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Admission and Discharge Practices among Assisted Living Communities: The Role of State Regulations and Organizational Characteristics

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Abstract

Background and Objectives. A better understanding of factors associated with assisted living admission and discharge practices can help identify communities that are more likely to allow residents to age in place. This study examined how state regulations and assisted living organizational characteristics relate to community admission and discharge practices for bathing, getting out of bed, and feeding.

Research Design and Methods. Using data from a representative sample of 250 assisted living communities in 7 states and a database of assisted living state regulations, we employed multilevel logistic regression models to examine regulatory and organizational correlates of assisted living community admission and discharge practices for three activities of daily living (ADLs [bathing, getting out of bed, and feeding]).

Results. States' regulations were not associated with assisted living community admission and discharge practices. However, assisted living communities above the median in the number of personal care staff members per resident were 17% (95% CI: 6.5%, 27.1%) were more likely to admit residents who needed assistance with feeding and 25.5% (95% CI: -37.7, -13.2) less likely to discharge these residents. For-profit communities were more likely to admit residents with bathing and feeding limitations.

Discussion and Implications. Organizational characteristics (e.g., for-profit affiliation, staffing levels) may in part drive admission and discharge practices, especially related to different care needs. The ability to house residents with advanced care needs may be influenced more by the organizational resources available to care for these residents than by states' admission and discharge regulations.

Keywords: Assisted living, aging in place, long-term care, admission, retention

Introduction

Assisted living is a predominant long-term care provider in the United States, constituting over half of all long-term care beds (Sengupta et al., 2022). Assisted living communities provide room and board, at least two meals a day, access to twenty-four hours of daily supportive services (e.g., assistance with bathing and dressing), and supervision to a primarily older adult population (Sengupta et al., 2022). Designed to meet individuals' personal care needs in a home-like setting, the assisted living model is intended to emphasize resident choice and autonomy (Zimmerman et al., 2022). However, despite commonalities in the philosophy of assisted living, there is no standard model of service provision (Kemp, Ball, & Perkins, 2019). For example, some assisted living communities offer complex medical services such as x-rays on-site and care by a registered nurse (RN) or licensed practical nurse (LPN), while others do not provide any medical care (Beeber et al., 2014; Kemp, Ball, & Perkins, 2019). Assisted living communities also differ substantially in terms of the amount of privacy provided, size, staffing, populations served, and building design (Zimmerman et al., 2022). Differences in models of care are believed to be driven in part by variation in the licensing and regulation of assisted living between and within states, as well as differences in business models (Smith et al., 2021; Smith et al., 2023; Temkin-Greener et al., 2021).

One way assisted living communities vary is in their decisions to admit or discharge residents with physical care needs, such as needing assistance with bathing and feeding**.** More than three-quarters of older persons express a desire to age in place within their homes (Davis, 2021). Relocation in older age has been associated with adverse outcomes such as anxiety and reduced quality of life (Costlow & Parmelee, 2020; Villeneuve et al., 2022). Although originally conceptualized as living in one's own private dwelling, the definition of aging in place has expanded to include congregate settings such as assisted living (Bigonnesse & Chaudhury, 2020); in fact, assisted living communities are increasingly becoming a location where older adults remain until death (Belanger et al., 2022; Temkin-Greener et al., 2022).

Admission practices help determine who can age in place in assisted living. Flexible discharge practices can allow AL communities to retain residents as their needs change over time and minimize relocation. Previous work has described how the decision to admit or retain residents is

a complicated process, involving consideration of resident preferences, regulations, business goals, the capability of an assisted living community to provide care, institutional liability, and the safety and well-being of other residents (Ball et al., 2004; Carder, 2002; Chapin & Dobbs, 2001; Mead et al., 2005).

We based our conceptual framework on how these diverse influences impact admissions and discharge practices on Donabedian's Structure, Process, and Outcome model (Donabedian, 1988). Structures are organizational factors that impact care provision; they can include material resources (e.g., community size), human resources (e.g., staffing), and organizational structure (e.g., affiliation with other communities). Process measures describe actions health or long-term care providers perform to influence health outcomes in a population. Outcomes reflect the impact on patient care. Donabedian's framework suggests that changes in the structure of an organization impact its processes, ultimately resulting in changes in outcomes of individuals (Donabedian, 1988). This model has been used commonly in assisted living research (Zimmerman et al., 2005; Zimmerman et al., 2016).

Relevant to this paper, Yang and colleagues (2021) expand on Donabedian's model by describing how regulations impact structures and processes within healthcare organizations to influence outcomes. As shown in the conceptual model displayed in Figure 1, the admission and discharge practices of assisted living communities (process measures) are influenced by organizational characteristics (structure measures) (Bernard et al., 2001). Although we cannot measure outcomes in the current study, structure and processes ultimately may influence an assisted living resident's ability to age in place (an important person-centered outcome).

Admission and discharge-related regulations. The intent of different types of licenses and certifications is to ensure that assisted living communities uphold quality and safety standards for differing resident needs (Smith et al., 2021). For example, Louisiana has Level 1, Level 2, Level 3, and Level 4 licenses. Unlike communities with other license types in Louisiana, Level 4 communities can provide intermittent skilled care and are allowed to administer medications (Carder, 2015).

Licenses also vary in terms of whether they require that assisted living communities refuse admission or require discharge of residents with certain care needs. Additionally, some licenses

have regulations that allow communities to override admission and discharge criteria if hospice or home health services are provided (Carder, 2015). In 2018, approximately 59% of large (25+ bed) assisted living communities were required by state regulations to limit admission for two or more health conditions, whereas 11% were not required by state regulations to limit admission (Kaskie et al., 2023); however, few studies to our knowledge have examined the role the variations in admission and discharge regulations have on assisted living practices. Most existing studies are over 10 years old (Ball et al., 2004; Bernard et al., 2001; Chapin & Dobbs, 2001; Street et al., 2009), however a recent study found that assisted living residents who lived in states with less restrictive requirements for admission and retention were least likely to die there (Temkin-Greener et al., 2022). Other work has shown that assisted living residents in states with state regulations supportive of third-party services in assisted living such as hospice and home health were more likely to age in place (Belanger et al., 2022) or to die with hospice services (Thomas et al., 2019), suggesting that state regulations are consequential for important treatment decisions.

Assisted living characteristics may also indirectly contribute to the relationship between admission/discharge-related regulations and assisted living admission/discharge practices (shown by the dashed arrow in Figure 1). License-specific regulations may influence the market entrance of providers with characteristics that make them predisposed to admitting or discharging residents with physical care needs. For example, individuals dually eligible for Medicare and Medicaid are less likely to age in place in assisted living communities (Rosendaal et al., 2023). Medicaid reimbursement rates are lower than private pay rates. Therefore, providers who care for residents receiving Medicaid may not obtain a license type that provides intensive services because Medicaid reimbursement rates may be too low to provide these services.

Structural characteristics. Assisted living organizational characteristics, an aspect of the "structure" component of Donabedian's framework, may influence assisted living admission and discharge practices. Ownership may play a role. For example, for-profit communities may be better positioned to care for residents with higher care needs because they have more resources (Bos et al., 2017). Communities that are affiliated with nursing homes may move residents to their nursing home beds as care needs increase to reduce risk of caring for residents in the AL community. Further, smaller communities may have more flexible and individualized approaches

for caring for residents, but in a study by Bernard and colleagues, bed size was not related to admission/discharge practices whereas for-profit communities were more likely to discharge residents due to physical care needs (Bernard et al., 2001). Qualitative work in five Georgia assisted living communities found that staffing levels were related to admission and discharge practices (Ball et al., 2004), but the relationship of staffing to practices has yet to be explored quantitatively and with a larger sample. Occupancy rates may also factor into admission and discharge practices; assisted living operators must balance the financial need to keep a bed filled versus the risk of admitting or retaining a resident who has care needs beyond what the community can accommodate (Carder, 2002). Also, communities with low private pay payment rates or high proportions of residents on Medicaid may have less flexible admission and discharge practices because they have fewer resources to provide more complex medical services.

Study Objectives

Based on the previous literature and grounded in Donabedian's conceptual model, the objective of this study was to examine state regulatory policies and assisted living structural characteristics associated with the process measures of assisted living admission and discharge practices. Our specific hypotheses were: (a) less flexible admission and discharge-related regulations will be associated with a decreased willingness to admit and retain residents with higher physical care needs; (b) assisted living organizational characteristics such as a lower private pay payment rate, affiliation with a nursing home or continuing care retirement community (CCRC), and a higher percent of residents on Medicaid will be associated with a decreased willingness to admit and retain residents with higher physical care needs; and (c) relationships between regulations/organizational characteristics and practices may differ depending on the extent of resident need (i.e., level of activity of daily living [ADL] impairment).

Methods

Data

We utilized assisted living community-level data from a study conducted by members of our research team from the University of North Carolina at Chapel Hill between 2016 and 2018 to examine care practices in assisted living. In that study, a stratified random sample of 250 assisted living communities from seven states (Arkansas, Louisiana, New Jersey, New York, Oklahoma, Pennsylvania, and Texas) was recruited. Within these states, 2 geographically clustered regions were selected to be representative of the state based on 8 demographic variables (i.e., per capita income, percent of population below the poverty level, percent of population identified as persons of color, unemployment rate, percent of the population age 65 years and over; number of primary care physicians, and hospital and nursing home beds per individual ages 65 years and over) (Zimmerman et al., 2005). For more information about the sampling frame, please see the Supplementary Material.

To be included in the study, assisted living communities had to be licensed by the state, have a census larger than 4, primarily serve adults aged 65+, and provide non-nursing home long-term care. Assisted living communities within states were approached in random order, and recruitment in each state continued until at least 35 communities agreed to participate. Administrators and health care supervisors in participating communities were interviewed about assisted living characteristics such as staffing; a limited amount of information (e.g., the number of residents in dementia-specific beds and primary payor status) was extracted from resident charts (Carder et al., 2022; Thomas et al., 2021). Approximately 4% of observations (n=10) had missing data for one or more variables and were listwise deleted. Data on regulations pertaining to admission and discharge criteria in 2018 were obtained from a longitudinal database of regulations for each of the 350 license types within the 50 states and Washington D.C. (Smith et al., 2021).

Measures

Assisted living community-level practices. Administrators were asked yes/no questions regarding whether they ever admitted or discharged residents who had various physical limitations. Analyses focused on one ADL from each of the three different stages of functional loss from chronic disease: unable to bathe or clean oneself (early stage), unable to get out of bed (mid stage), and unable to feed oneself (late stage) (Katz et al., 1963).

Assisted living organizational characteristics. We also examined other assisted living community characteristics. The percent of residents receiving Medicaid or state financial assistance was created using resident chart data. Administrator-reported data included ownership (for-profit or not-for-profit), number of beds, occupancy, average monthly private pay payment rate, whether the community was operated in association with a nursing home or CCRC, presence of a licensed practical nurse or registered nurse on site at least some portion of the day, and resident-to-staff ratio (averaged across three points in time: 10 am, 8 pm, and 2 am). We categorized continuous values as below/equal to the median vs. above the median.

Admission and discharge-related regulations. A dataset of state regulations had been previously created using question-based coding to record the presence or absence of specific regulations for each type of license/certification within each state (Smith et al., 2021). Responses to three regulatory questions pertaining to admission and discharge were relevant for this analysis: (1) "Does the license type limit admission based on physical care needs?", (2) "Does the license type require communities to discharge based on physical care needs?", and (3) "Does the state require use of third party services (e.g., home health or hospice services) to retain residents whose condition exceeds the community's admission/retention criteria (e.g., needs nursing services, can't evacuate, needs 2-person assist)?"

Using these data on admission and discharge-related regulations, we created three regulatory categories for each license type, ranging from most flexible to least flexible, that was applied to each individual assisted living community. For the admission measure, scores ranged from 1-3, with 1 being the most flexible regulation and 3 being the least flexible. A score of 1 indicated that the license type had no requirements to limit admission based on physical care needs. A score of 2 indicated that a resident's needs could exceed the specified admission requirements if

the resident received services from a third party (i.e., hospice, home health agency). A score of 3 reflected a license type that restricted admission and had *no* exceptions for residents receiving services from a third-party. The categories for discharge-related regulations were created similarly. Examples of text from the regulations are displayed in Table S1 in the Supplementary Material.

Analysis

Weights were based on assisted living community selection probability proportional to bed size. Data on sampled communities were scaled to represent the population of assisted living communities within the 7 states (For more information about the creation of the weights, please see the Supplementary Material). We examined the relationship between assisted living factors (i.e., admission/discharge-related regulations and organizational characteristics) and assisted living practices pertaining to admission/discharge for residents with three different levels of ADL need using multilevel logistic regression models. We examined null multilevel logistic regression models with random intercepts at the license level to explore the percent of variation in each outcome that was explained by the license type. We then estimated unadjusted models that examined the relationship between each independent variable and each outcome. We also examined models adjusting for all regulatory and organizational characteristics listed in the measures section. A random intercept was included at the license type level in all models. Stata version 17 was used for the analysis. Setting our alpha at .05, we used a Bonferroni adjusted *p* value of .017 to account for comparisons across three different types of ADLs (VanderWeele and Mather, 2019). We displayed our results as average marginal effects. The average marginal effect is interpreted as the difference in the predicted probability for each regulatory or organizational characteristic (e.g., for-profit ownership) compared to the reference group (e.g., non-profit ownership).

The Brown institutional review board approved all study procedures. Additional information about the data and methods used for these analyses can be found in the Brown Digital Repository.

Results

Table 1 provides the characteristics of the 240 communities included in this study which represented 23 different license types. The median number of beds was 49, 31% were affiliated with a nursing home or were part of CCRC and 66% were for-profit. Figure 2 displays the weighted percent of communities that had admission and discharge policies pertaining to the ADL limitations of bathing, getting out of bed, and feeding. Most (78%) assisted living communities reported that they admited residents who needed assistance with bathing. Only 13% of communities admitted residents who needed assistance getting out of bed and 27% of communities admitted residents unable to feed themselves. Regarding discharge practices, 20% discharged residents who needed assistance with bathing and 69% discharged residents who needed assistance getting out of bed. Approximately 52% discharged residents who needed assistance with feeding.

The intraclass correlation coefficient (ICC) indicated that between 6% to 21% of the variation in admission and discharge practices was explained by license type (Table 2). Results from the unadjusted and adjusted models examining the association of assisted living admission practices with regulatory and organizational characteristics are shown in Figure 3.

In the adjusted models, for-profit communities had a 16% increased probability of admitting residents who needed assistance with bathing when compared to non-profit assisted living communities (95% CI: 3.9%, 28.1%). There were no characteristics associated with admission practices pertaining to limitations in getting out of bed. Communities above the median in personal care staff to resident ratios had a 17% increased probability of admitting residents who needed assistance with feeding (95% CI: 6.5%, 27.1%). Being a for-profit community increased the probability of admitting residents with feeding limitations by 18.3% (95% CI: 7.8%, 28.8%) in the adjusted model.

Figure 4 presents results from the same models but related to discharge practices. Regulatory and organizational characteristics were not associated with the likelihood of discharging residents due to bathing limitations or due to limitations getting out of bed. Communities above the median in personal care staff-to-resident ratios displayed a 25.4% decrease (95% CI: -37.7, -13.2) in the probability of discharging residents with feeding limitations. Assisted living

communities affiliated with a CCRC or nursing home had a 19% increase (95% CI: 7.1, 31.3) in the probability of discharging residents who needed assistance with feeding.

Discussion

This study explored characteristics associated with assisted living admission and discharge practices in a sample of assisted living communities from seven states. Previous work on characteristics related to admission and discharge practices is illuminating but is state-specific or over 10 years old (Ball et al., 2004; Bernard et al., 2001; Chapin & Dobbs, 2001; Street et al., 2009). Additional inquiry in this area is important given the mental and physical stress that can accompany relocating in later life (Costlow & Parmelee, 2020; Villeneuve et al., 2022), as well as the preference of older adults to age-in-place within their own homes (Davis, 2021).

Three-quarters of assisted living communities admitted residents with bathing limitations and few (one-quarter) admitted residents with feeding limitations. Only 13% of assisted living communities admitted residents who needed assistance with getting out of bed. The finding that fewer assisted living communities admitted residents who needed assistance getting out of bed than feeding was somewhat unexpected, as feeding limitations are a later stage ADL need than getting out of bed (Katz et al., 1963). One potential reason for the lower number of providers that admit residents with mobility limitations is that some regulations explicitly mention the ability to ambulate during an emergency. For example, the Texas administrative code for assisted living communities with a License Type A states “Regardless of the possibility of ‘aging in place’ or securing additional services, the facility must meet all Life Safety Code requirements based on each resident's evacuation capabilities (Texas Administrative Code, 2018).” Under that requirement, administrators may choose to only admit residents who can evacuate (i.e., do not need assistance getting out of bed). This finding was supported by an earlier study of Kansas administrators that found less than 10% of administrators would admit residents who required assistance entering or leaving the building (Chapin & Dobbs, 2001).

Discharge practices among assisted living communities were slightly more lenient than admission practices, a finding also echoed in the Kansas study (Chapin & Dobbs, 2001). For example, while only 13% of assisted living communities admitted residents who needed assistance getting out of bed, 69% would discharge these residents. Therefore, some assisted

living communities may make accommodations for residents who experience functional decline so that they can remain in the community despite not admitting residents with similar need for assistance. Additional research is needed to examine the relationship between assisted living retention practices and resident outcomes.

Assisted living regulations were not statistically associated with admission and discharge practices. This lack of relationship could be related to the sample size or other sample characteristics. Alternatively, other license-specific regulations such as those pertaining to staffing or emergency preparedness may be more salient in describing variation in admission and discharge practices. As shown by the ICC, nearly 21% of the variation in admission practices pertaining to feeding was explained by the license type. Street and colleagues (2009) similarly found substantial differences in admissions and discharge practices by Florida license types (Traditional, High Frailty, and Behavioral).

Some, but not all, organizational characteristics displayed the hypothesized relationship with assisted living admission practices. A higher ratio of personal care staff to residents was associated with an increased probability of admitting and a decreased probability of discharging residents who needed assistance with feeding. This finding aligns with Donabedian's conceptual framework; the staffing ratio (a structure) may influence whether an assisted living community has the capacity to admit, care for, and retain residents with complex care needs (a process). Qualitative work by Ball and colleagues (2004) also found that staffing levels influenced an assisted living community's decision to admit or retain residents. A study of five assisted living communities found that those with an "enhanced care" program that included higher staff: resident ratios, additional training, higher staff wages and access to palliative and end of life care, supported aging in place for residents with dementia (Hyde et al., 2014).

Additionally, as hypothesized, being operated in association with a nursing home or CCRC was associated with an increase in the probability of discharging residents who had limitations in feeding. The decision to discharge residents with late-loss ADL limitations may be driven by the ability to continue providing care but in a more staff-intensive setting. Assisted living residents with complex care needs who deplete their financial resources may be moved more quickly by organizations with nursing home affiliations because Medicaid can provide coverage for

residents in these facilities. However, relocating residents to an affiliated CCRC or nursing home is stigmatizing and antithetical to aging-in-place (Zimmerman et al., 2016) and should be reconsidered if possible.

For-profit communities were associated with an increased probability of admitting residents with bathing and feeding limitations. For-profit long-term care communities have higher profit margins (Bos et al., 2017), which may contribute to the ability to provide more complex care services. Previous research by Ball and colleagues (2004) found that assisted living communities with greater resources, which tended to be corporate owned, were able to hire additional staff and admit residents with more complex ADL needs. Alternatively, for-profit communities may simply be motivated by a financial incentive to fill empty beds regardless of whether augmented care is provided.

Other organizational characteristics were not associated with discharge practices, including the presence of an LPN/RN on site. That said, LPNs and RNs likely play a role in the ability of residents with complex care needs to age in place due to nurses' roles in care coordination, assessment, and medication administration (Montayre & Montayre, 2017). Assisted living administrators and policy makers should consider whether and how the presence of an LPN or RN on site informs practices pertaining to admitting and discharging individuals with physical care needs.

One limitation of this study is that while the sample of 250 assisted living communities is large in the context of having primary data, it may not have been diverse enough to detect meaningful differences; also, the number of organizational characteristics under study was limited. There may be unmeasured factors explaining or confounding the study relationships. For example, Mead and colleagues (2005) found that sociocultural aspects such as whether the culture of the assisted living community is dementia-friendly and the level of family involvement in resident care help shape decisions to move residents into and out of assisted living communities. In addition, our measure of admission and discharge practices is at the assisted living-level, making it impossible to determine whether admission and discharge practices vary based on individual residents. Another limitation is that the seven states may not be sufficiently representative for

findings to generalize to other states or to the nation. Finally, the cross-sectional nature of this study makes it impossible to determine the temporal order among the relationships.

To conclude, we found that assisted living characteristics such as being operated in association with a CCRC or nursing home, being a for-profit community, and those with a higher number of personal care staff members to residents, related to assisted living community practices to admit and discharge residents with physical care needs – in essence, to the aging in place that assisted living residents desire. Although we did not find a relationship between admission regulations and admission practices, other regulations such as those pertaining to staffing levels and disaster preparedness may be relevant to admission decisions and should be further investigated. Additional research is needed to understand whether the structure and process measures identified in this study ultimately influence resident outcomes such as whether assisted living residents can age in place (an important person-centered outcome).

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Conflict of Interest

None declared.

Data Availability

Although the data for this manuscript are not publicly available, we provide the programming code in the Brown digital repository. This study is not preregistered.

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More information about the methods in this project can be found in the Brown digital repository (https://doi.org/10.26300/wajx-q360).

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Tables

Table 1. Descriptive statistics of assisted living communities (n=240)

Characteristic	**Weighted[a] percent or median (IQR)**
Number of beds in assisted living community (median)	49 (31, 74)
Occupancy rate (median)	79.8% (63.8, 88.2)
Monthly private pay payment rate (median)	$3,957.4 (3,000, 5,037.9)
Percent of residents currently receiving Medicaid (median)	0% (0, 1.9)
Number of personal care staff members to one resident (averaged across three shifts) (median)	0.10 (0.07, 0.28)
Affiliated with nursing home or part of a CCRC (%)	31.0%
Any on-site LPN or RN presence (%)	78.0%
For-profit (%)	65.7%

Note: IQR is interquartile range; CCRC is Continuing Care Retirement Community; LPN is licensed practical nurse; RN is registered nurse; [a]Weight = community-level weight

Table 2. Intraclass correlation coefficients for the null models

Outcome	Intraclass correlation coefficient for null model
Admission for bathing	.09
Admission for getting out of bed	.17
Admission for feeding	.21
Discharge for bathing	.10
Discharge for getting out of bed	.17
Discharge for feeding	.06

Figures

Figure 1. Conceptual model of potential correlates of admission and retention practices in assisted living

ALT TEXT: The conceptual model depicts Donabedian's structure, process, outcome framework applied to assisted living community admission practices. Structures such as the number of beds and staffing levels influence the process measures of admission and retention practices in assisted living. The process measures influence the outcome measure of aging-in-place. Admission and discharge state regulations influence structures and processes.

Figure 2. Percent of assisted living communities that admit and discharge residents who need support with different activities of daily living (n=240) [a]

[a.]Weight = community-level weight

ALT TEXT: The majority of assisted living communities will admit individuals who are unable to bathe themselves and few will discharge individuals who need assistance with bathing. Most assisted living communities will not admit individuals who are unable to get out of bed and many will discharge residents who need assistance with getting out of bed.

Figure 3. The relationship of regulatory and organizational characteristics with assisted living admission practices, displayed as marginal effects

Abbreviations: CCRC is a continuing care retirement community.

Notes: Multivariate models include all covariates displayed in the figure. For more information about variables, please see Table 1. Admission scores range from 1 (the reference group, representing the most flexible admission regulations) to 3 (the least flexible admission regulations)

ALT TEXT: Bivariate and multivariate models indicate that state regulations were not associated with admission practices in assisted living. Some organizational characteristics were associated with assisted living admission practices. Assisted living communities with above the median value in of staffing levels were more likely to admit residents who needed assistance with feeding.

Figure 4. The relationship of regulatory and organizational characteristics with assisted living discharge practices, displayed as marginal effects

Abbreviations: CCRC is a continuing care retirement community.

Notes: Multivariate models include all covariates displayed in the figure. Discharge scores range from 1 (the reference group, representing the most flexible admission regulations) to 3 (the least flexible admission regulations)

ALT TEXT: Bivariate and multivariate models indicate that state regulations were not associated with discharge practices in assisted living. Some organizational characteristics were associated with assisted living discharge practices. Assisted living communities that were part of a continuing care retirement community were more likely to discharge residents who needed assistance with feeding.

Figure 1

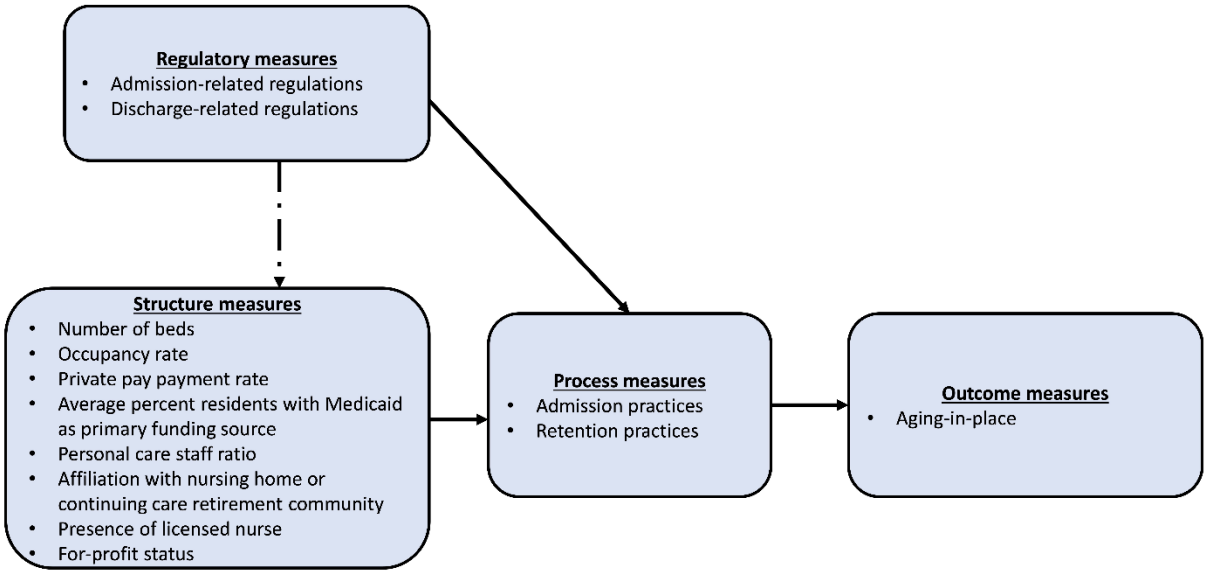

Figure 2

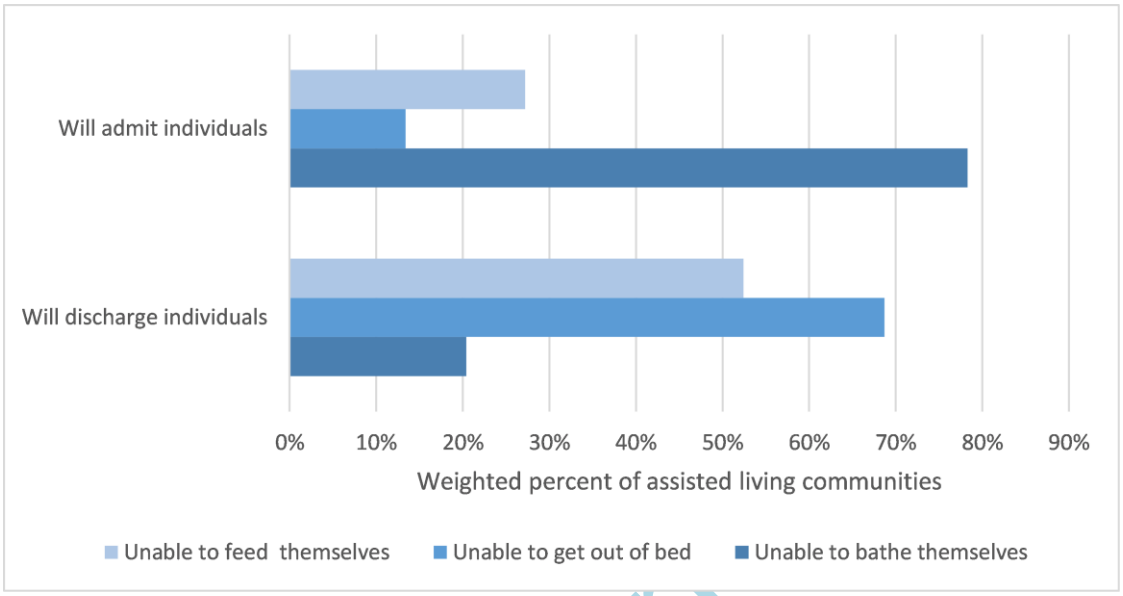

Figure 3

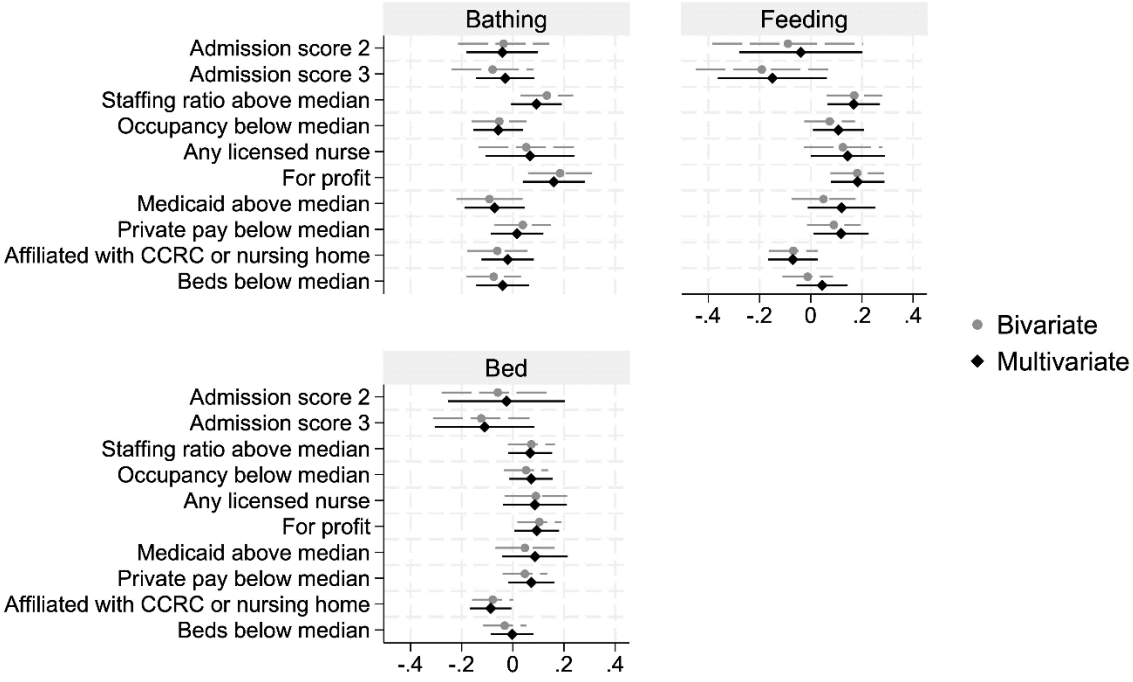

Figure 4