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NURSING HOME CONTROL OF PHYSICIAN RESOURCES (NHCOPR)

Orna Intrator, PhD*,

Department of Public Health Sciences, University of Rochester, 265 Crittenden Blvd., Rochester, NY 14642, Phone: 585-275-2191, Orna_Intrator@URMC.Rochester.Edu AND Canandaigua VAMC, 400 Fort Hill Ave, Canandaigua, NY 14424, Phone: 585-276-6892, Orna.Intrator@VA.Gov

Julie Lima, PhD, and

Brown University, Center for Gerontology and Health Care Research, 121 South Main St., Providence, RI 02912, Phone: 972 355-7814, Julie_Lima@Brown.Edu

Terrie Fox Wetle, PhD

Brown University, School of Public Health, 121 South Main St., Providence, RI 02912, Phone: 401 863-9858, Fox_Wetle@Brown.Edu

Abstract

Objective—Physician services are increasingly recognized as important contributors to quality care provision in nursing homes (NHs), but knowledge of ways in which NHs manage/ control physician resources is lacking.

Data—Primary data from surveys of NH Administrators and Directors of Nursing from a nationally representative sample of 1,938 freestanding U.S. NHs in 2009–2010 matched to Online Survey Certification and Reporting (OSCAR), aggregated NH Minimum Data Set (MDS) assessments and Medicare claims, and data from the Area Resource File (ARF).

Methods—The concept of NH Control of Physician Resources (NHCOPR) was measured using NH Administrators' reports of management implementation of rules, policies, and procedures aimed at coordinating work activities. The NHCOPR scale was based on measures of formal relationships, physician oversight and credentialing. Scale values ranged from weakest (0) to tightest (3) control. Several hypotheses of expected associations between NHCOPR and other measures of NH and market characteristics were tested.

Principal Findings—The full NHCOPR score averaged 1.58 (SD=0.77) on the 0–3 scale. Nearly 30% of NHs had weak control (NHCOPR ≤ 1), 47.5% had average control (NHCOPR between 1 and 2), and the remaining 24.8% had tight control (NHCOPR > 2). NHCOPR exhibited

*This work was done while the author was an Associate Professor (Research) at Brown University Department of Health Services Policy and Practice in the School of Public Health and Center for Gerontology & Healthcare Research.

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good face- and predictive-validity as exhibited by positive associations with more beds, more Medicare services, cross coverage and number of physicians in the market.

Conclusions—The NHCOPR scale capturing NH's formal structure of control of physician resources can be useful in studying the impact of NH's physician resources on residents' outcomes with potential for targeted interventions by education and promotion of NH administration of physician staff.

Keywords

Nursing home physicians; care organization; management of medical staff; control

INTRODUCTION

Though the importance of physician involvement in the NH has been recognized, the scant existing literature suggests that there is little physician presence in most NHs, but that when they are present, they have a positive impact on care¹⁻⁴. Given the growing shortage of primary care physicians specially trained in geriatrics and/or committed to NH care, the need to identify structures that optimize physician practice and enhance quality within the NH becomes even more pronounced^{5,6}. Research describing the organization of NH medical staff, its variation, and association of different models of medical staff organization with NH resident outcomes is limited, but a small study of 202 freestanding US NHs has shown tighter medical staff organization to be associated with more positive outcomes^{7,8}.

Recent research borrows from hospital organizational literature in developing dimensions of organization of medical staff in NHs^{9,10}. It is important to recognize that, unlike in hospitals, physicians are only occasionally present in NHs. Rather, nurses are the primary resource for NHs providing services required for management of daily care. Nonetheless, models developed for describing organization and function of hospitals can inform our understanding of NHs. Recently, Katz and colleagues conjectured that salaried NH physicians are more likely to provide better care to residents, not only because of their greater presence in the NH, but also because of the quality of the time spent there¹¹. In this paper we view physicians in NHs as an important, but adjunct, resource necessary to comply with government regulations and which provides nursing staff with applied knowledge and techniques required for managing residents' medical care.

Nursing home control of physician resources is a structural component of the NH organization. The concept of control of physician resources draws from the approach used by Van de Ven and Delbecq whereby control relates to NH leadership attempts to manage the behaviors of participants through hierarchy or organizational attempts to manage behaviors of participants through formalized methods such as rules, policies, and procedures aimed at coordinating work activities¹². Thus, NH control of physician resources involves issues pertaining to appointment processes, employment modes, and management of hierarchies, and formalized mechanisms aiming to assist in collaboration among staff. Using this understanding, we developed a measure of NH Control of Physician Resources (NHCOPR) based on responses to a survey of NH Administrators.

We use the framework of NH medical staff involvement presented by Shield and colleagues (2012) to form hypotheses to test the validity of the NHCOPR measure.⁴ Following Doabedian's structure-process-outcome theory, NHs' medical staff structure, including control of physician resources, was identified as a key element of medical staff involvement in processes of care, which, in turn, were hypothesized to be associated with better resident outcomes

Conceptually, a NH controls its physician resources by modes of staff employment, credentialing and formal oversight. For the purpose of this study we considered physician employment on-staff or through a contract to be similar. If physicians were employed directly or by contract it was assumed that it was easier for the NH to be proactive in its enrollment of medical services. It is also possible that only a small fraction of residents received their care from those physicians that were retained by employment arrangements, therefore it was important to include a measure of the degree to which residents received care from non-employed physicians. This latter measure had been used before to capture the related concept of open/closed practice staff model^{2, 13,14}. Credentialing is another way a NH can control its physician resources. Even if a physician is not employed on staff or by contract, a NH can require that s/he have specific credentials in order to provide care to residents. Finally, even if physicians are credentialed and are on staff or contract, the quality of the care that they provide in the nursing home should be monitored.

Hypotheses

Because there is no 'gold-standard' against which to formally validate NHCOPR, we tested several relationships that we hypothesized should exist between a NH's level of control over its physician resources and other NH and county level characteristics. We first hypothesized that:

1. NHs with more beds will have greater control of their physician resources because of economies of scale.

Controlling for facility size, we further hypothesized that:

2. NHs with a higher proportion of Medicare patients receiving skilled services (not rehabilitation) will have a greater control of their physician resources as these patients require more intensive medical services.

The admission process requires physician involvement, therefore we hypothesized that:

3. NHs with more admissions will have greater control of their physician resources.
4. Controlling for the population aged 65 and older, NHs in counties with higher concentrations of physicians will have greater control of their physician resources since with more physicians from which to recruit, NHs can be more selective regarding whom they choose to practice.

If NHCOPR measures the ability of the NH to assure adequate physician resources we would hypothesize that having higher levels of NHCOPR would be associated with:

5. More cross-coverage among providers and more coverage on weekends and holidays
6. Higher expectations that physicians: (a) participate in care planning meetings; (b) lead team meetings; (c) talk to pharmacy consultants regarding care of residents; and (d) be the primary NH representative in interactions with families.

METHODS

Data

A survey of a nationally representative sample of nursing homes was conducted between August 2009 and April 2011. Administrators in the sampled NHs were asked about the structure of physician involvement in their NHs. Questions were cognitively tested using a group of NH Administrators, in which respondents were asked how they interpreted each question, what tools they used to answer them, and about their overall thought processes.¹⁵ As a result of these cognitive tests, questions were restructured and/or dropped to better ensure that the questions were uniformly interpreted, the responses comparable, and that they addressed the intended concepts.

Several other data sources were used to characterize the surveyed NHs. The Centers for Medicare and Medicaid Services Online Survey Certification and Reporting (OSCAR) of annual certification of NHs provided information on NH's structure and staffing. Aggregated data from the Minimum Data Set (MDS) assessments of all NH residents, and Medicare claims provided information about the acuity of care needs of NH residents (see www.itcfocus.org). County level data about the NH market came from the Area Resource File (ARF).¹⁶

Study Sample

A universe of 14,703 NHs was identified consisting of all certified NHs that a) were located within the 48 contiguous states; b) had 30–499 beds; c) were not part of previous pilot surveys or cognitive interviews; and d) had fewer than 20% beds in AIDS or pediatric units. Among these, 4,149 NHs were selected for the study and 4,035 (97%) were deemed eligible upon further inspection. Completed Administrator surveys were received from 2,215 (55%) NHs. Ninety-three hospital-based NHs were excluded as their management is likely to be governed by the parent hospital and therefore was expected to be different from that of freestanding NHs. The resulting sample included 2,122 freestanding NHs.

A comparison of NH characteristics of the surveyed NHs used in developing NHCOPR to the overall freestanding NH population in 2010 adjusting for the complex stratified sampling frame confirmed that the study sample was representative of the population of U.S. free standing NHs on all characteristics (results not presented).

Variables

NH Control of Physician Resources (NHCOPR)—NHCOPR was defined as a combination of three concepts: credentialing, formal attachment to NH, and physician oversight. These concepts were measured by seven questions. Table 1 provides a detailed

description of the items and scoring method within each concept. *Credentialing* was defined as a dichotomous variable indicating if a committee in the NH credentialed physicians, the Medical Director credentialed physicians, or the administrator took part in the credentialing process. Based on the cognitive testing, most NH administrators understood credentialing to mean checking licensure, practice privileges, and obtaining references that confirm the physician is able to practice.

Formal attachment to NH combined three items. One point was given if the NH had any physicians who were either salaried or on contract. Additional points were given based on the percentage of residents cared for by community physicians *not* under contract with the NH. One point was given if the NH had 11–75% of its residents cared by community physicians, and 2 points were given if that percent was between 0 and 10%. This created a 4-point formal attachment score.

Finally, *physician oversight* was measured by responses on a 5-point likert scale to a question regarding how often the Medical Director checked on the medical care provided by attending physicians. In NHs where the only physician was the medical director physician oversight was assumed to be all of the time.

Each concept subscale was scaled to have a final score with a range of 0 to 1 so that each concept contributed an equal amount to the final NHCOPR measure. The resulting variable, NHCOPR, summing up scores from the 3 subscales ranged between 0 and 3 with higher values indicating tighter control of physician resources.

Other Variables—Information on ownership status (profit/ non-profit/ part of hospital), chain affiliation, number of beds, availability of special care units, payer mix, and occupancy rate were obtained from the OSCAR data. Residents' casemix acuity, number of admissions per bed and proportion of occupied bed days that were paid by Medicare were obtained from www.ltcfocus.org. Urban location and number of physicians to population 65 years old or older in the NH's county were obtained from the ARF. All measures were obtained from 2009 data.

Cross-coverage was obtained from the NH Administrator survey through the question "How often do you expect physicians to provide care for acutely ill residents other than their own patient?" Responses were on a 5-point likert scale. Physical or phone coverage on weekends and holidays by physicians, NPs or PAs was taken from another yes/no questions in the NH Administrator survey.

The degree of missing data for each concept ranged from 1.3% to 5.7%, and taken together, NHCOPR was missing for 8.7% of study NHs, resulting in 1,938 NHs with a value for NHCOPR. NHs that dropped out of the sample did not significantly differ from those that remained in the sample with one exceptions: NHs that remained in the model reported a greater number of hours per day per resident of direct care by registered nurses (RNs), licensed practical nurses (LPNs) or DONs than NHs that dropped out (results not shown).

Statistical Analysis

Strata were classified based on categories of profit-status, NH-type, bed-size, and percentage non-White residents according to data extracted at the end of 2008 from the OSCAR database. Sampling weights for the NH Administrator survey were used in all analyses except for correlations which were not weighted as they only informed the sample. Stata survey procedures were used throughout to adjust for the complex sampling design¹⁷.

To test the hypotheses, multivariate ordinary least squares (OLS) regression was conducted with NHCOPR as the dependent variable and each of the hypothesized variables as an independent variable adjusting for number of beds, profit status and chain affiliation. Results were presented graphically for each level of the hypothesized relationship.

Using the variables presented above we described NHs in 3 categories of NHCOPR: 0–1 weak control, 1–2 average control, and 2–3 tight control. We also sought to describe which facilities were likely to have tighter control, i.e. higher NHCOPR. We conducted multivariate ordinary least squares regression on NHCOPR and formal attachment subscale and ordinal logistic regression on credentialing and physician oversight, adjusting for the complex survey design. Regressors included ownership status, chain affiliation, payer source distribution, availability of special care units, concentration of post-acute care and county measures adjusting for number of beds and casemix acuity.

RESULTS

Table 1 presents the distributions of the NHCOPR measure, its subscales and underlying variables. Fifty-nine percent of NHs responded positively to at least one credentialing item, the most frequent being an administrator's participation in the credentialing process (55.7%). Nine percent of NHs reported at least one salaried physician and 41.5% reported at least one physician under contract. Forty percent of NHs had up to 10% of their residents cared for by community physicians, reflecting a higher degree of physicians' formal attachment to NHs; 33% of NHs had 11% to 75% of their residents cared for by community physicians; and the remaining had more than three-quarters of their residents being cared for by community physicians. The final formal attachment subscale identified 22% of facilities with lower formal attachment scores and 34% with the highest formal attachment score, for an average scaled score between 0 and 1 of 0.56, standard deviation (SD) 0.39.

Physician oversight was identified in 86% of facilities: 56% of administrators reporting 'some of the time', 16% 'most of the time', and the remaining 14% 'All of the time' (including 5% of NHs whose medical director was the sole attending physician.) Scaling responses between 0 (none of the time) and 1 (all of the time) resulted in a mean of 0.44 (SD=0.29) for this concept.

The full NHCOPR score averaged 1.58 (SD=0.77) on the 0–3 scale. Nearly 30% of NHs had NHCOPR of 1 or less, 45.7% had NHCOPR between 1 and 2, and the remaining 24.8% had NHCOPR higher than 2.

Face validation results are presented in Figure 1. Compared to NHs with fewer than 50 beds, larger facilities had increasingly higher NHCOPR. After controlling for bed-size, all other associations were in the hypothesized direction and were statistically significantly related to NHCOPR ($p<.001$ unless otherwise noted). Compared to NHs with the lowest percentage of days paid by Medicare, those in the third quintile or higher had significantly higher NHCOPR. NHs with higher rates of admissions per bed had higher NHCOPR than NHs with fewer admissions. Controlling for bed-size, counties with higher numbers of physicians per 1000 population aged 65 and over were associated with higher NHCOPR ($p<0.001$).

Predictive validation tests confirmed hypotheses 5–6 (Figure 2). Higher NHCOPR levels were associated with NHs having higher levels of cross-coverage, coverage by physicians, NPs, and/or PAs over holidays and weekends, physicians expected to attend care planning meetings, lead team meetings, talk with pharmacy consultants regarding care of residents, and be the primary NH representative in interaction with families.

Table 2 describes NHs within particular ranges of NHCOPR: weak control of physicians (NHCOPR up to 1), average control of physicians (NHCOPR 1–2), and tight control of physicians (NHCOPR 2–3). NHs did not differ in terms of ownership (profit or chain) availability of special care units, or the proportion of Medicaid residents. However, compared to NHs with average control of physicians, NHs with weak control of physicians tended to have fewer beds (95.9 vs. 113.9), have more residents not paid by Medicare or Medicaid (26.6% vs. 24.2%), have slightly lower casemix (also see in the lower number of admissions per bed and average proportion of days receiving Medicare paid care). These NHs were more likely to be located in rural counties (45.8% vs. 24%) that had fewer physicians per capita (2.4 vs. 3.7). In terms of NH process measures, these NHs had lower occupancy rates (81.2% vs. 85.2%), were less likely to have MDs, NPs or PAs available on-site at all times including weekdays (12.87% vs. 24.5%), their physicians were less likely to cover other residents (average 1.64 vs. 1.81 on a 5-point likert scale), and they were less likely to expect their physicians to attend care planning meetings, lead them, talk with pharmacy consultants, or be the primary NH representative for interactions with families (1.40 vs. 1.76, 1.22 vs. 1.40, 2.38 vs. 2.71, 1.78 vs. 1.92, respectively).

Compared to NHs with average NHCOPR, NHs with tight control of their physicians were larger (119 vs. 113.9 beds), were as likely to be located in urban counties, but those counties had a higher rate of physicians per capita (4.2 vs. 3.7 MDs per 1000 population 65 years old or older). Their process measures were better than those of the NHs with average NHCOPR: occupancy rate, coverage or all types, and expectations of physicians were all higher.

Table 3 presents results from a multivariable model of NHCOPR and each of its three subscales associating NH structure and market characteristics. Ordinary Least Squares (OLS) regression was conducted for NHCOPR and formal attachment subscale and ordinal logistic regression was conducted for credentialing and physician oversight. NHs with more beds, higher casemix acuity, more admissions per bed and in urban counties with more physicians per capita were likely to have higher NHCOPR, i.e. tighter control of physicians. However, the relationship of these variables and each of the subscales was somewhat different. Number of NH beds, casemix acuity and number of admissions per bed were only

related to credentialing. Although profit status was not related to NHCOPR it was related to each of the 3 subscales: for-profit NHs were less likely to credential and had less oversight of their physician staff but had higher formal attachment of physicians. On the other hand, as for NHCOPR, urban counties and counties with higher physicians per capita were likely to have higher subscale scores.

DISCUSSION

It has long been recognized that in NHs, as in hospitals, medical staff organization plays a role in the quality of resident care. Recent studies have only begun to quantify physicians' roles and test specific hypotheses^{9–11,18,19}. In this paper we presented a new perspective on medical staff organization, that of NH's control of physician resources. We developed a scale, NHCOPR, to capture the concept as it relates to NH leadership attempts to manage the behaviors of physicians through hierarchy or organizational attempts to manage behaviors of physicians through formalized methods such as rules, policies, and procedures aimed at coordinating work activities¹². NHCOPR captured the concept of control by summing subscales measuring appointment processes, employment modes, and oversight. NHCOPR varied widely across freestanding U.S. NHs. Across its 0–3 range NHCOPR averaged 1.58 with standard deviation of 0.77. Scores lower than 1, indicating weaker NH control, were observed in 29.5% of facilities and scores greater than 2, suggesting tighter control, were observed in 24.8% of facilities. Correlations among subscales of NHCOPR were small; the highest correlation was between credentialing and oversight (0.25). This raises the possibility that future analyses examining the relationship of NHCOPR with outcomes may find a stronger relationship with only some of the subscales.

NHCOPR showed good face validity as exhibited by the relationship in the hypothesized direction of about 10 variables. The predictive validation results showed the association of NHCOPR with NH expectations of cross-coverage on weekends and holidays, physician participation in meetings, interaction with pharmacy consultants, and NH responsibilities towards families. This suggests that there is a relationship to NH processes of care, and potentially hints at a possible association with NH quality of care and resident outcomes. It is important to note that this study used a cross-sectional approach and was not meant to test causal relationships with NHCOPR. Further studies of the relationship of NH control of physicians resources to NH processes and outcomes is required.

An initial analysis examining which NHs were more likely to have tighter control of their physician resources showed that these NHs tended to have more beds, care for sicker or more post-acute patients and located in urban counties and in counties with more physicians per capita. However, we also saw that these relationships varied with the 3 subscales (Table 3). Comparing sizes of coefficients across the 3 subscales shows that for-profit NHs were less likely to credential their physicians or require consistent oversight. Credentialing allows NHs to ascertain that the physicians that provide care to residents are qualified, and physician oversight is an ongoing process to assure adequate performance. These measures may relate to better care. This finding may be important to the American Health Care Association and other associations to assist in targeting intervention to their for-profit members..

Though NHCOPR relates to physicians, NP/PAs provide similar care to NH residents. About 70% of the NHs responding to the administrator survey also responded to a survey of Directors of Nursing (DONs) (1,477 NHs). DONs reported about modes of employment of NP/PAs: 14.5% of NHs with NHCOPR under 1 had NP/PAs who were employed by the NH, 19% with NHCOPR 1–2, and 22% with NHCOPR 2–3. This finding serves as additional validation to the NHCOPR measure and is in line with the literature that reports that NP/PAs provide complementary and not exchangeable care to that provided by physicians^{20,21}. How NHCOPR varies among NHs with NP/PAs and whether the concept of control of physician resources can be extended to NP/PAs are topics for future study.

There are several limitations to the study: NHCOPR was constructed from NH Administrator responses which do not include the perspectives of NH Medical Directors or the physician staff. A future study may examine the concordance of responses of medical directors and administrators. While this paper excludes hospital-based nursing homes, it focuses on the 93% NHs that are free-standing. Conceptually, a hospital-based NH administration would control its physicians resources as tightly as it controls its hospital physician resources as the nursing home would serve as another practice site for its staff and would provide the nursing home an environment that is rich in medical resources. Therefore, the meaning of “control of physician resources” in such a setting might be different. A future study could examine this conjecture. In summary, NHCOPR promises to be an important tool for research and in identifying NHs for intervention.

CONCLUSION

NHs are responsible for the care of a large number of medically complex and frail residents and therefore must assure effective medical care. Monitoring NH’s control of its physician resources may result in better NH resident outcomes. The NHCOPR measure provides a new tool for measuring the concept of control of NH physicians. This paper showed that the NHCOPR measure is valid and reflects the concept of control of physician resources. Future studies should examine the impact of tighter control of physician resource on resident outcomes such as fewer “bad medications”, fewer hospitalizations, better end of life care and other quality measures and resident outcomes. Future studies should also consider the interplay of physicians and other medical staff such as nurse practitioners and physician assistants in the delivery of care to NH residents.

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Figure 1.
Face Validity of Average NHCOPR Score

Figure 2.
Predictive Validity of Average NHCOPR Score

Table 1

Development of Nursing Home Control Of Physician Resources (NHCOPR) Scale and Sub-Scales

Sub-Scale Concept	Items	Scoring	Distribution: Mean (SD) or N(%) ^a	Recoding
(A) Credentialing	Indicate ways in which physicians may be credentialled to admit or treat residents in your nursing home...		0.59 (0.49)	If yes to any of the questions, then credentialing=1, otherwise 0. Concept is set to missing if all three questions were missing (1.3%).
	A committee in your NH credentialled physicians		516 (25.1%)	
	The Medical Director participates in credentialling physicians		789 (37.9%)	
	You, as the NH Administrator, participate in credentialling physicians		1147 (55.7%)	
(B) Formal Attachment to NH			0.56 (0.39)	(1 or 2) + 3) and scale to give range 0-1. Concept is set to missing if BOTH (1) and (2) are missing OR if (3) is missing (4.3%).
	(1) How many [primary care] physicians are salaried by your nursing home? (open ended)	Any	8.8%	
	(2) How many [primary care] physicians are paid by the nursing home through individual or group contracts? (open ended)	Any	41.5%	
	(3) What percent of residents in your nursing home is currently being cared for by a community physician who is neither salaried by nor under contract with the nursing home?	Multiple choice:		
		0%	24.0%	
		1-10%	15.7%	
(C) Physician Oversight		11-40%	15.6%	(3) Collapse into 3 groups: Add 0 points if % residents=76-100% Add 1 point if % residents=11- 75% Add 2 points if % residents=0- 10%
		41- 75%	17.1%	
		76-99%	9.5%	
		100%	18.1%	
(C) Physician Oversight	How often does the Medical Director check up on the medical care delivered by each attending physician?...	Multiple choice:	0.44 (0.29)	Recode Medical Director is the only Doctor as "All the time" (5.2%). Scale final measure to 0-1. Concept is set to missing for 5.7% facilities with no responses.
	None of the time		14.0%	
	Some of the time		55.5%	

Sub-Scale Concept	Items	Scoring	Distribution: Mean (SD) or N (%) ^a	Recoding
	...Most of the time ...All of the time		16.3% 9.0%	
Final Nursing Home Control of Physician Resources (NHCOPR) Measure				
Control of Physician Staff: NHCOPR		Mean (SD)	1.58 (0.77)	A + B + C, range 0–3. NHCOPR is missing if A, B, or C were missing (8.7%)
Weak: NHCOPR ≤ 1		N (%)	584 (29.5%)	
Average: 1 < NHCOPR ≤ 2		N (%)	881 (45.7%)	
Tight: NHCOPR > 2		N (%)	473 (24.8%)	

All sample statistics are weighted to be representative of the population based on the survey weights. Reported n's are unweighted.

Table 2

Description of NHCOPR by various nursing home structure, market, and nursing home process measures.

	Overall n=1938		NHCOPR ≤1 n=586		1 < NHCOPR ≤2 n=881		NHCOPR >2 n=474	
	mean/ %	sd	mean/%	sd	mean/ %	sd	mean/ %	sd
Nursing Home Structure Measures								
Total number of beds	109.9	55.9	95.9 *	45.4	113.9	56.6	119.0	62.0
For-profit	72.9%	44.2%	72.7%	45.0%	73.0%	44.3%	73.0%	44.0%
Part of chain	56.5%	49.6%	56.8%	50.1%	55.9%	49.5%	57.3%	49.1%
Has a special care unit (SCU)	20.4%	40.3%	20.1%	40.5%	21.3%	40.8%	19.1%	39.0%
Average Proportion Residents Paid by Sources other than Medicare or Medicaid	24.6	17.2	26.6 *	16.9	24.2	17.2	23.2	17.3
Average Proportion Residents Paid by Medicaid	60.95	20.7	60.3	20.2	60.9	20.5	61.7	21.6
Average RUGS Casemix Index at Admission	1.1	0.1	1.0 *	0.1	1.1	0.1	1.1	0.1
Average Percent of NH days that were SNF	17.0	12.5	14.8 *	11.6	17.8	12.3	18.1	13.4
Number of admissions per bed	1.7	1.5	1.4 *	1.3	1.8	1.4	1.9	1.8
Nursing Home Market Measures								
Urban	69.1%	41.2	54.2% *	50.40	76.0%	42.60	77.2%	41.6
No. Physicians per 1000 population 65 and over	3.4	3.4	2.4 *	2.8	3.7	3.5	4.2	3.5
Nursing Home Process Measures								
Average occupancy rate	84.7	13.3	81.2 *	14.9	85.2 *	12.5	88.0 *	11.4
One or more MD/NP/PA scheduled to be onsite Monday-Friday	25.2	43.4	12.8	33.7	24.5	42.9	41.3	48.9
One or more MD/NP/PA scheduled to be onsite Sat/Sun/holiday	5.0%	21.8%	2.3% *	15.1%	5.2% *	22.1%	8.0% *	26.9
Phone coverage by MD/NP/PA scheduled for Sat/Sun/holiday	77.7%	41.7%	65.3% *	48.1%	78.9% *	40.7%	90.0% *	29.7

How often do you expect physicians to
[1=none of the time; to 5=all the time...

	Overall n=1938		NHCOPR <=1 n=586		1 < NHCOPR <=2 n=881		NHCOPR >2 n=474	
	mean/ %	sd	mean/%	sd	mean/ %	sd	mean/ %	sd
...provide care to acutely ill residents other than their own	1.85	1.05	1.64	1.16	1.81	1.02	2.14	1.16
... attend care plan meetings	1.67	0.93	1.40	0.76	1.67	0.89	2.00	1.06
...lead team meetings	1.42	0.76	1.22	0.57	1.40	0.73	0.02	0.90
... talk with pharmacy consultants about patient	2.67	1.00	2.38	0.98	2.71	0.96	2.98	0.97
... to be the primary NH representative for interactions with families	1.93	0.93	1.78	0.87	1.92	0.92	2.12	0.98

* P-value < .05;

sd = standard deviation

All sample statistics are weighted to be representative of the population based on the survey weights

Table 3

Which nursing homes are likely to have higher scores on NHCOPR and each of the subscales? Regression results of full NHCOPR scale and formal attachment and physician oversight subscales, logistic regression credentialing subscale

Regressor Variable	NHCOPR SCALE (OLS)			SUBSCALES					
	Coef	Std. Err.	Sig.	FORMAL ATTACHMENT TO NH (OLS)		CREDENTIALING (logistic)		PHYSICIAN OVERSIGHT (Ordinal logistic)	
				Coef	Std. Err.	Sig.	Coef	Std. Err.	Sig.
Total Beds(per 100 beds)	0.00	0.00	**	0.00	0.00		0.01	0.00	**
For Profit	-0.05	0.04		0.04	0.02	*	-0.25	0.11	+
Part of NH Chain	0.01	0.04		0.00	0.02		0.01	0.10	
Any Special Care Unit	-0.05	0.04		-0.03	0.02		0.09	0.13	
Percent Residents Paid by Sources other than Medicare or Medicaid	0.00	0.00		0.00	0.00		0.00	0.01	
Percent Residents Paid by Medicaid	0.00	0.00		0.00	0.00		0.01	0.01	
Average RUGS Casemix Index at Admission	0.42	0.18	*	-0.07	0.09		2.58	0.53	**
Average Percent of NH days that were SNF	0.00	0.00		0.00	0.00		0.00	0.01	
Number of admissions per bed	0.04	0.02	+	0.00	0.01		0.21	0.08	+
Urban County	0.20	0.05	**	0.10	0.02	**	0.24	0.12	+
Number MDs per 10,000 Population 65 years old or older	0.02	0.01	**	0.01	0.00	+	0.09	0.02	**
Constant/ Constant 1	0.55	0.30	+	0.54	0.14	**	4.18	0.86	**
Constant 2	NA			NA			NA		
Constant 3	NA			NA			NA		
							1.82	0.80	*

** p-value < .001

* p-value < .05

+ p-value < .1