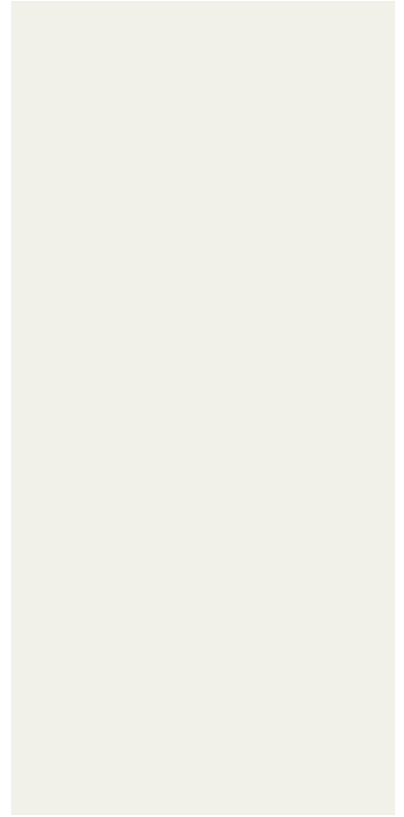


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**Hospice Readmission, Hospitalization, and Hospital Death  
Among Patients Discharged Alive from Hospice**



Abstract (continued)

burdensome transitions, such as hospice discharge planning that is incentivized, systematically applied, and tailored to needs of patients at greater risk for burdensome transitions.

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Live discharge from hospice—experienced by 15% of Medicare hospice users in 2020<sup>1</sup>—occurs when an individual leaves hospice before death. Reasons for live discharge include unplanned hospitalization, seeking curative treatment for a terminal condition, transferring hospice services, or condition stabilization that makes someone ineligible for hospice. Live discharge has policy, patient, and caregiver consequences.<sup>2-4</sup> It is typically disruptive, resulting in the loss of clinical and support services during the critical end-of-life period.<sup>2-4</sup> Nearly half of hospice patients (42%) die within 6 months of live discharge,<sup>5</sup> suggesting that uninterrupted hospice care may be appropriate for many individuals who were discharged alive.

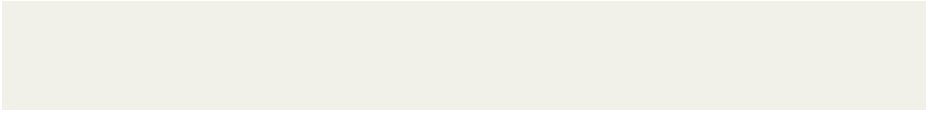
The Centers for Medicare & Medicaid Services (CMS) are concerned about the number of hospice live discharges and potentially negative consequences for patient quality of life and death. In 2021, CMS added 4 measures related to hospice live discharge to their 10-item Hospice Care Index for hospice care quality.<sup>6</sup> These 4 measures include early (ie,  $\leq 7$  days of hospice enrollment) and late (ie,  $>180$  days of hospice enrollment) live discharges and 2 types of posthospice burdensome discharge transition experiences.<sup>6</sup> Type 1 burdensome transitions focus on individuals who are admitted to a hospital within 2 days following hospice live discharge, and then readmitted to hospice within 2 days of hospital discharge.<sup>6</sup> Type 2 burdensome transitions identify the number of hospital admissions within 2 days of hospice live discharge.

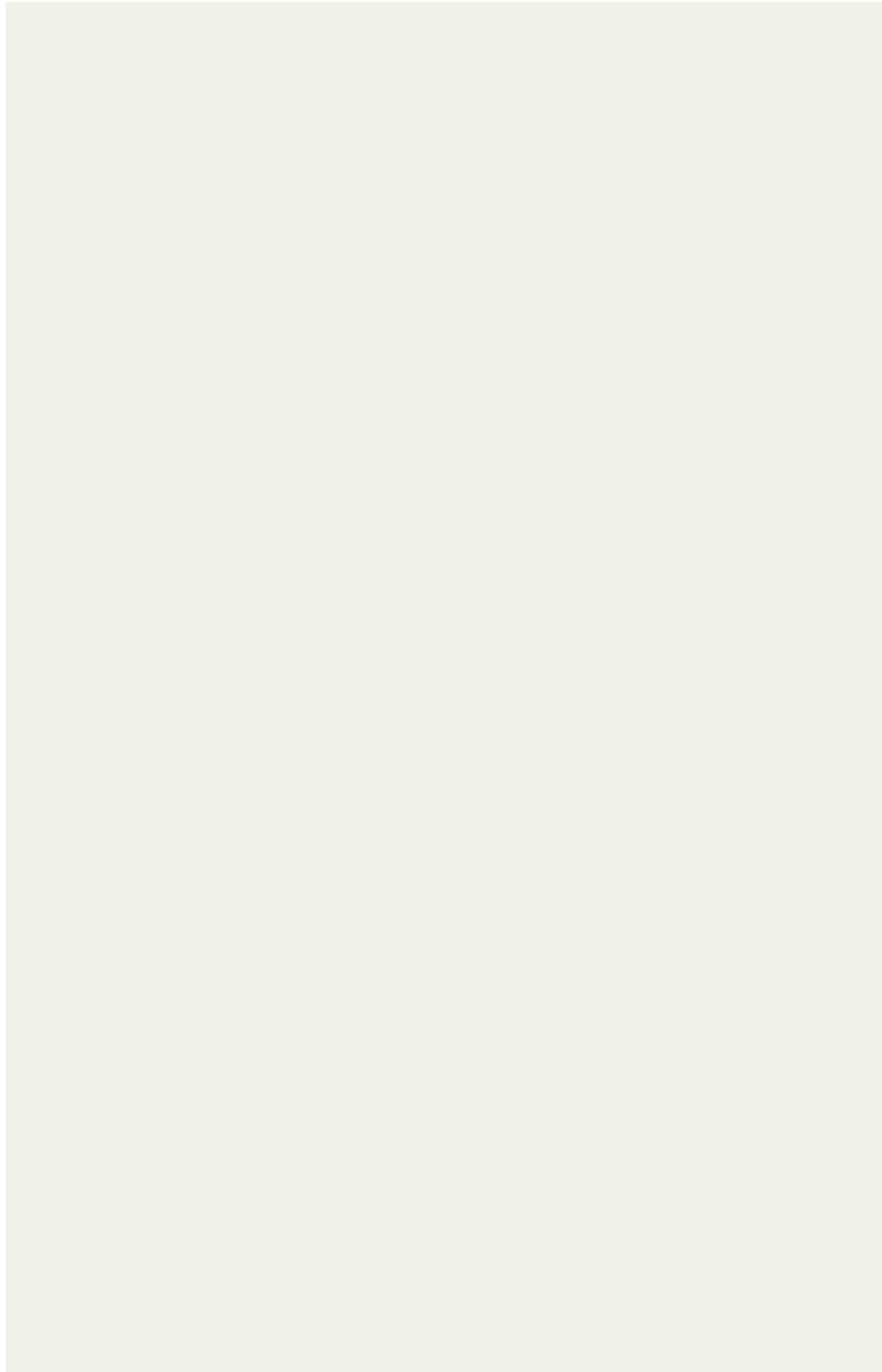
followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guideline.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

We conducted a retrospective cohort study using a 20% random sample of 2014 to 2019 Medicare fee-for-service (FFS) beneficiaries. Medicare is the federally funded health insurance program in the US for individuals aged 65 years and older and for eligible individuals with end-stage kidney disease and disabilities.<sup>21-23</sup> We used Medicare hospice claims files to identify hospice live discharges using discharge status codes.<sup>1,24</sup> To exclude most hospice stays that might be readmissions following a hospice discharge in 2013, we implemented a washout period of the first 90 days of 2014 to only include patients who newly started their hospice benefits in the study period.<sup>25</sup> The analysis included 115 072 patients who were aged 65 years or older when admitted to hospice, continuously enrolled







(aOR, 0.63; 95% CI, 0.59-0.68,  $P < .001$ ), and receiving inpatient respite (aOR, 0.78; 95% CI, 0.70-0.87;  $P$

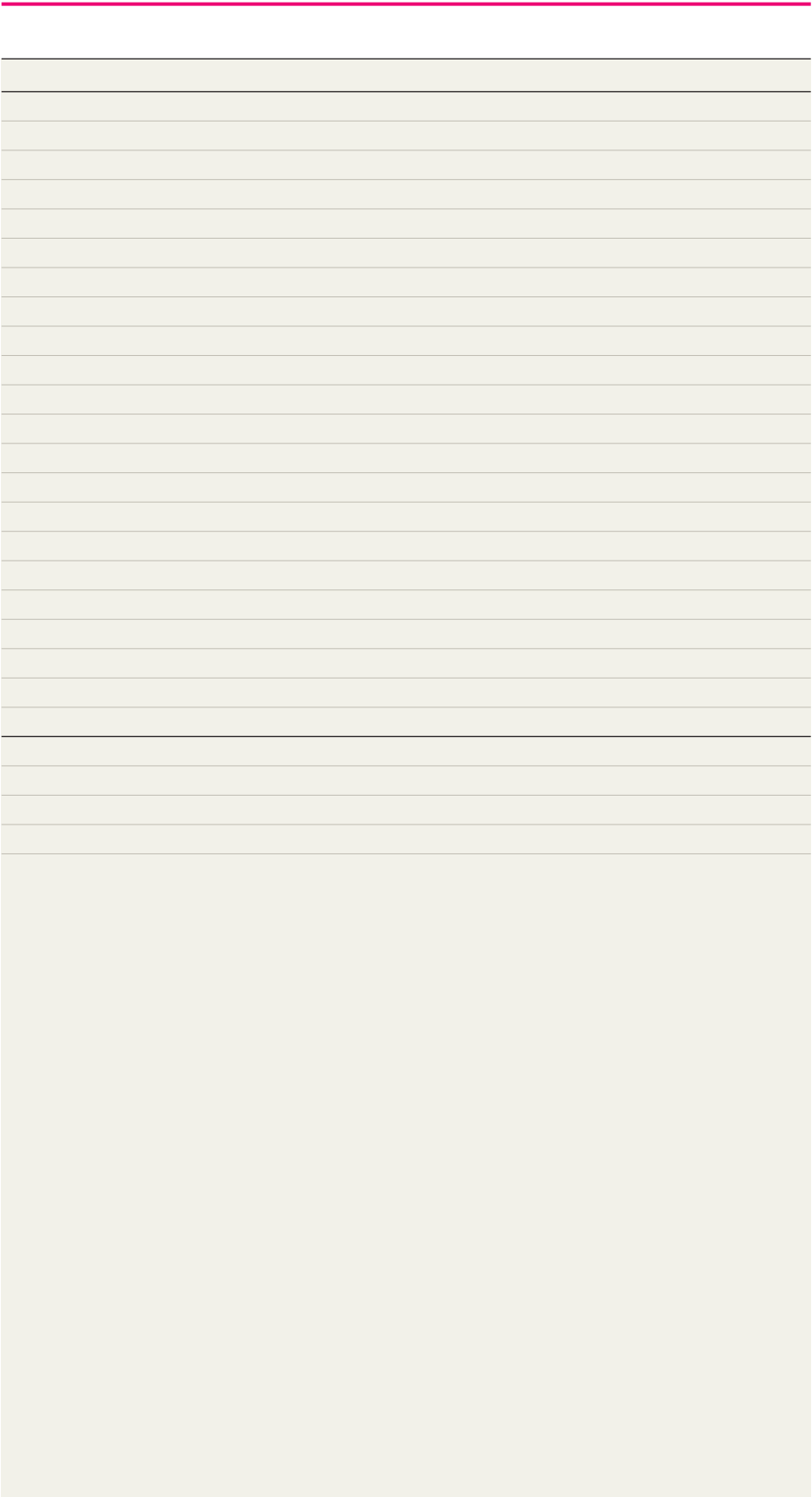


**Table 2. Logistic Regression Analysis to Identify Factors Associated With Burdensome Transition Type 1 in Hospice Patients Discharged Alive<sup>a</sup>**

Factor	aOR (95% CI)	P value
Patient sociodemographic characteristics		
Age		
65-74	1.00 (reference)	A
75-84	0.96 (0.90-1.02)	.20
≥85	0.86 (0.81-0.92)	<.001
Sex		
Male	1.06 (0.93-1.20)	.37
Female	1.47 (1.36-1.58)	<.001
Race		
White	1.00 (reference)	A
Black	0.89 (0.78-1.01)	.06
Hispanic		
Yes	1.00 (reference)	A
No		
Marital status		
Married	1.00 (reference)	A
Widowed		
Divorced		
Single		
Partnered		
Other		
Insurance		
Medicaid		
Medicare		
Private		
Other		
Education		
High school or less		
Some college		
College graduate		
Postgraduate		
Other		







**Table 3. Logistic Regression Analysis to Identify Factors Associated With Burdensome Transition Type 2 in Hospice Patients Discharged Alive<sup>a</sup> (continued)**

Factor	aOR (95% CI)	P value
≤ 7	1.71 (1.53-1.90)	<.001
8-179	1	A
≥ 180	0.60 (0.52-0.69)	<.001
D		
C	1	A
	2.12 (1.51-2.99)	<.001
	4.98 (4.00-6.19)	<.001
	3.21 (2.80-3.67)	<.001
	9.59 (7.93-11.60)	<.001
	1.79 (0.90-3.54)	.08
AC	0.99 (0.87-1.12)	.86
6	1.27 (1.15-1.39)	<.001
Organizational setting characteristics		
4		
1 ( )	1	A
2	0.95 (0.79-1.15)	.62
3	1.01 (0.84-1.20)	.98
4	1.11 (0.93-1.32)	.23
5 ( )	0.94 (0.79-1.11)	.45
4		
	1	A
	1.32 (1.15-1.52)	<.001
	1.38 (1.01-1.87)	.04
	1.17 (0.98-1.38)	.08

Abbreviations: ACP, advance care planning; ADRD, Alzheimer disease and related dementias; aOR, adjusted odds ratios; CMS, Centers for Medicare &

spending<sup>34</sup> due to restrictive eligibility criteria and limited availability. Our findings suggest they may be effective in supporting patients with complicated needs requiring temporary hospitalization. Increasing availability of inpatient respite and GIP within the hospice benefit may reduce burdensome transitions after live discharge. The lack of association between type of hospice care and type 2 transitions may relate to insufficient power to detect associations, as type 2 transitions, inpatient respite, and GIP occurred infrequently in our sample. Individuals receiving hospice in assisted living or a hospice residence had lower odds of hospitalization and hospital death but not hospitalization and hospice readmission. There may be support structures and professional medical care in these settings that prevent individuals from being hospitalized and dying in hospital after live discharge. Shorter hospice stays were associated with higher odds of burdensome transitions. Shorter stays likely reflect late referrals and do not allow the hospice team to put an effective care plan in place, potentially leading to additional transitions if live discharge occurs.

Although we could not assess the ongoing nature of goals-of-care planning, having a palliative care consultation in the months leading up to hospice admission was associated with higher odds of burdensome transitions. We would expect that palliative care would facilitate a timely transition into hospice<sup>42</sup> and be associated with lower likelihood of hospital death.<sup>43</sup> However, we found that palliative care encounters were associated with higher odds of burdensome transitions after live discharge. Possibly, palliative care consultations are sought for complex patients for whom hospice provides stability, but complications reoccur following live discharge, increasing risk for burdensome transition.

At the organizational level, individuals who received care from for-profit hospices had higher odds of a burdensome transition, possibly signaling a reverberating impact of poorer quality care documented in for-profit hospice agencies.<sup>16,25,44</sup> Financial incentives to discharge patients alive to



be detected for this group. Although hospitalization during a longer period after live discharge may be more common, we aligned our analysis with the CMS definition, given the policy relevance. Moreover, hospital admission within 2 days of live discharge is highly disruptive for patients and families and therefore important to consider. Third, we are unable to capture process-related measures, key in understanding and addressing adverse health outcomes. We used proxy measures to represent these processes (eg, advance care planning, palliative care consultations). Fourth, other factors not captured in claims data, such as family burden and resources and availability of paid and unpaid caregivers, may be protective against burdensome transitions. We have attempted to address potential bias by examining a comprehensive set of factors that may explain burdensome transitions.

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This cohort study found that burdensome transitions following live discharge from hospice were associated with patient, health care provision, and organizational setting characteristics that require responses in clinical practice, policy, and research. In clinical practice, increased attention to the

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See the [Supplement](#).

Manyao Zhang, MS (Department of Population Health Sciences, Weill Cornell Medicine) assisted in analyzing Medicare claims data. Ms Zhang was not compensated for this work.

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