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Who Transitions to the Community from Nursing Homes? Comparing Patterns and Predictors for Short-Stay and Long- Stay Residents

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Abstract

Little is known about characteristics of those who transition to the community after long stays in nursing facilities. Yet this information is highly relevant to efforts to reduce preventable nursing facility use. This study identifies and compares community transition among short-stay (1–90 days) and long-stay residents (91–365 days) aged 65+ using Kaplan-Meier survival estimates and logistic regression to analyze 3,762 episodes of care in Southern California. Over 90% of community discharges occurred in the first 90 days, and few characteristics predicted discharge after 90 days. Findings inform transition programs' efforts to identify and effectively target residents after 90-day stays.

INTRODUCTION

Nursing facility (NF) diversion has been investigated extensively for more than three decades. A number of studies have identified risk factors (Gaugler, Duval, Anderson, & Kane, 2007) and examined the role of home and community-based services (HCBS) to delay or substitute for placement (Reinhard, 2010), with an emphasis on Medicaid-eligible populations and those likely to spend down their assets. Despite evidence that the proportion of people served by HCBS is increasing, research on NF placement indicates that the risk of placement after age 65 is relatively high—over 40%—and rising (Kemper & Murtaugh, 1991; Liu, McBride, & Coughlin, 1994; Spillman & Lubitz, 2002), a result of greater longevity and lower disease-specific mortality rates.

In addition to diversion, recent policy has focused on programs to help NF residents transition back to the community (Reinhard, 2010). Thomas and colleagues noted that like diversion, interest in community transition has been driven by expectations that community care is cost effective, supports consumer preferences, promotes independent living, and

follows the Supreme Court's 1999 Olmstead Decision to provide care in the most integrated and least restrictive setting (Thomas, Gassoumis, & Wilber, 2010). Over the last decade, with funding from the Centers for Medicare and Medicaid Services (CMS), "Money Follows the Person" (MFP) initiatives have offered states incentives to develop transition projects (James, Wiley, & Fries, 2007). Although the majority of those transitioned have been younger adults with intellectual and physical disabilities, an evaluation by Mathematica indicates that residents aged 65 and older who have been transitioned to the community under MFP have improved quality of life (Simon & Hodges, 2011). Building on these initiatives, recent studies have described and assessed transition efforts across several states (James et al., 2007), examined consumer preference and perceived ability to transition (Nishita, Wilber, Matsumoto, & Schnelle, 2008), and identified characteristics of people in transition programs who are readmitted to a NF after an unsuccessful community discharge (Howell, Silberberg, Quinn, & Lucas, 2007). As part of the Affordable Care Act, MFP services have been expanded to residents with a minimum stay of 90 days, a reduction from the previous six-month criterion established under the Deficit Reduction Act of 2005.

Despite extensive research on NF alternatives, few studies have examined patterns of NF transitions to understand characteristics, timing, and discharge destination of those who leave. Although several robust studies from the 1980s and 1990s identified factors associated with transitioning (Chapin, Wilkinson, Rachlin, Levy, & Lindbloom, 1998; Engle & Graney, 1993; Greene & Ondrich, 1990; Mehr, Williams, & Fries, 1997), long-term care was markedly different during these decades in that it focused almost exclusively on custodial care. A 2004 study identified system-level and clinical predictors of discharge outcomes, but focused largely on Medicare Prospective Payment policies among stays up to 120 days (Wodchis, Fries, & Hirth, 2004). Another recent study predicted NF entry and exit using demographic and socioeconomic factors (Martikainen et al., 2009); while instructive, it took place in Finland, a very different long-term care system than the U.S.

More recently, two articles examined predictors of community discharge for short-stay residents. Focusing on California, Thomas and colleagues found various sociodemographic, health, and healthcare characteristics to predict community discharge among short-stay residents and emphasized the positive effect of participation in a Social HMO program (Thomas et al., 2010). Similarly, in a study of NF discharge in Minnesota, Arling and colleagues found that preference and/or the presence of a support person was a positive predictor of community discharge among short-stay residents (Arling, Kane, Cooke, & Lewis, 2010). Given the policy focus on transition after 90 days, it is critical to identify and compare discharge patterns among long-stay residents in addition to short-stays. Therefore, the purpose of this study is to 1) examine natural patterns of discharge among NF residents in California, and 2) compare characteristics that predict community discharge among short-stay residents and long-stay residents. Analyzing predictors of community discharge across different subgroups of NF residents can inform policy and practice efforts by identifying those likely to discharge without transition services and those that may benefit from such support programs.

METHODS

Sample

Data are from Nursing Home Minimum Data Set 2.0 (MDS) records for NFs in four Southern California counties (Los Angeles, Orange, Riverside, and San Bernardino) between January 1, 2001 and December 31, 2003. These four counties are among the most diverse counties in the country—in 2000, their combined population of 15.6 million people was 40.6% Hispanic, 10.6% Asian, 7.9% Black, and 4.7% mixed race (U.S. Census Bureau, 2011). As such, they provide a sample that naturally over-represents racial and ethnic

minorities, especially the Hispanic population, which are emerging as an increasing proportion of older adults both in California and across the U.S.

Study subjects were either enrolled in Medicare's fee-for-service (FFS) program or the SCAN Health Plan (SCAN), a capitated Medicare Advantage Program that also provides services to older adults enrolled in both Medicare and Medicaid. SCAN serves an estimated 128,000 older adults in Southern California and at the time of the study was a Social HMO, a model of managed care for the elderly. As a Social HMO, SCAN provided the full range of standard Medicare benefits plus additional services such as care coordination, prescription drug coverage, chronic care benefits and home and community-based services such as personal care services, adult day care, respite care, and medical transportation. The extra services were intended to help members stay in the community and avoid nursing home admission. The analysis database was originally constructed to assess SCAN's role in NH placement and diversion (Thomas et al., 2010), a construction that has allowed for the inclusion of SCAN enrollment in the current analysis as a proxy for increased support for and access to HCBS and care management coordination. Medicare FFS residents were matched to the SCAN sample using propensity scoring on six variables: age, race, sex, Medicaid eligibility, functional impairment, flags for selected chronic diseases (diabetes, coronary artery disease, cardiovascular disease, chronic obstructive pulmonary disease, arthritis, and congestive heart failure [CHF]), and a count of these diagnoses. The study was approved by the University of Southern California Institutional Review Board.

The MDS is a federally mandated resident assessment instrument administered to all residents in Medicare or Medicaid-certified NFs within 14 days of admission and at prescribed intervals thereafter (Morris et al., 1990). The MDS provides a comprehensive assessment of the medical, functional, and psychosocial status of each resident, enables detailed measures of behavioral characteristics, and includes questions on preference and support to return to the community.

The unit of analysis is an episode of care, operationally defined as a NF stay without an intervening discharge of more than 30 days. Individual stays separated by less than 30 days were concatenated to create a single episode of care (Thomas, Gassoumis, & Wilber, 2009). An episode ended when the resident either died or was discharged from the NF and did not re-enter within 30 days. Only episodes with a full admission assessment were included. To ensure that the first admission represented a novel episode, we left-censored 30 days of admissions data. We right-censored 395 days of admission data, which provided at least 395 days of data after each admission. This enabled us to accurately assess resident disposition for all episodes up to 365 days in duration.

Measures

The primary outcome measure is community discharge, defined as discharge to home, group home, board-and-care, or assisted living within 365 days. Discharge was characterized by episode length and was treated both as a continuous variable and as a categorical variable with 90 days as the short-stay threshold, due to its clinical and policy relevance (Arling et al., 2010).

We included predictor variables that have been associated with risk for placement and conversion (e.g., presence of diseases, cognitive and functional impairment, living situation; Arling et al., 2010; Meador et al., 2011) as well as measures designed to assess preference and support for transition (Arling et al., 2010). We organized predictor variables into four categories. 1) Sociodemographic variables were: age; sex; marital status (married vs. all others); race/ethnicity; and education level. 2) Psychosocial variables were: responsibility for decision making (Chapin et al., 1998; Nishita et al., 2008); mental health diagnoses

(schizophrenia or bipolar disorder; Arling et al., 2010; Martikainen et al., 2009); behavioral problems; and measures of cognitive status, depression, and social engagement. 3) Physical health variables were: select diseases (Arling et al., 2010; Charlson, Pompei, Ales, & MacKenzie, 1987; Martikainen et al., 2009; Simon & Hodges, 2011); functional dependence; urinary and fecal incontinence; and having a fall or fracture within the past 180 days. 4) Residential/healthcare status variables were: admission from an acute care hospital, a community setting, or another care facility; living alone prior to facility entry; transitioning to and back from an acute care setting within 90 days of admission; receipt of a Medicaid per diem; enrollment in the SCAN Health Plan; expressing a preference to return to the community (MDS question Q1a); having a support person who is positive toward community discharge (MDS question Q1b); and participation in community living skills training within the first 14 days of NF admission.

Cognitive status was measured by the well validated Cognitive Performance Scale (Morris et al., 1994; Morris et al., 1997). Since it is ordinal in nature, this scale is typically separated into categories of impairment for statistical analysis. Based on the mini-mental state examination equivalents reported by Morris and colleagues (1994), scores were grouped into cognitively intact (scores 0–1), mild/moderate impairment (scores 2–3), and severe impairment (scores 4–6). Depression was defined as a score of three or higher on the MDS Depression Rating Scale, which represents major or non-major depression (Burrows, Morris, Simon, Hirdes, & Phillips, 2000). Behavioral problems were any of five behaviors coded as not being easily altered: wandering, resisting care, and verbally abusive, physically abusive, or socially inappropriate/disruptive behavioral symptoms. Social engagement was calculated as a sum of six items included in the Index of Social Engagement (range = 0–6; Mor et al., 1995). Functional dependence was measured using the ADL Hierarchy Scale, based on dependency in eating, locomotion, hygiene, and toileting (range = 0–6; Morris, Fries, & Morris, 1999). Per convention, urinary and fecal incontinence were both operationalized with scores of 2 or more, representing urinary incontinence at least twice per week and fecal incontinence at least once per week (Mitchell et al., 2004; Offermans, Du Moulin, Hamers, Dassen, & Halfens, 2009). Community living skills training covers areas such as taking medication, activities of daily living, housework, shopping, and transportation, and can be provided to the resident or to a family member or other caregiver. Transitioning to and back from an acute care setting reflected a “ping-pong” pattern of discharge (Lewis, Cretin, & Kane, 1985), in which a temporary discharge to acute was followed by readmission to the NF within 30 days.

Analyses

Two transition curves plotted episode lengths using Kaplan-Meier survival estimates of time to discharge. All episodes were used regardless of missing data on predictor variables.

Descriptive statistics were calculated for the total sample and the two sub-samples: those who transitioned to the community during days 1–90 and 91–365. Bivariate probability statistics (χ^2 and t) compare each sub-sample to the remaining data and inform subsequent multivariable analyses. The 85 cases (2.3%) with missing data on one or more variables were excluded from analysis, per convention (Allison, 2002).

For greater clinical relevance, separate logistic regression models were calculated to predict community discharge in each time period. Odds ratios are presented with 95% confidence intervals and p -values; Hosmer and Lemeshow's χ^2 indicates model goodness-of-fit. Exclusion criteria for these analyses were an episode ending with discharge to an acute care setting or death; therefore, the results compare those who had a community discharge within each time period to those who remained in the facility at the end of the period. A multinomial logistic regression (not shown) was run to verify results in a multivariate model

that included discharge to acute and death; however, the few minor differences that emerged did not change the scope of this paper's findings. Analyses were performed using SAS version 9.2 (SAS Institute, Cary, NC).

RESULTS

Episode Length

The first transition curve includes all 3,762 episodes, regardless of discharge location; the second curve includes only those 1,879 episodes that resulted in discharge to the community within 365 days. The plot of all episodes' time to discharge from the NF (see Figure 2) indicates that few residents left the facility within two weeks of admission (11.0%), over two-fifths (43.0%) left by 30 days, and two-thirds (67.7%) left within the 90-day short-stay window. Only 14.1% were discharged between 91 and 365 days, with 18.2% of episodes lasting more than a year.

Half (1,879; 49.9%) of all admissions resulted in community discharge within 365 days. Among episodes that ended in transition to the community, discharge was more likely to occur soon after admission (see Figure 3). By day 30, three-fifths (62.4%) of all community-discharge residents had left, and nearly all (91.6%) left within the 90-day short stay window. Few episodes that ended in community discharge (8.4%) left the NF between 91 and 365 days.

Sample Characteristics

Overall, residents were likely to be female, unmarried, and white, with at least a high school education (Table 1). Few had severe cognitive impairment, a mental health diagnosis, or exhibited problems in other psychosocial domains, but a large proportion were incontinent or had experienced a recent fall. Diabetes, stroke, and CHF were the most prominent diseases. A majority were admitted from an acute care setting, lived with others before entering the NF, expressed preference to leave, or had a support person positive toward discharge. Bivariate comparisons reveal that the 1,704 residents who transitioned to the community within 90 days were significantly different ($p < .05$) from the total sample on all characteristics except marital status, depression, and four diseases (see Table 1). Those who transitioned to the community between 91 and 365 days had fewer significant differences, compared to the rest of the sample. They were less educated, less likely to have cancer, more cognitively intact, more likely to have fallen within 180 days of admission, and more likely to have transitioning to and back from an acute care setting during the first 90 days of their episode.

Timeframe 1: Predictors of Community Discharge by Day 90

When entered into a logistic regression model, 17 variables were significant ($p < .05$) predictors of community discharge within 90 days of admission, demonstrating a good fit to the data (Hosmer and Lemeshow's $\chi^2 = 7.02$, $df = 8$, $p = .534$).

The variables that increased the odds of community discharge were (Table 2): having a support person positive to discharge (381% greater odds), behavioral problems (47% greater odds), a preference to return to the community (44% greater odds), receiving community living skills training (40% greater odds), having cancer (39% greater odds), being married (36% greater odds) or female (35% greater odds), and being responsible for one's own decisions (25% greater odds). The variables that reduced the odds of community discharge were: transitioning to and back from an acute care setting within 90 days of admission (81% lesser odds), being admitted from another facility (60% lesser odds) or a community setting (48% lesser odds), experiencing fecal incontinence (53% lesser odds), having mild or

moderate cognitive impairment (37% lesser odds), receiving a Medicaid per diem (33% lesser odds), having severe cognitive impairment (31% lesser odds), falling within the past 180 days (22% lesser odds), and having greater functional impairment (10% lesser odds per point on the ADL Hierarchy Scale).

Timeframe 2: Predictors of Community Discharge Between 91 and 365 Days

The second logistic regression model, predicting community discharge between 91 and 365 days compared to remaining in the NF past 365 days, also showed strong goodness of fit (Hosmer and Lemeshow's $\chi^2 = 12.04$, $df = 8$, $p = .150$); two variables had significant effects ($p < .05$). Having cancer reduced the odds of community discharge by 62%, and being severely cognitively impaired reduced the odds of discharge by 56% (Table 2).

DISCUSSION

This study presents new information on the transition patterns of NF residents and predicts community discharge among short-stay and long-stay residents. Half of the episodes ended in transition to the community within 365 days, the vast majority of which occurred within 90 days of admission. Among 36 variables in the analysis model, 17 were significant predictors of community transition within 90 days; however, few were associated with community discharge within the 91–365 day timeframe. Among those who discharged within 90 days, transitioning to and back from an acute care setting had the greatest negative effect, a likely reflection of high acuity and complexity (Murtaugh & Litke, 2002). Notably, having a support person who is positive toward discharge has the greatest positive effect. Interestingly, age, several psychosocial variables (i.e., depression, mental health diagnosis, social engagement), and most diseases did not predict community discharge.

The severe decline in the transition curves' slopes and the few predictors of community discharge past 90 days show the difficulty of returning to the community during a long-stay episode. While it is clear that the curves' flattening is in part due to residents who require 24-hour nursing care, it is possible that some residents have become accustomed to their living environment and prefer to avoid additional transitions (Nishita et al., 2008). Research is needed to identify the characteristics of long-stay residents that suggest potential for discharge, who should be targeted, and the types of interventions and supports they require. Research into these areas might start by looking at those with family support to transition and those who transitioned to and back from an acute care setting. More specific characterizations of those residents who transition to and from acute settings would also be helpful, particularly the timing of and reason for the transition (e.g., premature discharge, poor transition planning, a condition developed during the NF stay). Also, research might explore whether the level of support provided to those who transition is in line with the type and level of support they require, and if not whether that discrepancy affects the likelihood of remaining in the community following a transition.

The present study has implications for the role of resident preference and familial support in the transition process, as well as for federal and state policy initiatives that offer incentives for developing transition programs. Findings suggest the need to focus additional research on better understanding barriers and continuing to develop and test models to support effective and appropriate transition at various lengths of episodes. Every resident admitted to a NH will ultimately fall into one of four subpopulations: those who will transition to the community without extra assistance; those who will transition only if provided with support; those likely to die or require hospital care because of high acuity or complexity; and those who require 24-hour institutional care due to chronic conditions, including dementing illnesses. Targeting transition support to the wrong group may result in undesirable consequences. Support might be provided to residents who could otherwise transition on

their own, increasing costs. Conversely, transition support might facilitate community transfer for residents who cannot function in the community, likely leading to reinstitutionalization.

The overwhelming choice of older adults is to live in the community; yet, preference to discharge does not have an effect on outcomes after 90 days. This suggests that the barrier to transitioning either becomes systemic and usurps resident desire to go home or is a reflection of the resident's high level of acuity necessitating care in an institutional setting. The Affordable Care Act extended the Money Follows the Person program, which supports community transitions for long-stay NF residents, through 2016 and expanded its scope to target residents after 90 days rather than 6 months in the NF. This study shows that although one third of episodes last longer than 90 days, very few community transitions occur after this point. Shortening the MFP threshold to 90 days may be a move in the right direction, allowing for more residents who need support to facilitate successful community transition to receive the assistance they need; however, it may also result in the inappropriate targeting of residents for whom community transition would be a poor choice and result in reinstitutionalization. Future research should aim to identify the characteristics of long-stay residents that suggest potential for successful and appropriate discharge. Early lessons learned from MFP efforts suggest that it offers a promising practice for supporting community discharge (Reinhard, 2010; Simon & Hodges, 2011). The present study offers a larger context within which to place these lessons.

Two methodological inferences can be drawn from this study's findings to inform future studies on NF transitions. First, the results underscore the importance of separating preference from the availability of a positive support person in future studies, two variables with a considerable amount of conceptual differentiation. Combining the two variables into a single summary variable reduced the odds ratio from a combined 6.92 to 6.22, suggesting that the effects of preference and support in Arling and colleagues' sample may have been even more pronounced than the reported effects (Arling et al., 2010). While the support person question has been excluded from the MDS 3.0, this and Arling's study indicate that it will continue to warrant inclusion in future transition studies. Second, the importance of using episodes of care instead of discrete stays was supported by the emergence of transitioning to and back from an acute care setting as strongly predictive of conversion to a long stay.

Several study limitations should be considered. The MDS identifies residents' discharge destination but does not track residents into other settings; unless residents re-entered a nursing facility during the study period, their final disposition following community discharge is unknown. Additionally, all data were from admission assessments, so residents' change in status over time is not included. Data are from four counties in southern California and care must be used when generalizing to other areas of the U.S. and beyond, as policies and practices in these regions may differ from those in other areas; however, the findings from the transition curve were similar to studies conducted elsewhere (Applebaum, Mehdizadeh, & Straker, 2000; Arling et al., 2010; Wodchis et al., 2004). The data were from 2001–2003—allowing insights into discharge patterns before the advent of MFP—a time in which the long-term care landscape differed somewhat from its current form. Finally, care must be taken in extending the results to transitions programs. MFP 90-day eligibility period is only started after any Medicare funding for rehabilitative care has been exhausted; as the MDS does not provide day-to-day information on funding sources, this study was unable to determine what portion of episodes fell outside of the MFP eligibility window. There are several additional limitations that enter into any research using the MDS: the psychometric properties of many of its derivative scales (e.g., the Depression Rating Scale) are not as good as the gold standards (e.g., the Geriatric Depression Scale) but are the only available

metrics given the questions included in the MDS; resident characteristics (e.g., falls, incontinence) may be underreported due to inaccurate self-report or other causes (Hill-Westmoreland & Gruber-Baldini, 2005); and staff in some facilities may be less well trained at administering the MDS, resulting in less accurate data. Furthermore, we are aware of no studies that compare the reliability or validity of the measures used in transitions research for short-stay residents versus long-stay residents. Despite these limitations, use of MDS data provides considerable benefits over other data sources used to study long-term care. As an administrative dataset, the MDS avoids concerns regarding response rate, exclusion criteria due to pragmatic issues (e.g., language barriers), and participants becoming lost to follow-up. Also, the MDS is the only dataset to explore familial support for transitioning home, the factor that was of greatest importance for predicting community discharge.

Finally, this study did not account for clustering of residents within nursing facilities or facility characteristics, largely because of sample constraints. This is, however, an area of growing visibility in the study of nursing facility transitions (e.g., Arling, Abrahamson, Cooke, Kane, & Lewis, 2011). Future research using larger datasets should consider the impact of facility characteristics on the community transitions of long-stay residents.

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Figure 1.
Episode of Care Flowchart

Figure 2.
One-Year Transition Curve by Discharge Location, All Episodes (n = 3,762)

Figure 3.
One-Year Transition Curve, Episodes with Community Discharge Within 365 Days
(n=1,879)

Table 1

Sample Characteristics: Total and Community Discharge, by Episode Length

	Total Sample (n = 3,677)	Community Discharge		
		1–90 days (n = 1,687)	91–365 days (n = 154)	p
	No. (%)	No. (%)	No. (%)	
<i>Sociodemographics</i>				
Age, mean (SD)	82.9 (7.3)	82.5 (7.1)	82.1 (6.9)	.16
Female	2395 (65.1)	1166 (69.1)	106 (68.8)	.33
Married	1181 (32.1)	559 (33.1)	46 (29.9)	.54
Race/Ethnicity:				
White, non-Hispanic	2807 (76.3)	1348 (79.9)	113 (73.4)	
Hispanic	369 (10.0)	149 (8.8)	18 (11.7)	.75
Black, non-Hispanic	249 (6.8)	89 (5.3)	10 (6.5)	
Other	252 (6.9)	101 (6.0)	13 (8.4)	
Education:				
Less than high school	878 (23.9)	352 (20.9)	50 (32.5)	
High school graduate	1781 (48.4)	809 (48.0)	62 (40.3)	.03 *
Some college or college graduate	1018 (27.7)	526 (31.2)	42 (27.3)	
<i>Psychosocial Health</i>				
Responsible for own decisions	1736 (47.2)	989 (58.6)	78 (50.6)	.38
Cognitive Performance Scale:				
Cognitively intact	1701 (46.3)	1061 (62.9)	79 (51.3)	
Mild/moderate impairment	1279 (34.8)	460 (27.3)	58 (37.7)	.04 *
Severe impairment	697 (19.0)	166 (9.8)	17 (11.0)	
Depression	132 (3.6)	50 (3.0)	4 (2.6)	.50
Mental health diagnosis	60 (1.6)	13 (0.8)	3 (1.9)	.75
Behavioral problem(s)	358 (9.7)	116 (6.9)	11 (7.1)	.27
Index of Social Engagement, mean (SD)	1.7 (1.2)	1.9 (1.2)	1.8 (1.3)	.14
<i>Physical Health</i>				
Diseases				
Cancer	428 (11.6)	187 (11.1)	6 (3.9)	.002 **
Congestive heart failure (CHF)	725 (19.7)	312 (18.5)	22 (14.3)	.08 †

	Total Sample (n = 3,677)	Community Discharge			
		1–90 days (n = 1,687)	91–365 days (n = 154)	No. (%)	p
COPD/Emphysema	599 (16.3)	268 (15.9)	.54	17 (11.0)	.07 †
Diabetes	875 (23.8)	388 (23.0)	.30	40 (26.0)	.52
Parkinson's disease	217 (5.9)	81 (4.8)	.009	8 (5.2)	.70
Renal failure	196 (5.3)	62 (3.7)	<.001	4 (2.6)	.12
Stroke/Cerebrovascular accident	768 (20.9)	314 (18.6)	.002	31 (20.1)	.81
ADL Hierarchy Scale, mean (SD)	3.8 (1.5)	3.4 (1.4)	<.001	3.7 (1.4)	.62
Incontinence - urinary	1533 (41.7)	568 (33.7)	<.001	65 (42.2)	.89
Incontinence - fecal	1717 (46.7)	530 (31.4)	<.001	67 (43.5)	.42
Recent fall	1566 (42.6)	756 (44.8)	.01	81 (52.6)	.01 *
Recent fracture	570 (15.5)	337 (20.0)	<.001	27 (17.5)	.48
<i>Residential & Healthcare Status</i>					
Lived alone before entry	950 (25.8)	532 (31.5)	<.001	39 (25.3)	.88
Admitted from:					
Acute	3113 (84.7)	1542 (91.4)		121 (78.6)	
Community setting	482 (13.1)	126 (7.5)	<.001	27 (17.5)	.08 †
Other facility	82 (2.2)	19 (1.1)		6 (3.9)	
Transitioning to and from acute within 90 days	401 (10.9)	67 (4.0)	<.001	26 (16.9)	.02 *
Medicaid	478 (13.0)	128 (7.6)	<.001	23 (14.9)	.47
SCAN	1807 (49.1)	873 (51.7)	.004	75 (48.7)	.91
Q1a) Community living preference	2481 (67.5)	1466 (86.9)	<.001	104 (67.5)	.99
Q1b) Positive support person	2522 (68.6)	1506 (89.3)	<.001	99 (64.3)	.24
Community living skills training	1717 (46.7)	1001 (59.3)	<.001	65 (42.2)	.25

Note: SD = standard deviation. For continuous variables, *p*-values are based on the *t* statistic; for dichotomous and categorical variables, *p*-values are based on the χ^2 statistic. Significance tests for each episode length category are based on comparisons using the total sample.

† *p* < .10.

* *p* < .05.

** *p* < .01.

*** *p* < .001

Table 2

Logistic Regression Models of Community Discharge: 1–90 Days and 91–365 Days

	1–90 Days (n = 2,875)		91–365 Days (n = 828)	
	OR (95% CI)	p	OR (95% CI)	p
<i>Sociodemographics</i>				
Age	1.00 (0.99–1.02)	.92	0.98 (0.96–1.01)	.19
Female	1.35 (1.10–1.67)	.005	1.25 (0.80–1.94)	.33
Married	1.36 (1.09–1.70)	.007	1.29 (0.82–2.03)	.27
Race/ethnicity (vs. white, non-Hispanic):				
Hispanic	0.84 (0.60–1.18)	.31	0.68 (0.36–1.30)	.25
Black, non-Hispanic	1.03 (0.70–1.51)	.88	0.88 (0.41–1.89)	.75
Other	0.92 (0.63–1.35)	.67	0.94 (0.46–1.93)	.88
Education (vs. less than high school):				
High school graduate	1.13 (0.88–1.44)	.34	0.63 (0.39–1.01)	.06
Some college or college graduate	1.29 (0.98–1.70)	.07	0.86 (0.50–1.48)	.58
<i>Psychosocial Health</i>				
Responsible for own decisions	1.25 (1.01–1.54)	.04	1.31 (0.86–2.01)	.21
Cognitive Performance Scale (vs. intact):				
Mild/moderate impairment	0.63 (0.50–0.80)	<.001	0.76 (0.47–1.21)	.24
Severe impairment	0.69 (0.49–0.97)	.03	0.44 (0.22–0.88)	.02
Depression	0.81 (0.50–1.31)	.39	0.44 (0.14–1.38)	.16
Mental health diagnosis	0.64 (0.30–1.33)	.23	0.59 (0.16–2.17)	.43
Behavioral problem(s)	1.47 (1.05–2.06)	.03	0.85 (0.42–1.73)	.65
Index of Social Engagement	0.95 (0.87–1.03)	.17	0.99 (0.85–1.16)	.93
<i>Physical Health</i>				
Diseases				
Cancer	1.39 (1.01–1.91)	.04	0.38 (0.15–0.95)	.04
Congestive heart failure (CHF)	1.06 (0.83–1.35)	.66	0.95 (0.55–1.63)	.86
COPD/Emphysema	1.06 (0.82–1.38)	.64	0.72 (0.40–1.30)	.27
Diabetes	1.04 (0.83–1.31)	.75	1.11 (0.70–1.76)	.66
Parkinson's disease	1.09 (0.74–1.60)	.66	0.66 (0.29–1.50)	.33
Renal failure	0.77 (0.49–1.21)	.26	0.69 (0.22–2.24)	.54

	1– 90 Days (n = 2,875)		91– 365 Days (n = 828)	
	OR (95% CI)	p	OR (95% CI)	p
Stroke/Cerebrovascular accident	0.92 (0.73–1.16)	.46	0.72 (0.45–1.15)	.17
ADL Hierarchy Scale	0.90 (0.83–0.98)	.01 *	1.05 (0.89–1.25)	.54
Incontinence – urinary	1.12 (0.88–1.42)	.36	0.99 (0.61–1.61)	.96
Incontinence – fecal	0.53 (0.41–0.69)	<.001 ***	0.75 (0.44–1.30)	.31
Recent fall	0.78 (0.63–0.95)	.01 *	1.27 (0.84–1.91)	.26
Recent fracture	1.30 (0.99–1.71)	.06 †	1.25 (0.71–2.21)	.45
<i>Residential & Healthcare Status</i>				
Lived alone before entry	1.19 (0.94–1.51)	.15	1.01 (0.63–1.61)	.98
Admitted from (vs. acute):				
Community setting	0.52 (0.39–0.70)	<.001 ***	0.82 (0.48–1.40)	.47
Other facility	0.40 (0.20–0.78)	.007 **	1.73 (0.63–4.76)	.29
Transitioning to and from acute within 90 days	0.19 (0.13–0.26)	<.001 ***	1.39 (0.81–2.36)	.23
Medicaid	0.67 (0.49–0.92)	.01 *	0.58 (0.33–1.00)	.05 †
SCAN	1.21 (1.00–1.47)	.05 †	1.00 (0.67–1.50)	.99
Q1a) Community living preference	1.44 (1.09–1.90)	.01 *	1.30 (0.71–2.35)	.39
Q1b) Positive support person	4.81 (3.68–6.28)	<.001 ***	1.30 (0.73–2.31)	.38
Community living skills training	1.40 (1.15–1.71)	<.001 ***	1.00 (0.65–1.53)	.99

OR = odds ratio; CI = confidence interval.

† $p < .10$,

* $p < .05$,

** $p < .01$,

*** $p < .001$