Doing Better to Do Good: The Impact of Strategic Adaptation on Nursing Home Performance

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Objective. To test the hypothesis that a greater commitment to strategic adaptation, as exhibited by more extensive implementation of a subacute/rehabilitation care strategy in nursing homes, will be associated with superior performance.

Data Sources. Online Survey, Certification, and Reporting (OSCAR) data from 1997 to 2004, and the area resource file (ARF).

Study Design. The extent of strategic adaptation was measured by an aggregate weighted implementation score. Nursing home performance was measured by occupancy rate and two measures of payer mix. We conducted multivariate regression analyses using a cross-sectional time series generalized estimating equation (GEE) model to examine the effect of nursing home strategic implementation on each of the three performance measures, controlling for market and organizational characteristics that could influence nursing home performance.

Data Collection/Abstraction Methods. OSCAR data was merged with relevant ARF data.

Principal Findings. The results of our analysis provide strong support for the hypothesis.

Conclusions. From a theoretical perspective, our findings confirm that organizations that adjust strategies and structures to better fit environmental demands achieve superior performance. From a managerial perspective, these results support the importance of proactive strategic leadership in the nursing home industry.

Key Words. Nursing homes, strategic adaptations, financial performance

The performance of nursing homes, particularly with respect to the quality of care, has been the subject of public policy concern for some time (Institute of Medicine 1986, 2001). Increased regulatory scrutiny was imposed by the 1987 Nursing Home Reform Act and subsequently reinforced by the quality initiatives that began in the 1990s. More recently, the Center for Medicare and

Medicaid Services (CMS) began publicly reporting quality measures for individual facilities to assist consumers in selecting a nursing home (CMS 2005). However, the vicissitudes associated with heavy reliance on public program (Medicaid and Medicare) financing has raised awareness of the importance of monitoring, in addition to quality, indicators reflecting effective economic performance (Weech-Maldonado et al. 2003). Indeed, given the increased frequency of facility closures and bankruptcies in recent years, the old adage "to do good, you have to do well" has never been more relevant for the nursing home industry (Angelelli et al. 2003; Mor et al. 2004).

The role of strategic adaptation, defined as the alignment of organizational strategy and structure, in accounting for differences in organizational performance has long generated considerable theoretical and managerial interest (Lawrence and Lorsch 1967; Child 1972; Miles and Snow 1978; Schendel and Hofer 1979; Porter 1980; Ghemawat 2001). While an ongoing process, strategic adaptation can be greatly accelerated by a relatively dramatic and visible change or set of changes in the environment. Organizations which do not adapt their strategies and restructure accordingly in anticipation or in response to these changes may jeopardize performance (Schendel and Hofer 1979; Meyer 1982; Walston and Bogue 1999).

There have been a number of studies of the determinants of strategic adaptation in health care, including nursing home care, that confirm an environmental motivation (Zajac and Shortell 1989; Shortell and Zajac 1990; Meyer, Goes, and Brooks 1993; Banaszak-Holl, Zinn, and Mor 1996; Walston and Bogue 1999; Kumar, Subramanian, and Strandholm, 2002; Luke, Walston, and Plummer 2003; Luke 2004). Some have specifically investigated the impact of strategy implementation on the performance of health care organizations (Clement 1987; Clement et al. 1997; Flood et al. 1998). However, while a topic of considerable managerial interest and policy relevance, few have considered the performance impact of strategy implementation in nursing homes (Rosko et al. 1995; Davis, Brannon, and Zinn 2001; Castle 2003). Thus, the objective of this study is to determine whether, and to what extent, strategic adaptation, exemplified here by the implementation of a subacute/

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rehabilitative care services strategy in response to market demands, affects nursing home performance.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

There are several different theoretical perspectives on how organizations, such as nursing homes, respond to evolving environmental pressures and demands. The resource dependence perspective emphasizes strategic choice, with organizations deemed to have the ability to interpret environmental demands and respond accordingly (Pfeffer and Salancik 1978). This perspective argues that no single organization can generate all the resources it needs for survival, requiring strategic action to ensure access to critical resources controlled by other organizations in the environment. Thus, strategic responses are aimed at lowering the level of uncertainty in the environment by securing a stable flow of resources. However, organizations that provide resources (such as referrals for nursing home care), frequently seek accommodations in return from the resource recipient. Changes in organizational structure or behavior may be required to accommodate the demands of resource providers in order to secure a stable flow of resources (Oliver 1990).

The strategic management perspective complements resource dependence theory by taking the additional step of linking environmental forces with strategic implementation (Schendel and Hofer 1979; Shortell and Zajac 1990; Luke 2004). It is explicitly concerned with performance, arguing that managers have discretion in choosing and implementing strategies to match environmental demands in ways that enhance organizational performance. This perspective argues that in high performing organizations, structure follows strategy (Schendel and Hofer 1979; Kimberly and Zajac 1985).

Changing expectations on the part of major resource providers with respect to the acuity of care provided in nursing homes represents a major source of increased environmental pressure requiring effective strategic adaptation. By providing the financial incentive to reduce hospital length of stay through early discharge, the implementation of Medicare's Diagnostic Related Groups (DRGs) for hospital reimbursement had the effect of increasing the acuity and hence the medical care requirements of residents discharged to nursing homes (Gerety et al. 1989; Cornelius et al. 1994). Compounding the DRG effect, the growth of managed care to approximately 15 percent of the Medicare eligible population by 2004 also promoted reduced hospital length of stay, intensifying the medical care needs of patients discharged to nursing

homes (ManagedCareOnline 2005). Thus, due in part to shortened Medicare and managed care hospital stays, the acuity level of nursing facility residents has increased substantially (Feng et al. 2006). National trends indicate that the proportion of nursing homes with more than 11 percent of residents receiving tube feeding increased from less than 10 percent in 1991 to 20 percent in 2000. Similarly, the proportion of facilities providing intravenous and tracheotomy services increased from 14 and 21 percent, respectively, in 1991 to 37 and 24 percent in 2000 (Zinn, Mor, and Gozalo 2000). In addition, after declining from 16.1 percent in 1997 to 12.7 percent in 1999 (possibly in reaction to prospective payment implementation), the percentage of nursing home residents receiving specialized rehabilitation care rebounded to 18.6 percent in 2004.

At the same time that nursing homes are required by key resource constituencies to admit increasingly complex patients and provide new treatments to meet their needs, nonmedical residential programs are attracting lighter care patients. In particular, assisted living facilities have made serious inroads into the private pay market by providing an alternative for residents requiring supportive or maintenance care. As a result, admissions to nursing homes are increasingly limited to those requiring a higher level of care than that provided in assisted living facilities. By siphoning off custodial private pay patients, assisted living facilities are contributing to the increase in resident acuity in nursing facilities. To the extent that these facilities are viewed as more "home-like" and therefore preferable to nursing homes, this trend is likely to persist. While the extent of substitution appears to depend on supply and demand conditions of local markets, estimates range from 10 to 25 percent of nursing home admissions. Thus, as lower acuity clients opt for assisted living, nursing home case-mix acuity has shifted upward (Newcomer et al. 2001).

Shortell, Morrison, and Robbins (1985) identified six basic strategies that health care organizations can pursue in response to environmental demands, including product/service diversification. We define diversification as offering a wider range of services through expansion within and into particular service areas. The environmental conditions confronting nursing homes imply the need for strategic adaptation through diversification into subacute and rehabilitative care. Implementation of this diversification strategy requires investments in new structure and staffing facilitating the provision of subacute and rehabilitative care.

The effectiveness with which an organization implements its chosen strategy can be a major determinant of organizational performance (Galbraith and Nathanson 1978). However, organizations differ in their ability to implement strategy effectively. Successful implementation requires that numerous

interconnected elements impacted by a change in strategy are addressed simultaneously, including staffing, skill set, and structure (Waterman 1982). Because of the scope of implementation that may be required, changing only one or two elements may be insufficient to bring about effective strategic implementation. Because of interconnectedness, implementation of one element may necessitate change in other elements. Implementation of a diversification strategy is no exception, as diversifying organizations may need to develop competence in different skills or acquire assets to serve new market segments (Clement 1987).

In addition, trends in the environment which are substantial and relatively permanent, like the demand for subacute and rehabilitative care in nursing homes, require changes of greater magnitude with respect to new and different resources and capabilities (Shortell and Zajac 1990). Thus, the degree to which strategic implementation has a positive impact on performance may depend on whether it is sufficient to effectively address environmental demands. This implies that facilities that have decided to diversify into subacute and rehabilitation care and are fully committed to the investment required for effective implementation may be more likely to be rewarded by superior financial and operational performance. These considerations motivate the following hypothesis:

> **Hypothesis**: Those facilities that have a greater commitment to strategic adaptation, as exhibited by more extensive implementation of a subacute/rehabilitation care strategy, will demonstrate superior performance.

METHODS

Data and Sample

The primary data for this study are longitudinal, derived from the Online Survey Certification and Reporting (OSCAR) system. An administrative database maintained by the Centers for Medicare and Medicaid Services (CMS), the OSCAR includes organizational characteristics for all Medicare/Medicaid certified nursing homes in the U.S. and aggregate resident data routinely collected as part of the licensure and certification process. CMS contracts with each state to conduct onsite inspections, which occur every 9–15 months (on average, about once a year). Survey results are evaluated to determine whether a Medicare/Medicaid participating nursing home meets the minimum quality and performance standards established by the CMS.

We used OSCAR data from 1997 to 2004 for this study, restricting our analysis to all urban freestanding nursing homes located within the boundaries of a metropolitan statistical area (MSA). Facilities in MSAs that had fewer than five nursing homes were excluded from the analysis, because all measures of organizational performance and the key explanatory variable (described below) were defined within the MSA context. Too few observations in a MSA could lead to potential measurement bias. We chose not to include hospital-based facilities because their managerial decisions are likely to be broadly influenced by the agenda and resources of the hospital that owns them. The final analytic sample (including 71,551 surveys from 10,200 unique facilities located in 801 counties) was merged with yearly data from the area resource file (ARF) over the same period to obtain relevant market (County/MSA) level variables.

Measures

In the test of our hypotheses, measures of nursing home economic performance are the dependent variables, and the existence and extent of implementation of a subacute/rehabilitation care diversification strategy is the primary independent variable. The unit of analysis in this study is the nursing home.

Dependent Variables

Because organizational performance is a multidimensional concept, no one single measure captures its complexity. Nor is there a conceptual or empirical basis for prioritizing one over another as a single best measure (Damanpour and Evan 1984). For these reasons, we used multiple measures of economic performance. Because we were interested in performance relative to peers within the MSA in which the facility is located, all performance measures are continuous and expressed as the deviation of the facility performance from the MSA average performance level for each year.

Occupancy is our first performance measure. Historically, most nursing homes were located in markets characterized by excess Medicaid demand, enabling them to operate at close to full capacity (Scanlon 1980). The lack of viable substitutes for nursing home care coupled with regulatory restrictions on new market entry left consumers with limited choice, so that even homes perceived to be substandard had high occupancy rates. However, the growth in the availability of home health and assisted living, and the sun-setting of Certificate of Need legislation in numerous states has contributed to excess capacity in the nursing home industry, with national occupancy rate falling from 93 percent in 1977 to 87 percent by 1995, and further down to 83 percent

by 2003. Nursing home administrators monitor occupancy rate closely because of its revenue implications, and threatened by declining occupancy because of evolving market conditions, they would be motivated to take action to sustain or increase it. Thus, diversification into subacute/rehabilitative care is expected to contribute to better performance with respect to occupancy. Although there is substantial regional variation in occupancy rates, instead of using the raw occupancy rate (percent beds that are occupied), we measure occupancy for each facility relative to a "typical" facility in the same MSA, as the deviation of the facility's occupancy rate from the MSA mean occupancy rate in each year. This dependent variable has an aggregate (over all years) mean of 0 percent (necessarily) and a range from -87 to 35 percent.

Source of revenue (payer mix) is a prime determinant of the ability to secure resources. The Medicaid program is the largest purchaser of nursing home services. Although there is considerable variation in Medicaid per diem payment rates from state to state, these rates are usually lower than other payers, and may be below the actual cost of providing care (Seidman 2005). The extent to which facilities are able to attract residents providing revenue streams from more lucrative sources of revenue (e.g., Medicare and private pay) and minimize dependence on less lucrative sources (e.g., Medicaid) is an indicator of the effectiveness of payer mix management. We measure payer mix performance based on two variables: percent of nursing home residents in the total census who are private pay, and percent of residents whose care is reimbursed by Medicare. Again, both variables are defined as the deviation from the MSA mean in each year instead of their raw values. For each, the aggregate mean is 0 percent, with a range of -55 to 88 percent for percent private pay and -29 to 95 percent for percent of Medicare.

Independent Variables

Our key independent variable is a constructed measure representing the extent of implementation of a diversification strategy. This measure of strategic implementation reflects the resources needed to care for the medical and rehabilitative care needs of residents with higher case-mix acuity. The following resources were used to construct the measure of strategic implementation used in our analyses:

- presence of a ventilator care unit,
- presence of a rehabilitation unit,
- presence of a hospice program,

- employment of physician extenders (nurse practitioners or physician assistants),
- employment of more than half of the full-time equivalent physical therapists or occupational therapists on staff.

We constructed a single implementation score for each nursing home in our data set for each year in the study based on the above set of investments facilitating subacute and rehabilitation care provision.

The role of management in meeting or exceeding performance objectives depends on the ability to adapt organizational structure to be consonant with environmental opportunities and constraints (Welton 2006). This suggests that the performance impact of strategic adaptation is largely a function of how effectively managers implement strategy, engaging in a broad range of efforts aimed at transforming strategic intentions into action (Galbraith and Nathanson 1978; Shortell, Morrison, and Friedman 1990). However, some health care provider organizations may adopt new structure or staffing capabilities in order to maintain prestige and status following similar actions by competitors (Fennell 1980; Goes and Park 1997). In that case, strategic implementation is not necessarily an adaptive response to environmental demands, but rather conformance with the actions of the majority through a process institutional theorists label "mimetic isomorphism" (DiMaggio and Powell 1983). To control for these "bandwagon" effects, the implementation score was adjusted by the proportion of nursing homes that had implemented each of the five structure or staffing elements within specific markets. Thus, the fewer the number of facilities in the local market implementing these strategic components, the higher the implementation score. Accordingly, the implementation score for nursing home k at time t is calculated as follows:

$$AI_{k,t} = \sum_{i=1}^{5} \{I_{k,i,t}/P_{i,t}\},$$

where $AI_{k,t}$ is the adjusted implementation score for nursing home k at time t; $I_{k,i,t}$ the implementation status (0 or 1) for nursing home k on the ith implementation element at time t; $P_{i,t}$ the proportion of nursing homes in the market area (MSA) that had implemented the ith element at time t.

A score is calculated for each year for each facility and, based on the formula, facility scores are a function of when and how many diversification elements are implemented and how that rate of adoption compares with others in the market (MSA).

A number of control variables at both the organizational and market level that could influence economic performance were included in the models. With respect to organizational control variables, an organization's existing capacity for securing resources will impact performance. Slack is defined as a pool of resources in an organization that is in excess of the minimum necessary to produce a given level of organizational output (Nohria and Gulati 1996). Among the organizational characteristics associated with slack are size, system membership, and control status. Larger facilities command greater internal resources, including larger administrative staffs, and may be more able to accommodate environmental change through internal restructuring than smaller facilities. Similarly, system membership can signify greater resource availability, particularly access to capital, that could provide flexibility in meeting performance targets. In addition, while for-profits are presumably the most market-oriented providers and would be expected to promptly identify changes in the environment, nonprofits subsidized through religious or fraternal affiliation may be better positioned to implement them.

Categorical variables, instead of a continuous one, were used to capture the possible curvilinear effect of facility size on performance. Facility size was categorized as: fewer than 50 beds (the reference group), 50 or more but less than 100 beds, 100 or more but less than 150 beds, 150 or more but less than 200 beds, and 200 or more beds. Dichotomous variables were used to measure other structural characteristics. System membership was indicated by nursing home chain affiliation (versus stand-alone), and control status by for-profit status (versus nonprofit). An indicator for stand-alone (nonchain) for-profit facilities was also included, to distinguish them from all other facilities. In addition, the percent of Medicare residents was included in the model estimating occupancy performance (but not in other models) to account for shorter length of stay and higher turnover by Medicare residents.

The degree of competition is a market-level variable that could influence nursing home performance. Increased competition may diminish performance because more competitors strain the carrying capacity of the environment (Boeker et al. 1997). We included two variables for market competition. The first is the Herfindahl index, which measures the extent of nursing home bed concentration in the local market. Ranging from 0 to 1, higher scores indicate higher concentration, and hence less competition. The second is the average number of empty beds per nursing home in the market, a measure of excess capacity (this variable was excluded from the model estimating occupancy). Both variables were computed by aggregating facility data from OSCAR to the county level. Per capita income (from ARF) was included in the

models to control for differences in economic conditions across markets. High per capita income signifies location in a wealthier community, and potentially access to resources that may facilitate better nursing home performance. All continuous independent variables were centered at their aggregate mean over the study period with increments by one standard deviation, so that the regression coefficients for these standardized variables are comparable in each model.

Finally, to control for other secular effects, a dummy variable was included in the models for every year represented in the data with 1997 as the base period (results not reported). A description of all variables included in the analysis is provided in Table 1.

Statistical Methods

Taking advantage of the panel nature of our analytic file, we conducted multivariate regression analyses using a cross-sectional time series generalized estimating equation (GEE) model to examine the effect of nursing home strategic implementation on each of the three performance measures. Specifically, we used the XTGEE procedure available in the latest version (V9) of the *STATA* software program (StataCorp 2005), which fits population-averaged panel data models. In each model, the identity link function was specified, assuming a Gaussian (normal) distribution of the dependent variable and an exchangeable correlation structure within each panel (facility). In addition, we applied the Huber–White robust variance estimator to adjust for clustering of observations within facility. The final estimates from these methods are unbiased in both the parameter estimates and the standard errors. Finally, all covariates on the right-hand side of the model equation were time varying and one-year lagged (except the calendar year dummies, which were concurrent with the dependent variable). Mathematically, the model takes the form: $\delta_{i,t} = \alpha + \beta X_{i,t-1} + \varepsilon_{i,t}$ where $\delta_{i,t} = y_{i,t} - \overline{y_t}$ is the deviation in the performance measure for facility i from the MSA mean at time t; α is the model intercept; $X_{i,t-1}$ is a vector of facility and market characteristics measured at $t-1$; β is a vector of parameter estimates for the effects of model covariates; and $\varepsilon_{i,t}$ is the error term.

RESULTS

Table 1 provides a summary description of the variables included in the model. Approximately 74 percent of the homes are for-profit, and 57 percent

Table 1: Description of Variables, Aggregated over 1997–2004

Variable	Percent/Mean (SD)
Dependent (measured as deviation from MSA mean)	
Occupancy rate (δ)	0 (11.5)
Private pay census (δ)	0 (18.9)
Medicare census (δ)	0 (12.7)
Independent	
Implementation score	3.9 (6.3)
Profit	73.8%
Chain	56.5%
Profit and nonchain	26.9%
Total number of beds	
Fewer than 50 (reference)	9.6%
50–99	31.3%
100–149	35.1%
150–199	14.0%
200 or more	10.0%
% Medicare residents	10.3 (13.6)
County Herfindahl index	0.2 (0.2)
County average number of empty nursing home beds	13.9 (9.4)
County per capita income	$26,210 (7,355)
Year dummies	
1997 (reference)	11.5%
1998	11.9%
1999	12.1%
2000	12.5%
2001	12.8%
2002	13.1%
2003	13.2%
2004	13.0%
Number of observations	
Surveys	71,551
Facilities	10,200
Counties	801

MSA, metropolitan statistical area.

are chain affiliated. The largest percentage of homes (about 35 percent) are in the 100–149 bed range.

Table 2 presents the cross-sectional time series GEE regression results. For all three performance measures tested, these results provide strong support for the central hypothesis. Higher implementation scores are associated with higher occupancy rates, and a higher percent of both privately paying and Medicare-reimbursed residents in total census compared with the market mean for these performance measures. For example, a one standard deviation

Table 2: Results of XTGEE Regression Analysis Modeling the Effects of Strategic Implementation on Nursing Home Performance

	Occupancy Rate (δ)			Private Pay Resident Census (δ)			Medicare Resident Census (δ)		
	β	95%	CI	β	95%	CI	β	95%	CI
Implementation score	0.148**	0.057	0.239	0.205**	0.081	0.330	0.283**	0.192	0.375
Profit	−1.585**	−2.057	−1.113	−5.701**	−6.472	−4.930	1.264**	0.756	1.771
Chain	−0.671**	−1.169	−0.172	−1.790**	−2.624	−0.956	0.776**	0.193	1.358
Profit and nonchain	−0.208	−0.794	0.377	−1.156*	−2.060	−0.253	−0.305	−0.937	0.327
Total number of beds (ref.: <50)									
50–99	3.247**	2.445	4.048	1.751*	0.285	3.217	−8.639**	−10.041	−7.237
100–149	4.106**	3.315	4.897	0.372	−1.074	1.818	−9.195**	−10.609	−7.781
150–199	2.739**	1.877	3.601	−1.083	−2.646	0.480	−9.712**	−11.136	−8.288
200 or more	1.224*	0.275	2.173	−4.482**	−6.111	−2.852	−10.838**	−12.293	−9.382
% Medicare residents	−0.392**	−0.521	−0.263	—	—	—	—	—	—
County Herfindahl index	0.194	−0.152	0.541	−0.088	−0.611	0.435	−0.321	−0.709	0.067
County average number of empty NH beds	—	—	—	0.280**	0.072	0.487	0.071	−0.075	0.217
County per capita income	0.037	−0.118	0.191	0.461**	0.180	0.741	0.260**	0.077	0.443
Intercept	−1.192**	−2.013	−0.372	6.102**	4.557	7.646	7.222**	5.793	8.650
χ^2/df/N	280.93/18/71447			543.37/18/71452			361.84/18/71452		

**$p<.01$,
*$p<.05$.
Standard errors for parameter estimates are adjusted for clustering within facility.

increase (about six points) above the aggregate mean implementation score (across markets, facilities, and years, at 4) translates into about a 0.15 increase in the standardized occupancy rate. The effect on both payer source performance measures is even larger.

The effects of many of the organizational-level control variables on performance are also significant. For-profit status and chain affiliation are both significantly associated with decreased performance with respect to occupancy and the proportion of self-pay in payer mix. However, both are associated with a higher Medicare census. The size of the coefficient associated with proprietary status across all three outcomes is very large, particularly with respect to the proportion of residents who are private pay. The interaction term indicates that relative to other facilities, for profit, nonchain affiliated facilities (what are typically considered "Mom and Pop" operations) have significantly lower self-pay residents in total census, compared with the market mean.

Larger size is associated with higher occupancy, but while still significant, the size advantage diminishes for facilities with 200 beds or more. The largest size group also has a significantly lower self-pay and Medicare census. Finally, as expected, a higher proportion of Medicare in the total census is associated with lower occupancy. Since Medicare residents tend to have shorter lengths of stay, this may be attributable to higher rates of turnover in high Medicare facilities.

The results for the market controls are mixed. With respect to competition, while the Herfindahl index has no significant association with our performance measures, the average number of empty beds per facility, signifying the amount of excess capacity in the local market, is significantly associated with higher self-pay census. As expected, higher per capita income in the local market (county) is associated with both a higher self-pay and a higher Medicare census compared with the market means.

DISCUSSION

Our results suggest that more extensive implementation of a subacute/rehabilitation care diversification strategy in nursing homes is an adaptive response associated with better economic performance. In the case of nursing homes, a confluence of market and regulatory events changed the expectations of key resource providers regarding the role of the nursing home with respect to the provision of subacute and rehabilitative care. The results of our

longitudinal analyses indicate that investment in structural and staffing capacity that supports diversification into subacute and rehabilitative care has a positive impact on occupancy and payer mix performance. However, it should be noted that many of the facilities in our data set implemented minimally or not at all, raising the question of why these facilities fail to act in their best interest. In order to address that question, we explore several possible reasons why nursing homes may not invest in a level of strategic implementation sufficient to have a favorable impact on performance.

Given the manner in which the implementation score is constructed, a low score can be attributed to: (1) engaging in limited or no implementation, or (2) implementing strategies that are already widely diffused in the local market, or (3) a combination of the two. If the first, minimal or no implementation may be characteristic of relatively poor facilities lacking slack resources needed for major investment, but that are still devoting scarce resources to modest attempts at strategic implementation in order to be responsive to environmental demands. However, from a resource dependence perspective, these limited efforts may be insufficient to secure resources from key providers needed to have a positive impact on economic performance. Indeed, if resources are diverted from core activities, inadequate investment in strategic implementation may actually contribute to decline in performance over time. Thus, our findings are consistent with a prior study of selective nursing home contracting and referral practices by managed care organizations that found that poorer facilities, even if they are able to meet the minimum criteria needed to secure a managed care contract, rarely get referrals (Zinn, Mor, and Gozalo 2000; Mor et al. 2004).

Alternatively, if the reason for a low implementation score is the proliferation of subacute/rehabilitation care diversification strategies in the local market, ineffective implementation may not be due to a lack of sufficient resources but to a lack of strategic vision and leadership (Alexander 1991). Facilities that delay commitment until a strategy has been widely implemented in the local market may not be responding strategically to changing market demands but reacting to what others are doing in an effort to catch up. However while leadership is important, there may be other reasons for failure to implement strategy, including resource constraints and uncontrollable externalities (Alexander 1991). For example, organizations with slack resources may be better able to attract high-quality personnel at all levels, to identify possible threats from a changing environment and to effectively implement change. While beyond the scope of this study, the role played by leadership (compared with other factors) in effective strategic implementation may merit future exploration.

Although not addressed by our primary hypothesis, the association of some of the control variables with performance was unexpected and merits attention. We assumed that larger, for-profit and chain-affiliated facilities would have slack resources that, independent of the extent of strategic implementation, would be reflected in better performance. To the contrary, for-profit status and chain affiliation are associated with lower occupancy and a lower proportion of self-pay residents in total census compared with market means. It may be that these types of facilities are being hit hard by market forces, such as the growth in assisted living as a viable nursing home substitute for privately paying residents with lighter care needs. In response, these facilities may be pursuing a focused payer mix strategy, concentrating on the Medicare segment. Indeed, the traditional "Mom and Pop" model of nursing home operation (generally for-profit and nonchain) may be particularly at risk in the current and foreseeable market climate, as reflected in payer mix performance. While larger size is associated with higher occupancy, the size advantage appears to be less for the largest (over 200 beds) facilities. Facilities with 200 beds or more also have significantly poorer performance with respect to both self-pay and Medicare payer mix. This may be attributable to diseconomies of scale, including the difficulties of maintaining managerial control in large facilities. In addition, because larger facilities are frequently operated and subsidized by local and state governments as "safety net" facilities that are intended to provide care for the indigent, their mission may be less focused on economic performance. This may also reinforce negative public perception of larger homes as "warehouse-like," diminishing their appeal to the private pay or Medicare market.

Finally, the apparent inconsistency between the two measures of competition may be explained by how nursing home competition works "on the ground." In markets with excess capacity (more empty beds), firms compete more intensely for residents, and would be more motivated to improve their public image through superior performance.

Although we believe the results of this study provide important baseline information with respect to the performance implications of strategic implementation in nursing homes, there are some limitations to our analyses. First, we were limited to examples of structural and staffing implementation in support of a subacute and rehabilitative care diversification strategy that were available in our data. Other examples (for example, implementation of clinical information systems or staff development initiatives) may also impact performance, but these measures are not available on a national basis.

Second, investment in the implementation of strategic change is not without risk. To adopt a postacute diversification strategy, facilities must hire different staff, retrain existing staff, introduce new care procedures, more actively court referral sources and invest in ongoing liaison with these referral sources. Failure to properly gauge the market and competition for these services could result in losses that are directly attributable to efforts to implement a new strategy. However, data limitations precluded our ability to quantify risk in terms of level of investment. Thus, we cannot determine how much risk increases with the level of investment, as indicated by the value of the implementation score. In addition, because 1997 was the first year that all data items needed to construct the implementation score were recorded in OSCAR, we cannot determine if some strategic implementation occurred earlier.

In conclusion, the performance implications of strategic implementation in nursing homes should be of great concern to both providers and policy makers (Banaszak-Holl, Zinn, and Mor 1996). However, there has been very little research on how nursing home choose and implement strategy, in stark contrast to the extensive research on implementation in acute care settings. A possible reason may be the perception that the phrase "nursing home strategic management" is an oxymoron. That is, the services traditionally provided in nursing homes are not associated with proactive approaches to environmental demands. However, our study demonstrates that effective strategic implementation is an important contributor to nursing home performance. Given the key role these organizations play in caring for frail and vulnerable populations, what enables nursing homes to effectively implement strategy needs to be better understood and encouraged. Future research is needed to explore factors fostering a responsive culture that supports effective strategic change in these critical health care providers.

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