NC RHRP

Findings Brief
NC Rural Health Research Program

September 2017

Rural-Urban Variations in Medicare Live Discharge Patterns from Hospice, 2012-2013

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OVERVIEW

For the last decade-and-a-half, the proportion of patients discharged from the Medicare hospice program prior to death – known as a "live discharge" – has largely increased across the country with significant hospice-level geographic variations.[1,2] Created in 1983, the Medicare hospice benefit was designed for terminally ill Medicare beneficiaries expected to live six or fewer months, as certified by two physicians. The hospice program requires beneficiaries to opt out of traditional services covered under Medicare, but hospice enrollees may still be able to receive support for illnesses unrelated to their terminal conditions.

Live discharges are important to study because they can reflect both good and bad quality care and stem from a confluence of interpersonal, intrapersonal, organizational and environmental factors.[3] Patient-preference or needs-driven live discharges reflect a service delivery system that appropriately caters to patients, while live discharges motivated by hospice-level profit margins or an inability of hospice providers to handle escalating patient needs at the end of life may reflect poor quality.[3,4] Due to variations in live discharge rates at the hospice and market level, the Medicare Payment Advisory Commission (MedPAC) has expressed concern that some hospices may be motivated by cost and financial factors rather than patient needs.[2] This trend could be particularly harmful to patients because live discharges can create discontinuities in care and disrupt existing patient/provider relationships,[1,2] and relative to those who remain in hospice until death, those discharged from hospice alive have increased emergency department, inpatient care, and intensive care unit use.[5-8]

KEY FINDINGS

- In 2012-2013, 21.5 percent of freestanding hospices were located in rural areas.
- Rural hospices were more likely to be: located in the South Census region (63.4 percent); non-chain-owned (56.8 percent); or for-profit (58.3 percent) in 2012-2013.
- The average rate of live discharge for rural hospices was 16.0 percent, compared to 12.9 percent for hospices located in urban areas.
- Across all types of hospices, rural for-profit hospices in the South Census region had the highest average rate of live discharge (22.8 percent).

In fiscal year 2013, state-level live discharge rates ranged from 11.6 percent in Kentucky to 37.0 percent in Mississippi.[9] These differences in live discharge rates suggest that regional – rather than patient-based – factors may influence some live discharges. While regional variation in patient preferences and demographics may be one cause, other factors may be driving some live discharges from hospice, such as state and federal regulations, local practice patterns, market structure, and patient choice.

Despite these clear geographic variations in live discharge rates and known rural-urban disparities (e.g., patients of rural hospices have higher satisfaction), previous studies have not explored differences in live discharging patterns between rural and urban areas in depth.[10] Accordingly, this brief first provides an overview of the geographic distribution of "freestanding" (i.e., rather than those co-located in a hospital, home health agency, or skilled nursing facility) rural and urban hospices and, second, explores live discharge rates for hospices operating in rural versus urban areas. We merged data from the 2012-2013 Medicare claims (Provider of Services file, the Hospice Research Identifiable File, and the Master Beneficiary Summary File). Due to data use agreement restrictions, hospices with 10 or fewer observed discharges (either alive or deceased) were excluded. Rural-urban status (i.e., metro versus non-metro) was determined at the county level based on whether the hospice was located in a Core-Based Statistical Area.

RESULTS

Of the 4,548 hospice-years with valid data during the 2012-2013 calendar years, 978 were located in rural areas (483 rural hospices in 2012 and 495 in 2013). As shown in Table 1, a majority of rural freestanding facilities were located in the South Census region, not owned by chains, and for-profit; differences with urban hospices were all statistically

significant across these variables ($p < .05$). Compared to urban hospices, facilities in rural areas had a slightly shorter median length of stay (57.7 days compared to 61.4 days) and had been delivering Medicare services longer (10.9 years compared to 8.1 years, on average). *[Data not shown and not statistically different.]*

Table 1: Rural-Urban Distribution of Hospices, 2012-2013*

	Rural		Urban		Total	
	Number	Percent	Number	Percent	Number	Percent
Region						
Midwest	206	21.1%	662	18.9%	868	19.4%
Northeast	41	4.2%	390	11.1%	431	9.6%
South	618	63.4%	1,663	47.4%	2,281	50.9%
West	109	11.2%	793	22.6%	902	20.1%
Total	*974*	*100.0%*	*3,508*	*100.0%*	*4,482*	*100.0%*
Pearson $chi^2(3) = 127.7866$ Pr = 0.000						
Chain ownership						
Non-chain	542	56.8%	1,672	47.9%	2,214	49.8%
Chain	413	43.2%	1,818	52.1%	2,231	50.2%
Total	*955*	*100.0%*	*3,490*	*100.0%*	*4,445*	*100.0%*
Pearson $chi^2(1) = 23.4682$ Pr = 0.000						
Facility ownership type						
For-profit	570	58.3%	2,582	72.3%	3,152	69.3%
Non-profit/Government	333	34.0%	701	19.6%	1,034	22.7%
Other	75	7.7%	287	8.0%	362	8.0%
Total	*978*	*100.0%*	*3,570*	*100.0%*	*4,548*	*100.0%*
Pearson $chi^2(2) = 92.1229$ Pr = 0.000						

**Counts vary across categories due to missing data (e.g., unknown chain status).*

Table 2, Figure 1, and Figure 2 show differences in live discharge rates by rural and urban facilities. Overall, rural hospices had a higher rate of live discharge in 2012-2013 (16.0 percent), compared to urban hospices (12.9 percent). This difference was driven primarily by rural hospices in the South, which had a rate of live discharge of 19.7 percent compared to urban hospices in the South (13.4 percent) (see Figure 1). Similarly, the rate of live discharge was higher among rural for-profit hospices compared to non-profit/government-owned hospices and those with an "other" profit status designation[11] (see Table 2 and Figure 1). Although for-profit hospices (both urban and rural) had the highest rate of live discharge overall (15.2 percent versus 9.3 percent for non-profits and 11.2 percent for other profit status), rural hospices had a live discharge rate higher than urban for-profit hospices – 19.8 percent compared to 14.6 percent. Rural for-profit hospices in the South Census region had the highest live discharge rate at 22.8 percent (not shown in the table). Finally, compared to non-chains, rural chain hospices had a higher rate of live discharge (17.5 percent versus 14.3 percent); both urban chains and non-chains had lower live discharge rates than rural chains and non-chains (see Table 2).

Table 2: Live Discharge Rates by Rural-Urban and Profit/Chain Status*

	Rural		Urban	
Type	Live Discharge Rate	n	Live Discharge Rate	n
Facility Ownership				
For-profit	19.8%	204	14.6%	1,381
Non-profit/Government	10.1%	135	9.2%	492
Other	17.3%	30	10.1%	164
Chain Ownership				
Chain	17.5%	185	12.6%	1,146
Non-Chain	14.3%	181	13.3%	867

**Counts vary across categories due to missing data (e.g., unknown chain status).*

Figure 1. Average Hospice-Level Live Discharge Rate by Rural vs. Urban Location and Region, 2012-2013

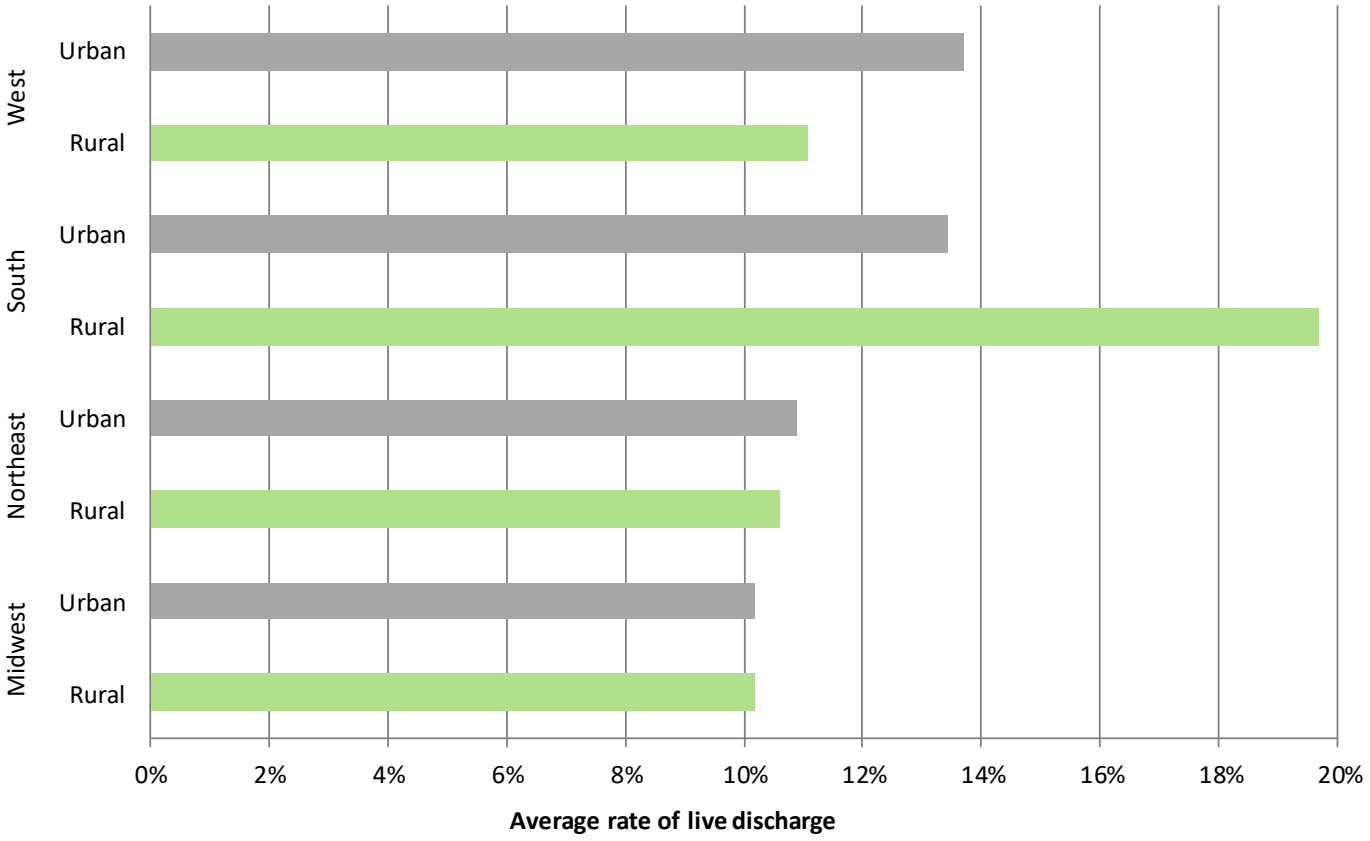
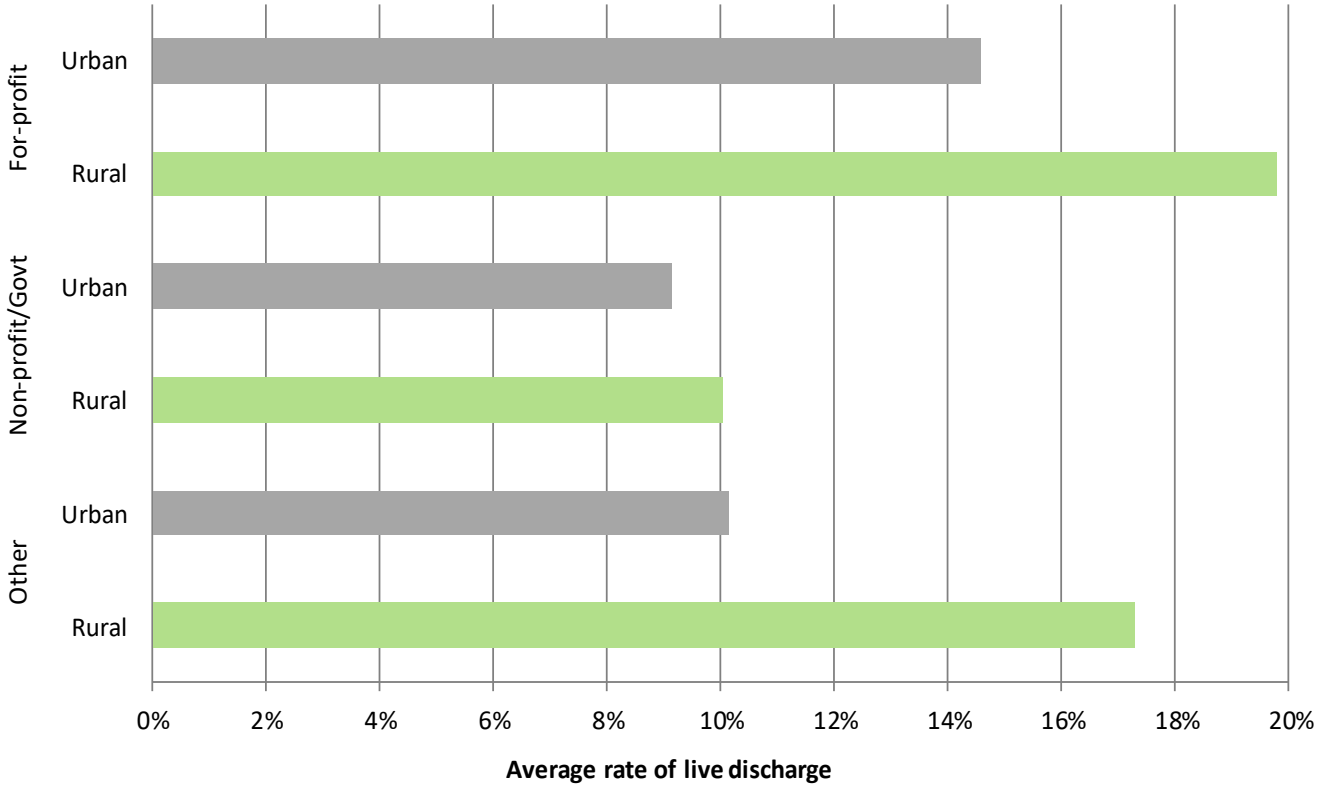


Figure 2: Average Hospice-Level Live Discharge Rate by Rural vs. Urban Location and Facility Profit Status, 2012-2013



DISCUSSION

As the population continues to age and increasingly relies on end-of-life services and supports, the need for hospice care in rural areas will inevitably continue to increase. Recent research concluded that access to end-of-life care (such as hospice) was comparable for residents of rural and urban areas,[12] although there may be some barriers restricting access to hospice care for certain populations.[13] Although live discharges can occur for a variety of reasons, particularly high rates might be an indicator of poor-quality care.[2-4] Understanding the relative importance of factors that drive variations in rates of live discharge (e.g., provider financial incentives, practice patterns of hospice professionals, patient preferences, and the supply of hospice care), particularly in more isolated rural areas of the country where options may be more limited, will support the delivery of higher quality care to vulnerable patients nearing the end of life. More research is needed to better understand the implications of rurality on live discharging patterns – particularly across the South Census region – within and across hospices.

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This study was supported by the Federal Office of Rural Health Policy (FORHP), Health Resources and Services Administration (HRSA), U.S. Department of Health and Human Services (HHS) under cooperative agreement # U1GRH07633. The information, conclusions and opinions expressed in this brief are those of the authors and no endorsement by FORHP, HRSA, HHS, or The University of North Carolina is intended or should be inferred.