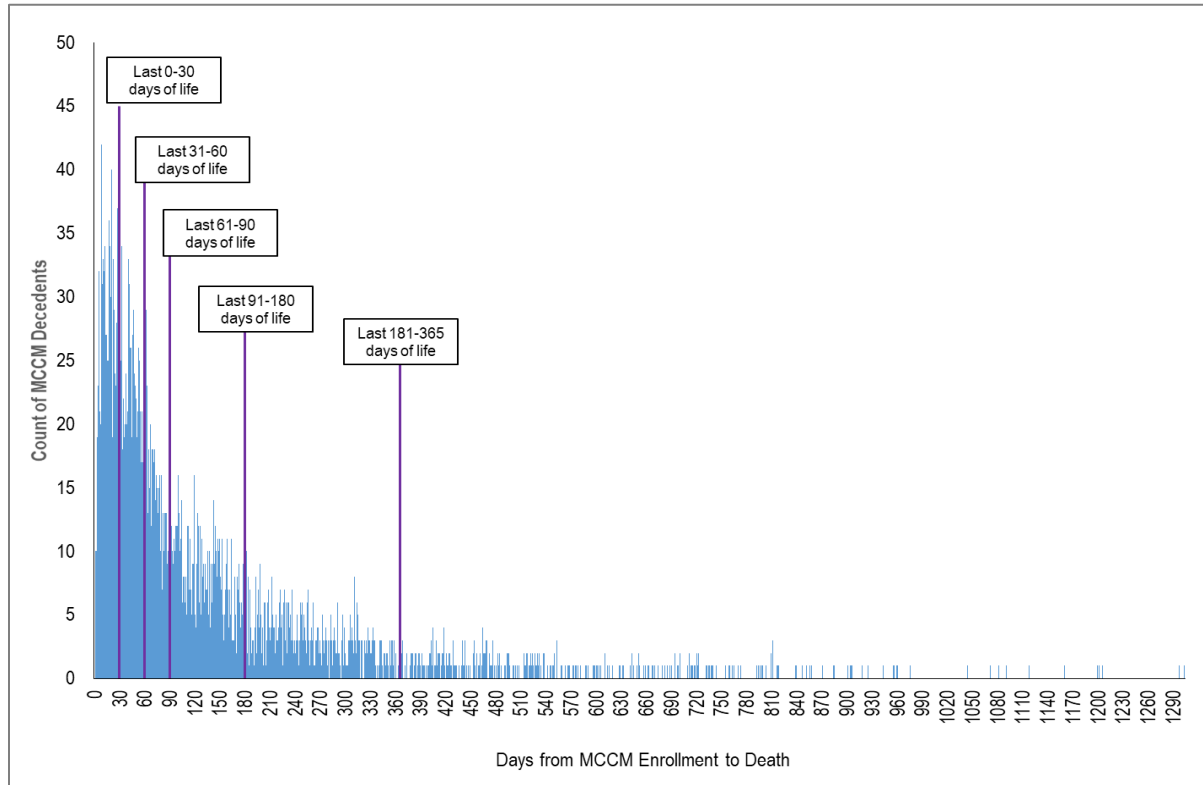
**Post-MCCM enrollment survival times varied widely.** Even with the requirement that a physician certify that a prospective enrollee has a terminal illness with the expectation of

<sup>25</sup> Demographic characteristics, social support, and living arrangements of MCCM enrollees and decedents were similar; see **Appendix Exhibits 1.4 and 1.5**.

<sup>26</sup> The comparison group we used for estimating MCCM impacts is different from the comparison groups we used to assess caregiver survey results, as described in **Section 1.2**.

having six months or less to live, the time between MCCM enrollment and death varied widely. On average, beneficiaries enrolled in MCCM 144 days (4.8 months) before death, as discussed in **Section 3.4**. Beneficiaries enrolled between 2 days to over 3 years before death, with 26 percent living more than 6 months after they enrolled in the model, as shown in **Exhibit 1.7**. Because decedents’ post-enrollment survival time is associated with utilization and cost of care at the end of life, it is important to account for the wide range of survival times when comparing MCCM decedents and the comparison group, to avoid bias.<sup>27</sup>

**Exhibit 1.7 Post-MCCM Enrollment Survival Varied Widely**



Sources: MCCM portal and Medicare enrollment data, January 1, 2016-September 30, 2019.

Note: This exhibit displays the frequency of the number of days between enrollment and death for 3,603 MCCM decedents who died on or before September 30, 2019. The number of days between enrollment and death is inclusive of the day of enrollment and the day of death, and ranges from 2 days to 1,304 days. The purple lines indicate the points in time, or anchor dates, which serve as hypothetical enrollment dates for comparison decedents. 3%, 19%, 19%, 13, 21% and 17% of MCCM decedents died within 7, 30, 60, 90, 180, and 365 days, respectively. Cumulatively, 9% of MCCM decedents were enrolled in the model for 365+ days before death and 26% were enrolled for over 180 days.

<sup>27</sup> See **Appendix Section F.1** for a discussion of the relationship between cost of care and post-enrollment survival time among MCCM decedents.

**Comparison group decedents lacked MCCM enrollment dates.** Another challenge was the lack of an enrollment date for decedents in the comparison group. The enrollment date marks the point in time when MCCM hospices could begin to influence utilization and expenditure outcomes.

To address these two challenges, we selected 5 hypothetical enrollment dates for comparison decedents: 30, 60, 90, 180, and 365 days before death. We refer to these five time points as enrollment “anchor dates.” These anchor dates reflect the skewed distribution of MCCM decedents’ post-enrollment survival time. We observed comparison decedents at each anchor date such that the comparison group consisted of observations at the decedent’s anchor-date level.

We used these anchor dates as common points in time from which to consistently measure health status and medical services utilization during the prior 12 months for both MCCM and comparison group decedents. We therefore observed MCCM decedents’ characteristics at a single anchor date by assigning each decedent to 1 of 5 groups, or survival strata, based on their post-enrollment survival time as follows: 0-30, 31-60, 61-90, 91-180, and 181-365 days before death.<sup>28</sup> MCCM decedents’ anchor dates are the upper bound of their survival strata.

We took two additional steps to ensure similarity between MCCM and comparison decedents. First, we drew comparison decedents in non-MCCM markets areas from areas served by a group of comparison hospices with organizational and market characteristics that were similar to those of MCCM participation hospices. Second, we weighted the comparison group such that the distribution of their observable characteristics<sup>29</sup> was as similar as possible to that of MCCM decedents.<sup>30</sup> We calculated separate weights at each anchor date to account for associations among observable characteristics, post-enrollment survival time, and MCCM outcomes.

In the paragraphs below, we describe key features of our comparison group specification and impact estimation.

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<sup>28</sup> Setting the anchor date at the date farthest from death in each survival stratum ensured that decedent characteristics were measured before their enrollment in the model to avoid diluting impact estimates by including time periods during which enrollees did not receive MCCM services.

<sup>29</sup> **Appendix Exhibits D.1-D.5** describe measures of observable characteristics of the beneficiaries used in our weighting procedure.

### *Intervention Group of MCCM Decedents*

All 3,603 MCCM enrollees who died on or before September 30, 2019 served as the starting point for the intervention group. From there, we limited the analytic sample to MCCM enrollees who:

- Lived no more than 365 days after enrollment
- Were eligible for MCCM at the time of enrollment based on administratively verifiable criteria.

We used Medicare claims and enrollment data to exclude 567 of the 3,603 MCCM decedents (16 percent) who did not meet 1 or more of the MCCM administratively verifiable eligibility criteria<sup>31</sup> on their enrollment date.<sup>32,33</sup> We also excluded an additional 270 eligible MCCM decedents (8 percent) who enrolled in MCCM more than 365 days before death. MCCM targets beneficiaries with a six-month or less prognosis and these enrollees lived significantly longer than expected after enrollment in the model. These exclusions helped ensure that the analytic sample represented the population of Medicare beneficiaries targeted by the model's eligibility criteria, and supported development of the rigorous comparison group described below.

Of the 3,603 MCCM decedents in the initial sample, 2,766 remained after applying the two restrictions above. See **Appendix Section F.2** for a discussion of the methods used to identify the set of MCCM decedents included in the impact analyses.

### *Comparison Group Decedents*

The group of comparison decedents consisted of Medicare beneficiaries, as identified in **Exhibit 1.8**.<sup>34</sup> In order to enroll in MCCM, beneficiaries must meet a set of model eligibility criteria, listed in **Section 1.1.1**. Therefore, we kept those beneficiaries who met the following administratively verifiable MCCM-eligibility criteria: (1) had an MCCM-qualifying diagnosis and (2) met all Medicare enrollment-related requirements at each anchor date.

<sup>31</sup> We were unable to verify eligibility based on having a physician-certified, six-month or less prognosis using the administrative data available to our evaluation team.

<sup>32</sup> See **Appendix Exhibit D.2** for a description of the MCCM-eligibility criteria and the data sources used to verify them. MCCM also requires that a physician certify that the enrollee has a six-month or less prognosis. The evaluation team did not have data to verify this eligibility criterion and we discuss our approach to incorporating this requirement in **Appendix Section F.3**.

<sup>33</sup> Differences in real-time administrative data available to Medicare administrative contractors at the time of MCCM enrollment and historical data available to the evaluation team, and unobserved time intervals between eligibility assessments and recorded enrollment dates may cause MCCM decedents who were eligible at enrollment appear ineligible in the data.

<sup>34</sup> See **Appendix Section F.2** for a detailed discussion of the methods used to select the group of comparison decedents.



The final comparison group contained 4,504,418 comparison decedent anchor-date observations and 1,312,394 unique decedents. Each comparison decedent may be represented up to five times, depending on the number of anchor dates when they met these two inclusion criteria.

### *Outcome Measures*

We estimated the effect of MCCM on utilization of Medicare-covered services<sup>35</sup> and Medicare expenditures<sup>36</sup> during the last 7, 30, 60, 90, and 180 days of life; and on transitions to MHB.<sup>37</sup>

In analyses of end-of-life utilization and expenditures, we included only decedents who had been enrolled in MCCM for the full observation period. For example, beneficiaries who enrolled in MCCM 91 days before death would be included in the analytic samples used to estimate outcomes during the last 7, 30, 60, and 90 days of life; but excluded from outcomes measured during the last 180 days of life.

### *Baseline and Performance Time Periods*

Measuring the effect of MCCM on end-of-life outcomes requires that we compare differences in outcomes between MCCM and comparison decedents before and after the model's implementation. We assigned comparison decedents to either the baseline or performance period based on their date of death. Comparison beneficiaries who died between January 1, 2014 and December 31, 2015 were assigned to the baseline period, while comparison beneficiaries who died between January 1, 2016 and September 30, 2019 were assigned to the performance period. MCCM decedents who died on or before September 30, 2019 are included in the intervention group during the performance period.

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<sup>35</sup> Medicare-covered services included inpatient admissions, home health episodes, emergency department visits, observational stays, intensive care unit stays, physician visits, ambulance services, and inpatient 30-day readmissions. We report estimated impacts per 1,000 decedents. Descriptions of these measures are in **Appendix Exhibit D.8**.

<sup>36</sup> Expenditure measures included total Medicare, inpatient, home health, hospice (excluding MCCM expenditures), skilled nursing facility, outpatient, durable medical equipment, and physician/supplier expenditures. Descriptions of these measures are in **Appendix Exhibit D.8**.

<sup>37</sup> MHB transition measures include the number of days from MHB enrollment to death, the likelihood of MHB conversion, and the likelihood of length of stay in MHB for one or two days. Descriptions of these measures are in **Appendix Exhibit D.8**.

### Covariate Balance

We used entropy balancing<sup>38</sup> to calculate weights for comparison decedents in order to eliminate or reduce differences in the distribution of observable characteristics between the intervention and comparison group.<sup>39,40</sup>

We included a broad set of characteristics in the entropy balancing that indicate decedents' severity of illness, access to health care, and relationships with health care providers before enrollment. Entropy balancing yields weights for each comparison decedent such that those who were similar to MCCM decedents received higher weights, while those who were dissimilar to MCCM decedents received lower weights. Each MCCM decedent had a weight equal to one. As decedents' health status and use of Medicare-covered services are associated with both survival time and MCCM outcomes, we calculated separate entropy-balancing weights at each anchor date. This stratified approach to weighting the comparison group allowed us to account for important, but unobserved, decedent-level characteristics associated with survival time and end-of-life outcomes.

### Difference-in-differences Regression Analysis

This evaluation compares differences in average outcomes among decedents who resided in MCCM markets from the performance period to the baseline period, with differences in outcomes among decedents who resided in comparison markets from the performance period to the baseline period. This calculation removes confounding effects of time-invariant factors that may differentially affect intervention and comparison groups. For example, aggressive treatment at the end of life may be the norm for certain regions of the Nation, but not others. The quality, intensity, and costs of medical care also vary by region and may affect outcomes of interest.<sup>41</sup> Assuming these factors did not change over time, their effects are accounted for by the difference-in-differences model.

<sup>38</sup> Hainmueller, J, Yiqing X. (2013). eBalance: A Stata package for entropy balancing. *J Stat Softw*, 54(7), 1-18.

<sup>39</sup> We used the following groups of characteristics to calculate entropy-balancing weights for comparison decedents: demographics, MCCM-eligibility criteria, Medicare-covered services indicative of serious illness and frailty, and other indicators of illness and frailty. We included the following demographics in the entropy-balancing weighting: age, Census region, hierarchical condition category risk score, comorbidities, dual eligibility, gender, urban/rural location, and race/ethnicity. See **Appendix Exhibit D.1** for a description of these variables. See **Appendix Exhibits D.3, D.4, and D.5** for descriptions of other covariates included in the entropy balancing.

<sup>40</sup> See **Appendix Section F.3** for a discussion of the use of entropy balancing in the development of the comparison group.

<sup>41</sup> Regional variation in Medicare utilization has been extensively documented in the *Dartmouth Atlas of Health Care*, available at <https://www.dartmouthatlas.org>, and retrieved on May 25, 2020.

**Model specification.** To estimate the effect of MCCM on Medicare-covered services, Medicare expenditures, and transitions to MHB during the last 7, 30, 60, 90, and 180 days of life, we used linear regression models.

We conducted sensitivity analyses using alternative samples of MCCM decedents to isolate separate and joint effects of excluding ineligible MCCM decedents and MCCM decedents who had enrolled more than 365 days before death on estimates of MCCM’s impact on utilization and expenditure outcomes. The results of these analyses indicated the effect on end-of-life outcomes, accounting for “leakage” of beneficiaries into the model that did not reflect the population specifically targeted by the model.

We estimated the effect of MCCM participation for key populations to explore differential impacts of the model across beneficiary types, and identified beneficiary and hospice-level characteristics associated with larger savings. Specifically, we identified the impact of MCCM on decedents with a record of a cancer diagnosis versus those without a record of cancer, and beneficiaries enrolled by MCCM participating hospices with high total enrollment counts versus those enrolled in all other MCCM hospices. We also estimated heterogeneous impacts of MCCM for beneficiaries who did and did not transition to hospice.

**Risk adjustment.** Despite our efforts to balance observable characteristics of MCCM and comparison hospices, markets, and decedents, external factors unrelated to the model may change over time and affect end-of-life outcomes (e.g., changes in palliative care referral practices or health insurance coverage of palliative care services). If such changes led to changes in decedent characteristics that were correlated with the evaluation’s outcome measures, failing to control for these characteristics might bias the estimated impact of MCCM. To address this possibility, the difference-in-differences model included decedent characteristics that may be associated with changes in the receipt of palliative care and other environmental factors. In particular, we accounted for the following decedent characteristics: age, Census region, hierarchical condition category (HCC) risk score, dual eligibility, gender, urban/rural location, and race/ethnicity.<sup>42</sup> We also controlled for relevant market factors associated with enrollment in MCCM and end-of-life outcomes.<sup>43</sup>

### *Parallel Trends Assumptions*

Our ability to attribute impacts on end-of-life outcomes to MCCM rests on the assumption that trends in utilization and Medicare expenditures were similar between MCCM and comparison decedents before the model’s implementation. A common approach to assess whether this assumption holds is the “parallel trends” test. We found strong evidence that trends in outcomes were similar between decedents in MCCM and non-MCCM markets

<sup>42</sup> See **Appendix Exhibit D.1** for a description of these demographic variables.

<sup>43</sup> See **Appendix Exhibit D.7** for a description of market-level variables.

during the baseline period, which supports the use of the difference-in-difference model approach.<sup>44</sup>

### *Net Savings*

We estimated the net savings to Medicare as the total cumulative impact of MCCM on Medicare expenditures (“total gross savings”) less the sum of per-beneficiary, per-month payments made by Medicare to MCCM hospices for services provided to MCCM decedents (“total costs”). In order to determine model-level gross savings, we aggregated estimated reductions in total Medicare expenditures across all MCCM decedents.<sup>45</sup> We calculated model-level costs as the sum of payments made from CMS to MCCM hospices from January 1, 2016 to September 30, 2019. CMS made a \$400 per-month, per-beneficiary payment to MCCM hospices for enrollees who received an MCCM service during the month and who, at that time, had Medicare as their primary payer.<sup>46</sup>

Hospices received a per-beneficiary, per-month payment for approximately 80 percent of the total number of months that beneficiaries were enrolled in MCCM, as shown in **Appendix Exhibit F.14**. To understand how non-paid months affected net cost savings, we calculated net savings assuming that hospices had received a per-beneficiary, per-month payment for all enrolled months.

In addition to model-level net savings, we estimated net savings per decedent as aggregate net savings divided by the number of MCCM enrollees who died on or before September 30, 2019 ( $n = 3,603$ ). We calculated the percent change in net savings per decedent as aggregate net savings divided by average per-decedent total Medicare expenditures for Medicare beneficiaries in MCCM market areas during the baseline period. **Appendix Section F.5** discusses the calculation of net savings and the percent change in net savings per decedent in detail.

### *1.2.2 Evaluation Data*

The findings discussed in this report were generated using a mixed-method evaluation design that collects and synthesizes findings from a variety of data sources, including programmatic data submitted by participating MCCM hospices via the secure, web-based MCCM portal; Medicare claims and enrollment data; interviews with hospice staff, referring

<sup>44</sup> See **Appendix Section F.4** for a discussion of parallel trends test results.

<sup>45</sup> To calculate gross savings for a given MCCM decedent, we used their post-enrollment survival time to identify the appropriate outcome measurement period (the last 7, 30, 60, 90, or 180 days of life). We then assigned the impact estimate during their respective measurement period as the decedent’s gross savings. **Appendix Section F.5.1** describes the estimation of total gross savings in greater detail.

<sup>46</sup> The only exception to the \$400 per-beneficiary, per-month payment is in beneficiary’s first calendar month of enrollment. A hospice receives \$200 for the beneficiary’s first month if the beneficiary was enrolled for fewer than 15 days and was enrolled on the last day of the month.

providers, and beneficiaries and their caregivers; a survey of MCCM hospices; and a survey of caregivers of enrollees.

**MCCM Programmatic Data**

We present MCCM programmatic data throughout this report. CMS requires MCCM hospices to document model referrals and enrollments through a web-based portal. Additionally, hospices report delivered services and activities, such as screenings and assessment results; what staff (by title) provided those services; and information about enrollees’ clinical and social support characteristics. We used these programmatic data to (1) identify and characterize participating hospices and their enrolled beneficiaries, (2) describe MCCM services provided to enrollees, and (3) assess the quality of care delivered by participating hospices.<sup>47</sup>

**Medicare Administrative Data**

We used Medicare enrollment and claims data to (1) conduct descriptive analysis of the pre-enrollment utilization presented in **Section 2** and transitions to MHB presented in **Section 3**; and (2) estimate the impacts of MCCM on utilization and cost presented in **Section 4**. We describe how we used the two sources of Medicare administrative data in **Exhibit 1.8**.

**Exhibit 1.8 Use of Medicare Administrative Data for the MCCM Evaluation**

Data Source	Purpose
Medicare enrollment data	<ul style="list-style-type: none"> <li>• Verify dates of death for MCCM enrollees and comparison group members</li> <li>• Specify demographic characteristics of MCCM enrollees and comparison group decedents, including age, race/ethnicity, gender, and dual-eligibility status</li> <li>• Identify Medicare decedents residing in markets served by comparison group hospices</li> <li>• Assess MCCM’s Medicare enrollment requirements (i.e., having Medicare Part A and B as a primary payer and not being enrolled in Medicare Advantage)</li> <li>• Identify transitions to MHB</li> <li>• Measure length of stay in MHB</li> </ul>
Medicare claims data	<ul style="list-style-type: none"> <li>• Identify Medicare beneficiaries with MCCM diagnoses and those living in traditional homes</li> <li>• Identify MCCM-qualifying events, including MCCM diagnoses, hospital encounters, and physician visits</li> <li>• Identify use of Medicare-covered services indicative of serious illness and frailty</li> <li>• Identify diagnoses indicative of serious illness and frailty, and chronic health conditions</li> <li>• Measure MCCM utilization and expenditure outcomes</li> </ul>

Notes: See **Appendix Section D** for additional information on the use of Medicare administrative data. See **Annual Report 2 Appendix Exhibit D.1** for information about the use of Provider of Services files for identifying comparison group hospices.

<sup>47</sup> Descriptions of service delivery and quality measures are in **Appendix Section E**.

***Interviews with Hospice Staff, Referring Providers, Beneficiaries, and Caregivers***

Throughout this report, we present data from 106 qualitative interviews conducted between 2017 and 2019. We conducted these interviews in person and over the telephone with hospice staff, referring providers, and beneficiaries and their caregivers, as described in **Exhibit 1.9**, to capture contextual information not available in the administrative data.<sup>48</sup> In this report, we integrate quantitative findings with data about the perspectives and experiences of model participants and beneficiaries on topics that include marketing and outreach activities, impacts of MCCM on hospitalization, transition to MHB, delivery of bereavement services, shared decision making, and advance care planning.

***Exhibit 1.9 Number and Purpose of Interviews Conducted for the MCCM Evaluation***

Interview Type	Purpose	Mode	Number Conducted in 2017	Number Conducted in 2018	Number Conducted in 2019
Interviews with MCCM hospices selected for case studies	Gather information from hospice staff, referring providers, and beneficiaries and their caregivers about MCCM implementation and the model's impacts.	In person	10 <sup>a</sup>	14 <sup>b</sup>	12 <sup>b</sup>
Interviews with MCCM hospices that previously participated in case studies	Gather information on changes in implementation over time from hospice staff, and beneficiaries and their caregivers about MCCM implementation and the model's impacts.	Telephone	0	0	6 <sup>b</sup>
Interviews with cohort 2 hospices	Gather information from hospice leadership and staff about plans for MCCM implementation, including changes to operations, clinical processes, marketing methods, and staffing.	Telephone	8	0	0
Interviews with MCCM hospices with low enrollment	Learn about challenges hospices faced when enrolling beneficiaries in MCCM; in particular, whether providers "divert" potential referrals to competing programs with less-stringent requirements.	Telephone	8	8	0

<sup>48</sup> A description of primary data collection methodologies and activities for the qualitative data in this report appears in **Annual Report 2, Appendix Section G**.

Interview Type	Purpose	Mode	Number Conducted in 2017	Number Conducted in 2018	Number Conducted in 2019
Interviews with withdrawn MCCM hospices <sup>c</sup>	Understand the circumstances and experiences that led the hospice to withdraw from MCCM, including lessons learned, and how CMS might improve experiences for hospices continuing in the model.	Telephone	18	15	7

Sources: Qualitative data collection, January 2017-December 2019.

<sup>a</sup> Interviews included cohort 1 hospices only.

<sup>b</sup> Interviews included both cohort 1 and 2 hospices.

<sup>c</sup> Interviews were conducted with a subset of the hospices that withdrew from MCCM. Of the 58 hospices that withdrew through December 31, 2019, we interviewed staff from a total of 40 hospices. Before the official start of the model, 12 hospices declined our interview request and 5 hospices withdrew before the evaluation start date. In 2017, we conducted a group interview with four hospices with separate CCNs that were part of the same parent organization. In 2018, we conducted a group interview with three hospices with separate CCNs that were part of the same parent organization. In each of these two instances, we conducted only one interview, but applied the information across the multiple CCNs.

CCN = CMS certification number.

### Caregiver Experience of Care Survey

This report includes survey results about care received by MCCM enrollees and comparison beneficiaries who died between October 1, 2017 and September 30, 2019. The overall response rate to the caregiver survey during this period was 49 percent.<sup>49</sup>

The purpose of the survey was to learn how individuals differ in terms of the type and intensity of care they need and desire, and in their interest in shared decision making about end-of-life care. To assess the experiences of MCCM enrollees and their caregivers, as well as comparison beneficiaries who were eligible for MCCM but enrolled directly in MHB, we used a modified version of the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) Hospice Survey, which we call the Caregiver Experience of Care Survey (caregiver survey). We analyzed two main types of enrollee and caregiver experiences:

- Shared decision making regarding transitions to MHB, including the level of involvement, the timing of referral to hospice, and reasons for enrolling or not enrolling in MHB
- Quality of life at the end of life.
- Other beneficiary and caregiver experiences of care in MCCM or MHB include communication with hospice staff, timeliness of care, respect, and willingness to recommend the model or hospice to others.

<sup>49</sup> As a point of comparison, the average response rate for the national CAHPS® Hospice Survey is 40 percent when administered via mail with a telephone follow-up.

The caregiver survey is a continuous data collection effort, with four new samples drawn every month, as follows:

1. **MCCM+MHB:** Caregivers of deceased MCCM enrollees who elected MHB
2. **MCCM only:** Caregivers of deceased MCCM enrollees who did not elect MHB
3. **MCCM comparison group:** Caregivers of deceased beneficiaries who met MCCM-eligibility criteria and received MHB care from MCCM hospices, but who were not enrolled in the model
4. **Non-MCCM comparison group:** Caregivers of deceased beneficiaries who met MCCM-eligibility criteria and received MHB care from 1 of 33 matched comparison hospices.<sup>50</sup>

Deceased beneficiaries for the two survey comparison groups (Groups 3 and 4 above) were randomly selected from all MCCM and non-MCCM hospices participating in this survey using MCCM-eligibility criteria that could be verified with Medicare administrative data.<sup>51</sup> We sent surveys to those beneficiaries' caregivers.<sup>52</sup>

### *Organizational Survey*

In this report, we discuss selected findings from a survey of MCCM hospices conducted in 2017 and 2018 about affiliations with other types of organizations (e.g., hospitals, home health agencies, physicians) and access to patient data. The purpose of the survey was to collect data on organizational structure and characteristics not available from other sources used in this evaluation. The survey methodology and instruments are described in detail in **Annual Report 2, Appendix Section H**.

## 1.3 EVALUATION LIMITATIONS

It is important to note certain limitations that apply throughout the report:

- MCCM is a voluntary model and we know that participating hospices differ in ways from those that did not volunteer related to geography, size, and operational characteristics. Findings in this report may therefore not be generalizable to all hospices nationwide.<sup>53</sup>

<sup>50</sup> These hospices were a subset of the 236 hospices used to estimate the impacts of MCCM presented in **Section 4**. The comparison group used for the difference-in-differences analysis of MCCM impacts did not include MHB enrollees in MCCM hospices.

<sup>51</sup> We were unable to verify eligibility based on having a physician-certified, six-month or less prognosis using the administrative data available to our evaluation team.

<sup>52</sup> For more information on how we developed the caregiver survey, survey sampling, and data collection, see **Appendix H** and **Annual Report 2, Appendix Section I**.

<sup>53</sup> See **Appendix Exhibit F.5** for comparisons of characteristics of 141 MCCM hospices to 3,985 non-MCCM hospices operating in the United States during 2016.



- During the first 3-and-a-half years of a 5-year test model, MCCM hospices enrolled approximately 5,000 Medicare beneficiaries, 54 percent of whom enrolled in 9 hospices.<sup>54</sup> MCCM enrollees were more likely than those residing in the market areas of similar hospices to live in urban areas, less likely to be dually eligible for Medicare and Medicaid, and more likely to have an MCCM-qualifying diagnosis of cancer.<sup>55</sup> Findings in this report may therefore not be generalizable to all Medicare beneficiaries who are terminally ill with MCCM diagnoses.
- As MCCM is ongoing, the patterns and trends discussed in this report may change as the model continues through December 2021.<sup>56</sup> Further, some beneficiaries were still alive and enrolled in the model on September 30, 2019 (the ending date for data included in this report). Because the sample for the impact analyses focused on decedents, findings to date neither provide a full picture of enrollee experiences in the model and resulting outcomes (e.g., total time in MCCM, services received, metrics related to death, cumulative costs), nor account for the effects of MCCM on post-enrollment survival time.
- The MCCM portal documented a variety of data used to conduct this evaluation, including referrals, beneficiary characteristics, enrollment duration, and quality of care. Although the capabilities of the portal improved over time, missing information and changes over time in the content of MCCM service and activity data limited our ability to provide a complete, longitudinal picture of enrollees' experiences receiving care from MCCM hospices.
- This report presents estimates of the impact of MCCM on utilization and Medicare expenditures based on the cumulative experiences of MCCM decedents relative to those of a comparison group of Medicare decedents who resided in market areas served by a group of matched comparison hospices. We used statistical modeling to ensure the similarity of decedent groups based on demographics, the use of Medicare-covered services, and the presence of serious illness and frailty at the end of life, as documented in the Medicare administrative data. Despite the resulting similarity between the groups on a rich set of time-varying characteristics, there may be important, but unobserved, differences between MCCM and comparison decedents on factors that influence end-of-life outcomes. These factors include, but are not limited to:
  - Beneficiaries' access to care, choice of healthcare provider, and nature of the MCCM referral process
  - Quality-of-life prolonging treatment

<sup>54</sup> See **Appendix Section I.26** for comparisons of characteristics of the top nine enrolling MCCM hospices compared to those of other MCCM hospices.

<sup>55</sup> See **Annual Report 2, Exhibit 2.13** for comparisons of demographic and clinical characteristics of MCCM enrollees versus MCCM-eligible decedents not in the model.

<sup>56</sup> An extension to MCCM announced on June 25, 2020 added one year to the model period of performance. MCCM is now scheduled to continue through December 31, 2021.

- Clinical judgments used by community providers to certify that a beneficiary was likely to have six months or less to live
- Beneficiaries' preferences for aggressive, life-prolonging treatment.

Because of these limitations, readers should take care in interpreting the impact estimates as causal.

- We excluded 16 percent of 3,607 MCCM decedents from our impact estimation because they did not appear eligible for the model on the enrollment date listed in the MCCM portal based on administratively verifiable criteria.<sup>57</sup> Excluding administratively ineligible decedents in our intervention and comparison groups helped to ensure that the two groups were similar and that our results were valid. However, it is not clear whether the excluded decedents were actually ineligible or whether the retrospective administrative data used to verify eligibility differed from that used by Medicare administrative contractors to verify eligibility at the time of enrollment. For example, the two data sources could have varied due to unobserved lags between eligibility assessment and enrollment, changes in Medicare enrollment status, and/or late-arriving claims not recorded at the time of enrollment. Sensitivity analyses suggested the exclusion of administratively ineligible decedents did not meaningfully affect the estimated impacts of MCCM.
- We used a stratified approach to assign weights to the comparison group to account for important, but unobserved, decedent-level characteristics associated with both disease trajectory and end-of-life outcomes, as described in **Appendix Section F.3**. Because this method assesses health status at similar points in time relative to the date of death for MCCM and comparison decedents, our method represents an improvement over methods that randomly assign pseudo-enrollment dates to comparison group members. Even so, the detailed set of health status measures used to weight comparison decedents may not fully control for unobserved differences between MCCM and comparison decedents that affect utilization and expenditure outcomes. Examples of these differences could include beneficiary preferences for life-prolonging treatment, clinical characteristics, quality of care, and access to care.
- In calculating net savings of MCCM to CMS, we found that hospices received MCCM payments for approximately 80 percent of all enrollee months. The lack of payment could have occurred because hospices did not provide any services in a given month or because they did not submit claims, perhaps due to administrative costs. To understand how per-beneficiary, per-month payments affected the magnitude of net cost savings, we recalculated net savings assuming that hospices received payments for all enrollee months during the evaluation period. We found that adding the additional payments had a minimal effect on estimates of net cost savings.

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<sup>57</sup> See a description of excluded MCCM decedents in **Appendix Section F.2**.

## 1.4 ORGANIZATION OF THE REMAINDER OF THIS REPORT

The remainder of this report presents descriptive findings and early impacts from the MCCM evaluation:

- Section 2 describes the characteristics of MCCM enrollees during the year before enrollment in terms of health status and utilization of care.
- Section 3 describes the duration of MCCM enrollment and transitions from MCCM to MHB.
- Section 4 describes the impacts of MCCM on utilization and Medicare expenditures during the last 7, 30, 60, 90, and 180 days of life.
- Section 5 describes the quality of care based on MCCM programmatic data and the experiences of MCCM beneficiaries and their caregivers.
- Section 6 discusses the lessons learned from report findings and their implications for sustainability and scalability of MCCM.

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## Beneficiary Story<sup>58</sup>

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The beneficiary, a Caucasian man, lives with his caregiver. He was diagnosed with COPD, heart failure, diabetes, and a rare kidney disease. He was in and out of the hospital seven times in the past year before enrolling in MCCM.

During one of his hospital encounters, the hospice social worker came to the beneficiary's room and explained MCCM and the types of services he was eligible to receive. He was excited about the services MCCM provides, including the support provided by someone coming to his home, and wanted to enroll in the model. He had never previously received hospice or visiting nursing services. The beneficiary said the social worker comes once a month to his home to check in on him and the MCCM nurse comes every two weeks. She records his weight, listens to his heart and lungs, examines his feet for swelling, and asks questions about his overall health and wellness. The MCCM nurse and beneficiary review any medication changes together. Currently, the beneficiary is given three breathing treatments and four insulin shots daily. While bathing is challenging, he chose not to receive an aide's services for this task. The caregiver used the after-hours call line when she wanted to take the MCCM beneficiary to the hospital one evening, but was unsure if this was permissible while receiving services through the model. The on-call nurse reassured the caregiver that she can still bring the beneficiary to the hospital while enrolled in the model, and so she did. After the hospital encounter, the MCCM nurse followed-up with the MCCM beneficiary and his caregiver to check in on his health and wellbeing.

At this point in time, the model is providing the services the beneficiary needs. The MCCM nurse explained to him that on MHB, he can get more support than what he receives through the model, but the beneficiary expressed that he is not quite ready to make that transition. The beneficiary knows his condition will only get worse and he is not afraid of death. In response, the MCCM nurse told him and his caregiver that she can always come more frequently to the home if needed. Both the beneficiary and the caregiver want to stay enrolled in MCCM. They are so thankful that the social worker came to visit them in the hospital that day. Since enrolling, the MCCM beneficiary has only gone to the hospital twice. The MCCM beneficiary ended the interview by stating, *"It makes you feel secure that there is someone in your corner."*

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<sup>58</sup> This beneficiary story is an actual story given by an MCCM enrollee during a site visit. The story is not a composite, and represents a typical MCCM enrollee the qualitative data collection team interacts with during in-person case studies. We maintain confidentiality by omitting the beneficiary's name, age, ethnicity, and geographic location.

## 2. What Are the Pathways to MCCM Enrollment?



In this section we report Medicare beneficiary characteristics during the year before enrollment in MCCM, including efforts to market the model to potential enrollees. We cover three specific topics:

- Health and functional status during the 12 months before enrolling in MCCM are described in **Section 2.2**
- Use of Medicare-covered services during the 12 months before enrolling in MCCM is also described in **Section 2.2**
- Efforts to market MCCM to providers and potential enrollees through communication with referring providers and others are described in **Section 2.3**.



To discuss the pre-enrollment health status and use of Medicare-covered services, **Section 2** incorporates data from:

- Medicare claims and enrollment data
- Interviews with MCCM hospice staff and enrolled beneficiaries
- Organizational survey data

### 2.1 KEY FINDINGS

- Most MCCM enrollees had high levels of medical and functional needs consistent with physician certification of a terminal illness and a life expectancy of six months or less. Over 80 percent had one or more chronic conditions. Over half had hypertension, anemia, hyperlipidemia, ischemic heart disease, or chronic kidney disease. Only one in five was functionally independent at enrollment, and almost half needed assistance or were disabled during this time.
- Beneficiaries used Medicare-covered services at high rates throughout the year before MCCM enrollment, and utilization increased in the three months just before enrollment. Over 60 percent of beneficiaries had an inpatient admission during the 90 days before MCCM enrollment. About 70 percent had one or more ambulance transports, emergency department visits, observational stays, and/or an inpatient admission during this time. Fewer than 2 percent of beneficiaries used no services during the 90 days before enrollment in the model.
- Some hospices made efforts to expand their marketing beyond existing affiliations with hospitals and home health agencies in order to increase the number of provider referrals to MCCM.

### 2.2 PRE-ENROLLMENT FUNCTIONAL AND HEALTH STATUS

Hospices assessed beneficiaries' functional status at the time of enrollment and recorded it in the MCCM portal. Functional status is an important indicator of health. Those whom hospices identify at MCCM admission as "dependent" may require more services and support than those who are "independent." As was the case with the results reported in Annual Report 2, the majority of MCCM enrollees were limited in their capacity to care for themselves without assistance.

Enrollees who were not functionally independent and who had less support at home might have required more support and services from MCCM hospices. Half of the beneficiaries were married when they enrolled in MCCM, 40 percent had a spouse or partner as their caregiver, and 77 percent lived with another person rather than alone.

More than two-thirds of MCCM enrollees had an MCCM-qualifying diagnosis of cancer, fewer than 1 percent had HIV/AIDS, and the rest had COPD or CHF, as shown in **Exhibit 2.1**. Finally, enrollees had an average HCC score of 4.42; scores of this magnitude are indicative of a serious illness.<sup>59</sup> Average HCC scores were largely similar across implementation cohorts and functional status categories, as shown in **Appendix Exhibit I.3**. The exception was that disabled enrollees in cohort 1 hospices had lower average HCC scores than those in cohort 2 (4.5 versus 5.4).

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<sup>59</sup> Higher scores represent higher expected Medicare expenditures. The average HCC score reported here is higher than that reported in Annual Reports 1 and 2. This is because for this report, we calculated HCC scores based on diagnoses recorded on claims submitted during the 12 months before beneficiaries' enrollment in MCCM, which more accurately reflects pre-enrollment terminal diagnoses.

**Exhibit 2.1 Most Medicare Beneficiaries Lacked Functional Independence and Had a Cancer Diagnosis at the Time of MCCM Enrollment**

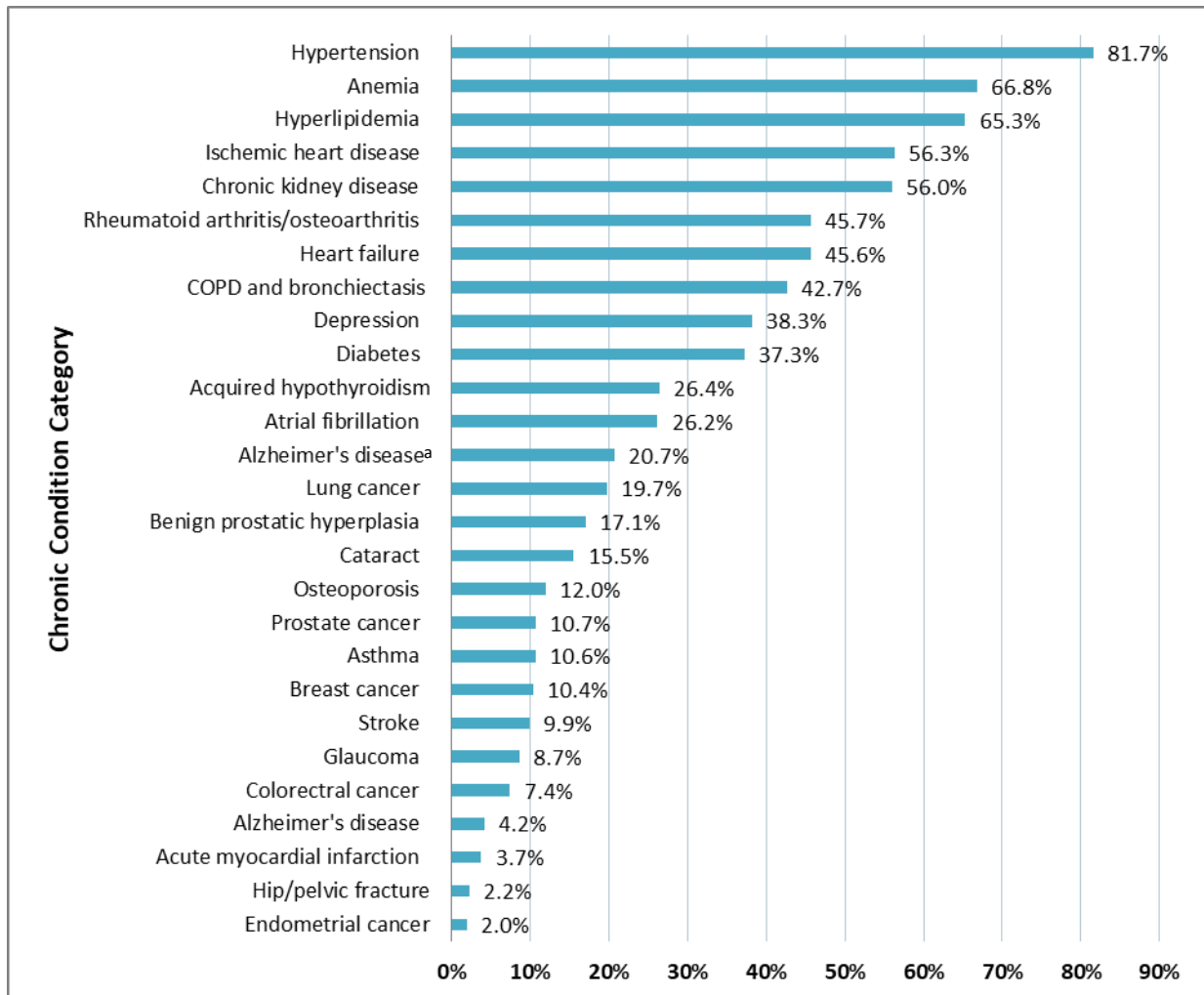
Beneficiary Characteristic	Percentage of MCCM Enrollees
<b>Functional status</b>	
Independent	18.6%
Needs some assistance	48.1%
Dependent	16.8%
Disabled	5.9%
Missing	10.6%
<b>MCCM-qualifying diagnosis</b>	
Cancer	68.8%
Congestive heart failure	27.3%
Chronic obstructive pulmonary disease	29.7%
Human immunodeficiency virus/acquired immunodeficiency syndrome	0.5%
<b>Living arrangement</b>	
Lives alone	23.0%
Lives with other	77.0%
<b>Marital status</b>	
Married	49.8%
Widowed	28.6%
Divorced	9.2%
Never married	5.7%
Declined to report	5.9%
Partner	0.9%
<b>Hierarchical condition category score</b>	
Average score	4.42

Sources: Medicare claims, Master Beneficiary Summary File, and MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit displays column percentages for characteristics of 4,988 Medicare beneficiaries enrolled in MCCM between January 1, 2016 and September 30, 2019. MCCM-qualifying diagnoses were identified based on the presence of 1 or more MCCM International Classification of Disease 9/10 diagnosis codes on inpatient, outpatient, or carrier claims during the 12 months before enrollment. The percentages of MCCM-qualifying diagnoses together exceed 100% because some enrollees had claims for multiple MCCM diagnoses. The hierarchical condition category is the measure of a beneficiary's expected future healthcare expenditures based on diagnoses documenting during the previous calendar year and demographic characteristics.

The vast majority of MCCM enrollees had at least one chronic condition, in addition to their MCCM-qualifying diagnosis, at some point during the 12 months before enrollment in the model. More than 50 percent of enrollees had hypertension (82 percent), anemia (67 percent), hyperlipidemia (65 percent), ischemic heart disease (56 percent), or chronic kidney disease (56 percent), as shown in **Exhibit 2.2**. In addition, 21 percent of beneficiaries had a diagnosis of Alzheimer's disease or related disorder and senile dementia in the 12 months before MCCM enrollment.

**Exhibit 2.2 Medicare Beneficiaries Had a Variety of Chronic Conditions in Addition to Their MCCM-Qualifying Diagnosis before MCCM Enrollment**



Sources: Medicare inpatient, outpatient, and carrier claims files; January 1, 2015-September 30, 2019; CMS Chronic Conditions Warehouse, January 1, 2015-September 30, 2019.

Note: This exhibit shows the percentage of MCCM enrollees (n = 4,988) with each of 27 chronic conditions sometime during the 12 months before enrollment in the model. Chronic condition indicators were obtained from the CMS Chronic Conditions Warehouse. See codes and computation algorithms at <https://www2.ccwdata.org/web/guest/condition-categories>. **Appendix D.5** contains descriptions of chronic conditions.

<sup>a</sup> Alzheimer's disease or related disorder and senile dementia.

COPD = chronic obstructive pulmonary disease.



### ***2.2.1 Pre-Enrollment Utilization of Medicare-Covered Services***

Patterns of pre-enrollment service use provide insight into the health conditions and unobserved processes through which providers identify potential candidates for MCCM and refer them to participating hospices. In this section, we describe utilization of Medicare-covered services during the 12 months before enrollment. The results of these analyses also informed the development of the comparison group we used to measure the impacts of MCCM on utilization and expenditures, as described in **Section 1.2.2** and **Appendix F.2**.

### ***2.2.2 Use of Medicare-Covered Services During the 12 Months Before MCCM Enrollment***

We examined the use of 9 specific types of services<sup>60</sup> during the 12 months before MCCM enrollment. For all of these services, patterns show high-service use 6-12 months before enrollment, a decline for the next 2-3 months, followed by an increase in the 60 days before enrollment; see **Exhibit 2.3**. These patterns of declining use followed by steeply increasing use were evident for the three types of hospital encounters that CMS specified as eligibility requirements for MCCM:

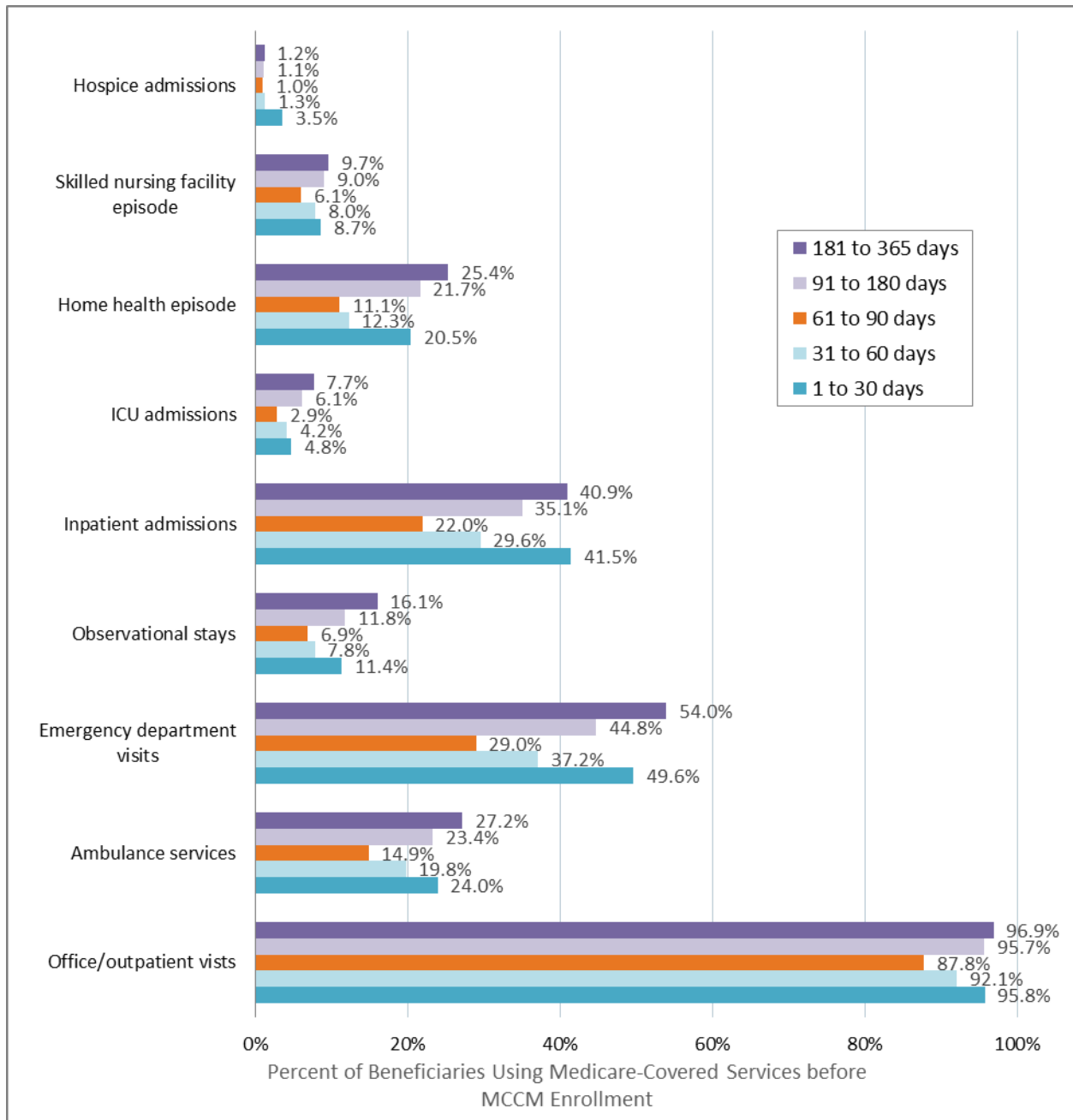
- Emergency department visits: 54 percent of beneficiaries had at least 1 emergency department visit during the 6-12 months before MCCM enrollment, 29 percent during the 2-3 months before enrollment, and 50 percent during the 30 days before enrollment.
- Observation stays: 16 percent of beneficiaries had at least 1 observation stay during the 6-12 months before MCCM enrollment, 7 percent during the 2-3 months before enrollment, and 11 percent during the 30 days before enrollment.
- Inpatient admissions: 41 percent of beneficiaries had at least 1 hospitalization during the 6-12 months before MCCM enrollment, 22 percent during the 2-3 months before enrollment, and 42 percent during the 30 days before enrollment.

The pattern of decreasing use followed by increasing use in the period just before enrollment was also evident for both skilled nursing facility admissions and home health episodes, indicating that ongoing medical need after inpatient discharges was common among beneficiaries before MCCM enrollment. Ninety-seven percent of beneficiaries had at least 1 office or outpatient visit during the 6-12 months before MCCM enrollment.

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<sup>60</sup> See descriptions of Medicare-covered services analyzed in this section in **Appendix Section D.8**.

**Exhibit 2.3 Use of Medicare-Covered Services Varied during the Year Before MCCM Enrollment**



Sources: Medicare claims data, Master Beneficiary Summary File, and MCCM portal data, January 1, 2015-September 30, 2019.

Note: This exhibit displays the proportion of Medicare beneficiaries who used Medicare-covered services during the year before enrollment in MCCM by the type of service and number of days before enrollment. The analysis includes 4,988 Medicare beneficiaries enrolled in MCCM between January 1 and September 30, 2019. The percentage of users in each service category during each pre-enrollment time interval is the number of MCCM enrollees with one or more claims divided by the total number of MCCM enrollees. Physician visits were identified using evaluation and management Healthcare Common Procedure Coding System codes 99201-99499 in office and outpatient settings. See descriptions of service category definitions in **Appendix D.8**.

ICU = Intensive care unit.

### 2.2.3 Average Monthly Number of Medicare Services Used During the 12 Months Before MCCM Enrollment

The average monthly number of Medicare-covered services used by beneficiaries steadily increased during the 12 months before enrollment, as shown in **Exhibit 2.4**. We found that visits averaged 3 per month in the 6-12 month period before MCCM enrollment, and increased to 9 per month in the 30 days before enrollment.

- Hospitalizations averaged 0.2 per month in the 6-12 months before MCCM enrollment, and increased to 0.5 per month in the 30 days before enrollment.
- Emergency department visits averaged less than 0.2 per month in the 6-12 months before MCCM enrollment, and increased to 0.7 per month in the 30 days before enrollment.

Similarly, average monthly use of ambulance transports, observational stays, home health episodes, and intensive care admissions more than doubled between 180 and 365 days and 1 and 30 days before enrollment.

Service utilization became more frequent during the month before MCCM enrollment. More frequent contact with the health care system may have contributed to interest in palliative care and a willingness to make end-of-life plans, which in turn led to referrals to MCCM/hospice. For example, the most common qualifying diagnosis among MCCM enrollees was cancer. Six to twelve months before MCCM enrollment, beneficiaries with cancer might have been in active treatment, trying to slow the progression of their disease. A few months later, they might have discontinued futile treatment due to toxic side effects, but eventually they might have needed more help to manage symptoms of their advanced cancer—leading up to a realization that palliative and, ultimately, hospice care would be beneficial.

These types of situations are consistent with information enrollees and caregivers shared when we interviewed them during 2017, 2018, and 2019. Many beneficiaries and caregivers

#### INNOVATIONS



#### Helping community providers identify MCCM-eligible beneficiaries

In the beginning, particularly before CMS relaxed eligibility criteria, hospices found only a fraction of beneficiaries eligible for the model. Finding their patients ineligible disappointed and frustrated providers. Hospices worked to create checklists and other materials for providers to help them better understand the eligibility criteria. These resources helped to better identify patients that met the criteria.

told us that they were at a point in their disease trajectory where they needed extra support, beyond what their primary caregiver could provide.<sup>61</sup>

The frequent use of medical care, particularly from hospitals, may have also facilitated MCCM enrollment by establishing relationships with health care providers that have access to the clinical histories needed to certify terminal MCCM-qualifying diagnoses, office/outpatient visits, and hospital encounters during the prior year. By contrast, providers that treat newly diagnosed beneficiaries may not have access to the level of documentation needed to substantiate eligibility for MCCM, based on prior office/outpatient visits, and hospital encounters, even if their illnesses are terminal. The high frequency of office/outpatient visits during the 12 months before enrollment suggests that beneficiaries had established relationships with providers before enrollment in the model.

**Exhibit 2.4 Frequency of Medicare Service Use Per Beneficiary, Per Month Increased Steadily during the Year before MCCM Enrollment**

Medicare Service Category	Days before MCCM Enrollment					
	1-30 Days	31-60 Days	61-90 Days	91-180 Days	181-365 Days	Cumulative 1-365 Days
Office/outpatient visits	8.54	6.94	5.55	4.21	3.16	52.60
Ambulance transports	0.40	0.30	0.23	0.17	0.12	2.17
Emergency department visits	0.68	0.48	0.37	0.26	0.19	3.45
Observational stays	0.12	0.09	0.07	0.05	0.03	0.63
Inpatient admissions	0.52	0.35	0.26	0.18	0.12	2.41
Intensive care unit admissions	0.05	0.04	0.03	0.02	0.02	0.29
Home health episodes	0.21	0.13	0.11	0.09	0.06	1.09
Skilled nursing facility admissions	0.13	0.11	0.08	0.06	0.03	0.70
Hospice enrollments	0.04	0.02	0.01	0.01	0.01	0.13

Sources: Medicare claims data, Master Beneficiary Summary File, and MCCM portal data, January 1, 2015-September 30, 2019.

Note: This exhibit shows the average number of events per enrollee per month by type of service and the number of days before enrollment. The analysis includes 4,988 Medicare beneficiaries enrolled in MCCM on or before September 30, 2019. The monthly per MCCM enrollee average for each service category is the total number of claims during a given pre-enrollment time interval divided by the number of beneficiary months in the given time interval. Office/outpatient visits were identified using evaluation and management Healthcare Common Procedure Coding System codes 99201-99499 in office and outpatient settings. See descriptions of service category definitions in **Appendix D.8**.

<sup>61</sup> Additional reasons Medicare beneficiaries gave for enrolling in MCCM can be found in **Annual Report 2, Section 2.2.3**.

### ***2.2.4 Use of Medicare-Covered Services During the 90 Days Before MCCM Enrollment***

We examined sequences of Medicare-covered service use during the 90 days before enrollment in MCCM and assessed whether they varied based on having an MCCM diagnosis of cancer, as shown in **Exhibit 2.5**.<sup>62</sup>

The results highlight the central role that hospitals may have played in referring eligible beneficiaries, both with and without a qualifying cancer diagnosis, to MCCM. Over 60 percent of beneficiaries, with and without cancer, were hospitalized during the 3 months before MCCM enrollment. Some hospitalizations were followed by post-acute care (i.e., an admission to a skilled nursing facility or a home health episode) and some were not. In the latter case, beneficiaries went directly home from the hospital without home health care. Among beneficiaries admitted to the hospital, those with cancer were less likely to use post-acute care than those without cancer.

Use of ambulance transports, emergency department visits, and/or observational stays without subsequent inpatient visits was relatively rare for beneficiaries with and without cancer (13 and 9 percent, respectively). Similarly, enrollment in MCCM directly from home health care was also relatively rare for beneficiaries with and without cancer (9 and 11 percent, respectively). The same was true for office/outpatient visits not accompanied by use of other Medicare-covered services.

Finally, even though MCCM allows beneficiaries to satisfy eligibility criteria based on prior service use at any point during the year before enrollment, fewer than 2 percent of beneficiaries used no services during the 90 days before enrollment. This finding highlights the important role that recent hospital encounters, particularly those involving inpatient admissions, might play in the referral of eligible beneficiaries to MCCM and their enrollment.

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<sup>62</sup> In this analysis, having a cancer diagnosis was defined as having one or more claims with a primary MCCM-qualifying diagnosis of cancer during the year before enrollment, as described in **Appendix Exhibit D.2**.

**Exhibit 2.5 Most Beneficiaries Were Hospitalized During the 90 Days Before Enrolling in MCCM**

Sequencing of Pre-MCCM Service Use	Percent with an MCCM Cancer Diagnosis (n = 3,167)	Percent without an MCCM Cancer Diagnosis <sup>b</sup> (n = 1,821)
Office/outpatient visits only	15.0%	8.6%
Inpatient admission followed by a PAC episode	24.3%	36.7%
Inpatient admission without a subsequent PAC episode	39.1%	33.3%
Home health episode without a prior inpatient admission	9.0%	10.5%
Use of ambulance transports, emergency department visits, and/or observational stays without subsequent inpatient admissions	12.5%	9.3%
No utilization <sup>a</sup>	0.1%	1.6%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

Sources: Medicare claims data, Master Beneficiary Summary File, January 1, 2016-September 30, 2019.

Note: This exhibit displays the percentage of Medicare beneficiaries who used care in a given care sequence category during the 90 days before enrollment in MCCM. The analysis included 4,988 Medicare beneficiaries enrolled in MCCM between January 1, 2016 and September 30, 2019. We classified beneficiaries as having a cancer diagnosis based on the presence of one or more claims with a primary MCCM-qualifying International Classification of Disease 9/10 diagnosis code during the 12-month period before MCCM enrollment. Physician visits were identified using evaluation and management Healthcare Common Procedure Coding System codes 99201-99499 in office and outpatient settings. See descriptions of service category definitions in **Appendix D.8**. See **Appendix Exhibit D.7** for a list of International Classification of Disease 9/10 codes used to identify an MCCM-qualifying cancer diagnoses. Care sequence categories are mutually exclusive. PAC episodes include home health episodes and/or skilled nursing facility admissions.

- <sup>a</sup> The "No utilization" category included MCCM enrollees who did not use office/outpatient visits, inpatient care, skilled nursing facility care, home health care, emergency department visits, observational stays, or ambulance transports during the 90 days before MCCM enrollment.
- <sup>b</sup> Enrollees with a cancer diagnosis may have a co-occurring MCCM-qualifying diagnosis of chronic obstructive pulmonary disease, congestive heart failure, or human immunodeficiency virus/acquired immunodeficiency syndrome.

PAC = post-acute care.

### 2.2.5 Last Paid Claim for Medicare-Covered Services Before MCCM Enrollment

To gain insight into the types of medical care encounters that may lead to MCCM referrals, we examined the type of care documented on the last paid claim before a beneficiary enrolled in MCCM, as shown in **Exhibit 2.6**. We found half of the last paid claims before MCCM enrollment were indicative of an urgent need for medical care: an emergency department visit without an inpatient admission (15 percent), an emergency department visit with an inpatient admission (27 percent), ambulance transport (8 percent), and/or observational stay (1 percent). The other half of last paid claims were for inpatient admissions without emergency department visits (7 percent), home health episodes (19 percent), and office/outpatient visits (17 percent). The remaining 6 percent was for skilled nursing care and hospice care. Interestingly, fewer than 1 percent of beneficiaries did not have any paid claim during the 90 days before enrollment, even though beneficiaries may enroll in MCCM with a qualifying diagnosis, a hospital encounter, and three office visits any time during the 12 months before enrollment.

#### STORIES FROM THE FIELD

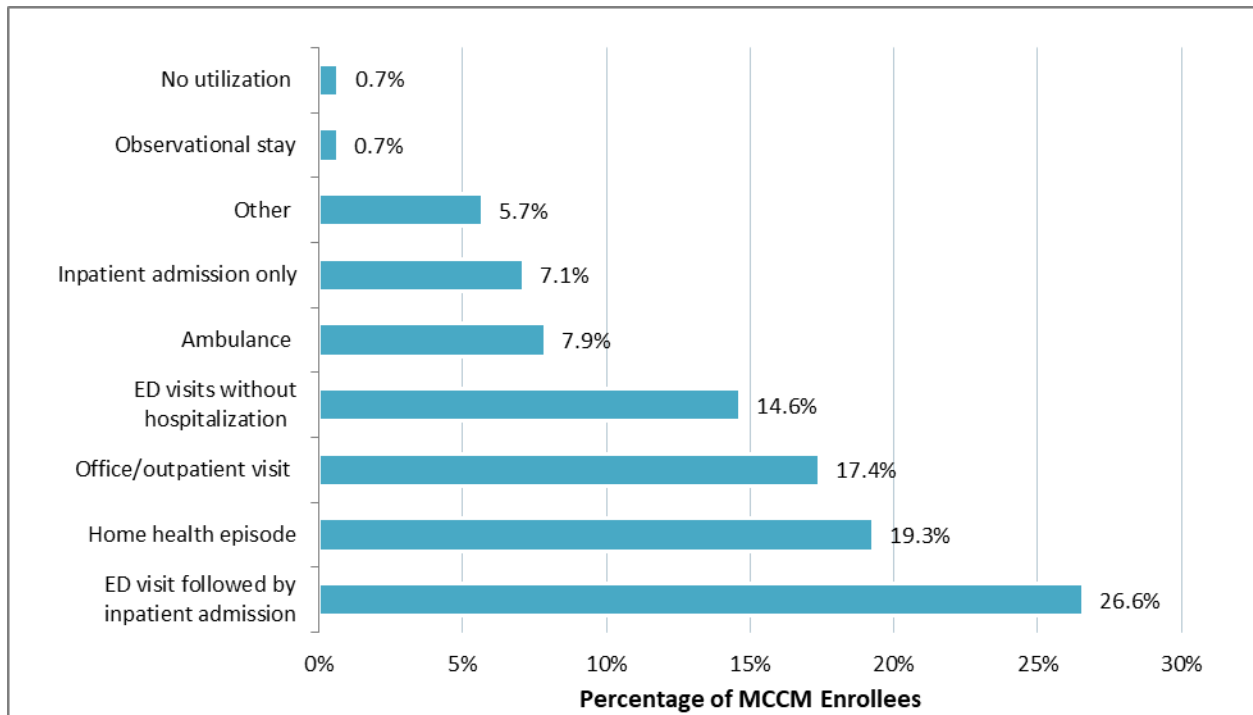


#### Enrollees learned about MCCM while receiving care from:

- Hospital staff (e.g., discharge planners) during or shortly after a hospitalization
- Physicians during in-home or office visits
- Home health nurses and palliative care staff, providing care in the patient's home or in other community settings.

—Responses of MCCM hospice staff to a question about where they learned about MCCM, 2017-2018.

**Exhibit 2.6 For Half of Enrollees, the Last Paid Claim Before Enrolling in MCCM Was for a Hospital Encounter**



Sources: Medicare claims data, Master Beneficiary Summary File, and MCCM portal data, January 1, 2016-September 30, 2019.

Notes: This exhibit displays the number and proportion of Medicare beneficiaries whose most-recent utilization event before enrollment was a given service type. The analysis uses Medicare beneficiaries enrolled in MCCM on or before September 30, 2019 (total MCCM enrollees, n = 4,988). A hospital encounter is defined as an inpatient admission, ED visit, or observational stay. Office/outpatient visits were identified using evaluation and management Healthcare Common Procedure Coding System codes 99201-99499 in office and outpatient settings. See descriptions of service category definitions in **Appendix D.8**. "Other" utilization events include skilled nursing facility admissions and hospice enrollments. "No utilization" refers to MCCM enrollees who did not have a utilization event in the 90 days before enrollment.

ED = emergency department.

## 2.3 MARKETING MCCM TO PROVIDERS AND MEDICARE BENEFICIARIES

Data collected from MCCM hospices between 2017 and 2019 reveal information about the organizational affiliations and marketing strategies of providers that referred Medicare beneficiaries to the model.

### 2.3.1 Organizational Affiliations of MCCM Hospices

Relationships with community-based health care providers with access to medical record data are essential for identifying Medicare beneficiaries who meet MCCM's eligibility requirements. Over 80 percent of hospices reported having affiliations or contracts with hospitals; and over 40 percent had similar relationships with palliative care programs, home health agencies, and/or physician practices, as shown in **Appendix Exhibit I.6**. At the



same time, over 70 percent of hospices also reported having some access or full access to medical records maintained by hospitals and palliative care programs, as shown in **Appendix Exhibit I.7**. Access to medical records maintained by home health agencies and physician practices was less commonly reported.

### 2.3.2 Marketing Challenges

MCCM hospices told us that they worked to differentiate MCCM from traditional hospice programs and expand marketing beyond their own organizations and existing referral networks<sup>63</sup>:

- A small number of hospices noted that they expanded their marketing to increase their referral sources. Several hospices told us they initially started marketing to a specific group of potential referrers, such as their own palliative care and home health nurses; and then reached out to other providers in the community, such as cancer care providers. A cohort 2 hospice explained that when they realized that they were not receiving as high a proportion of referrals from oncologists as other hospices in their cohort, they conducted additional education and outreach with a local cancer center and its social workers.
- Several hospices, particularly cohort 1 hospices, stated that after discovering that providers and potential beneficiaries struggled with differentiating between MCCM and the MHB program, hospices modified their approach to outreach and marketing to focus more on education and less on the role of hospice care at the end of life.
- A few hospices used provider success stories and beneficiary and caregiver testimonials to increase awareness of and referrals to MCCM. For example, one cohort 1 hospice shared that following their initial struggles to obtain referrals, the marketing team produced a provider handout that included testimonials from referring providers about MCCM’s benefits, as well as testimonials from beneficiaries and family members.
- A few hospices shared the specific messaging they used, particularly describing MCCM as an additional layer of services that could benefit individuals who were not ready for hospice and messaging based on diagnosis. A cohort 1 hospice marketing staff member noted that when speaking to patients, she takes different strategies depending on their diagnosis: “For example, while patients with COPD and CHF have lived with it for a while, patients with a cancer might have had it



**Example of a successful effort to expand MCCM referral networks beyond hospitals**

“I thought, well there is no harm in palliative care,” so she reached out to the hospice to ask about it.

—MCCM beneficiary who learned about the model from a nurse in their cancer center and actively reached out to a cohort 1 hospice.

<sup>63</sup> **Annual Report 2, Section 3.7** describes MCCM referral processes and sources.

come on suddenly. For the patients with cancer, we discuss how they are doing and how MCCM can supplement their cancer treatment. For patients with COPD and CHF, the conversation is more on quality of life and how MCCM can improve the quality of life.”

Despite these efforts to expand referral networks and explain MCCM to potential enrollees, the pace of new MCCM enrollments did not increase after the second half of 2018, and started to decline in 2019, as described in **Section 1.1.3**. It is possible that expanded marketing and educational efforts were not sufficient to overcome eligibility-related challenges.

### 2.4 CONCLUSION

We found that most MCCM enrollees had multiple chronic conditions, in addition to the terminal diagnosis that made them eligible for the model. More than two-thirds of MCCM enrollees had a cancer diagnosis, fewer than 1 percent had a HIV/AIDS diagnosis, and the rest had a COPD or CHF diagnosis. The most common additional chronic conditions were hypertension, anemia, hyperlipidemia, and/or chronic kidney disease. Fewer than 20 percent of MCCM enrollees were functionally independent at enrollment, almost half needed assistance, and 6 percent were disabled. The majority of enrollees lived with another person at enrollment, who presumably helped the enrollee manage to live in a traditional home, which is an MCCM requirement.

Beneficiaries used Medicare-covered services at high rates throughout the year before MCCM enrollment, and utilization increased in the months just before enrollment. Over 60 percent of beneficiaries had an inpatient admission during the 90 days before enrollment. About 70 percent had one or more ambulance transports, emergency department visits, observational stays, and or an inpatient admission during this 90-day period. Less than 2 percent of beneficiaries used no Medicare-covered services during the 90 days before MCCM enrollment. Frequency and sequencing of hospital encounters and physician visits that we observed were indicative not only of more-intensive medical needs at the end of life, but also of established relationships with providers that may have facilitated documentation of MCCM eligibility.

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## Beneficiary Story<sup>64</sup>

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The beneficiary, a Caucasian man, lives with his caregiver at his home and was diagnosed with inoperable cancer. The diagnosing physician offered hospice as a next step, but the beneficiary wanted to fight his cancer with chemotherapy. While undergoing treatments, he lost his teeth, hair, and memory, but continuing the treatments was important to him. He was very close to ending his chemotherapy treatments due to the difficult side effects, but received positive test results that showed the treatments were effective, and so he decided to continue them.

The beneficiary was at a hospital for an atrial fibrillation event when he and his caregiver first learned about the model. A nurse at the hospital had given his caregiver a brochure for MCCM, and soon afterward, the caregiver and beneficiary requested that he be enrolled in the model. Since he enrolled, staff from the MCCM care team come to visit the beneficiary twice a week at his home. The caregiver said the “nurse has won their hearts.” The beneficiary enjoys the chaplain’s visits but declined to receive aide services. The beneficiary and caregiver rely on the MCCM nurse to coordinate care with the oncologist’s office on their behalf. Since cell phone reception at the beneficiary’s house is poor and the caregiver has a strained relationship with staff at the oncologist’s office, they prefer the MCCM nurse to take over this responsibility. The caregiver has used the 24/7 access line a few times when the beneficiary’s blood pressure was very low. Any time they have issues, the caregiver calls MCCM staff and they respond back to her almost immediately. The MCCM care team has not yet helped to coordinate the acquisition of durable medical equipment. The caregiver continues to manage the man’s medications, because this is their preference. The MCCM care team offered to take over this responsibility but his caregiver felt they had a good system and so did not need additional support.

When asked about their experience with the model, the beneficiary and caregiver reported that they love having access to additional services and enjoy someone coming into the home to help. The caregiver noted that their experience with the model has been “amazing,” and said they did not have a single negative experience. The caregiver did report that the beneficiary has returned to the hospital four times since enrolling in the model due to dehydration. The caregiver and the MCCM care team are actively working on better managing the beneficiary’s hydration levels. Overall, the caregiver said that MCCM has eased the stress that the beneficiary’s condition has caused.

*“This choice [MCCM] is a godsend; it’s a gift.”*

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<sup>64</sup> This beneficiary story is an actual story given by an MCCM enrollee during a site visit. The story is not a composite, and represents a typical MCCM enrollee the qualitative data collection team interacts with during in-person case studies. We maintain confidentiality by omitting the beneficiary’s name, age, ethnicity, and geographic location.

# 3. What Do We Know about Transitions from MCCM to MHB?



A stated goal of MCCM is to increase access to supportive services provided by hospices. MCCM is an option for eligible beneficiaries who are not yet ready to forgo life-prolonging treatment for their terminal condition, as required for admission into MHB.

The length of time that beneficiaries were enrolled in MCCM indicates whether the model achieved its goal of expanding access to supportive services in hospices and enrolled the terminally ill population that the model is intended to serve.

In this section, we report the results of qualitative and quantitative analyses of transitions from MCCM to MHB through September 20, 2019. We cover five specific topics:



To discuss beneficiary transition to MHB, **Section 3** incorporates data from:

- Interviews with MCCM hospice staff and enrolled beneficiaries
- Surveys of caregivers of MCCM enrollees who died
- Beneficiary service and activity data
- Medicare claims and enrollment data

- Duration of enrollment in MCCM is described in **Section 3.2**
- Reasons for leaving MCCM are described in **Section 3.3**
- The timing of transitions from MCCM to MHB is described in **Section 3.4**
- Associations between enrollee characteristics and transitions to MHB are described in **Section 3.5**
- Care experiences following transition to MCCM are described in **Section 3.6**.
- Caregiver perceptions regarding transitions to MHB, including the level of involvement, the timing of the referral to MHB, and reasons for enrolling or not enrolling in MHB, are described in **Section 5.4**.

#### 3.1 KEY FINDINGS

- Enrollees with an MCCM-qualifying cancer diagnosis were less likely to spend 180 or more days enrolled in the model compared to those without an MCCM-qualifying cancer diagnosis (14 versus 25 percent).
- Overall, 84 percent of MCCM decedents transitioned to MHB after an average of 14 weeks (99 days) in the model and about 7 weeks (46 days) before death. Most enrollees transitioned to the same hospice that had initially enrolled them in the model.
- Fewer than 10 percent of decedents transitioned to MHB during the last 2 days of life, when it may be too late to benefit fully from a broader array of supportive services.
- These three findings suggest that MCCM is achieving its goal of increasing access to supportive services provided by hospices. Enrollees may benefit from the full range of hospice services when they no longer wish to receive potentially life-prolonging treatment.

#### 3.2 DURATION OF MCCM ENROLLMENT

On average, beneficiaries enrolled in MCCM 144 days (5 months) before death. The number of days between enrollment and death ranged between 2 and more than 1,304 days, as shown in **Exhibit 1.7**.

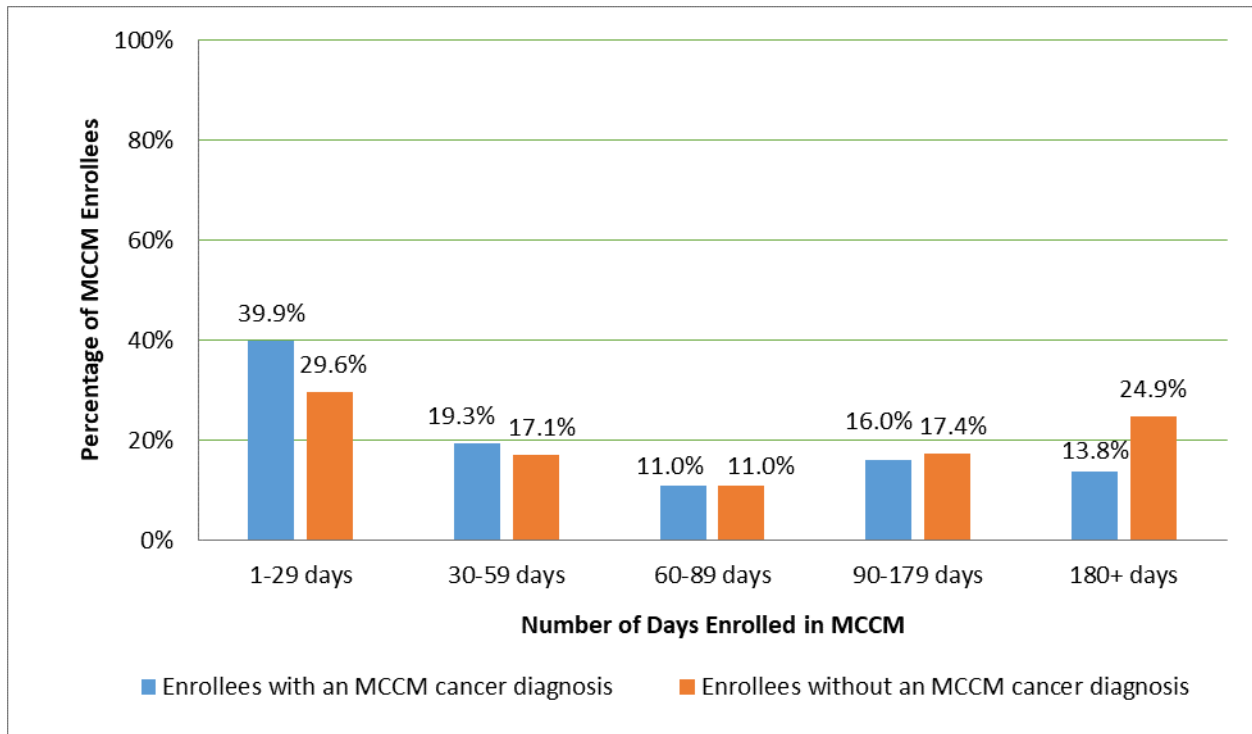
The duration of MCCM enrollment varied for beneficiaries with and without an MCCM-qualifying diagnosis of cancer, as shown in **Exhibit 3.1**. As with enrollment patterns reported in Annual Report 2, almost 40 percent of beneficiaries with a qualifying cancer diagnosis enrolled in MCCM for 1 month or less, compared to fewer than 30 percent with a qualifying COPD, CHF, and/or HIV/AIDS diagnosis. Almost 25 percent of beneficiaries with a qualifying non-cancer diagnosis enrolled in MCCM for 180 days or more compared to almost 14 percent with a qualifying cancer diagnosis.<sup>65</sup>

Beneficiaries who enrolled in MCCM for substantially more than 180 days may have had less-serious illnesses than the population that the model was intended to serve. Overall, beneficiaries with a qualifying cancer diagnosis enrolled in the model for an average of 89 days, compared to an average of 135 days (or about 6.5 weeks more) for those without a qualifying cancer diagnosis.

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<sup>65</sup> Cohort 1 beneficiaries were enrolled in MCCM longer than cohort 2 beneficiaries on September 30, 2019; see **Appendix Exhibit I.8**. The differential enrollment durations were a reflection of the two-year difference in the cohort start dates.

**Exhibit 3.1 Discharged Beneficiaries with a Qualifying MCCM Cancer Diagnosis Spent Fewer Days Enrolled in the Model**



Sources: Medicare claims data, Master Beneficiary Summary File, and MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit displays an analysis of 4,006 MCCM enrollees with recorded dates of discharge out of a total 4,988 beneficiaries who enrolled in MCCM on or before September 30, 2019. The assignment of enrollees to diagnostic categories was based on the presence of claims with one or more primary MCCM-qualifying International Classification of Disease 9/10 diagnosis codes during the 12 months before enrollment. Claims-based MCCM diagnosis categories are not mutually exclusive and enrollees with a given diagnosis may have had one or more of the three other MCCM-qualifying diagnoses.

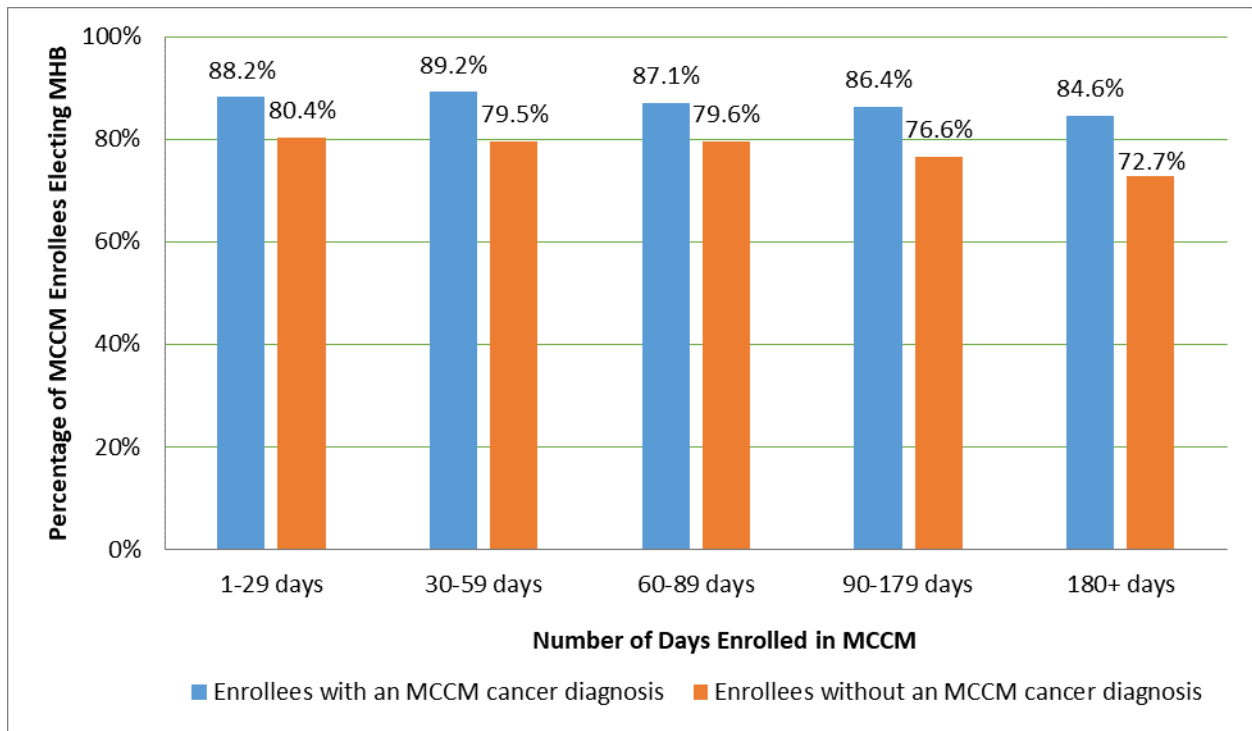
In this analysis, 2,675 enrollees had an MCCM-qualifying diagnosis of cancer; and 1,331 enrollees did not have a diagnosis of cancer, but had a qualifying diagnosis of congestive heart failure, chronic obstructive pulmonary disease, or human immunodeficiency virus/acquired immunodeficiency syndrome. Enrollees with cancer may have had one or more of the three other MCCM-qualifying diagnoses.

Overall, hospice enrollment data show that 84 percent of MCCM decedents<sup>66</sup> transitioned to MHB before death. Regardless of the duration of their MCCM enrollments, decedents diagnosed with cancer were 7 to 12 percentage points more likely to transition from MCCM

<sup>66</sup> For Annual Report 2, we conducted a similar analysis of transitions to MCCM for decedents with and without an MCCM-qualifying diagnosis of cancer. For this report, we changed our analytic approach in two ways: (1) we analyzed discharges so that we would have complete information about all transitions to MHB that occurred between January 1, 2016 and September 30, 2019; and (2) we changed our method of reporting MCCM diagnoses based on the number of claims with one or more primary MCCM diagnosis codes, such that we no longer report MCCM diagnoses as mutually exclusive categories. These two changes reduced the gap in the percentage transitioning to MHB with and without MCCM cancer diagnoses by roughly half, from 13 to 23 percentage points to 7 to 12 percentage points.

to MHB, compared to their counterparts with other diagnoses, as shown in **Exhibit 3.2**. The lower transition rate for enrollees without a qualifying cancer diagnosis may reflect a continuing preference to continue to receive life-prolonging treatment.

**Exhibit 3.2 Decedents Discharged from MCCM with an MCCM-Qualifying Diagnosis of Cancer Were More Likely to Transition to the Medicare Hospice Benefit**



Sources: Medicare claims data, Master Beneficiary Summary File, and MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit displays an analysis of the percentage of all Medicare decedents (n = 3,603) who transitioned to MHB before death by the number of days enrolled in the model, and whether enrollees had an MCCM-qualifying diagnosis of cancer. The analysis included MCCM enrollees with dates of death on or before September 30, 2019. The assignment of enrollees to diagnostic categories is based on the presence of claims with one or more primary MCCM-qualifying International Classification of Disease 9/10 diagnosis codes during the 12 months before enrollment. Claims-based MCCM diagnosis categories are not mutually exclusive and enrollees with a given diagnosis may have had one or more of the three other MCCM-qualifying diagnoses. In this analysis, 2,480 MCCM decedents had a qualifying diagnosis of cancer; 1,123 MCCM decedents did not have a qualifying cancer diagnosis, but had a qualifying diagnosis of congestive heart failure, chronic obstructive pulmonary disease, or human immunodeficiency virus/acquired immunodeficiency syndrome. Enrollees with a qualifying MCCM cancer diagnosis may have had one or more of the three other MCCM-qualifying diagnoses.

MHB = Medicare hospice benefit.

### 3.3 REASONS FOR LEAVING MCCM

Reasons that enrollees gave for leaving MCCM were similar to those previously reported in Annual Report 2. Over 79 percent of the beneficiaries who enrolled in MCCM and subsequently left, stated that electing MHB was their reason for MCCM discharge, as shown

in **Exhibit 3.3**. Twelve percent of enrollees died while enrolled in MCCM. Less than 5 percent of enrollees left for other reasons.

**Exhibit 3.3 The Most Common Reason for Leaving MCCM Was to Transition to the Medicare Hospice Benefit**

Reason for Leaving MCCM	Number of MCCM Enrollees	Percent of MCCM Enrollees
Elected MHB	3,168	79.1%
Died without electing MHB	461	11.5%
Other	159	4.0%
Requested voluntary discharge from MCCM	129	3.2%
Moved out of hospice service area	60	1.5%
Lived outside the home for 90 days or more (Portal Version 2, only)	19	0.5%
Resided in long-term nursing facility for more than 90 days (Portal Version 1, only)	9	0.2%
Discharged for cause <sup>a</sup>	1	0.0%
Transferred to another MCCM hospice (Portal Version 1, only)	0	0.0%
<b>Total</b>	<b>4,006</b>	<b>100.0%</b>

Sources: MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit displays the number and percent of MCCM enrollees discharged from the model for nine reasons. The analysis includes 4,006 of the 4,988 Medicare beneficiaries who enrolled in MCCM on or before September 30, 2019 with a discharge reason code. The portal does not collect additional information about the “other” category.

The nine reasons for leaving MCCM are mutually exclusive, with one reason counted for each beneficiary. This difference is due to the use of MCCM portal data in this exhibit, rather than claims data. The MCCM portal does not fully capture transitions to MHB that occur after enrollees leave the model.

<sup>a</sup> Possible reasons why beneficiaries may have been discharged for cause include being disruptive or abusive to hospice staff, and living in homes that are unsafe for hospice staff to visit.

MHB = Medicare hospice benefit.

**3.4 TIMING OF TRANSITIONS FROM MCCM TO MHB**

To characterize the transitions from MCCM to MHB, we identified the subgroup of MCCM enrollees who died on or before September 30, 2019, and calculated the number of enrollees who entered MHB based on their admission dates. We found that:

- On average, beneficiaries were enrolled in MCCM 144 days (5 months). This is longer than the 89 days (3 months) reported in Annual Report 1. This increase was partly due to a longer observation period, from January 2016 through June 2017 for Annual Report 1 (18-month study period), through June 2019 for



We report the impacts of MCCM on the likelihood of transition to MHB, the likelihood of transitioning to MHB during the last two days of life, and the duration of MHB enrollment in **Section 4**.

We report results from the caregiver survey about shared decision making around transitions to MHB and experiences with MCCM by MHB transition status in **Section 5**.



Annual Report 2 (30-month study period), and through September 2019 for Annual Report 3 (45-month study period). The longer study periods allow us to observe enrollment for increased periods of time.<sup>67</sup> However, the association between the length of the observation period and the length of enrollment makes it difficult to interpret the cause of changes in enrollment duration across time.

- Overall, 84 percent of MCCM enrollees transitioned to MHB before death, which is similar to the percentage shown in Annual Report 2.<sup>68,69</sup>
- The transition to MHB occurred, on average, approximately 14 weeks after MCCM enrollment (99 days) and approximately 7 weeks (46 days) before death.<sup>70</sup>

#### ***3.4.1 Transitions to the Medicare Hospice Benefit in the Last Two Days of Life***

Among MCCM enrollees, there was little change over time in the rates of transition to MHB during their last two days of life when seriously ill individuals are likely to be actively dying, as shown in **Exhibit 3.4**. The one exception to this trend was for cohort 2 hospices among 2018 decedent MCCM enrollees; the rate of transition to MHB in the last two days of life was nearly twice that of cohort 2 hospices (13.7 percent) versus 7.8 percent for cohort 1 hospices. However, by 2019 the rate had decreased to comparable levels (8.7 percent versus 8.1 percent for cohort 1 and cohort 2 hospices, respectively).

Just one or two days of full hospice care at the end of life is generally considered poor care because it represents an insufficient length of time to manage a dying person's symptoms. However, we know little about the impact of such short MHB experiences for MCCM

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<sup>67</sup> For example, it would not have been possible to observe a 24-month MCCM enrollment in Annual Report 1, but it was possible to do so for Annual Reports 2 and 3.

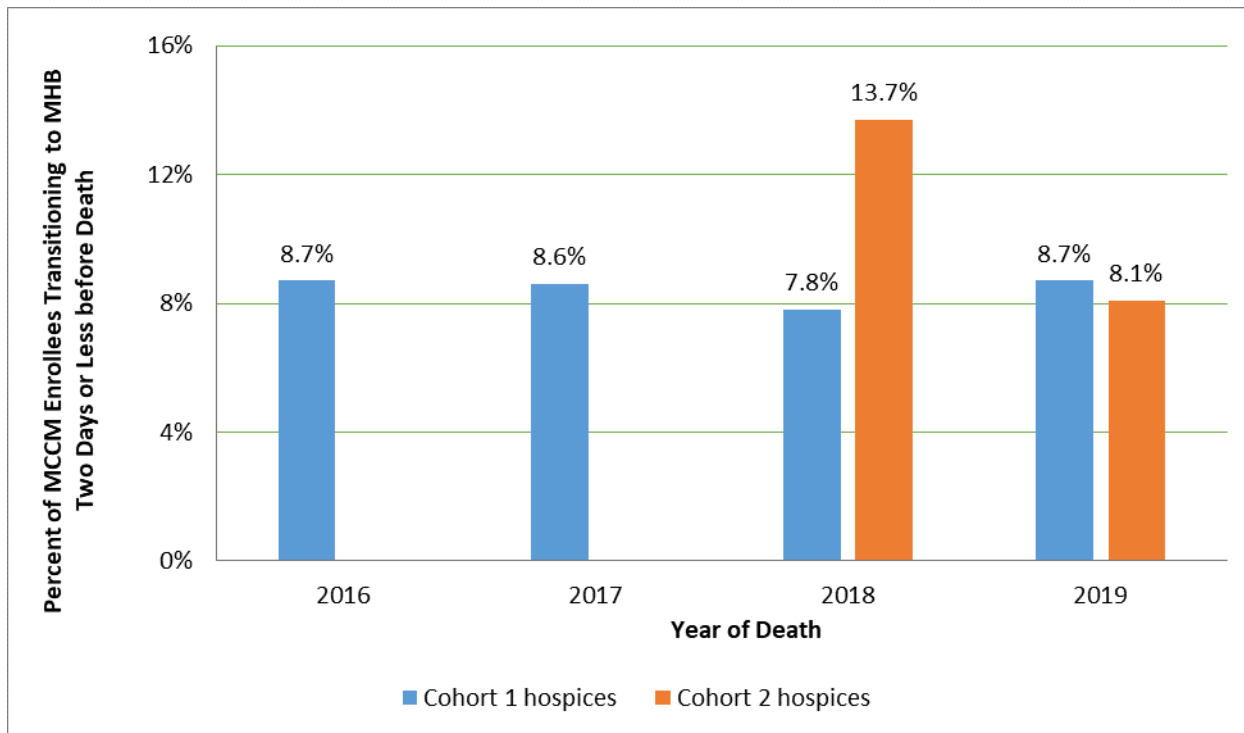
<sup>68</sup> Here we report that 84 percent of MCCM enrollees transitioned to MHB before death, which is slightly more than the 79.1 percent we reported in **Section 3.3**, which was based on MCCM portal data. We based estimates in **Section 3.4** on hospice claims, and include transition to MHB for *any* enrollee in MHB after MCCM enrollment. Claims data permit us to determine MHB enrollment status and the transition to MHB in a standardized way. Documentation of MHB enrollment status in the portal is reported by MCCM hospice staff, who may not have consistently recorded the location and status of enrollees after they leave the model.

<sup>69</sup> The Medicare Payment Advisory Commission reports, nationwide, that only half of Medicare beneficiaries elect MHB before the end of life. The rates of transition from MCCM to MHB exceed this rate. Medicare Payment Advisory Commission. (2020). *Report to Congress*, Chapter 12, "Hospice Services." Retrieved on April 7, 2020 from [http://www.medpac.gov/docs/default-source/reports/mar20\\_medpac\\_ch12\\_sec.pdf?sfvrsn=0](http://www.medpac.gov/docs/default-source/reports/mar20_medpac_ch12_sec.pdf?sfvrsn=0).

<sup>70</sup> Note that the timing from MCCM enrollment to MHB transition (99 days) and MHB transition to death (46 days) is exactly 1 day greater than the timing from MCCM enrollment to death (144 days). This is because in calculating timing with respect to MHB transition, the transition day is counted twice. For example, a person enrolls in MCCM on Monday, transitions to MHB on Tuesday, and dies on Wednesday. We would say his/her survival was three days (Monday, Tuesday, and Wednesday), he/she was on MCCM two days before transitioning to MHB (Monday and Tuesday), and he/she elected MHB two days before death (Tuesday and Wednesday). In this case, Tuesday is counted twice.

decedents, who were already receiving numerous supportive services before transitioning to MHB. It is possible that MCCM was meeting many enrollees’ needs, and beneficiaries and caregivers saw little reason to transition to MHB.

**Exhibit 3.4 In Most Years, Fewer Than 10 Percent of MCCM Decedents Transitioned to the Medicare Hospice Benefit in Their Last Two Days of Life**



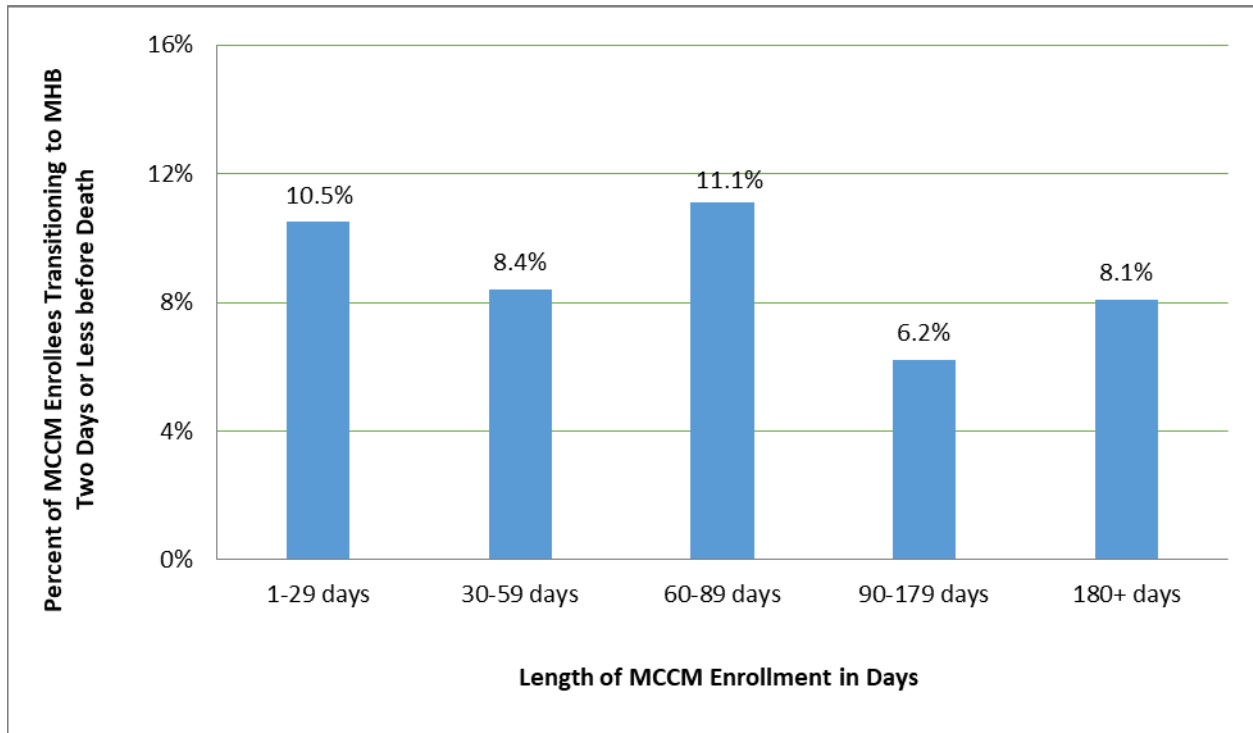
Sources: Medicare claims data, Master Beneficiary Summary File, and MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit displays an analysis of 3,010 MCCM enrollees who died before September 30, 2019 and had transitioned to MHB before their death. We assigned beneficiaries to categories based on the year of their death. Among MCCM enrollees who transitioned to MHB, 240 died in 2016, 571 died in 2017, 1,206 died in 2018, and 993 died in 2019.

MHB = Medicare hospice benefit.

The percentage of enrollees who transitioned to MHB during the last two days of life varied between 6 percent and 11 percent, but was not associated with the duration of MCCM enrollment, as shown in **Exhibit 3.5**.

**Exhibit 3.5 Transitions to the Medicare Hospice Benefit within the Last Two Days of Life Appear Unrelated to Length of MCCM Enrollment**



Sources: Medicare claims data, Master Beneficiary Summary File, and MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit displays an analysis of 3,010 MCCM enrollees who died before September 30, 2019 and had transitioned to MHB before their end of life.

MHB = Medicare hospice benefit.

### 3.5 ASSOCIATIONS BETWEEN ENROLLEE CHARACTERISTICS AND TRANSITIONS TO THE MEDICARE HOSPICE BENEFIT

To explore any differences in MHB transitions related to diagnosis or medical complexity, we examined the average survival (in days) from the date of MCCM enrollment to the date of death; and the rate of MHB transition, by primary MCCM diagnosis, functional status, and dual-eligibility status, as shown in **Exhibit 3.6**. Reflecting the longer study period, the time between enrollment and the transition to MHB and those between MHB enrollment and end of life reported here are longer than those reported in Annual Report 2.

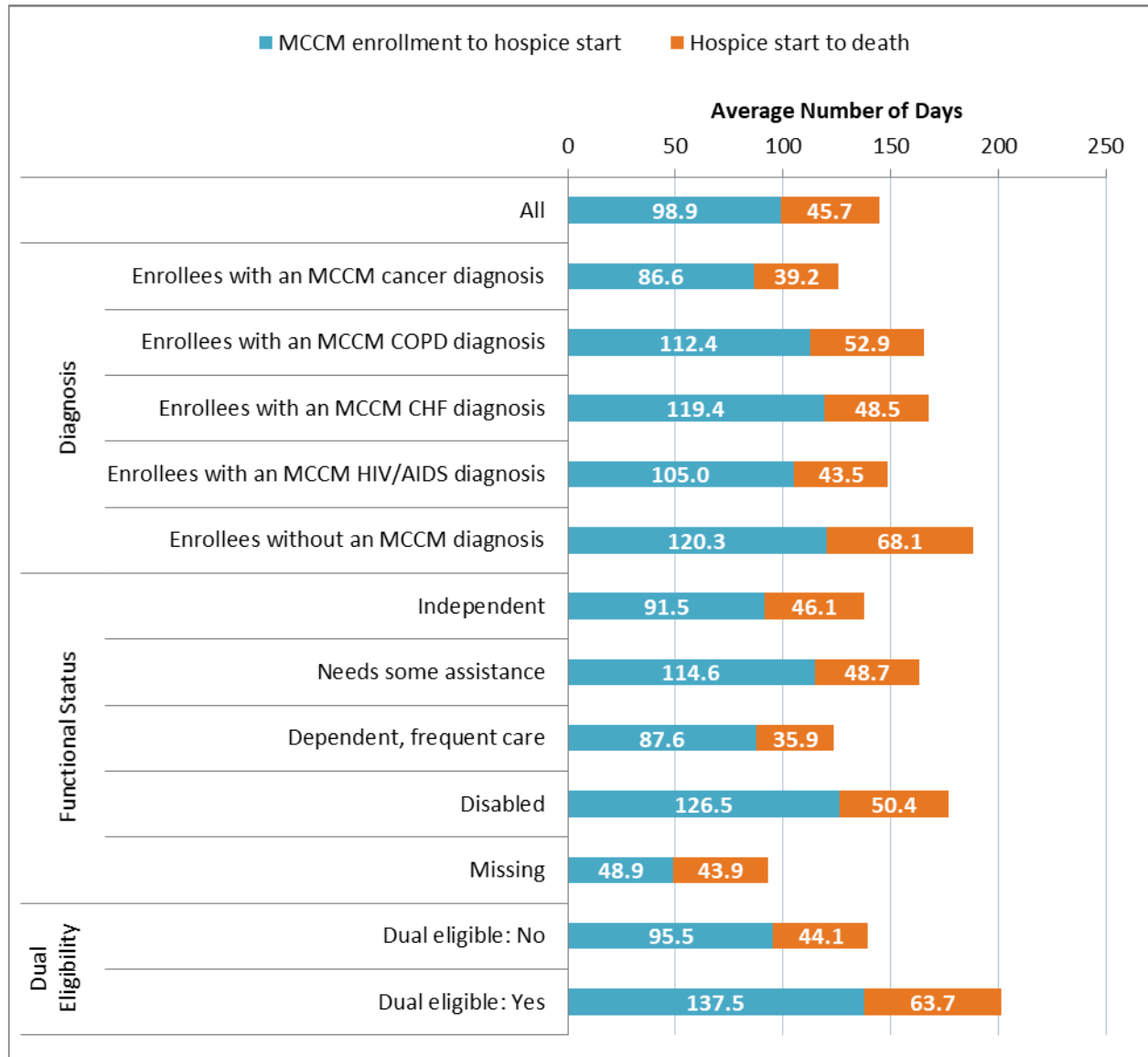
Highlights of the updated analysis include the following<sup>71</sup>:

- **MCCM diagnosis**: On average, MCCM decedents with a diagnosis of cancer transitioned to MHB 86.6 days after enrolling in MCCM, which was 25.8 days sooner than enrollees with a diagnosis of COPD (112.4 days from MCCM enrollment to MHB transition) and 32.8 days sooner than enrollees with CHF (119.4 days until MHB transition). This could be because cancer patients were more seriously ill when they enrolled in MCCM, and may reflect the more unpredictable disease trajectory for COPD and CHF. The typical cancer trajectory involves a progressive illness despite treatment and a functional decline that leads to death. By contrast, typical non-cancer disease trajectories involve prolonged periods of functional dependency with hospice referrals, triggered by an infection or, in the case of CHF, cardiac arrhythmia, neither of which are easy to predict. It may be more difficult to identify the appropriate time to make the transition to MHB for beneficiaries with CHF or COPD than for those dying from cancer.
- **Functional status**: MCCM decedents who were functionally dependent at MCCM enrollment had the briefest durations in MCCM (87.6 days) and MHB (35.9 days). Overall, there does not seem to be a clear pattern between functional status and enrollment timing. Those with the poorest functional status may have had more advanced illness and been closer to death.
- **Medicare-Medicaid dual eligibility**: MCCM decedents who were dually eligible for Medicare and Medicaid were enrolled longer in MCCM (137.5 days) and MHB (63.7 days) than those who were not dually eligible (95.5 days in MCCM and 44.1 days in MHB). Beneficiaries who are dually eligible for Medicare and Medicaid are often sicker and poorer than the non-dually eligible. Beneficiaries with dual eligibility may enroll earlier in MCCM to acquire supportive services that they otherwise might not receive through their state's Medicaid programs.

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<sup>71</sup> The analytic sample for impact estimation described in **Section 1.2.2** included 2,765 MCCM decedents who lived no more than 365 days after enrollment and were eligible for MCCM at the time of enrollment based on administratively verifiable criteria. Among this group of decedents, 84 percent transitioned to MHB, as shown in **Appendix Exhibit G.6**. Those who transitioned to MHB spent an average of 69 days enrolled in MCCM and transitioned to MHB an average of 34 days before death.

**Exhibit 3.6 Length of Enrollment in MCCM before Transition to the Medicare Hospice Benefit Varied by Primary Diagnosis, Functional Status, and Dual Eligibility**



Sources: Medicare claims data, Master Beneficiary Summary File, and MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit displays an analysis of 3,010 MCCM decedents who later transitioned to MHB, among the 3,603 MCCM decedents who died before September 30, 2019. The analysis excluded one decedent with an erroneously recorded date of death. The assignment of enrollees to diagnostic categories is based on the presence of claims with 1 or more primary MCCM-qualifying International Classification of Disease 9/10 diagnosis codes during the 12 months before enrollment. Claims-based MCCM diagnosis categories are not mutually exclusive and enrollees with a given diagnosis may have had one or more of the three other MCCM-qualifying diagnoses. Data for beneficiaries who did not have an MCCM diagnosis (n = 157) and functional status data (n = 365) are included in the "All" row at the top of the exhibit.

CHF = congestive heart failure, COPD = chronic obstructive pulmonary disease, HIV/AIDS = human immunodeficiency virus/acquired immunodeficiency syndrome.

## 3.6 CARE EXPERIENCES FOLLOWING TRANSITION TO THE MEDICARE HOSPICE BENEFIT

Caregivers of MCCM enrollees who transitioned to MHB reported experiences of care in MHB that were generally similar to those reported by caregivers of comparison beneficiaries for most aspects of care, as shown in **Exhibit 3.7**, with regard to how well the MCCM hospice team<sup>72</sup>:

- Communicated with caregivers
- Provided help in a timely manner
- Treated the beneficiary with respect
- Provided emotional and spiritual support
- Trained family members/caregivers to care for the beneficiary.

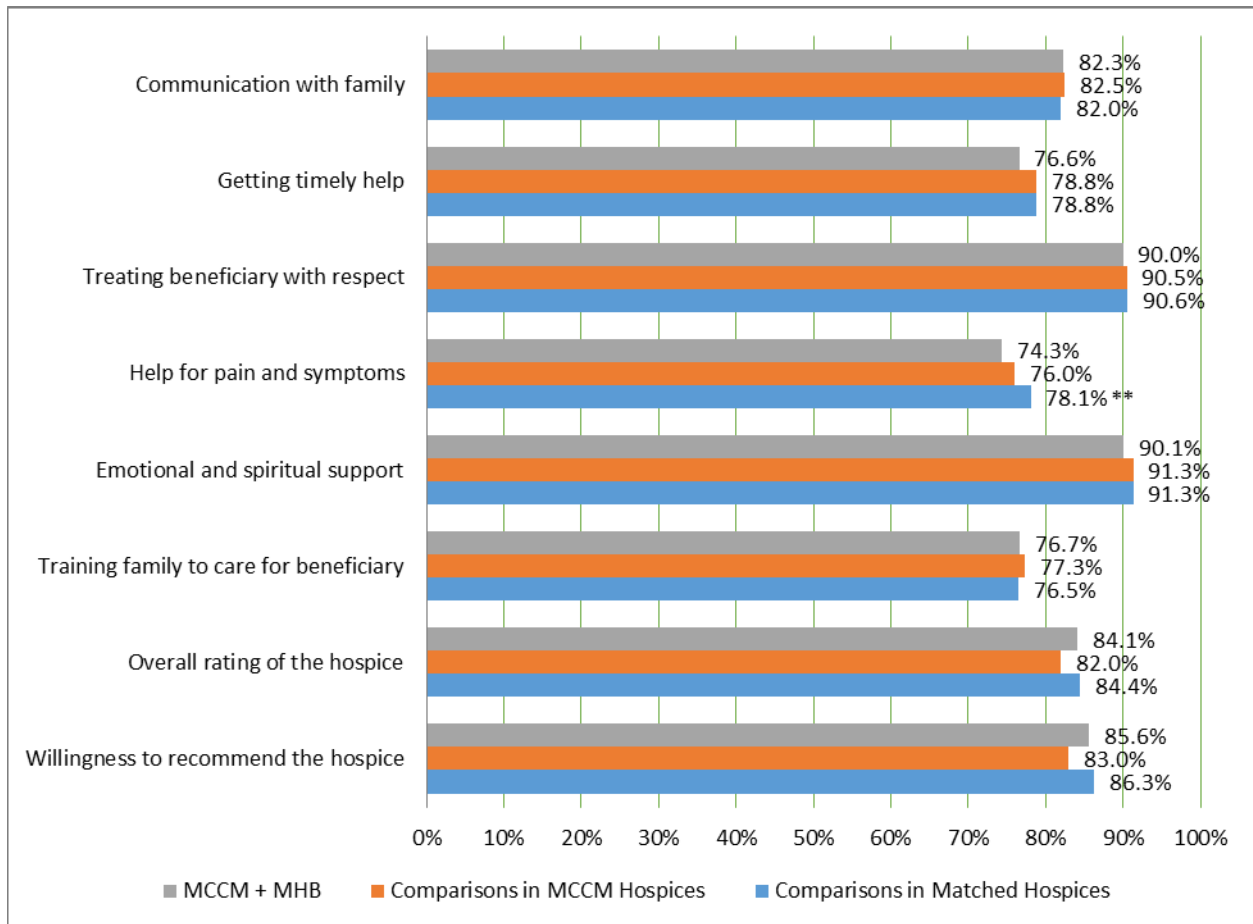
However, caregivers of MCCM enrollees who transitioned to MHB were less likely to report very good care for pain and other symptoms than caregivers of comparison beneficiaries who were cared for by matched hospices (74 percent versus 78 percent).<sup>73</sup>

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<sup>72</sup> We found no statistically significant differences in reported experiences of hospice care between cohort 1 and cohort 2 MCCM hospices. Further information on experiences with shared decision making around the transition to MHB can be found in **Appendix Exhibit I.9** for enrollees who transitioned to MHB by cohort and in **Appendix Exhibit 1.10** for enrollees who remained in MCCM.

<sup>73</sup> Data presented in **Section 5.4** describe caregiver experiences of enrollees' transitions to MHB and experiences with MCCM care.

**Exhibit 3.7 Caregivers of MCCM Enrollees Who Elected the Medicare Hospice Benefit Reported Very Good Care Experiences**



Source: Caregiver Experience of Care Survey, October 2017-September 2019.

Note: This exhibit displays responses for MCCM enrollees and comparison beneficiaries who died between October 2017 and September 2019 in 71 MCCM hospices and 33 matched hospices for which there were completed surveys. The sample size for each respondent category differed: MCCM + MHB, n = 793; comparisons in MCCM hospices, n = 786; and comparisons in matched hospices, n = 696. We report significance using a linear regression model, including case-mix adjusters [response percentile, beneficiary age at death, payer for hospice care (i.e., Medicare in combination with other payers)], first MCCM-eligible diagnosis, duration of final episode of hospice care, caregiver-respondent age and education, relationship of caregiver-respondent to deceased beneficiary, language, setting of care, hierarchical condition category score, and count of chronic conditions, with MCCM + MHB as the reference group. We report statistical significance at the 10% (\*), 5% (\*\*), and 1% (\*\*\*) levels.

MHB = Medicare hospice benefit.

## 3.7 CONCLUSION

MCCM helps introduce people to hospice care, which may facilitate timely, person-centered transitions to MHB through shared decision making. In this report, we described transitions (or lack thereof) from MCCM to MHB using data from approximately 3,000 more beneficiaries than were available for the analysis in Annual Report 2. The beneficiaries enrolled in the model between July 1, 2018 and September 30, 2019. These additional 15 months enabled us to describe transitions to MHB more accurately.

Even with additional data, our updated results were similar to those reported in Annual Report 2. Overall, 84 percent of MCCM decedents transitioned to MHB after an average of 14 weeks in MCCM and about 7 weeks before death. At the same time, fewer than 12 percent of enrollees transitioned to MHB during the last two days of life.

Among those discharged from MCCM, most remained enrolled long enough for MCCM staff to clarify and explain to enrollees and caregivers the purpose of the model and the benefits of transitioning to MHB at the appropriate time.

These results suggest that MCCM is achieving its goal of facilitating transitions to MHB when enrollees could benefit from the full range of hospice services.



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## Beneficiary Story<sup>74</sup>

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The beneficiary lives with her brother, her caregiver, in a remote area and is several miles from convenient services and 40 minutes from the hospice's main offices where her MCCM team is located.

Her primary illnesses are cardiac disease and COPD, which affect her breathing and ability to move about easily, and she suffers from obesity. Her brother keeps to himself in another area of the house, but helps her as needed and responds to her calls if she needs him and is in distress. She tries to remain as independent as possible.

The beneficiary learned about MCCM when she was in the hospital about two years ago from a MCCM care manager who visited the hospital to share information about the model. Since electing MCCM services, the beneficiary reports that MCCM care team members have been especially helpful to her because they always reach her when needed. She related an example that once, in the middle of the night, she was in respiratory distress and called the on-call nurse. A nurse arrived at her home within 20 minutes and helped alleviate her difficulty in breathing, preventing a visit to the emergency department. The hospice views the beneficiary as a success story, since she has stayed out of the hospital in the two years since her enrollment in MCCM.

The beneficiary reported that she has a doctor and nurse who visit her every two weeks. The MCCM social worker has visited her and has begun educating her about hospice services. She noted the importance of the emotional support of MCCM in addition to the physical support she receives.

This beneficiary stated that because of these conversations and her relationships with hospice staff, she will be ready to transition to hospice when the time is right. She stated, "MCCM has been helpful. Knowing that if I need someone, they're a phone call away. They can get to me even though I am secluded. I like to know there is someone there to catch me."

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<sup>74</sup> This beneficiary story is an actual story given by an MCCM enrollee during a site visit. The story is not a composite, and represents a typical MCCM enrollee the qualitative data collection team interacts with during in-person case studies. We maintain confidentiality by omitting the beneficiary's name, age, ethnicity, and geographic location.

## 4. How Does MCCM Affect Utilization and Medicare Expenditures?



In this section, we present estimates of the impacts of MCCM enrollment on utilization of care and Medicare expenditure outcomes, relative to comparisons using the quasi-experimental approach described in **Section 1.2.2**. We cover five specific topics:

- Impacts of MCCM on Medicare expenditures during the last 7, 30, 60, 90, and 180 days of life in **Section 4.2**
- Impacts of MCCM on utilization of Medicare-covered services during the last 7, 30, 60, 90, and 180 days of life in **Section 4.3**
- Impacts of MCCM on transitions to MHB in **Section 4.4**
- Drivers of estimated cost savings in **Section 4.5**
- Results of sensitivity tests and subgroup analyses in **Section 4.6**.



The analyses of MCCM impacts on utilization, Medicare expenditures, and transitions to MHB in **Section 4** incorporate data from:

- Medicare enrollment database
- Medicare claims
- Interviews with MCCM hospice staff and enrolled beneficiaries

### 4.1 KEY FINDINGS

- We estimated that MCCM reduced total Medicare expenditures by approximately \$26 million while CMS paid out \$4.6 million in per-beneficiary, per-month payments to MCCM hospices for 3,603 decedents enrolled between January 1, 2016 and September 30, 2020, as shown in **Exhibit 4.1**. The difference in these values amounts to total net savings of \$21.5 million. These results imply a 25 percent net reduction (or \$5,962 per decedent) in Medicare expenditures.
- The total magnitude of estimated Medicare savings per decedent was greatest during the last 90 days of life relative to comparison decedents (\$9,874), while reductions were \$8,014 and \$8,061 during the last 30 and 180 days, respectively. This implies that the period around the last 90 days of life may be a “sweet spot” when there is enough time to educate Medicare beneficiaries about the potential benefits of MHB and enroll them, before the time when inpatient care begins to increase at the end of life.

**Exhibit 4.1 MCCM Generated an Estimated \$21.5 Million in Net Savings to Medicare**

Component	Per MCCM Decedent Impact Estimates	All MCCM Enrollees
Total gross reductions in Medicare expenditures due to MCCM	-\$7,226	-\$26,034,489 (-\$31,472,807 to -\$20,596,107)
Total PBPM payments	\$1,264	\$4,555,040
Net savings to Medicare	-\$5,962	-\$21,479,449 (-\$26,917,767 to -\$16,041,067)

Sources: Medicare claims and enrollment data and MCCM portal data, January 1, 2012 to September 30, 2019.

Notes: This exhibit shows components of estimated total and per-decedent net savings for Medicare for 3,603 Medicare beneficiaries who enrolled in MCCM and died between January 1, 2016 and September 30, 2019. In the parentheses we report estimates at the upper and lower bounds of the 90% confidence interval surrounding the point estimates. MCCM per-decedent estimates are calculated as the point estimate divided by 3,603. Total net savings to Medicare is equal to the total estimated reductions in gross Medicare expenditures minus the total PBPM payments to MCCM hospices. We describe the net savings calculation in **Section 1.2.2** and **Appendix Section F.5**. Total PBPM payments are based on paid claims to MCCM hospices.

PBPM = per-beneficiary, per-month.

- MCCM reduced the number of hospital encounters during the last 180 days of life by 28 percent for emergency department visits (650 per 1,000 decedents), 21 percent for observational stays (62 per 1,000 decedents), 36 percent for inpatient admissions (673 per 1,000 decedents), and 57 percent for intensive care unit admissions (209 per 1,000 decedents). Over half of these reductions occurred during the last 30 days of life.
- MCCM decedents were 20 percentage points more likely than comparison decedents to enroll in MHB, representing a one-third increase relative to the baseline. MCCM decedents who transitioned to MHB were enrolled in MHB an average of a week longer than decedents not enrolled in MCCM. The impact of the model on the time spent in MHB was sensitive to the time spent MCCM. When we included the 270 beneficiaries who enrolled in MCCM more than a year before death in our analytic sample, we found that MCCM decedents transitioned two weeks earlier, on average, than comparison decedents.
- Estimated reductions in expenditures during the last 30 days of life were \$9,268 for the 84-percent subgroup of decedents who transitioned to MHB and \$346 for those who remained enrolled in MCCM. This finding suggests that virtually all of the estimated impact of MCCM on spending during the last 30 days of life was attributable to enrolled decedents who transitioned to MHB.

### 4.2 MCCM IMPACTS ON MEDICARE EXPENDITURES

MCCM reduced Medicare expenditures by 39.6 percent (\$8,014 per decedent) during the last 30 days of life. This estimated reduction resulted primarily from a 63.8 percent (\$7,730) reduction in inpatient expenditures relative to comparison decedents, as shown in **Exhibit 4.2** and **Exhibit 4.3**.<sup>75,76</sup> During this time, MCCM also reduced Part B expenditures by \$1,301, and home health care and skilled nursing facility expenditures by \$832. Total estimated savings across these three expenditure categories were \$9,863. These savings were offset by an increase of 77.2 percent (\$1,850) in MHB expenditures during the last 30 days of life, because MCCM enrollees elected MHB earlier (i.e., more days before death) than comparison decedents.

The total magnitude of estimated Medicare savings per decedent was greatest during the last 90 days of life relative to comparison decedents (\$9,874), while the reduction was \$8,014 and \$8,061 during the last 30 and 180 days, respectively. This implies that the period around the last 90 days of life may allow enough time to educate Medicare beneficiaries about the potential benefits of MHB and enroll them, before the time when inpatient care begins to increase at the end of life.

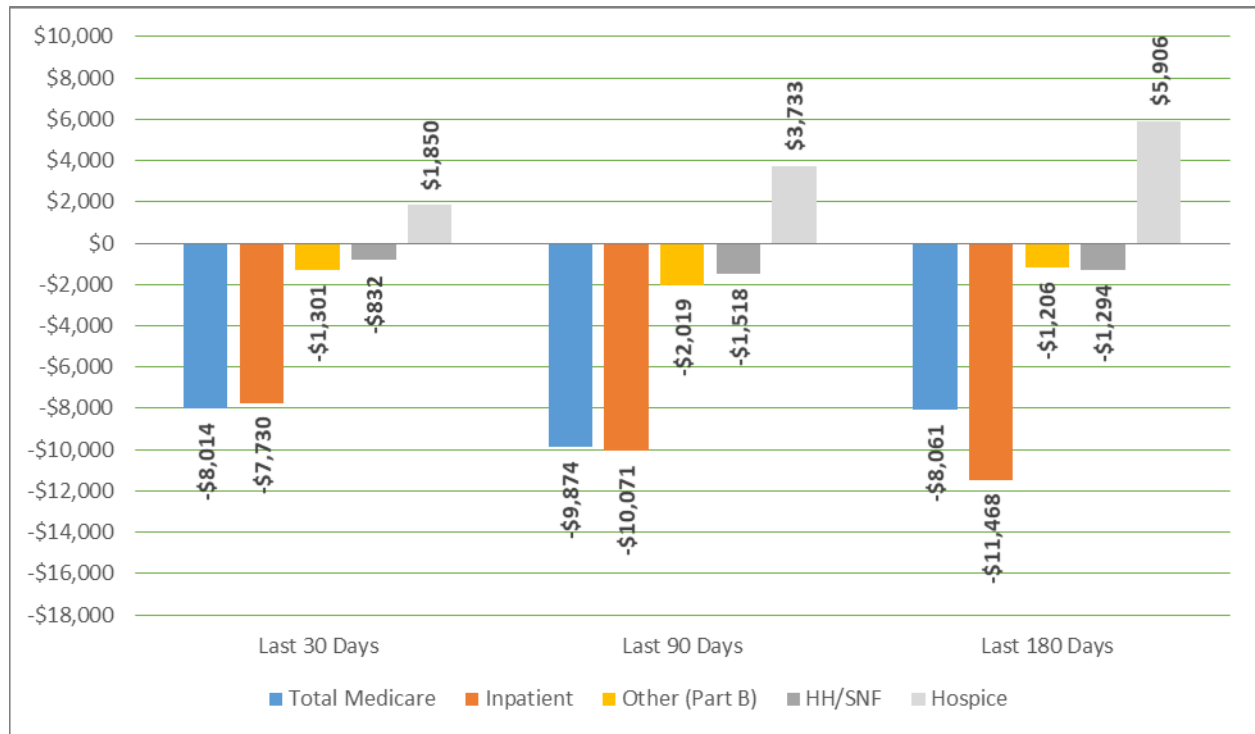
Although estimates of total Medicare savings per decedent were similar during the last 30 and 180 days of life, the estimated savings per day due to MCCM were greatest during the last 30 days of life: \$267 per day in savings during the last 30 days versus \$45 per day during the last 180 days of life. This difference suggests that almost all of the reductions in spending attributable to MCCM accrued during the last month of life.

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<sup>75</sup> Expenditure estimates exclude MCCM per-beneficiary, per-month payments.

<sup>76</sup> Inpatient expenditures include hospital admissions and readmissions, services provided in intensive care units, emergency department care, and observational stays for beneficiaries who were later admitted to hospitals.

**Exhibit 4.2** *Estimated Reductions in Medicare Expenditures due to MCCM Were Partially Offset by Increased Hospice Expenditures*



Sources: Medicare Enrollment Database, Master Beneficiary Summary File, and Medicare claims data, January 1, 2012-September 30, 2019.

Notes: This exhibit shows difference-in-difference impact estimates of MCCM on total Medicare, inpatient, other (Part B), HH/SNF, and hospice expenditures per decedent during the last 30, 90, and 180 days of life. Other (Part B) includes expenditures documented in outpatient, durable medical equipment, and physician/supplier files. Inpatient expenditures include hospital admissions and readmissions, services provided in intensive care units, emergency department care, and observational stays for beneficiaries later admitted to hospitals. **Exhibit 4.3** provides a complete summary of the estimated impacts on Medicare expenditures. **Appendix Exhibits G.1-G.5** present detailed findings for each outcome measurement period. Expenditure estimates do not include MCCM per-beneficiary, per-month, payments.

HH = home health, SNF = skilled nursing facility.

We show the estimated impacts of MCCM on seven components of Medicare spending in terms of dollars and the percentage change during the last 7, 30, 60, 90, and 180 days of life relative to comparison decedents in **Exhibit 4.3**.<sup>77</sup> We defined percentage change in spending relative to comparable spending for decedents who resided in MCCM market areas in the pre-implementation baseline period.

<sup>77</sup> In each period we included decedents who transitioned to MHB from MCCM and those who did not.

**Exhibit 4.3 Estimates Suggest that MCCM Reduced Spending on Life-Prolonging Treatments and Increased Spending on Supportive Care and Transitions to MHB**

Outcome	Last 7 Days of Life (MCCM: n = 2,682) (CG: n = 4,504,091)		Last 30 Days of Life (MCCM: n = 2,120) (CG: n = 4,434,975)		Last 60 Days of Life (MCCM: n = 1,531) (CG: n = 3,563,886)		Last 90 Days of Life (MCCM: n = 1,156) (CG: n = 2,616,531)		Last 180 Days of Life (MCCM: n = 502) (CG: n = 1,680,735)	
	Impact Estimate	Percent Change	Impact Estimate	Percent Change	Impact Estimate	Percent Change	Impact Estimate	Percent Change	Impact Estimate	Percent Change
Total Medicare expenditures	-\$4,586***	-41.0%	-\$8,014**	-39.6%	-\$9,844***	-34.8%	-\$9,874***	-28.7%	-\$8,061***	-16.2%
Inpatient expenditures	-\$4,686***	-62.1%	-\$7,730***	-63.8%	-\$9,393***	-60.0%	-\$10,071***	-55.9%	-\$11,468***	-48.3%
Home health expenditures	\$31	11.8%	-\$16	-2.3%	-\$197***	-18.7%	-\$152	-11.8%	-\$147	-7.0%
Hospice (non-MCCM) expenditures	\$828***	46.0%	\$1,850***	77.2%	\$2,802***	91.1%	\$3,733***	102.2%	\$5,906***	136.9%
Skilled nursing facility expenditures	-\$328***	-59.5%	-\$817***	-52.7%	-\$1,236***	-50.3%	-\$1,366***	-44.1%	-\$1,146***	-25.0%
Outpatient expenditures	-\$23	-11.8%	-\$141**	-15.3%	-\$234*	-12.3%	-\$263	-9.3%	\$149	2.6%
Durable medical equipment expenditures	\$16***	58.5%	\$66***	63.7%	\$133**	60.8%	\$193**	60.6%	\$415**	68.1%
Physician/supplier expenditures	-\$425***	-52.1%	-\$1,226***	-50.4%	-\$1,719***	-43.5%	-\$1,949***	-37.6%	-\$1,770***	-20.2%

Sources: Medicare Enrollment Database, Master Beneficiary Summary File, and Medicare claims data, January 1, 2012-September 30, 2019.

Notes: This exhibit shows difference-in-differences impact estimates of MCCM on total Medicare expenditures and 7 subcategories of expenditures during the last 7, 30, 60, 90, and 180 days of life, as described in **Appendix Section F**. Inpatient expenditures include hospital admissions and readmissions, services provided in intensive care units, emergency department care, and observational stays for beneficiaries later admitted to hospitals. Percent changes equal difference-in-differences estimates divided by mean expenditures for similar Medicare decedents who resided in MCCM markets during the baseline period. **Appendix Exhibits G.1-G.5** present detailed findings for each outcome measurement period. **Appendix Exhibit D.8** describes outcome measure specifications. Expenditure estimates do not include MCCM per-beneficiary, per-month payments. Statistical significance is denoted at the 99% level (\*\*\*), 95% level (\*\*), and 90% level (\*).

CG = comparison group.

Patterns of estimated impacts of MCCM measured as a percentage of baseline expenditures in MCCM markets are indicative of shifts away from spending on life-prolonging treatments toward spending on supportive care and transitions to MHB. For example, estimated impacts of MCCM on inpatient expenditures increased from 48 to 64 percent compared to spending for similar beneficiaries residing in MCCM markets during the baseline period between the last 180 and 7 days of life, respectively. Estimated impacts of MCCM on hospice care expenditures declined from 137 to 46 percent relative to the baseline period over the same measurement periods.

The estimated impacts of the model on home health spending were minimal in both dollar and percentage terms. This suggests that hospices met the needs of enrollees by promoting transitions to MHB, even though approximately 50 percent of cohort 1 hospices and 60 percent of cohort 2 hospices reported affiliations with home health agencies.<sup>78</sup>

### 4.3 IMPACTS ON UTILIZATION OF MEDICARE-COVERED SERVICES

MCCM enrollment led to reductions in the use of Medicare-covered services throughout the last 180 days of life, and these were steepest during the last 30 days of life, as shown in **Exhibit 4.4**. Estimated reductions in utilization were consistent with reductions in total Medicare expenditures, especially with the large reductions in inpatient expenditures described above in **Exhibit 4.2** and **Exhibit 4.3**. Compared to comparison decedents in MCCM markets during the baseline period, MCCM reduced hospital care during the last 180 days of life by:

- 28 percent for emergency department visits (650 per 1,000 decedents)
- 21 percent for observational stays (62 per 1,000 decedents)
- 36 percent for inpatient admissions (673 per 1,000 decedents)
- 57 percent for intensive care unit admissions (209 per 1,000 decedents).

Over half of these reductions occurred during the last 30 days of life.

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<sup>78</sup> **Appendix Section I.6** presents hospice-reported organizational affiliations.

**Exhibit 4.4 Reductions of MCCM on Use of Medicare-Covered Services Were Greatest During the Last 30 Days of Life**

Outcome	Last 7 Days of Life (MCCM: n = 2,682) (CG: n = 4,504,091)		Last 30 Days of Life (MCCM: n = 2,120) (CG: n = 4,434,975)		Last 60 Days of Life (MCCM: n = 1,531) (CG: n = 3,563,886)		Last 90 Days of Life (MCCM: n = 1,156) (CG: n = 2,616,531)		Last 180 Days of Life (MCCM: n = 502) (CG: n = 1,680,735)	
	Impact Estimate	Percent Change	Impact Estimate	Percent Change	Impact Estimate	Percent Change	Impact Estimate	Percent Change	Impact Estimate	Percent Change
Inpatient admissions	-208.6***	-46.3%	-405.5***	-49.2%	-507.1***	-45.1%	-544.4***	-40.7%	-672.7***	-36.2%
Home health episodes	1.6	1.3%	-36.2*	-11.8%	-86.2***	-19.6%	-72.6*	-13.8%	-55.0	-6.7%
Emergency department visits without a hospitalization	-185.2***	-42.0%	-360.6***	-40.8%	-452.3***	-35.6%	-471.7***	-30.0%	-649.7***	-27.7%
Observational stays	-14.3***	-39.8%	-33.4***	-35.8%	-33.9**	-23.3%	-43.2***	-22.9%	-61.8**	-20.5%
Intensive care unit admissions	-99.2***	-60.2%	-134.0***	-60.4%	-150.5***	-56.9%	-162.7***	-55.4%	-209.5***	-57.4%
Office/outpatient visits	-2,010.2***	-48.1%	-5,444.8***	-46.3%	-7,573.5***	-41.9%	-8,021.0***	-35.3%	-9,921.6***	-28.3%
Ambulance transports	-99.0***	-27.7%	-325.5***	-34.6%	-427.1***	-30.8%	-395.3**	-22.5%	-320.4	-12.7%
Inpatient 30-day readmissions	-93.7***	-52.1%	-183.7***	-56.5%	-227.1***	-53.3%	-234.5***	-48.3%	-292.9***	-46.8%

Sources: Medicare Enrollment Database, Master Beneficiary Summary File, and Medicare claims data, January 1, 2012-September 30, 2019.

Notes: This exhibit shows difference-in-differences impact estimates of MCCM on the utilization of select Medicare-covered services per 1,000 decedents during the last 7, 30, 60, 90, and 180 days of life. Note that hospice expenditures exclude MCCM per-beneficiary, per-month payments. We compared MCCM enrollees' end-of-life service utilization to a comparison group of similar decedents who resided in markets served by comparison hospices. Percent changes equal difference-in-differences estimates divided by mean utilization for similar Medicare decedents who resided in MCCM markets during the baseline period, as described in **Appendix Section F**. Detailed results for MCCM impacts on Medicare service utilization can be found in **Appendix Exhibits G.1-G.5**. **Appendix Exhibit D.8** describes the outcome measures. Statistical significance is denoted at the 99% level (\*\*\*), 95% level (\*\*), and 90% level (\*).

CG = comparison group.



### 4.3.1 Stakeholder Perspectives on Reductions in Inpatient Use

Results suggesting that MCCM played a large role in reducing inpatient admissions align with the perceptions of stakeholders we interviewed between 2017 and 2019. We summarize their perspectives below.

- **Beneficiary and caregiver perspectives.** Several beneficiaries told our interviewees that enrolling in MCCM reduced or even eliminated their visits to the emergency department and their hospitalizations, compared to the time before they enrolled in the model. For example, one caregiver said the MCCM care team at a cohort 1 hospice kept one beneficiary out of the hospital on three separate occasions.
- **Referring providers.** Providers noted that the MCCM care team helped prevent medical crises from escalating by checking in with beneficiaries and monitoring them closely, which reduced emergency department visits and hospitalizations (and, by extension, intensive care unit admissions).
- **MCCM hospice staff.** Most of the hospice staff we interviewed noted that ongoing symptom management in the home setting, and more timely transitions to hospice, were the primary ways MCCM prevented hospitalizations. They told us that 24/7 access provided an alternative to calling 911 or going directly to the hospital. An MCCM staff member at a cohort 2 hospice described several instances when their registered nurse care coordinator intervened when a beneficiary was in crisis and coordinated with the beneficiary’s physician to prevent a visit to the emergency department or a hospital readmission. Others noted, however, that many MCCM enrollees still called 911 rather than the hospice team.



#### Perceived impact of MCCM on hospitalization

“MCCM has broken a 5-year cycle of every 3-month hospitalizations. The staff treat the beneficiary from head to toe, psychologically and physically.”

—Caregiver of a cohort 2 hospice beneficiary

## 4.4 MCCM IMPACTS ON TRANSITION TO MEDICARE HOSPICE BENEFIT

Overall, our results suggest that MCCM increased enrollment in MHB and promoted earlier transitions to MHB, as shown in **Exhibit 4.5**. MCCM decedents were 20 percentage points more likely than comparison decedents to enroll in MHB. This change represented a 32 percent increase relative to the baseline. MCCM did not affect the proportion of decedents who transitioned to MHB in the last 48 hours of life. MCCM decedents transitioned to hospice about one week (6.9 days) earlier (i.e., had an additional week of MHB enrollment before death) than comparison decedents. An estimated impact of one week is

substantial, given that national data show the median hospice length of stay is 18 days.<sup>79</sup> The subject matter experts we spoke with suggested that MCCM might provide indirect financial benefits to hospices by helping them reduce short stays in MHB. Short hospice stays make it difficult for hospices to cover the costs they incur transitioning beneficiaries to MHB.

**Exhibit 4.5 Impacts of MCCM on Transition to the Medicare Hospice Benefit**

Outcome	Analytic Sample Sizes	DID Estimate	Percent Change
Likelihood of MHB transition	MCCM decedents: n = 2,765 Comparison group decedents: n = 4,504,091	0.199***	32.2%
Likelihood of MHB transition in the last two days of life	MCCM decedents: n = 2,765 Comparison group decedents: n = 4,504,091	0.004	6.1%
Number of days from MHB enrollment to death	MCCM MHB decedents: n = 2,325 Comparison group MHB decedents: n = 2,318,578	6.9***	25.8%

Sources: Medicare Enrollment Database, Master Beneficiary Summary File, and Medicare claims data, January 1, 2012-September 30, 2019.

Notes: This exhibit shows DID impact estimates of MCCM on transitions to MHB compared to a comparison group of similar decedents who resided in markets served by comparison hospices. The percent change column estimates DID estimates divided by mean outcomes for Medicare beneficiaries who resided in MCCM markets during the pre-implementation baseline period, as described in **Appendix Section F**. Descriptive analyses presented in Section 3 represent all enrollees. Detailed results for MCCM impacts on Medicare service utilization can be found in **Appendix Exhibit G.6**. **Appendix Exhibit D.8** describes outcome measures. Statistical significance is denoted at the 99% level (\*\*\*), 95% level (\*\*), and 90% level (\*).

DID = difference-in-difference, MHB = Medicare hospice benefit.

**4.5 DRIVERS OF ESTIMATED COST SAVINGS**

**4.5.1 Role of Increased Hospice Use on Expenditures at the End of Life**

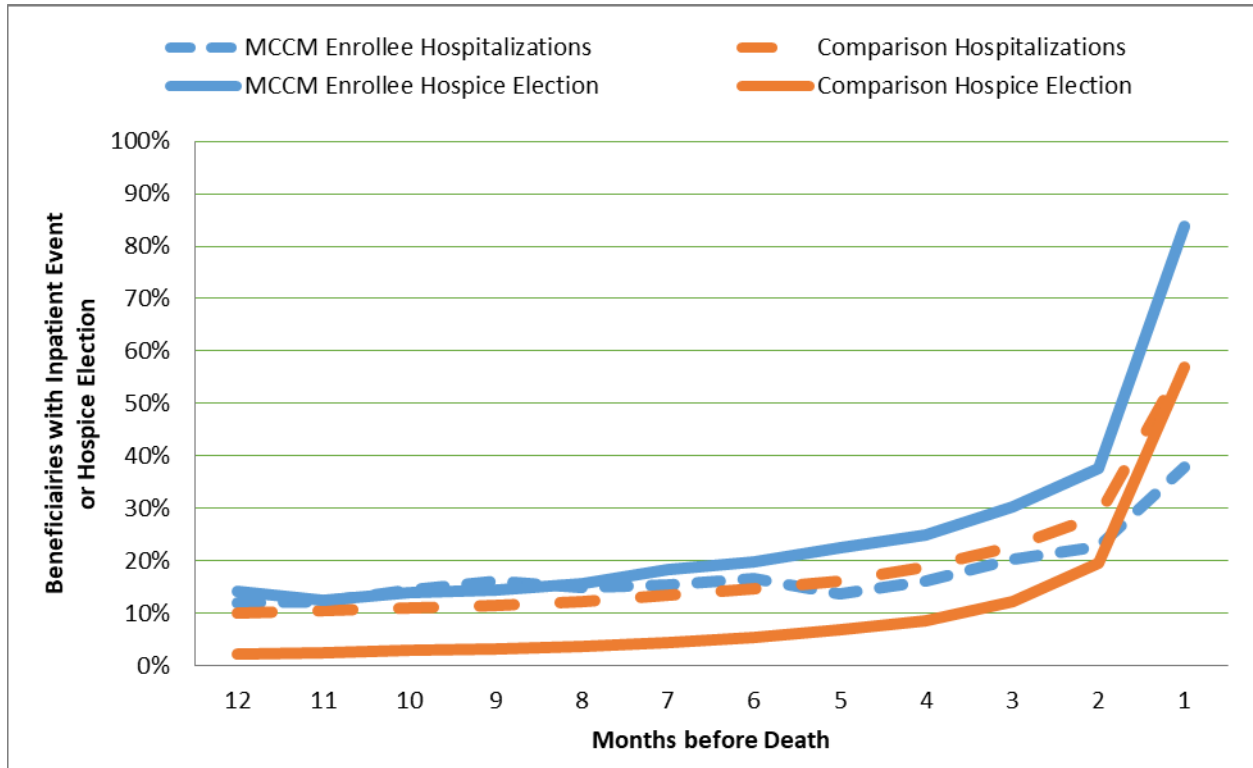
Reductions in inpatient expenditures due to MCCM were associated with increases in the volume and duration of MHB enrollment. To understand whether MCCM caused these changes, we conducted a descriptive analysis comparing trends in hospitalizations and MHB enrollment for MCCM and comparison group decedents, during the year before death; see **Exhibit 4.6**. Trends in hospice election and hospitalizations for MCCM and comparison groups started to diverge about two months before death, with hospice enrollment higher and hospitalizations lower among MCCM decedents than among comparison decedents.

These differential trends are consistent with data from qualitative interviews reported in Annual Report 2 and **Section 3** of this report. Interviewees described efforts to familiarize enrollees with MHB, and their perception that MCCM enrollees might not have elected MHB if not for the encouragement of MCCM hospice staff. These two findings suggest that MHB

<sup>79</sup> Medicare Payment Advisory Commission. (2020). *Report to Congress*, Chapter 12, "Hospice Services." Retrieved on April 7, 2020 from [http://www.medpac.gov/docs/default-source/reports/mar20\\_medpac\\_ch12\\_sec.pdf?sfvrsn=0](http://www.medpac.gov/docs/default-source/reports/mar20_medpac_ch12_sec.pdf?sfvrsn=0).

enrollment contributed to hospitalizations more for MCCM decedents than for comparison decedents.

**Exhibit 4.6 Differing Trends Suggest That MHB Enrollment May Have Reduced Hospitalizations for MCCM Decedents More Than for Comparison Decedents**



Sources: Medicare Enrollment Database, Master Beneficiary Summary File, and Medicare claims data, January 1, 2012-September 30, 2019.

Note: This exhibit shows unadjusted rates of cumulative hospice election and monthly inpatient hospitalization for MCCM enrollees (n = 3,603), and a comparison group of similar decedents who resided in comparison hospice markets who died in the intervention period (n = 1,249,677). Further methodological details are available in **Appendix Section F**.

#### 4.5.2 Live Discharges from MHB

Another avenue through which MCCM could reduce inpatient spending during the last two months of life is by reducing the likelihood that beneficiaries who elect MHB return to regular Medicare, and resume life-prolonging treatment. Because one of the roles of MCCM is to educate enrollees about options for end-of-life care, enrollees may transition to the model with a clearer understanding of the benefits and limitations of MHB, and thus be less likely to disenroll.

To investigate this possibility, we analyzed the rate of live discharges among the 3,010 MCCM enrollees who subsequently elected MHB. Among this group, 495 (16 percent)

left MHB at least once before they died, a percentage similar to the national rate of live discharges from MHB.<sup>80</sup>

Among those who transitioned to MHB in the 30 to 60 days before death, the live discharge rate was only 7 percent and just 1 percent for those electing MHB in the last month of life. This suggests that MCCM enrollees who transitioned to MHB many months before death were perhaps not yet ready to forgo treatment for their medical conditions, and may not have understood the distinction between MCCM (concurrent access to life-prolonging treatment) and MHB.

### 4.6 RESULTS OF SENSITIVITY TESTS AND SUBGROUP ANALYSES

We conducted analyses to assess the sensitivity of our expenditure and utilization impact estimates to the inclusion of MCCM decedents who did not meet model eligibility criteria on the date they enrolled, and those who enrolled more than a year before death. We summarize the results of these analyses below. A detailed discussion of the sensitivity tests can be found in **Appendix Section F.6** and detailed findings can be found in **Appendix Section G**.

#### 4.6.1 Results of Sensitivity Tests

The impact estimates shown in **Section 4.2** to **Section 4.4** excluded 837 of 3,603 MCCM decedents: (1) those not eligible for MCCM on their enrollment dates, based on Medicare administrative data; and/or (2) those who enrolled in MCCM one year or more before death.<sup>81</sup> We assessed whether the inclusion of these additional 837 enrollees affected the magnitude of estimated MCCM impacts during the last 30 days of life in 3 separate analyses. Results from these analyses include the following:

- **Administratively ineligible MCCM decedents** are those who did not meet the model's administrative eligibility criteria on their dates of enrollment.<sup>82</sup> Adding these 506 decedents slightly increased estimated savings by \$54 during the last 30 days of life, from \$8,014 to \$8,068. See **Appendix Exhibits G.7-G.12**.
- **Long-surviving MCCM decedents** are those who lived a year or more after enrolling. Adding these 270 decedents reduced estimated savings by \$250 in the last 30 days of life, from \$8,014 to \$7,764. See **Appendix Exhibits G.13-G.18** The impact of MCCM on time spent in MHB was sensitive to the inclusion of long-surviving decedents. When

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<sup>80</sup> National live discharge rates from the MHB were 17 percent in 2016, 17 percent in 2017, and 17 percent in 2018. Medicare Payment Advisory Commission. (2020). *Report to Congress*, Chapter 12, "Hospice Services." Retrieved on April 7, 2020 from [http://www.medpac.gov/docs/default-source/reports/mar20\\_medpac\\_ch12\\_sec.pdf?sfvrsn=0](http://www.medpac.gov/docs/default-source/reports/mar20_medpac_ch12_sec.pdf?sfvrsn=0)

<sup>81</sup> See **Appendix Exhibit D.2** for a list of administratively verifiable MCCM criteria.

<sup>82</sup> See **Appendix Section F.2** for an accounting of reasons why MCCM decedents were excluded due to the model's administrative eligibility criteria.

we included beneficiaries who enrolled in the model more than a year before death, the estimated impact of MCCM on the number of days between MHB enrollment and death more than doubled from an average of 6.9 days to 14.2 days.

- **Administratively ineligible and/or long-surviving MCCM decedents** were those in both of the groups above. Adding these 837 decedents reduced estimated savings by \$315 in the last 30 days of life, from \$8,014 to \$7,699. **Appendix Exhibits G.19-G.24**

These sensitivity analyses suggest that decedents who were not administratively eligible for MCCM on their enrollment date were not systematically different from decedents who were fully eligible, or were dissimilar in ways that did not affect expenditures. Alternatively, it is possible that decedents were administratively ineligible during potential gaps in time between eligibility assessments performed by Medicare administrative contractors and MCCM enrollment dates documented in the MCCM portal. Distinguishing between these two possible causes will help CMS assess the benefits of disseminating the model more widely using the current eligibility criteria.

Including decedents with an MCCM-qualifying diagnosis who survived substantially longer than physicians anticipated in the analysis reduced estimated savings for Medicare. Even so, the net savings remained positive after accounting for MCCM payments.

### 4.7 SUBGROUP ANALYSES

We conducted three subgroup analyses: (1) beneficiaries enrolled in MCCM who later transitioned to MHB versus those that did not, (2) decedents with a qualifying MCCM diagnosis of cancer versus those without, and (3) decedents enrolled by the “Top 9” MCCM participating hospices based on cumulative enrollment since the start of the model versus those who were not, and. We describe the key findings below. A detailed discussion of the subgroup analyses can be found in **Appendix Section F.7** and detailed findings can be found in **Appendix Section G**.

#### 4.7.1 *Being Enrolled in MHB*

MCCM was associated<sup>83</sup> with greater reductions in expenditures during the last 30 days of life for those decedents who transitioned to MHB than for those who did not (\$9,268 versus \$346<sup>84</sup>). These estimates suggest that enrollees who transitioned to MHB generated

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<sup>83</sup> As described in **Appendix Section F.7**, the transition to MHB is a post-intervention outcome. Thus, reported outcomes were estimated using a heterogeneous treatment effects framework and should not be interpreted as causal. See detailed impact estimates in **Appendix Exhibits G.27** and **G.32**.

<sup>84</sup> The association between MCCM enrollment and the last 30 days of Medicare expenditures was not statistically significant at  $p < 0.10$  for decedents who did not transition to MHB. The association between MCCM and the last 30 days of Medicare expenditures was statistically significant at

virtually all of MCCM's \$8,014 impact on Medicare expenditures in the last 30 days of life. See **Appendix Exhibits G.25-G.35**. Enrollees who did not transition to MHB generated a small and statistically insignificant amount of savings. This finding may reduce concerns among policy makers that providing life-prolonging treatments concurrently with support services would increase costs.

### ***4.7.2 Having a Qualifying MCCM Cancer Diagnosis***

MCCM reduced expenditures more during the last 30 days of life for decedents who had an MCCM diagnosis of cancer than for those with other MCCM-qualifying diagnoses (\$8,099 versus \$7,594, respectively<sup>85</sup>). As shown in **Section 3**, MCCM decedents with a cancer diagnosis spent roughly 12 fewer days enrolled in MCCM before transitioning to MHB. See **Appendix Exhibits G.36-G.47**. By transitioning to MHB sooner, we might expect MHB to have a greater impact on decedents with cancer diagnoses compared to those who transition later. However, those with cancer spent only five more days enrolled in MHB than other MCCM decedents, and thus may not have had time to contribute to substantially greater cost reductions while in MHB.

### ***4.7.3 Being Enrolled by a "Top 9" MCCM Hospice***

MCCM had a greater impact on Medicare expenditures during the last 30 days of life for decedents enrolled in one of the 9 hospices with the largest number of MCCM enrollees than for those enrolled in any of the other participating hospices (\$8,624 versus \$7,337, respectively<sup>86</sup>). See **Appendix Exhibits G.48-G.59**. In theory, more enrollees may have contributed to economies of scale that may have helped the "Top 9" enrolling hospices achieve greater savings through the development and deployment of marketing strategies. Since "Top 9" hospices are more likely to be located in urban areas, as shown in **Appendix Exhibit I.26**, they may be able to develop referral networks that leverage health information technology systems of large medical centers to identify greater numbers of eligible beneficiaries.

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p < 0.10 for decedents who did transition to MHB; however, a test of the difference in the estimated associations was significantly different at the p < 0.10 level.

<sup>85</sup> Tests on whether these impacts were individually different from zero were both statistically significant at the p < 0.10 level; however, a test of whether estimated impacts were different from each other was not statistically significant at the p < 0.10 level. Based on these results, we concluded that MCCM had similar impacts on Medicare expenditures for decedents with and without cancer during the last 30 days of life.

<sup>86</sup> Tests of whether these impacts were individually different from zero were both statistically significant at the p < 0.10 level; however, a test of whether estimated impacts were different from each other was not statistically significant at the p < 0.10 level.

### 4.8 CONCLUSION

Understanding the extent to which MCCM enrollment reduces utilization and Medicare expenditures at the end of life is an important goal of this evaluation. Our findings suggest a substantial reduction in the utilization of health care services, especially inpatient admissions, in the last months of life, due to the model. The savings are almost five times the total amount paid to participating hospices by Medicare. Earlier transitions to and longer duration in MHB appear to be important mechanisms through which MCCM achieved its goal of reducing Medicare expenditures and increasing access to supportive services at the end of life.

Our findings suggest MCCM and similar models could make a meaningful difference in the quality and cost of end-of-life care. Avoidance of potentially intensive hospital-based interventions at the end of life accounted for most of the observed savings. From a quality-of-care standpoint, avoiding hospital care removes burdensome transitions across care settings and increases beneficiaries' quality of life beyond what claims data alone would show.

Our approach to identifying a group of comparison decedents removed observable sources of confounding factors between enrollment in MCCM and utilization and cost outcomes. Nonetheless, an important caveat of our results is that our estimation strategy may not fully account for unobservable differences between MCCM decedents and the comparison group. These could include clinical differences between the groups that cannot be observed in claims data (e.g., cancer stage), or differences in preferences for care at the end of life. To the extent that these differences exist, results may be biased in ways that cannot be avoided easily in a voluntary (i.e., non-randomized) model evaluated using administrative data.

## 5. How Does MCCM Affect the Quality of Care Experienced by MCCM Enrollees and Their Caregivers?



In this section, we report the results of new and updated<sup>87</sup> analyses of the quality of care delivered by MCCM hospices and caregiver perceptions of the quality of those services. We cover three specific topics:

- Administration of comprehensive assessments that inform enrollee needs and care delivery in **Section 5.2**
- Screening for palliative care needs and symptom management in **Section 5.3**
- Delivery of person- and family-centered care through shared decision making, caregiver training, and support for the emotional needs of enrollees and family members in **Section 5.4**.



To examine these processes and outcomes of care, **Section 5** uses data from:

- Interviews with MCCM hospice staff and enrolled beneficiaries
- Surveys of caregivers of MCCM enrollees who died
- Beneficiary service and activity data
- Claims and enrollment data

### 5.1 KEY FINDINGS

- MCCM hospices documented in the portal a 48-hour initial assessment and a comprehensive assessment within 5 days of enrollment for 63 percent of enrollees. However, they documented only 1 of the 2 types of assessments during the first 5 days of enrollment for 28 percent of enrollees and no time-compliant assessments for 9 percent of enrollees.<sup>88</sup>
- The median number of portal-documented comprehensive assessments each month was 2.1, suggesting that hospices documented comprehensive assessments every 15 days for 50 percent of enrollees, which is the number consistent with CMS guidance. Hospices documented no more than 1 assessment per month for 25 percent of enrollees.
- Hospice-documented treatments successfully alleviated symptoms for 90 percent or more of enrollees who were screened and showed symptoms. However, the analysis excluded 9 to 71 percent of enrollees with emotional concerns and bowel problems for whom hospices staff considered it “too soon to tell” whether efforts to manage

<sup>87</sup> See previous findings in **Annual Report 2 Section 4**.

<sup>88</sup> As discussed in Section 5.2.1, CMS does not expect hospices to administer a 48-hour initial assessment if hospices administer a comprehensive assessment within 48 hours of enrollment.



symptoms were effective. The lack of portal-documented assessments may reflect some combination of incomplete reporting and logistical challenges associated with coordinating care for beneficiaries receiving concurrent life-prolonging treatments for terminal illnesses.

- Most caregivers of enrollees were highly satisfied with the care delivered by MCCM hospices and their experiences transitioning to MHB. However, caregivers of enrollees who did not transition to MHB held less-positive views of MCCM in terms of receiving timely care, help with pain, and the training they received to care for enrollees at home.
- Hospice staff indicated that MCCM's goal of promoting shared decision making influenced their implementation of the model. They also indicated that participating in shared decision making was critical to making a positive impact on enrollees, and possibly reducing their use of medical care needed to treat their terminal conditions.
- Fifteen percent of enrollees studied had do-not-hospitalize orders documented in the MCCM portal. Of these, only 7 percent were subsequently hospitalized while enrolled in MCCM, suggesting that MCCM staff respected patients' wishes.

### 5.2 ADMINISTRATION OF ENROLLEE STATUS ASSESSMENTS

MCCM staff assessed enrollees' functional status and screened for pain, shortness of breath, psychological problems, emotional needs, and other symptoms.<sup>89</sup> Data gathered during these assessments ensure that hospice staff have the information they need to create and adapt individualized care plans and provide appropriate services. CMS uses assessment data collected by hospices to support the calculation of quality metrics for evaluation and monitoring of the model.<sup>90</sup> The evaluation team did not analyze hospice records to assess the alignment between portal-documented assessments and those reported in hospice records.

The MCCM implementation team developed and made widely available technical assistance, periodic reminders, and learning activities related to supporting the timely and accurate documentation of assessment data.<sup>91</sup>

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<sup>89</sup> Caregiver and family needs for bereavement and emotional support are assessed in bereavement counseling, and are not included in comprehensive assessments.

<sup>90</sup> Medicare Care Choices Model, Resource Manual, November 2019, page 11. The specifications for measuring hospice performance in administering comprehensive assessments are in **Appendix Section E.3**.

<sup>91</sup> The MCCM implementation contractor provided hospices with numerous learning activities to help them understand the model's requirements, how to use the MCCM portal, and the importance of entering complete and accurate data. These activities include monthly TouchPoint webinars, which hospices are expected to attend; as well as email updates every few weeks with reminders to submit data and information about tools to help correct portal data. Learning opportunities are

### 5.2.1 Early Post-Enrollment Assessments

CMS expects hospices to perform an initial assessment within 48 hours of enrollment and a comprehensive assessment within 5 days of enrollment, similar to assessments required of Medicare-certified hospices.<sup>92,93,94</sup>

Below we present analysis results of the portal-documented administration of 48-hour initial assessments and comprehensive assessments during the first 5 days of enrollment for newly enrolled beneficiaries between January 1, 2018 and September 30, 2019.<sup>95</sup> During this time, the MCCM portal was reconfigured to better differentiate between the two types of early post-enrollment assessments.

MCCM hospices documented both a 48-hour initial assessment and a comprehensive assessment within 5 days of enrollment in the portal for 63 percent of enrollees, as shown in **Exhibit 5.1**. However, they documented only 1 of the 2 types of assessments during the first 5 days of enrollment for 28 percent of enrollees and no time-compliant assessments for 9 percent of enrollees. Cohort 1 hospices were more likely to document only one of the two types of assessments during the first five days of enrollment and less likely to administer both types of assessments on different days.

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listed in **Appendix Section J.2** of **MCCM Annual Report 2** and **Appendix Section I.6** of this report.

- <sup>92</sup> Department of Health & Human Services (DHHS), Centers for Medicare & Medicaid Services (CMS) (2010). CMS Manual System Pub. 200-07 State Operations. Provider Certification. *Code of Federal Regulations 418.54*. <https://www.cms.gov/Regulations-and-Guidance/Guidance/Transmittals/downloads/R65SOMA.pdf>.
- <sup>93</sup> Regulatory guidance suggests that 48-hour initial assessments are conducted by a registered nurse, who assesses the enrollee's physical, psychosocial, emotional, and spiritual status related to the terminal illness and related conditions. The information gathered during the initial assessment informs the delivery of services to meet the immediate needs of enrollees, and provides information needed to begin development of a care plan. A registered nurse conducts a comprehensive assessment within five days of enrollment, in consultation with the hospice's interdisciplinary group and the enrollee's attending physician (or the hospice physician, if the enrollee does not have an attending physician or the attending physician is unavailable). The comprehensive assessment covers the same topics as the initial assessment but is guided by the results of the initial assessment. These two types of assessments may occur on the same day. See CMS Manual System Pub. 200-07 State Operations. [https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap\\_m\\_hospice.pdf](https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_m_hospice.pdf).
- <sup>94</sup> In December 2018, CMS provided guidance to MCCM hospices indicating that if they perform a comprehensive assessment within 48 hours of enrollment, then the 48-hour initial assessment is not required. See MCCM Guidance: Portal Documentation of Comprehensive Assessments, December 6, 2018.
- <sup>95</sup> Starting January 1, 2018, hospices could record specific information about the type of comprehensive assessments (i.e., "48-hours initial assessment," a "comprehensive assessment within 5 days of enrollment," or a "subsequent comprehensive assessment") in the MCCM portal.

## 5. HOW DOES MCCM AFFECT THE QUALITY OF CARE EXPERIENCED BY MCCM ENROLLEES AND THEIR CAREGIVERS?

### **Exhibit 5.1 Hospices Documented One or Both Early Post-Enrollment Status Assessments for Most Enrollees**

Timing of Post-Enrollment Comprehensive Assessments	All Enrollees (n = 3,258)	Cohort 1 Enrollees* (n = 1,473)	Cohort 2 Enrollees* (n = 1,780)
Forty-eight-hour initial assessment only performed within 48 hours***	16.8%	22.0%	12.4%
Comprehensive assessment only performed within five days***	11.4%	13.2%	10.0%
Both 48-hour and 5-day comprehensive assessments reported in 1 encounter, within 48 hours of enrollment***	37.4%	33.7%	40.6%
Both 48-hour and 5-day comprehensive assessments reported in 1 encounter, within 3 to 5 days of enrollment	0.4%	0.4%	0.4%
Both 48-hour and 5-day comprehensive assessments reported on different days***	25.2%	18.7%	30.5%
Neither comprehensive assessment***	8.8%	12.0%	6.2%

Sources: MCCM portal data, January 1, 2018-September 30, 2019.

Note: This exhibit shows the percentage of MCCM enrollees who received 48-hour and/or 5-day comprehensive assessments for 3,258 beneficiaries enrolled in MCCM for 5 days or more between January 1, 2018 and September 30, 2019, when the MCCM portal was reconfigured to capture administration of different types of comprehensive assessments. The exhibit also shows a similar analysis by cohort. The analytic sample excluded 161 of 3,419 beneficiaries with less than 5 days of enrollment. The beneficiaries were enrolled by 73 of the 141 hospices that were actively enrolling beneficiaries during the measurement period. We excluded five enrollees from the cohort analysis because they were not assigned a valid hospice identification number. We used a chi-square test to identify differences across cohorts for each type of timing of assessment, with statistical significance at the 10% (\*), 5% (\*\*), and 1% (\*\*\*) levels.

### **5.2.2 Subsequent Assessments**

After the first week of enrollment, CMS expects MCCM hospices to perform subsequent comprehensive assessments every 15 days or more frequently, as required by the beneficiary’s condition.<sup>96</sup> If hospices met this requirement, enrollees would receive an average of approximately two or more comprehensive assessments per month.

The frequency with which hospices documented subsequent comprehensive assessments varied widely, with cohort 2 hospices documenting more assessments than cohort 1 hospices, as shown in **Exhibit 5.2**. Hospices documented an average of 2.4 comprehensive assessments per month. The median number of assessments recorded each month was 2.1, suggesting that hospices documented assessments multiple times per month to only half of

<sup>96</sup> State Operations Manual Appendix M – Guidance to Surveyors: Hospice (Rev. 200, 02-21-20) §418.54(d). [https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap\\_m\\_hospice.pdf](https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/som107ap_m_hospice.pdf).

## 5. HOW DOES MCCM AFFECT THE QUALITY OF CARE EXPERIENCED BY MCCM ENROLLEES AND THEIR CAREGIVERS?

enrollees. Hospices documented assessments for approximately 25 percent of enrollees no more than once per month.

### **Exhibit 5.2 Hospices Documented 15-Day Assessments on Schedule for Only 50 Percent of MCCM Enrollees**

Frequency of Twice-Monthly Comprehensive Assessments	All Enrollees (n = 2,860)	Cohort 1 Enrollees (n = 1,283)	Cohort 2 Enrollees (n = 1,573)
Average comprehensive assessments per month***	2.4	2.2	2.6
Maximum	17.1	15.0	17.1
75th percentile	3.2	3.1	3.4
50th percentile	2.1	1.7	2.3
25th percentile	1.1	0.7	1.5
Minimum	0.0	0.0	0.0

Sources: MCCM portal data, January 1, 2018-September 30, 2019.

Notes: This exhibit provides summary statistics describing the number of comprehensive assessments recorded by MCCM hospices each month (i.e., the average, maximum, and minimum number of recorded monthly assessments; and the number of monthly assessments at the 25th, 50th, and 75th percentile cut-points) overall and by cohort. The analytic sample included 2,860 beneficiaries who enrolled in MCCM between January 1, 2018 and September 30, 2019, when the MCCM portal was reconfigured to capture different types of comprehensive assessments. We excluded 559 of the 3,419 enrollees with fewer than 14 days of enrollment. The resulting analytic sample included 2,860 enrollees in 72 hospices. Four enrollees were missing information on cohort membership because they did not have a valid hospice identification number. The frequency of comprehensive assessments is equal to the number of comprehensive assessments divided by enrollment days and multiplied by 30. Enrollees receiving the expected number of 15-day assessments were assessed twice per month or more. We used a t-test to compare means across cohorts in the average rate of comprehensive assessments, with statistical significance at the 10% (\*), 5% (\*\*), and 1% (\*\*\*) levels.

Despite wide variation in hospice documentation of comprehensive assessments of MCCM enrollees, we did not find substantial differences in the demographic characteristics of enrollees who received and did not receive comprehensive assessments between January 1, 2018 and September 30, 2019, as shown in **Appendix Exhibit I.11**.

### **5.3 SCREENING AND SYMPTOM MANAGEMENT**

CMS expects MCCM hospices to screen enrollees for shortness of breath, pain, and emotional well-being; and to discuss spiritual concerns with enrollees and their caregivers. Hospice teams should then document symptoms and concerns; initiate treatment, as appropriate; and monitor whether the treatment was effective. Hospices should also provide care to manage symptoms that they identify through screenings that occur during initial and subsequent comprehensive assessments, and record whether the symptoms were managed effectively.

In the next two subsections, we describe how we calculated screening rates and rates of symptom management in accordance with the measure specifications described in **Appendix Section E.2**, and present screening rates and symptom management rate results.

### 5.3.1 *Screening for Symptoms and Concerns*

We measured screenings for symptoms and concerns at two clinically relevant time points: during the 48 hours after enrollment when hospices are assessing new enrollees and developing care plans, and after a change in the enrollees' functional status when hospices screen enrollees to understand and document their changing needs.<sup>97</sup> Measures of the quality of symptom management require that:

- Encounters be performed by appropriate personnel (e.g., a registered nurse is qualified to assess symptoms and manage pain, a social worker is qualified to manage emotional concerns but not pain)
- Encounters occur during an in-person visit in the home, in the community, or at a facility bedside
- Enrollees are recipients of the encounters
- Enrollees are able and willing to receive the service (i.e., they did not decline to discuss a subject and had the capacity to communicate their decision).

If a hospice did not document a 48-hour initial assessment or a 5-day comprehensive assessment within the first 48 hours after enrollment, we assumed the hospice did not screen the enrollee for symptoms, and treated the encounter as a missed screening opportunity. We included missed screening opportunities in the screening rate denominator to accurately measure whether hospices participating in the model performed the expected number of screenings.<sup>98</sup> We included only beneficiaries enrolled by 58 hospices with 10 or more MCCM enrollees to promote reliable comparisons of screening rates across hospices. We calculated the percentage of enrollees who enrolled in MCCM for seven or more days to allow time for hospices to administer screenings and document their results.

- Overall, MCCM hospices with 10 or more enrollees screened over 85 percent of MCCM enrollees for symptoms and concerns: shortness of breath (93 percent), pain (92 percent), emotional well-being (88 percent), and spiritual concerns (86 percent).
- By contrast, the four screening rates we reported in Annual Report 2 were somewhat higher, due in large part to the exclusion of missing 48-hour assessments in the measure denominator in Annual Report 2.

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<sup>97</sup> Screening rates reported in **Annual Report 2, Exhibit 6.1** did not incorporate this exclusion because it was not possible at the time of analysis to reliably identify 48-hour assessments for the majority of the time period covered in the report.

<sup>98</sup> Before the reconfiguration of the MCCM portal, it was not possible to use the encounter-type field to differentially identify assessment types and account for missing assessments in screening rate calculations.

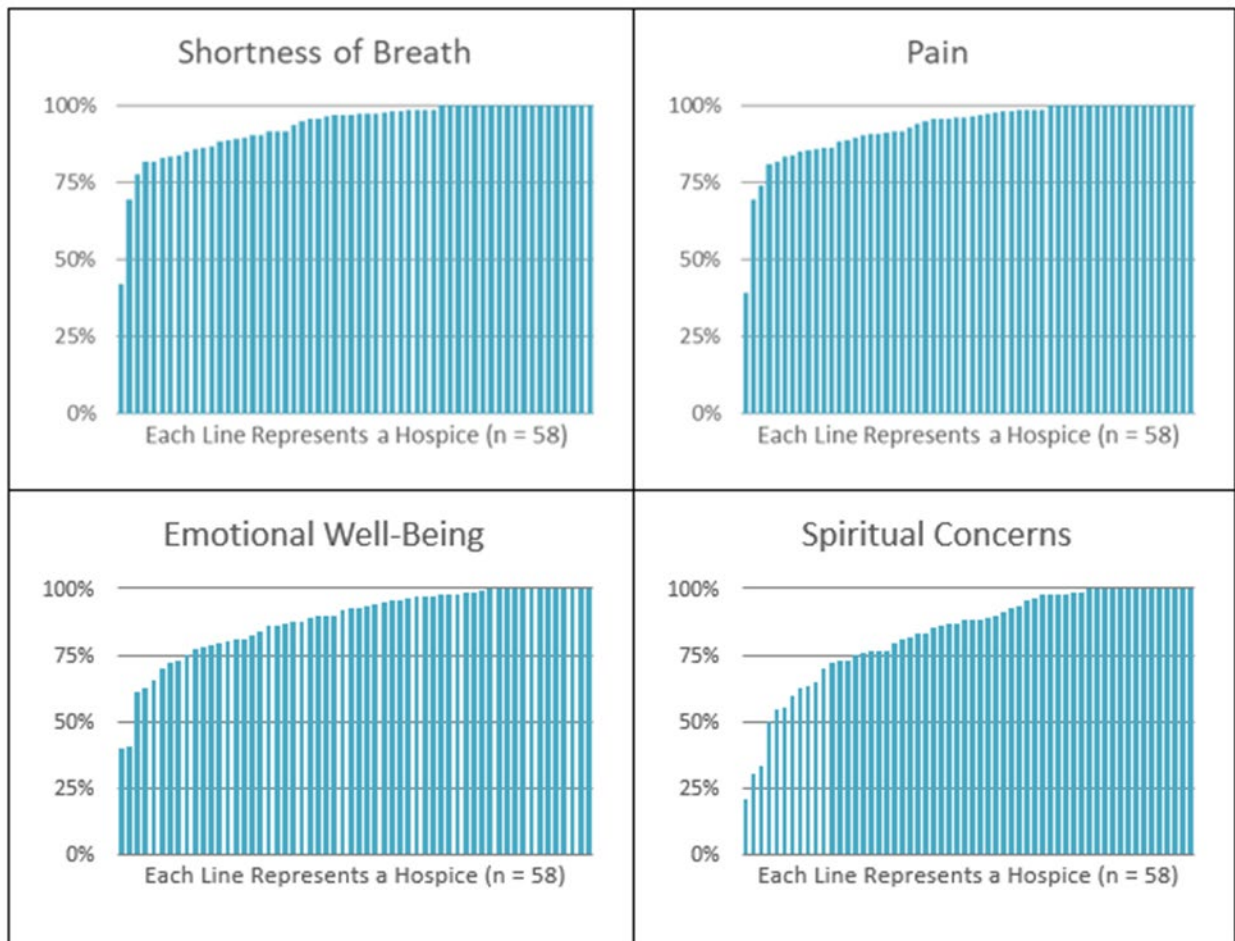
## 5. HOW DOES MCCM AFFECT THE QUALITY OF CARE EXPERIENCED BY MCCM ENROLLEES AND THEIR CAREGIVERS?

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We also calculated hospice-specific screening rates for 50 hospices with 10 or more enrollees. Results showed that the proportion of screened enrollees varied widely across hospices participating in the model, as shown in **Exhibit 5.3**. The lowest-performing hospices screened under 30 percent of enrollees, while the highest-performing hospices screened well over 90 percent of enrollees. During interviews conducted between 2017 and 2019, hospice staff noted that they considered MCCM's reporting requirements to be burdensome. These burdens, in combination with low MCCM payments, may have contributed to the under-reporting of screenings that hospices actually performed.

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**Exhibit 5.3 Documented Screenings of MCCM Enrollees for Shortness of Breath, Pain, Emotional Well-Being, and Spiritual Concerns Varied by Hospice**



Sources: MCCM portal data, January 1, 2016-September 30, 2019.

Notes: This exhibit displays the percentage of measure-eligible beneficiaries enrolled in MCCM between January 1, 2016 and September 30, 2019 who received screenings in each of 58 hospices for 4 conditions. Screening occurred during comprehensive assessments administered within 48 hours of enrollment or after a change in the enrollee's functional status, per the quality-measured specifications described in **Appendix Exhibit E.3**. The four conditions are shortness of breath, pain, emotional well-being, and spiritual concerns. Each line in the graph represents one hospice.

Because CMS expects hospices to perform 48-hour initial assessments on all MCCM enrollees, beneficiaries without a 48-hour initial assessment and/or comprehensive assessment within 48 hours of enrollment were eligible for inclusion in screening rate denominators but not numerators. Beneficiaries not assessed within 48 hours of enrollment were not counted as having been screened at that time.

We excluded 385 beneficiaries enrolled in MCCM for fewer than 7 days to allow time needed to document multiple types of screenings. To promote reliable comparisons of screening practices across hospices, we excluded an additional 120 enrollees of hospices with fewer than 10 MCCM enrollees. After these exclusions, 4,483 of the 4,988 beneficiaries were determined eligible and included in the analysis of 58 hospices.

Measure-eligibility criteria vary by screening type, as described in **Appendix Exhibit E.3**, which resulted in differences in the number of beneficiaries represented in each measure's screening rate.

Criteria excluded encounters where a beneficiary or caregiver provided a clinically valid reason for not responding. The subset of the 4,483 MCCM enrollees eligible for each screening is as follows.

- Shortness of breath: n = 4,061
- Pain: n = 4,187
- Emotional well-being: n = 3,984
- Religious concerns: n = 4,483.

### 5.3.2 *Symptom Management*

Starting January 1, 2018, hospices documented treatment of enrollee symptoms of shortness of breath, pain, emotional concerns, and bowel obstruction; and whether or not the treatment was successful. Enrollees included in the symptom management were identified using documented screenings administered during a 48-hour initial assessment<sup>99</sup> or a comprehensive assessment after a change in functional status. Therefore, an enrollee could have a symptom addressed more than once.

The analytic population for the symptom management measure is enrollees for whom hospices documented (1) shortness of breath, pain, emotional concern, or potential bowel obstruction; and (2) an action to treat symptoms at least once. A very high proportion of hospices indicated in the service and activity data that it was “too soon to tell” whether symptom management had an effect. We excluded these reports from symptom management measure denominators. The number of excluded “too soon to tell” reports ranged from 10 percent of enrollees for bowel regimens to 71 percent of enrollees for emotional concerns.

With the “too soon to tell” reports excluded, staff documented that symptom management was effective at least 92 percent of the time, as shown in **Exhibit 5.4**. Bowel regimens and shortness of breath have the highest success rates, suggesting that hospices alleviated symptoms for over 99 percent of enrollees needing this type of care.

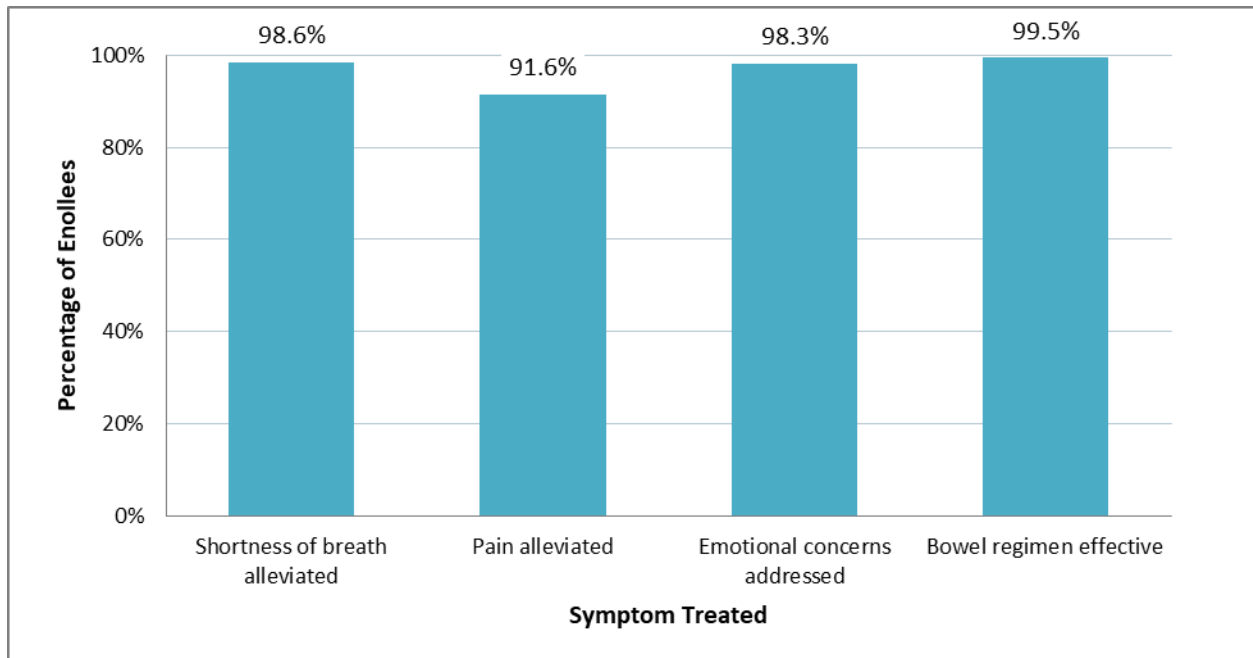
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<sup>99</sup> Any assessment within 48 hours is treated as an initial assessment (i.e., an early 5-day assessment).



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**Exhibit 5.4 MCCM Hospices Addressed the Vast Majority of Symptoms for Enrollees with Documented Screenings**



Sources: MCCM portal data, January 1, 2018-September 30, 2019.

Notes: This exhibit displays the percentage of measure-eligible beneficiaries enrolled in MCCM between January 1, 2018 and September 30, 2019, whose symptoms were addressed for each of the 4 conditions identified during status assessments that occurred within 48 hours of enrollment or after a change in the enrollee's functional status, per the specifications for quality measures described in **Appendix Exhibit E.3**. Symptoms identified during 5-day comprehensive assessments that occurred within 48 hours of enrollment were counted in measure denominators. The conditions are shortness of breath, pain, emotional, and bowel regimen concerns.

We excluded 254 beneficiaries enrolled for fewer than 7 days to allow for the time needed to document screenings, and identify and manage symptoms. The analysis included 3,165 of the 3,419 beneficiaries enrolled in MCCM between January 1, 2018 and September 30, 2019.

- Shortness of breath was identified and treated for 1,137 enrollees in 63 hospices. There was insufficient time to determine whether the treatment was successful for 199 (18%) of these enrollees. Of the 938 enrollees with sufficient time to determine whether the treatment was successful, symptoms were managed for 925 enrollees (99%).
- Pain was identified and treated for 1,846 enrollees in 68 hospices. There was insufficient time to determine whether the treatment was successful for 207 (11%) of these enrollees. Of the 1,639 enrollees with sufficient time to determine whether the treatment was successful, symptoms were managed for 1,501 enrollees (92%).
- Emotional concerns were identified and treated for 803 enrollees in 62 hospices. There was insufficient time to determine whether the treatment was successful for 566 (71%) of these enrollees. Of the 237 enrollees with sufficient time to determine whether the treatment was successful, symptoms were managed for 233 enrollees (98%).
- Need for a bowel regimen was identified and treated for 1,531 enrollees in 66 hospices. There was insufficient time to determine whether the treatment was successful for 143 (9%) of these enrollees. Of the 1,388 enrollees with sufficient time to determine whether the treatment was successful, symptoms were managed for 1,381 enrollees (nearly 100%).

## 5.4 DELIVERY OF PERSON- AND FAMILY-CENTERED CARE

MCCM strives to deliver person- and family-centered care through shared decision making, care coordination, and delivery of supportive services to promote quality of life.<sup>100</sup> In the sections below, we present the results of five analyses to inform whether and how MCCM hospices achieved these goals:

- Hospice promotion of shared decision making at the end of life in **Section 5.4.1**
- Caregiver-reported experiences of transitions to MHB in **Section 5.4.2**
- Caregiver-reported experiences of care in MCCM in **Section 5.4.3**
- Hospitalization of MCCM enrollees with do-not-hospitalize orders in **Section 5.4.4**
- Receipt of bereavement counseling in **Section 5.4.5**.

### 5.4.1 Shared Decision Making

Shared decision making is a process through which clinicians and patients work together to make decisions and develop care plans that reflect clinical evidence, and patient preferences and values.<sup>101</sup> Engaging MCCM enrollees in shared decision making is an important avenue for achieving the model's goal of promoting person- and family-centered care.

#### *MCCM Staff Perceptions of Shared Decision Making Around MHB Transitions*

Qualitative interview data collected by the evaluation team between 2017 and 2019 describe the perspectives of MCCM hospice staff, enrolled beneficiaries, and caregivers about the value of shared decision making and its implementation. We summarize these perspectives below.

- Hospice staff noted that the flexibility hospices had in designing MCCM activities to meet the model's goals of care coordination, patient-centered care, and shared decision making was influential in how hospices organized and delivered care.

#### STORIES FROM THE FIELD



#### Recognition of the contrasting nature of shared decision making in MCCM and MHB

"This program has been viewed as a godsend to a lot of patients I've seen because it allows patients to enter end of life care without making a dramatic decision to go to end of life."

—MCCM Program Director,  
Cohort 2 hospice

<sup>100</sup> See a description of the hallmarks of hospice care in **Appendix Section A.1**.

<sup>101</sup> Shared decision making is a care process widely promoted by CMS and other federal agencies for enhancing patient satisfaction, especially in situations where patients must make decisions in the absence of a clearly superior option. For more information, see [https://www.healthit.gov/sites/default/files/nlc\\_shared\\_decision\\_making\\_fact\\_sheet.pdf](https://www.healthit.gov/sites/default/files/nlc_shared_decision_making_fact_sheet.pdf).

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- Hospice staff shared that one of their roles in delivering MCCM services was to educate beneficiaries and their caregivers so that beneficiaries can make informed decisions about the care they receive through the model, the care received from their curative treatments, and the transition to MHB or to care at another facility.
- Most beneficiaries and caregivers noted that the support and education from MCCM staff were critical to the positive impact of the model on their lives.

### *Caregiver Perceptions of Shared Decision Making Around MHB Transitions*

The caregiver survey collected information about their experiences deciding whether and when to transition MCCM enrollees to MHB. The vast majority of caregivers of MCCM decedents who enrolled in MHB reported that the timing of MHB enrollment was appropriate and that the MCCM team involved them enough in the decision making process about enrollment in MHB. This was true for caregivers of both MCCM decedents and comparison beneficiaries (who never enrolled in the model). For MCCM decedents who transitioned to MHB, 9 out of 10 caregivers reported favorable experiences of shared decision making about enrollment in MHB, that the MCCM enrollee made the decision to elect MHB at the right time, and that the MCCM or hospice team did not pressure the MCCM enrollee to elect MHB.

There were no statistically significant differences between reports of shared decision making regarding enrollment in MHB from caregivers of MCCM decedents who transitioned to MHB, caregivers of comparison beneficiaries enrolled in MCCM hospices, or caregivers of comparison beneficiaries enrolled in matched hospices. We further describe these results in **Exhibit 5.5**.

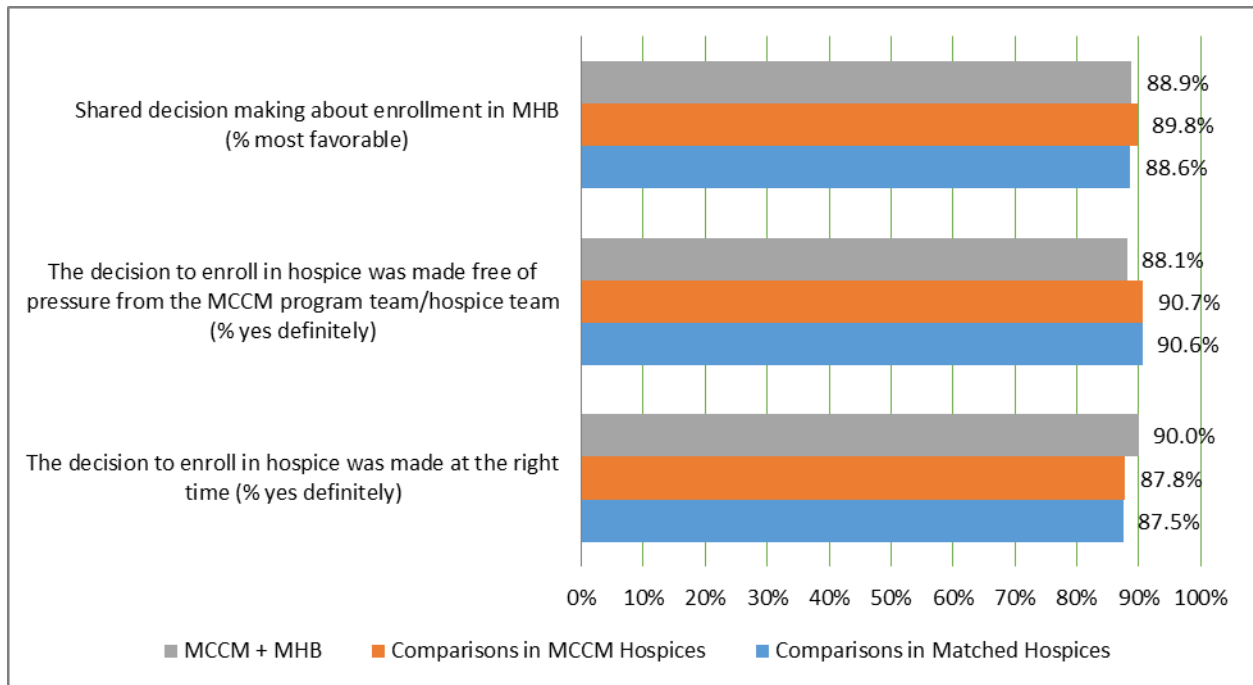
We found no statistically significant differences in our overall measure of shared decision making between cohort 1 and cohort 2 MCCM hospices. However, caregivers of MCCM decedents who transitioned to MHB from cohort 1 MCCM hospices were four percentage points more likely than those in cohort 2 hospices and caregivers of comparison beneficiaries in MCCM hospices to report that they felt pressure from the MCCM team to enroll in hospice (7 percent versus 5 percent and 4 percent, respectively).<sup>102</sup>

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<sup>102</sup> Further information on experiences with shared decision making around transition to MHB can be found in **Appendix Exhibit I.9** for enrollees who transitioned to MHB by cohort and in **Appendix Exhibit 1.10** for enrollees who remained in MCCM.

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**Exhibit 5.5 Caregivers Reported that Decisions to Enroll in Hospice Were Made at the Right Time and without Pressure**



Source: Caregiver Experience of Care Survey, October 2017-September 2019.

Note: This exhibit displays caregivers' responses for MCCM decedents and comparison beneficiaries who died between October 2017 and September 2019 in 71 MCCM hospices and 33 matched hospices for which there were completed surveys. The sample size for each respondent category differed: MCCM + MHB, n = 793; comparisons in MCCM hospices, n = 786; and comparisons in matched hospices, n = 696. Significance is reported from a linear regression model, including case-mix adjustors (response percentile, beneficiary age at death, payer for hospice care, first MCCM-eligible diagnosis, duration of final episode of hospice care, caregiver-respondent age and education, relationship of caregiver-respondent to deceased beneficiary, language, setting of care, hierarchical condition category score, count of chronic conditions), with MCCM + MHB as the reference group. We found no statistically significant differences.

MHB = Medicare hospice benefit.

### Advance Care Planning

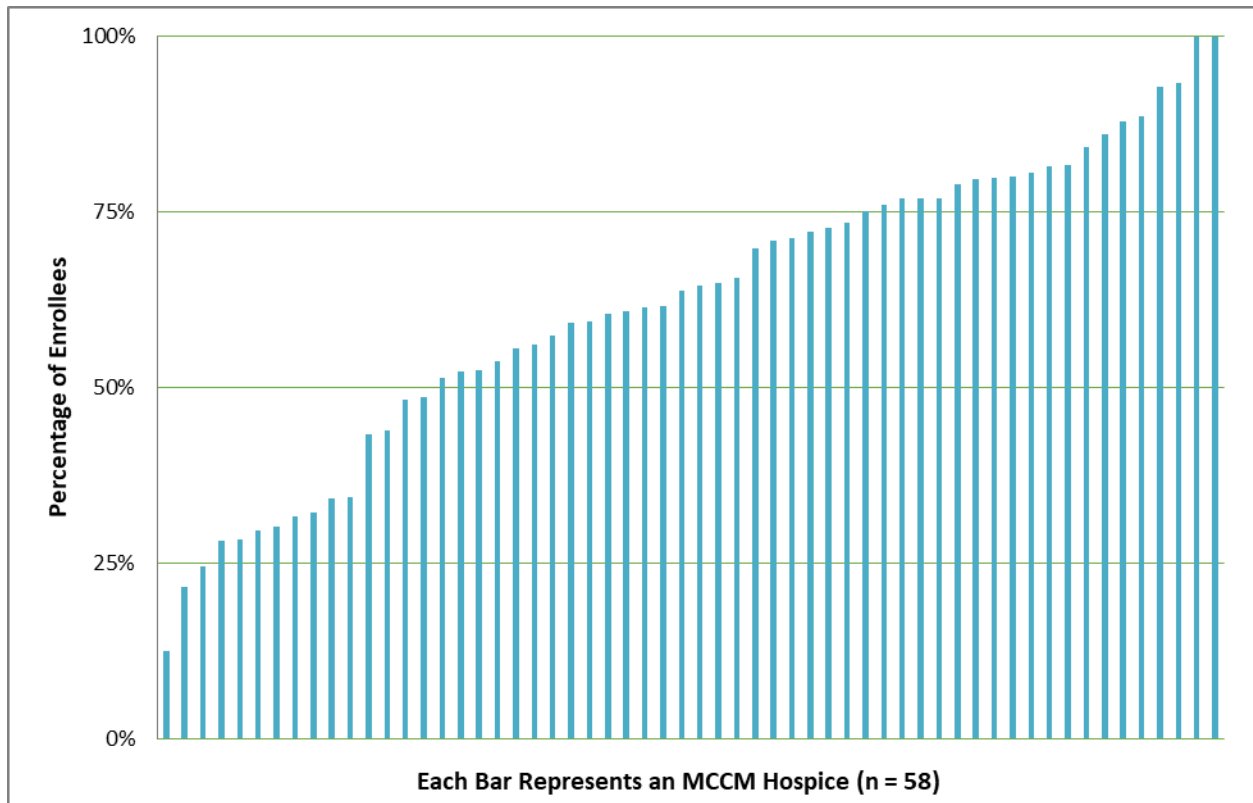
Having discussions about advance care planning is one indicator of whether MCCM hospices are engaging in shared decision making with enrolled beneficiaries. Discussions about advance care planning are voluntary and may include topics such as goals of care, treatment preferences, transition to hospice, and appointing a health care agent. Since medical events may leave an enrollee unable to make or express treatment decisions, advance care planning is important to help the seriously ill person and his or her caregiver state their wishes about future care interventions.

We analyzed the frequency with which advance care planning discussions were documented in the MCCM portal for 58 hospices that enrolled 10 or more beneficiaries. We considered seven days a reasonable minimum amount of time needed to conduct required assessments and establish rapport with new enrollees.

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The hospices discussed advance care plans with 68 percent of enrollees.<sup>103</sup> However, the hospices varied widely in the percentage of enrollees with whom they discussed advance care plans, as shown in **Exhibit 5.6**. For example, 4 hospices discussed advance care plans with more than 90 percent of enrollees, while 15 hospices conducted these discussions with less than 50 percent of enrollees. As discussed above, hospice staff noted that MCCM’s reporting requirements were burdensome, and this burden may have prevented some hospices from discussing advanced care planning or documenting discussions that did occur.

**Exhibit 5.6 Documented Advance Care Planning Discussions with MCCM Enrollees and Family Members Varied Widely Across Hospices**



Sources: MCCM portal data, January 1, 2016-September 30, 2019.

Note: This exhibit displays the percentage of beneficiaries enrolled in 58 MCCM hospices between January 1, 2016 and September 30, 2019 who discussed advance care planning with MCCM hospice staff. Each line in the graph represents one hospice. We excluded 385 beneficiaries enrolled for fewer than 7 days of enrollment to allow time needed to conduct required assessments and establish rapport with new enrollees. To reliably compare screening practices across hospices, we excluded an additional 120 enrollees of hospices with fewer than 10 MCCM enrollees. After these exclusions, 4,483 of the 4,988 beneficiaries were included in the analysis of 58 hospices.

<sup>103</sup> The proportion of enrollees participating in advance care planning discussions reported here is lower than the 93 percent reported in **Annual Report 2, Exhibit 4.5**. This difference reflects the entry of cohort 2 hospices into the model and the larger number of hospices with 10 or more beneficiaries enrolled for 7 or more days, and that cohort 2 hospices may have initiated advance care planning discussions late in the observation period.

#### **5.4.2 Caregiver Experiences of Enrollee Transitions to MHB**

##### **Reasons for Transitioning to MHB**

Responses to the caregiver survey suggest that MCCM enrollees transitioned to MHB when their care needs changed. Among the 642 caregivers who described one or more reasons why MCCM enrollees transitioned to MHB in response to open-ended questions on the caregiver survey, the most common reasons were:

- A general decline in the beneficiary's condition and/or disease progression (57 percent). This decline also was evident in caregiver comments, indicating that the enrollee and/or family members needed more support than MCCM provided, such as more frequent nursing visits, 24/7 care, help with repositioning and lifting the enrollee, and more help with activities of daily living (22 percent).
- The beneficiary needed more access to specific supplies such as a hospital bed and oxygen, or more comprehensive symptom management than what they perceived MCCM could provide (17 percent). Among caregivers who specified the need for supplies and symptom management, 72 percent indicated the need for additional help with pain control, including access to more pain medication.
- The treatment for their underlying condition(s) was no longer working (16 percent). Caregivers also noted that the beneficiary wanted to stop active treatment and/or was willing to accept that he or she was dying and ready for MHB (12 percent). Eight percent of caregivers specifically noted that it was the beneficiary's wish to transition to MHB.
- Physicians or other medical or service providers either directly recommended the switch to MHB or counseled the beneficiary in a way that influenced this decision (13 percent).

##### **Reasons for Not Transitioning to MHB**

Among the 116 caregivers of MCCM decedents who indicated why enrollees did not transition to MHB on the caregiver survey, the most common reasons were:

- Death came unexpectedly or too quickly to arrange for MHB (42 percent). In some cases, this was due to a sudden decline in the enrollee's condition; 9 percent indicated that the enrollee went to the hospital suddenly (e.g., due to a fall) and died there. In other cases, the enrollee and/or his or her caregiver did not consider enrolling in MHB until so late in the process that the hospice could not arrange care in time.
- The enrollee preferred not to enroll in MHB because:
  - The enrollee wanted to continue with his or her medical treatment or to continue to receive treatment from his or her medical doctor(s) or have the option to go to the hospital or emergency department (26 percent).
  - The enrollee and his or her family felt that the enrollee was doing well enough and that hospice "wasn't needed" or that it "wasn't time" for hospice care (22 percent).

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- The enrollee was not ready to “give up,” still had things to do, or could not accept death (17 percent).
- The enrollee and his or her family simply did not want to consider hospice care (11 percent).

### 5.4.3 Caregiver Experiences with MCCM Care

#### *Decedents Who Transitioned to MHB*

Overall, caregivers of enrollees who transitioned to MHB reported positive experiences with the care that enrollees received while in MCCM, specifically, survey respondents<sup>104</sup>:

- Rated the quality of life of enrollees as high during the time they were receiving care under the model (8.6 out of a possible 10). These ratings are similar to ratings from caregivers of eligible, but not enrolled, comparison beneficiaries (8.4 out of a possible 10 for caregivers of non-MCCM beneficiaries served by MCCM hospices and 8.5 out of a possible 10 for caregivers of non-MCCM beneficiaries served by matched hospices responding to our caregiver survey).
- Gave high ratings to MCCM (9.1 out of a possible 10), and 96 percent indicated that they would definitely or probably recommend the model to friends and family members. This suggests that caregivers see the value of the program to enrollees.
- Indicated that the MCCM team “always” (54 percent) or “usually” (31 percent) seemed informed and up-to-date about the enrollee’s treatment from non-MCCM providers, suggesting good information-sharing between MCCM hospices and other providers.
- Rated MCCM highly on an overall measure assessing the alignment of services with beneficiary preferences, with 88 percent of caregivers indicating that care was consistent with their wishes, as shown in **Exhibit 5.7**.<sup>105</sup> Results were similar for caregivers of comparison beneficiaries in MCCM and matched hospices.

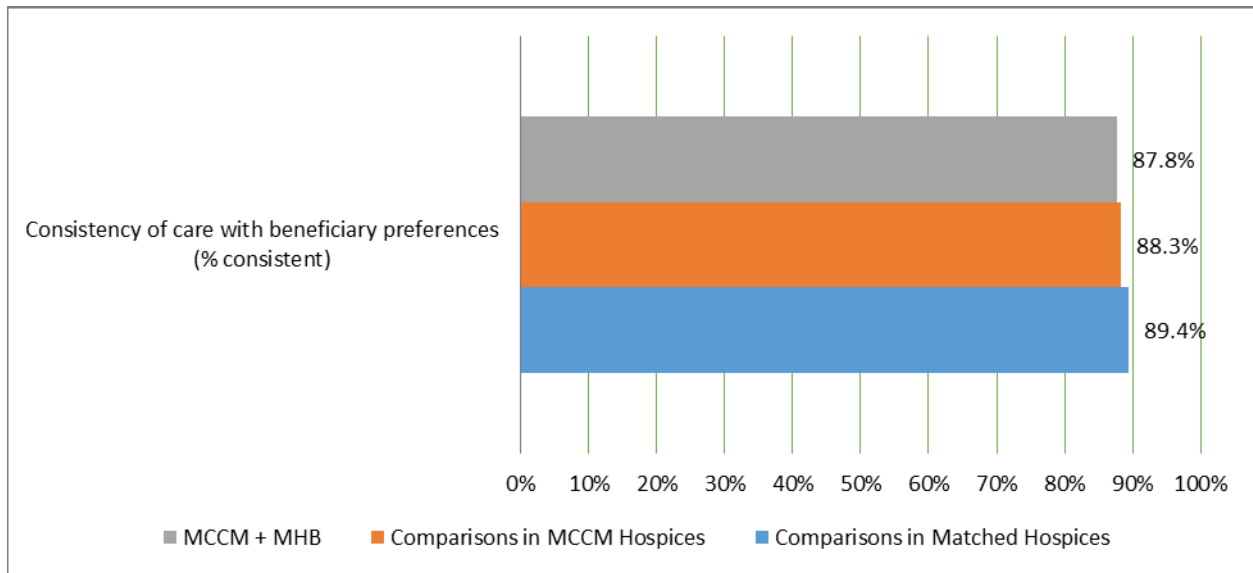
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<sup>104</sup> Further information on quality of life and experience of care for enrollees who transitioned to MHB by cohort can be found in **Appendix Exhibit I.12**.

<sup>105</sup> There was no statistically significant difference in the overall measure for consistency of care with beneficiary preferences between cohort 1 and cohort 2 MCCM hospices.

## 5. HOW DOES MCCM AFFECT THE QUALITY OF CARE EXPERIENCED BY MCCM ENROLLEES AND THEIR CAREGIVERS?

### Exhibit 5.7 Caregivers Reported Consistency of Care with Beneficiary Wishes



Source: Caregiver Experience of Care Survey, October 2017-September 2019.

Note: This exhibit displays responses for MCCM decedents and comparison beneficiaries who died between October 2017 and September 2019 in 71 MCCM hospices and 33 matched hospices for which there were completed surveys. The sample size for each respondent category differed: MCCM + MHB (n = 793); comparisons in MCCM hospices (n = 786); and comparisons in matched hospices (n = 696). We report significance using a linear regression model, including case-mix adjusters [response percentile, beneficiary age at death, payer for hospice care (i.e., Medicare in combination with other payers), first MCCM-eligible diagnosis, duration of final episode of hospice care, caregiver-respondent age and education, relationship of caregiver-respondent to deceased beneficiary, language, setting of care, hierarchical condition category score, count of chronic conditions], with MCCM + MHB enrollees as the reference group. We found no statistically significant differences.

### Decedents Who Did Not Transition to MHB

Caregivers of decedents who did not transition to MHB had the least-satisfactory experiences with MCCM. Caregivers of MCCM enrollees who remained in MCCM until they died rated the model an average of 8.4 out of 10, and 95 percent reported that they would definitely or probably recommend MCCM to their friends and family. The strongest aspects of the model reported by these caregivers were the respectfulness of care and the consistency of care with enrollees' wishes.<sup>106</sup> Among the 110 caregivers who provided a response to the final open-ended question on the caregiver survey:

- Eighty-five percent provided positive feedback about MCCM (e.g., "Wonderful program," "It was very helpful to our family")
- Thirty-four percent praised the respect and care that program staff showed to beneficiaries

<sup>106</sup> Further information on the quality of life and experience of care for enrollees who remained in MCCM can be found in **Appendix Exhibit I.13**.



## 5. HOW DOES MCCM AFFECT THE QUALITY OF CARE EXPERIENCED BY MCCM ENROLLEES AND THEIR CAREGIVERS?

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- Fifteen percent noted the emotional and spiritual support provided to beneficiaries and their family members
- Fifteen percent noted positive communication, particularly in answering questions and providing thorough explanations to caregivers.

In contrast, caregivers of these enrollees reported that MCCM had substantial room for improvement with regard to timeliness of care, provision of help with pain and other symptoms, and training families to care for enrollees at home, with:

- Sixty percent of caregivers reported that they “always” received timely care.
- Fifty-three percent reported that they “always” or “definitely” received needed help for pain and other symptoms.
- Fifty-six percent reported that they “definitely” got the training they needed to care for the enrollee at home.
- Among the 110 caregivers who provided a response to the final, open-ended question, 42 provided negative feedback about the model. Unlike the positive feedback received, the negative feedback was almost always very specific:
  - One-third of the negative comments included descriptions of delays in receiving returned calls and visits, or delays between reporting a death and the arrival of an MCCM staff member
  - Nearly one-quarter (24 percent) described misunderstandings and concerns regarding the level of support that could be expected from the model.

Fewer than two-thirds (62 percent) of caregivers of MCCM decedents who remained in the model until they died indicated that the MCCM team either “always” or “usually” seemed informed and up-to-date about the enrollee’s treatment from non-MCCM providers. Among caregivers providing negative feedback about MCCM, 45 percent noted concerns about communication, including explaining the model and services, conveying when and who would arrive to care for the enrollee, and receiving information on what to expect when the enrollee died.

Although there is no comparison group against which to benchmark these findings,<sup>107</sup> across all aspects of care assessed, reported care experiences were better for beneficiaries who

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<sup>107</sup> Results for this group are displayed separately from MHB groups because MCCM enrollees receive fewer services than those enrolled in MHB, MCCM care may be delivered by a different care team than MHB, and the version of the survey for caregivers of MCCM enrollees who did not transition to MHB uses slightly different wording for most questions (e.g., inquiring about the special program team rather than the hospice team, and about “discussions” regarding enrollment in hospice rather than the actual decision to enroll in hospice).

enrolled in MCCM for longer than 30 days than they were for those enrolled for 30 days or less before they died. This suggests that those whose conditions took a sudden turn for the worse, or who did not have sufficient time to enroll in MHB before death, may not have been able to benefit from the full range of services offered by MCCM.

### ***5.4.4 Hospitalization of MCCM Enrollees with Do-Not-Hospitalize Orders***

In general, a person with a documented do-not-hospitalize order should not be hospitalized. To investigate how frequently this situation occurs, we compared the dates of the do-not-hospitalize orders recorded in the MCCM portal with the dates of hospitalizations.

We identified 523 enrollees<sup>108</sup> with a do-not-hospitalize order recorded in the portal. *Of those, just 36 (7 percent) were hospitalized at least once before discharge from the model, despite having a do-not-hospitalize order.*

### ***5.4.5 Bereavement Counseling***

Bereavement counseling is a type of emotional support that hospices provide, which may improve the quality of life for family members and others who have an emotional bond to their dying or deceased loved ones.<sup>109</sup> Very few bereavement services were recorded in the MCCM portal<sup>110</sup>: 321 encounters with 206 enrollees (4 percent). This number suggests that MCCM hospices may not have systematically reported delivery of bereavement counseling or provided bereavement services to the majority of MCCM enrollees who transitioned to MHB.

Encounters involving bereavement counseling recorded in the portal show that social workers (43 percent) provide most bereavement services, followed by bereavement counselors (15 percent) and care coordinators (15 percent), chaplains (14 percent), and nurses (11 percent); see **Exhibit 5.8**.

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<sup>108</sup> We identified 523 enrollees out of 3,419 enrolled by 89 hospices between January 1, 2018<sup>108</sup> and September 30, 2019.

<sup>109</sup> Makaroun LK, Teno JM, Freedman VA, Kasper JD, Gozalo P, Mor V. (2018). Late transitions and bereaved family member perceptions of quality of end-of-life care. *J Am Geriatr Soc*. Epub 2018/07/05. doi: 10.1111/jgs.15455. PubMed PMID: 29972587.

<sup>110</sup> Starting January 1, 2018, hospices could specify that they provided a bereavement service in the MCCM portal. Before January 1, 2018, hospices could only report that the provider was a bereavement counselor, who reported providing services such as active listening, education, or unspecified counseling.

## 5. HOW DOES MCCM AFFECT THE QUALITY OF CARE EXPERIENCED BY MCCM ENROLLEES AND THEIR CAREGIVERS?

### **Exhibit 5.8 Social Workers Provided the Majority of Bereavement Services**

Discipline	Number	Percent of Services
Social worker	138	43%
Bereavement counselor	49	15%
Care coordinator	49	15%
Chaplain	46	14%
Nurse	35	11%
Aide	3	1%
Other spiritual counselor	1	0%
<b>Total</b>	<b>321</b>	<b>100%</b>

Sources: MCCM portal data, January 1, 2018-September 30, 2019.

Note: This exhibit shows which disciplines provided bereavement services in all 321 encounters in 45 hospices that recorded encounters between January 1, 2018 and September 30, 2019. No exclusion criteria are applied. Totals may not sum due to rounding.

During qualitative interviews, most hospices shared that they offered bereavement counseling, which they defined as the provision of emotional support as requested by enrollees and families before death, and grief counseling for families after death.

Hospices reported that social workers, chaplains, and other support providers that worked on the MCCM and/or MHB care teams offered bereavement counseling. A cohort 1 hospice noted that their social worker fulfills multiple roles; in addition to her role as a social worker, she provides admissions, data management, and bereavement support.

Bereavement services were provided in-person, over the phone, or through mailings and other educational materials. While they offered bereavement counseling, most hospices that we interviewed acknowledged that very few beneficiaries received these services. As a cohort 2 hospice noted, "Beneficiaries rarely request the services from the bereavement coordinator or the chaplain; the hospice staff believes this is because MCCM enrollees are often earlier in the disease process [compared to (MHB) beneficiaries] and may not be ready to discuss spiritual care."

While many hospices noted that their MCCM beneficiaries did not receive bereavement counseling, a few hospices stated that there was a positive impact when beneficiaries received these services. A cohort 2 hospice stated, "Staff noticed better outcomes in bereavement among beneficiaries who discussed end-of-life services early in their care, and in how beneficiaries and their families view death and dying."

## 5.5 CONCLUSION

MCCM aims to promote high-quality, person- and family-centered care for seriously ill and dying enrollees. Understanding beneficiary and caregiver experiences with the model is important in assessing the value and quality of the model, especially because people with terminal illnesses differ in their preferences for life-prolonging care and in their desire for shared decision making.

We found that many hospices employ best practices. For example, MCCM hospices documented both 48-hour initial and comprehensive assessments to 63 percent of enrollees within 5 days of enrollment. More than 50 percent of hospices documented having assessed enrollees an average of 2 or more times a month, meeting or exceeding the expectation of once every 15 days. Hospices documented having screened the majority of enrollees for symptoms. Rates of documented symptom relief among those screened exceeded 90 percent. Hospice staff perceived shared decision making as important and a way to promote the effectiveness of MCCM care.

However, there is room for improvement. Hospices documented only 1 of the 2 types of assessments during the first 5 days of enrollment for 28 percent of enrollees and no time-compliant assessments for 9 percent of enrollees. Administering both types of assessments sequentially soon after enrollment may be logistically challenging, because MCCM enrollees may be continuing to receive life-prolonging treatments or re-adjusting to life at home after a hospital discharge. However, conducting the two types of assessments early after enrollment allows hospices to elicit and incorporate interdisciplinary perspectives into care plans in a way that is timely and effective.

Advance care plan discussions promote patient-centered care and provide a sound foundation for effective care coordination. Hospices discussed advance care plans with 7 in 10 enrollees, on average. The percentage of enrollees with a documented advance care planning discussion varied widely across hospices. Some hospices discussed advance care plans with 90 percent or more of enrollees. Others discussed advance care plans with less than one-quarter of enrollees.

Most caregivers reported that enrollees benefited from MCCM. However, caregivers of enrollees who did not transition to MHB held less-positive views of the model, on average, in terms of receiving timely care, help with pain, and training to care for enrollees at home. Qualitative interview data suggested that some hospice staff perceived that bereavement counseling provides emotional relief to grieving enrollees, caregivers, and others with whom they share emotional attachments. However, encounter data suggest that delivery of bereavement services was rare and performed by a variety of staff with different types of disciplinary training.

## 6. Summary and Implications



MCCM tests whether delivering selected supportive services through hospices to beneficiaries who continue to receive treatment for their terminal illnesses through fee-for-service Medicare can increase access to supportive services, improve quality of care, and reduce Medicare expenditures. In this section, we discuss findings presented in the third annual report of the MCCM evaluation and present conclusions.

**MCCM generated substantial reductions in total Medicare expenditures.** Our findings suggest that MCCM reduced Medicare expenditures by approximately \$26.0 million for 3,603 enrollees between January 2016 and September 30, 2019. CMS paid \$4.6 million in per-beneficiary, per-month payments to MCCM hospices for the same beneficiaries. The resulting net savings to Medicare was \$21.5 million in total, or a reduction of 25 percent (\$5,962 per decedent). A 36-percent reduction in inpatient admissions (673 per 1,000 decedents) was a key driver of estimated savings during the last 180 days of life.

**MCCM decedents who transitioned to MHB were less costly.** MCCM decedents were 20 percentage points more likely than comparison decedents to enroll in MHB, representing a one-third increase relative to the baseline. MCCM decedents who transitioned to MHB were enrolled in MHB an average of one week longer than decedents not enrolled in the model. Virtually all of the estimated impact of MCCM on spending during the last 30 days of life was attributable to enrolled decedents who transitioned to MHB. Estimated reductions in expenditures during the last 30 days of life were \$9,268 for the 84-percent subgroup of decedents who transitioned to MHB and \$346 for those who remained enrolled in the model. These findings may reduce concerns among policy makers that providing life-prolonging treatments concurrently with supportive services would increase costs. Finally, the revenue generated by additional MHB enrollments may have helped hospices to offset the costs of operating the model that were not covered by the \$400 per-beneficiary, per-month MCCM payments.

**Hospitals may have been a key source of eligible referrals to MCCM.** We did not directly observe referrals to the model. Information gathered from an analysis of claims data, a survey of hospices, and qualitative interviews suggested that hospitals were a key source of eligible referrals to MCCM. Over 80 percent of hospices surveyed in 2018 reported having affiliations with hospitals. A similar percentage reported at least some access to hospital medical records. Over 60 percent of MCCM decedents experienced at least 1 hospital encounter during the 90 days before enrollment in the form of an emergency department visit, inpatient admission, or observational stay. An ability to access medical

records, directly or through referring providers, may have helped participating hospices market MCCM to eligible beneficiaries, and avoid disappointment and confusion when hospices found beneficiaries ineligible post-referral.

**MCCM did not affect several key MHB outcomes.** MCCM serves Medicare beneficiaries who were not willing to forgo life-prolonging treatments for traditional hospice care. As such, it is reasonable to expect the model to have led to later transitions to MHB and to disenrollments from MHB in order to resume curative treatment. However, MCCM did not appear to affect the proportion of decedents who transitioned to MHB in the final 48 hours of life. With the administrative data available to the evaluation, it was not possible to determine whether MHB outcomes of MCCM enrollees reflect preferences for life-prolonging treatments and/or selective efforts to transition enrollees most likely to have favorable outcomes to MHB.

**Roughly 16 percent of decedents appeared to be ineligible for MCCM on their enrollment dates based on administratively verifiable criteria.** MCCM required enrollees to have had a hospital encounter, had three physician visits, been enrolled in Medicare Parts A and B as a primary payer, and not been enrolled in a Medicare Advantage plan during the 12 months before enrollment. These criteria, especially those related to Medicare coverage, contributed to the evaluability of the model by ensuring that all utilization and expenditures were documented in the claims data. There are several reasons why eligible enrollees could appear ineligible in the administrative data. First, hospices may have recorded enrollee names and identification numbers in the MCCM portal in ways that we could not be accurately link with the claims and Medicare enrollment data used by the evaluation team. Second, the real-time data used by Medicare administrative contractors to assess eligibility at the time of enrollment may have been less complete and accurate than the retrospective data used for the evaluation. A sensitivity analysis suggested that the inclusion of the subgroup of administratively ineligible beneficiaries did not affect estimated cost savings.

**MCCM hospices found it difficult to find beneficiaries eligible for the model.** While MCCM's eligibility criteria promoted the ability to conduct a valid evaluation of the model, they posed challenges for participating hospices. Between January 1, 2016 and September 30, 2019, only 45 percent of beneficiaries referred to MCCM hospices were eligible for the model. During interviews, many hospices told us that it was difficult to find eligible Medicare beneficiaries and that the stringency of eligibility requirements contributed to decisions to withdraw from the model. These challenges may help to explain why a high proportion of hospices that remained in the model were affiliated with organizations, such as hospitals, that maintain medical record systems that are useful for verifying the eligibility of referral candidates. Providing resources to hospices to assist them in verifying the eligibility of candidate enrollees could encourage a broader participation of hospices in the model and their ability to serve more enrollees.

**Hospices did not document enrollee status assessments as frequently as expected.**

CMS expects MCCM hospices to assess enrollees twice during the 5 days after enrollment and then every 15 days thereafter. Hospices use assessment data to inform the development of care plans, to meet enrollees' immediate and evolving needs, and to promote engagement in shared decision making. We found that the number and timeliness of status assessments documented in the MCCM portal varied widely across enrollees and across hospices. MCCM hospices documented both a 48-hour initial assessment and a comprehensive assessment within 5 days of enrollment for two-thirds of enrollees. Hospices documented timely performance of 15-day comprehensive assessment for only half of enrollees.

**Two factors may explain lower-than-expected rates of documented assessments.**

First, hospices indicated during qualitative interviews that the reporting required by MCCM was burdensome and that the MCCM portal was difficult to use. (Thus, it is possible that MCCM hospices administered more assessments and screenings than were documented in the portal.) Second, unlike MHB enrollees, many MCCM enrollees may have been receiving medical treatment for terminal conditions, which may have complicated the scheduling of separate 48-hour and 5-day assessments. Improved understanding of how ongoing receipt of curative treatment affects the delivery of palliative care will help to inform the benefits of regulatory waivers for future concurrent care models.

**While most caregivers were highly satisfied with MCCM, satisfaction was lower among caregivers of enrollees who did not transition to MHB.** This finding suggests that participating hospices may have struggled to adapt care practices to the logistical, clinical, and emotional needs of beneficiaries who continued to receive life-prolonging treatments after enrollment. Improved understanding of how ongoing receipt of curative treatment affects delivery of supportive services will help to inform the design of future concurrent care models to ensure that the needs of enrollees who prefer not to transition to MHB are well met.

## 5.6 CONCLUSION

In sum, the findings in this report suggest that transformation of the delivery of traditional hospice services to address the needs and preferences of beneficiaries who wish to continue to receive life-prolonging treatments take time but can lead to meaningful outcomes. While half of enrollments were concentrated in only nine hospices, the magnitude of cost savings so far, and high satisfaction among MCCM enrollees who transitioned to MHB, demonstrate that MCCM and similar models can make a positive difference in the quality and cost of end-of-life care. More precise results are expected in the coming year as MCCM continues, further improvements are made, and evaluation methods are refined.