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Original Study

Nursing Home Control of Physician Resources

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A B S T R A C T

Objective: Physician services are increasingly recognized as important contributors to quality care provision in nursing homes (NH)s, 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 1938 freestanding United States NHs in 2009–2010 matched to Online Survey Certification and Reporting, aggregated NH Minimum Data Set assessments, Medicare claims, and county information from the Area Resource File.

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.

Results: The full NHCOPR score averaged 1.58 (standard deviation = 0.77) on the 0–3 scale. Nearly 30% of NHs had weak control (NHCOPR $\leq$1), 47.5% had average control (NHCOPR between 1 and 2), and the remaining 24.8% had tight control (NHCOPR >2). NHCOPR exhibited 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 regarding physician staff.

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Though the importance of physician involvement in the nursing home (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 care.[1–4] 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 et al[11] 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

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there. In this article, 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 or organizational attempts to manage the behaviors of participants through hierarchy or formalized methods such as rules, policies, and procedures aimed at coordinating work activities.[12] 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 et al[4] to form hypotheses to test the validity of the NHCOPR measure. 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 who were retained by employment arrangements, therefore, it was important to include a measure of the degree to which residents received care from nonemployed physicians. This latter measure had been used before to capture the related concept of open/closed practice staff model.[2,10,13] 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 the physician has specific credentials 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 the level of control of a NH 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; and

(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; and
(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.[14] 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 assessments of all NH residents, and Medicare claims provided information about the acuity of care needs of NH residents (see www.ltcfocus.org). County level data about the NH market came from the Area Resource File.[15]

Study Sample

A universe of 14,703 NHs was identified consisting of all certified NHs that (1) were located within the 48 contiguous states; (2) had 30–499 beds; (3) were not part of previous pilot surveys or cognitive interviews; and (4) had fewer than 20% beds in AIDS or pediatric units. Among these, 4149 NHs were selected for the study and 4035 (97%) were deemed eligible upon further inspection. Completed administrator surveys were received from 2215 (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 2122 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 US free standing NHs on all characteristics (results not presented).

Variables

NH Control of Physician Resources (NHCOPR)

NHCOPR was defined as a combination of 3 concepts: credentialing, formal attachment to NH, and physician oversight. These