

Assisted Living and Nursing Homes: Apples and Oranges?

Sheryl Zimmerman, PhD,^{1,2} Ann L. Gruber-Baldini, PhD,³
Philip D. Sloane, MD, MPH,^{1,4} J. Kevin Eckert, PhD,⁵ J. Richard Hebel, PhD,³
Leslie A. Morgan, PhD,⁵ Sally C. Stearns, PhD,⁶ Judith Wildfire, MPH,²
Jay Magaziner, PhD, MS Hyg,³ Cory Chen,¹ and Thomas R. Konrad, PhD¹

Purpose: The goals of this study are to describe the current state of residential care/assisted living (RC/AL) care and residents in comparison with nursing home (NH) care and residents, identify different types of RC/AL care and residents, and consider how variation in RC/AL case-mix reflects differences in care provision and/or consumer preference. **Design and Methods:** Data were derived from the Collaborative Studies of Long-Term Care, a four-state study of 193 RC/AL facilities and 40 NHs. Multivariate analyses examined differences in ten process of care measures between RC/AL facilities with less than 16 beds; traditional RC/AL with 16 or more beds; new-model RC/AL; and NHs. Generalized estimating equation models determined differences in resident case-mix across RC/AL facilities using data for 2,078

residents. **Results:** NHs report provision of significantly more health services and have significantly more lenient admission policies than RC/AL facilities, but provide less privacy. They do not differ from larger RC/AL facilities in policy clarity or resident control. Differences within RC/AL types are evident, with smaller and for-profit facilities scoring lower than other facilities across multiple process measures, including those related to individual freedom and institutional order. Resident impairment is substantial in both NHs and RC/AL settings, but differs by RC/AL facility characteristics. **Implications:** Differences in process of care and resident characteristics by facility type highlight the importance of considering: (1) the adequacy of existing process measures for evaluating smaller facilities; (2) resident case-mix when comparing facility types and outcomes; and (3) the complexity of understanding the implication of the process of care, given the importance of person-environment fit. Work is continuing to clarify the role of RC/AL vis-à-vis NHs in our nation's system of residential long-term care.

Key Words: Residential care, Process of care, Resident case-mix

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Address correspondence to Sheryl Zimmerman, PhD, Associate Professor and Co-Director, Program on Aging, Disability, and Long-Term Care, Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill, 725 Airport Road, Campus Box 7590, Chapel Hill, NC 27599-7590. E-mail: Sheryl_Zimmerman@unc.edu

¹Cecil G. Sheps Center for Health Services Research, University of North Carolina at Chapel Hill.

²School of Social Work, University of North Carolina at Chapel Hill.

³Department of Epidemiology and Preventive Medicine, University of Maryland, Baltimore.

⁴Department of Family Medicine, University of North Carolina at Chapel Hill.

⁵Department of Sociology and Anthropology, University of Maryland, Baltimore County.

⁶School of Public Health, University of North Carolina at Chapel Hill.

Skilled nursing facilities have been the primary source of institutional care for the elderly since the inception of Medicare and Medicaid (Korcok, 1987; Mollica, 2001b). However, the combined impact of growing numbers of older adults, a shortage of nursing beds, increasing costs of nursing care, the better overall health of new cohorts of older adults, and dissatisfaction with nursing home (NH) care focused awareness on a gap in the "continuum" of care between independent senior housing that catered to the elderly population without any functional impairments and nursing facilities that catered to the chronically ill (Bishop, 1999; Borra, 1986; Korcok, 1987).

Congregate housing was the first attempt to fill the gap between independent senior housing and NHs. The failure of these facilities to thrive has been attributed to an overestimation of demand and an underestimation of the level of care needed by residents. Continuing care retirement communities and larger NHs learned from this mistake and broadened their continuum of care, resulting in the first stand-alone assisted living (AL) facilities that were modeled after Dutch residential settings and provided an “invisible support system” in a residential setting (Sullivan, 1998). The success of this concept drew investment from a number of large NH chains that saw the opportunity to use AL as a feeder for their nursing level of care, into which residents could be transferred as impairment increased. At the same time, market pressure began to push the AL industry, particularly stand-alone facilities, to provide higher levels of care to enable aging-in-place (Mollica, 2001b; Sullivan, 1998); in such cases, facilities opted to avoid NH transfer through the use of outside home health care or physical therapy (Thompson & Marinaccio, 1997).

Although AL has become one of the most attractive residential care options for older adults and is projected to eclipse NH care (Meyer, 1998), its place along the continuum of care is hotly debated by both policy makers and the long-term care industry itself. NHs are threatened by the increasing market share occupied by AL, which is not subject to the same licensing restrictions and for which guidelines expressly encourage aging-in-place (Mollica, 2001b; Snow, 1997). Furthermore, although AL, as an industry, states goals of providing a homelike environment, independence, autonomy, and privacy to their residents, the term is used by facilities that do not necessarily subscribe to this philosophy, nor is it always used by facilities that do (Hawes, Rose, & Phillips, 1999). In essence, there is no single accepted definition of AL nor guidelines for how to operationally distinguish it from other forms of care (Lewin-VHI, Inc., 1996). Finally, the lack of long-standing AL state regulations and federal oversight has allowed significant variability in the characteristics of the facilities themselves and the residents they serve (Assisted Living Quality Coalition, 1998; Frytak, Kane, Finch, Kane, & Maude-Griffin, 2001; Hawes, Lux, et al., 1995; Mitchell & Kemp, 2000; Mollica, 2001b; Morgan, Gruber-Baldini, & Magaziner, 2001; Wilson, 1996). One form of AL is not necessarily similar to another, nor is the distinction between AL and NH care and residents evident as this form of care has evolved. In sum, the thought that AL is a distinct stop along a continuum of care merits questioning; AL may be best considered a discrete node that services residents similar to those in NHs and in a similar fashion.

The purposes of this paper are to describe the current state of AL care and residents in comparison with NH care and residents; identify differences

between different types of AL care and residents; and consider how differences in AL case-mix reflect differences in care provision and/or consumer preference. The analyses use data from a four-state study of 233 long-term care facilities and 2,078 AL residents participating in the Collaborative Studies of Long-Term Care (CS-LTC), which includes facilities and residents across the spectrum of licensed AL and NH care. This is the first and largest study to make such comparisons, and the findings shed light on the current status of our nation’s system of residential long-term care for the elderly population.

Methods

Sample

Data used for these analyses are derived from a multistage cluster sample of residential care/assisted living (RC/AL) facilities and NHs in four states: Florida, Maryland, New Jersey, and North Carolina. The CS-LTC defined RC/AL broadly as facilities or discrete portions of facilities licensed by the state at a nonnursing home level of care, which provide room, board, 24-hour oversight, and assistance with activities of daily living (ADLs; Kane & Wilson, 1993). Because the term *assisted living* has come to be used as both a generic and specific term, the CS-LTC refers to its sample of facilities as RC/AL facilities to indicate the broad inclusion of facility types and to avoid confusion about nomenclature.

To achieve broad representation and allow comparisons across settings, three types of RC/AL homes were identified: facilities with fewer than 16 beds, facilities with 16 or more beds of the traditional board-and-care type, and new-model facilities. The new-model designation was intended to represent the recent boom in AL, those facilities that exemplify the evolution of the field. The operational definition of new-model was derived empirically through a three-step process. First, an expert (J.K.E.) identified a sample of “new-type, purpose-built assisted living facilities”; then, 66 facilities, including some that were excluded from that designation, were surveyed by telephone; and finally, characteristics that best discriminated between the two groups were identified. These new-model facilities were found to have 16 or more beds; be built after January 1, 1987; and have at least one additional characteristic. These characteristics include the following: (1) at least two different private pay monthly rates, depending on resident need; (2) 20% or more of the resident population requiring assistance in transfer; (3) 25% or more of the resident population who are incontinent daily; or (4) either an RN or an LPN on duty at all times. It is important to recognize that the definition of new-model is a research construction only, permitting

Table 1. Aggregated Four-State Estimates of Facility Types, Based on the Collaborative Studies of Long-Term Care Sampling Frame^a

Variable	Residential Care/Assisted Living Facilities				
	<16 Beds	≥16 Beds		All RC/AL	Nursing Home
		Traditional	New-Model		
No. of facilities	1,216	877	407	2,500	1,551
No. of rural facilities (%)	248 (20)	122 (14)	59 (14)	429 (17)	237 (15)
No. of facilities for profit (%)	1,171 (96)	596 (68)	331 (81)	2,098 (84)	909 (59)
No. of beds	10,301	44,420	25,547	80,268	175,990
No. of beds/1,000 population ≥ age 65	2	9	5	16	34
Mean facility bedsize (SD)	8.9 (3.6)	45.8 (37.5)	65.1 (41.6)	27.9 (34.4)	116.4 (50.7)
Mean facility age in years (SD)	12.7 (13.4)	23.0 (16.4)	5.3 (3.0)	13.2 (13.9)	24.1 (15.1)

Note: RC/AL = residential care/assisted living. Adapted from *Assisted Living: Needs, Policies and Practices in Residential Care for the Elderly*, edited by S. Zimmerman, P. D. Sloane, and J. K. Eckert, Baltimore, MD, The Johns Hopkins University Press, 2001, p. 131.

^aStates are Florida, Maryland, New Jersey, and North Carolina. Estimates are based on facilities that met eligibility criteria (i.e., facilities were excluded if they had been in operation for less than 6 months; served primarily persons with mental illness or developmental disabilities; or had fewer than 4 [small], 10 [traditional and new-model], or 40 [nursing home] elderly persons). Weights were derived for each facility type by: (1) telephone screening to determine the number of eligible facilities in each selected region, (2) multiplying the proportion of eligible facilities in the region by the number of facilities in the state to derive the number of eligible facilities in the state, and (3) dividing the number of eligible facilities in the state by the number of participating facilities to obtain the number of eligible facilities in the state that each participating facility represented as a weight.

clarity and uniformity in data collection and interpretation. The facility sample also included NHs.

The study sample excluded the following types of facilities: those in operation for less than 6 months or primarily serving persons with mental illness or developmental disability; small RC/AL facilities serving three or fewer residents; larger RC/AL facilities housing fewer than 10 residents aged 65 and older; and NHs with fewer than 40 residents. Exclusions because of size resulted in minimal loss to the sampling pool. Table 1 illustrates the prevalence and characteristics of these facilities within the four states participating in the CS-LTC. Of the estimated total 2,500 RC/AL facilities, 1,216 (49%) are small, 877 (35%) are traditional, and 407 (16%) are new-model. The new-model facilities contain 32% of all RC/AL beds. State differences (not shown) indicate that Florida has markedly more beds of all types than the other states. For example, it has 49,800 RC/AL beds, compared with 15,012 in North Carolina (the next closest in number); respective numbers of new-model beds are 14,314, compared with 5,514. Maryland has the fewest RC/AL beds (4,708) and new-model beds (1,858). The number of beds per 1,000 elderly persons by state are 18 in Florida, 16 in North Carolina, 10 in New Jersey, and 8 in Maryland.

To increase efficiency in data collection, a purposive sample of counties (i.e., a sampling region) was selected within each state. The following criteria were used to select the regions: (1) each region must contain at least 15% of the state's RC/AL facilities of each type; (2) each region must include both urban/rural areas; and (3) when compared with the entire state, the region must fall within 30% of the state mean on eight measures that characterize the county

population by race, age, income, and employment status, and prevalence of primary care physicians, hospitals, and NH beds. Within each region, facilities were randomly selected from a stratified list of all licensed RC/AL facilities and NHs. The sample of new-model facilities was identified by random numbering all facilities with ≥16 beds and calling them to determine if they met eligibility criteria and would participate. The study aimed to include an equal number of residents from each type of facility; this goal dictated that more small RC/AL facilities be enrolled than other facilities, because they house fewer residents. A total of 233 facilities were recruited from October 1997 to November 1998 (113 small, and 40 from each of the other three types).

Among eligible facilities, the overall recruitment rate was 59%. Facilities that participated in the CS-LTC differ from those that refused to participate in three areas. Nonparticipating RC/AL facilities have more owners working more hours in the facility, more rate levels, and a slightly less impaired resident population (e.g., 4.6% vs. 9.9% are chairfast and 1.2% vs. 4.2% are unable to transfer in nonparticipating vs. participating facilities, respectively). There were no differences in reference to proprietary status; affiliation with other long-term care facilities; facility age, size, or occupancy rate; and resident age, ethnicity, or race. Nonparticipating NHs have a higher occupancy rate than participating NHs and less resident impairment (e.g., 53.6% vs. 65.8% are incontinent). There were no differences in reference to the other variables listed previously.

RC/AL and NH residents were eligible if they were 65 years of age or older. NH residents needed to meet additional eligibility criteria hypothesized to reflect current or future cohorts of RC/AL

residents—therefore, they are inappropriate for comparison in the present analyses, and such comparative data will be derived from national samples reported elsewhere. Overall, only 8% of eligible residents and/or their family members refused to participate. Further details about the CS-LTC sampling and data collection procedures are available elsewhere (Zimmerman, Sloane, Eckert, Buie, 2001).

Measures

Data sources for the CS-LTC used in these analyses included interviews with facility administrators, care providers, and residents. Charts were not abstracted because of a lack of uniformity in reporting requirements; but, in many cases, measures replicating those in use in NHs in the Minimum Data Set (MDS) were administered (Morris et al., 1990).

Facility-Level Measures.—In addition to demographic information (such as facility size, age, and profit status), administrators were asked to report on policies related to their process of care. The study replicated six measures from the *Policy and Program Information Form* of the Multiphasic Environmental Assessment Procedure (Moos & Lemke, 1996) and modified four measures that summarize admission policies and estimate the range of available services. These ten process of care measures are organized by three domains: (1) requirements for residents (including the degree to which facilities accept 16 problem behaviors; admission policies related to seven ADLs; and overall admission policies related to 24 resident characteristics); (2) individual freedom and institutional order (including policy choice, the extent to which residents can individualize 19 routines; resident control, the degree to which residents can influence 27 policies; policy clarity, the degree to which mechanisms are in place to define/communicate expectations in ten areas; and the amount of privacy available in ten areas); and (3) provision of services and activities (including the prevalence and accessibility of ten health services; the availability of 13 social/recreational activities; and the overall provision of 20 health and supportive services). Each of the ten measures results in an aggregate score ranging from 0% to 100%, with higher scores indicating endorsement of more items. Aggregate measures were not calculated for facilities with missing data on 20% or more of the component items. Because six of the measures are replicates of extensively tested measures with established reliability and validity (Moos & Lemke, 1996), the study did not re-examine these properties. For the four new measures (i.e., overall admission policies, admission policies specific to ADL functioning, overall provision of services, and provision of health services), Cronbach's alpha was used to assess

internal consistency. The alphas for these four measures ranged from .74 to .84, indicating good internal reliability.

Resident-Level Measures.—Information related to resident demographics was obtained (i.e., age, race, gender, marital status, and medical conditions) as was that related to functional, cognitive, and behavioral status. Need for assistance in ADLs was determined using the Minimum Data Set ADL Self-Performance Index (MDS-ADL; Morris, Fries, & Morris, 1999). The MDS-ADL rates dependency over the last seven days in bed mobility, eating, locomotion, transfer, toileting, dressing, and personal hygiene, with scores ranging from 0 (independence/no assistance) to 4 (total dependence). Ratings of cognitive impairment were available from reported diagnoses of dementia, the Mini-Mental State Examination (Folstein, Folstein, & McHugh, 1975), and the Minimum Data Set Cognition Scale (MDS-COGS; Hartmaier, Sloane, Guess, & Koch, 1994)—a ten-point measure of cognition on which scores of 2 or greater indicate impairment and scores of 5 or more indicate severe impairment. Behavioral problems were measured using the short (14-item) version of the Cohen-Mansfield Agitation Inventory (Cohen-Mansfield, 1986), a scale that identifies the frequency of reported agitated behaviors over the last two weeks.

Analyses

In addition to calculating descriptive statistics across facility types (i.e., each of the RC/AL facility types and NHs), the relationship between facility type and process of care was examined using multivariate techniques controlling for potential confounding by facility size, age, and profit status. Regression analysis and analysis of variance determined the mean differences between process measures by facility type and the inclusion of covariates tested for the impact of these variables on the facility type means; post-hoc tests evaluated the mean differences between specific facility groups. Facility-level analyses were run in SAS 6.12. Data were available for 226 (97%) of the facilities for these analyses, and NH data were used as the comparison/referent group. Differences in resident case-mix across RC/AL facilities were determined utilizing Stata 6.0 (StataCorp., 1999). All resident-level analytic models controlled for clustering within the facility (Huber, 1967) in a generalized estimating equation model (Liang & Zeger, 1986), assuming either a Gaussian (for normally distributed variables) or Poisson (for dichotomous variables) distribution and an exchangeable covariance matrix. Each resident characteristic was estimated by separate models with each individual facility predictor. Data were available for 2,078 RC/AL residents for these analyses.

Table 2. Characteristics of the Facilities Participating in the Collaborative Studies of Long-Term Care, by Facility Type

Characteristic	<16 Beds (<i>n</i> = 113)	≥16 Beds		
		Traditional (<i>n</i> = 40)	New-Model (<i>n</i> = 40)	Nursing Home (<i>n</i> = 40)
Demographic				
Mean bedsize (<i>SD</i>)	8.9 (3.6)	45.8 (36.7)	65.1 (43.1)	115.8 (50.8)
Mean facility age (<i>SD</i>)	12.8 (13.4)	23.0 (16.4) ^a	5.3 (3.0)	24.1 (15.1)
Percent for-profit	92	67	73	58
Reported policies				
	Mean % (<i>SD</i>)	Mean % (<i>SD</i>)	Mean % (<i>SD</i>)	Mean % (<i>SD</i>)
Requirements for residents				
Acceptance of problem behaviors	30.6 (21.7)	41.8 (19.5)	34.9 (20.0)	42.3 (21.8)
Admission policies, ADLs	61.4 (30.9)	51.9 (31.8)	72.5 (22.3)	100.0 (0.0)
Admission policies, all	72.5 (19.7)	70.0 (17.9)	75.1 (14.8)	94.7 (5.8)
Individual freedom and institutional order				
Policy choice	44.7 (13.0)	52.8 (15.4)	63.4 (14.7)	51.3 (14.2)
Policy clarity	47.9 (21.8)	69.9 (21.5)	78.1 (12.0)	81.7 (12.1)
Provision of privacy	47.9 (14.8)	64.3 (24.0)	74.9 (22.1)	41.7 (19.8)
Resident control	21.3 (14.5)	37.6 (15.2)	38.6 (11.0)	41.6 (12.0)
Provision of services and activities				
Provision of services, health	51.2 (18.1)	75.1 (16.5)	77.1 (11.6)	86.4 (6.7)
Provision of services, social/recreational	41.4 (21.6)	61.4 (19.7)	66.7 (10.5)	72.3 (12.4)
Provision of services, all	51.0 (15.3)	68.3 (15.3)	69.1 (11.4)	77.2 (8.2)

Note: ADLs = activities of daily living. Adapted from *Assisted Living: Needs, Policies and Practices in Residential Care for the Elderly*, edited by S. Zimmerman, P. D. Sloane, and J. K. Eckert, Baltimore, MD, The Johns Hopkins University Press, 2001, p. 130, 214.

^aOne facility had been in operation for 148 years and was excluded from the calculation; the facility in operation for the next longest time had been open for 80 years.

Results

Description of Facilities

Characteristics of the CS-LTC facilities are shown in Table 2. NHs, on average, were approximately twice as large as traditional and new-model RC/AL (115.8 vs. 45.8 and 65.1 beds), as old as traditional facilities (24.1 years vs. 23.0 years) and twice as old as smaller RC/AL facilities (12.8 years). The majority of all facilities were for-profit, although the percentage of for-profit NHs in the CS-LTC sample was somewhat less than national figures (58% vs. 67%; Gabrel & Jones, 2000). In addition, the reported process of care across all ten domains is shown in Table 2 and illustrated in Figure 1.

Requirements for Residents.—NHs were more likely than RC/AL facilities to admit impaired residents, both overall and specific to those with ADL impairments. Differences in policies allowing residents with problem behaviors were less marked. Variation within RC/AL facilities was minimal and inconsistent; traditional facilities appeared more accepting of problem behaviors (endorsing 42% vs. 31%–35% of items), and new-model facilities were more accepting of ADL impairment (endorsing 73% vs. 52%–61% of items).

Individual Freedom and Institutional Order.—All RC/AL facilities scored higher than NHs on the

provision of privacy, but NHs scored similarly to larger RC/AL facilities (i.e., traditional and new-model) in policy choice, clarity, and resident control. In reference to variation within RC/AL, there was a consistent trend of new-models scoring highest and smaller facilities scoring the lowest; the greatest disparity among RC/AL facilities was in privacy and policy clarity, where there was a difference of 27–30 percentage points between smaller and new-model facilities.

Provision of Services and Activities.—There was a consistent ordering in the provision of services and activities, with NHs having the highest scores, followed in order by new-model, traditional, and smaller RC/AL facilities. The differences between new-model and traditional were not marked, however, and ranged from 1 to 6 percentage points.

In addition to the differences between NHs and RC/AL and within the RC/AL types described previously, it is worth noting that NHs scored higher than new-models across every indicator except policy choice and privacy, and that new-model facilities scored higher than both small and traditional RC/AL facilities on all indicators other than acceptance of problem behavior.

Relationship Between Facility Type and Process of Care.—The models summarized in Table 3

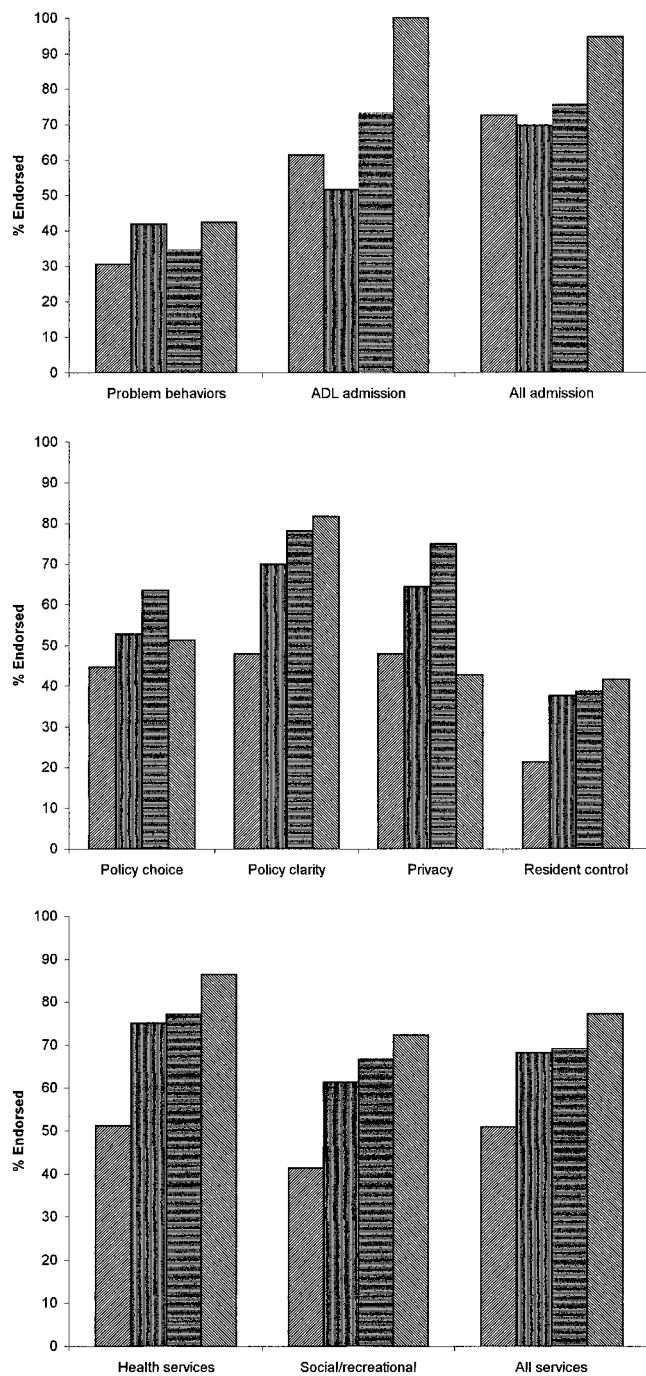


Figure 1. Reported process of care, by facility type. ADL = activity of daily living. ▨ 16 beds; ▮ traditional; ▩ new-model; ▧ nursing home.

examined the relationship between facility type and the process of care controlling for differences that may result from varying characteristics, such as facility size, age, and profit status. Seven of the ten models had adjusted R^2 s that ranged from .32 to .48, indicating that they explained from one third to one half of the variance in the process of care measure. Two models exhibited a moderate fit, with R^2 s ranging from .24 to .29. An R^2 of .07 in the acceptance of problem behavior model suggested

that the factors included in this model did not explain the differences among the sampled facilities in this process of care indicator, and that facilities were not uniform in these policies.

Requirements for Residents.—As introduced in Table 2 and Figure 1 and tested in the model controlling for facility size, age, and profit status, NHs were significantly less restrictive than RC/AL in all measures (except acceptance of problem behaviors by traditional facilities). NHs scored approximately 5–18 percentage points higher on acceptance of problem behavior, 33–46 points higher on ADL admission policies, and 24–26 points higher on all admission policies than RC/AL facilities.

Individual Freedom and Institutional Order.—NHs scored significantly lower in the provision of privacy than all RC/AL facility types, ranging from 23 to 40 percentage points lower. They scored higher than smaller RC/AL facilities in policy clarity and resident control (24 and 14 points, respectively), but lower than new-model facilities in policy choice. Also (results not shown), new-model facilities scored significantly higher than smaller facilities across all measures and than traditional facilities in policy choice and privacy.

Provision of Services and Activities.—NHs scored significantly higher than all RC/AL facility types in the provision of health and overall services and higher than smaller facilities in the provision of social/recreational services. The largest differences were in comparison with smaller facilities (ranging from 25 to 35 percentage points), and there was only a 9–12 point difference between NHs and traditional and new-model facilities. Also (results not shown) new-model facilities again scored significantly higher than smaller facilities across all measures, but did not differ from traditional facilities.

Finally, for-profit facilities scored 8–16 percentage points lower than nonprofit facilities in three areas of individual freedom and institutional order (i.e., policy choice, policy clarity, and provision of privacy), but had less restrictive admissions policies, scoring 8–10 points higher. Older facilities had more restrictive admission policies, and larger facilities offered significantly more privacy.

Description of Residents

Characteristics of the 2,078 RC/AL residents are shown in Table 4, alongside national statistics for similar characteristics among NH residents. (*Note:* The CS-LTC sample of NH residents was a selected sample and does not permit comparison. Also, the best medical data available for comparison on a national level were heart conditions, considered

Table 3. Summary of Multivariate Regression Models for Process of Care Domains^a

Variable	Requirements for Residents			Individual Freedom and Institutional Order				Provision of Services and Activities		
	Acceptance of Problem Behaviors <i>b</i> (SE)	Admission Policies: ADLs <i>b</i> (SE)	Admission Policies: All <i>b</i> (SE)	Policy Choice <i>b</i> (SE)	Policy Clarity <i>b</i> (SE)	Provision of Privacy <i>b</i> (SE)	Resident Control <i>b</i> (SE)	Provision of Services: Health <i>b</i> (SE)	Provision of Services: Recreational <i>b</i> (SE)	Provision of Services: All <i>b</i> (SE)
Facility type										
<16 beds	-18.1 (6.3)**	-41.9 (7.7)***	-25.9 (4.8)***	-1.5 (4.1)	-24.0 (5.6)***	22.6 (5.3)***	-14.4 (4.1)***	-34.6 (4.6)***	-24.9 (5.5)***	-27.1 (4.1)***
Traditional	-4.8 (5.7)	-45.7 (7.0)***	-23.9 (4.4)***	4.4 (3.7)	-6.1 (5.1)	31.1 (4.8)***	-0.9 (3.7)	-11.5 (4.2)**	-6.8 (5.0)	-10.0 (3.8)**
New-model	-11.4 (5.6)*	-33.0 (6.8)***	-23.9 (4.2)***	13.4 (3.6)***	-0.6 (4.9)	40.2 (4.7)***	0.3 (3.6)	-9.9 (4.0)*	-3.9 (4.9)	-8.7 (3.6)*
Bedsizes	-0.07 (0.05)	0.04 (0.05)	0.02 (0.03)	0.03 (0.03)	0.07 (0.04)	0.11 (0.04)**	0.04 (0.03)	0.00 (0.03)	0.05 (0.04)	-0.01 (0.03)
Age	-0.05 (0.09)	-0.36 (0.11)**	-0.24 (0.07)***	-0.08 (0.06)	-0.10 (0.08)	-0.03 (0.08)	0.03 (0.06)	-0.09 (0.07)	-0.09 (0.08)	-0.04 (0.06)
For-profit	-4.2 (3.7)	10.1 (4.6)*	8.3 (2.8)**	-7.7 (2.4)**	-10.8 (3.3)**	-16.3 (3.1)***	-3.4 (2.4)	-5.0 (2.7)	-4.1 (3.2)	-2.0 (2.4)
R ²	.07	.32	.29	.24	.42	.39	.33	.48	.35	.38

^aReference categories: nursing home, nonprofit. Facility bedsize is per 10 beds, and facility age is per 10 years. **p* ≤ .05; ***p* ≤ .01; ****p* ≤ .001.

herein as a good indicator of a prevalent and chronic health condition.) The demographic characteristics of RC/AL and NH residents were similar: 46%–57% were aged 85 and older; 85%–95% were White; 72%–77% were female; 10%–17% were married; and 38%–49% had a heart condition. Markedly more NH residents were impaired in ADLs (83% vs. 15%–37% in RC/AL), but differences in the percentage with cognitive impairment (51% vs. 23%–42%) and behavioral problems (30% vs. 37%–49%) were less extreme. Within RC/AL facility types, smaller facilities consistently housed the most impaired residents, and traditional facilities consistently housed the least impaired.

Case-Mix of RC/AL Residents by Facility Characteristics.—Table 5 shows the demographic, health, and functional characteristics of residents by all facility characteristics under study. For these analyses, bedsize for facilities ≥16 beds was cut at the median (i.e., 60 beds), facility age was cut at the first and third quartiles (i.e., 5 and 15 years), and the process of care measures were cut at their respective median. Results indicate case-mix differences across all resident and facility characteristics. For example, residents in traditional facilities differed significantly from those in smaller facilities in race (92% White, compared with 83% White), percentage with a heart condition (48% vs. 38%), functional impairment (mean MDS-ADL score 3.0 vs. 6.1), and cognitive impairment (mean MDS-COGS score 2.1 vs. 3.2). Residents in facilities that provided more privacy are more often White (94% vs. 84%); female (79% vs. 72%); older (85.2 years vs. 82.7 years); with a heart condition (50% vs. 39%); and scored lower in functional, cognitive and behavioral impairments.

Discussion

The field of AL has been shaped by consumer needs and preferences, provider actions, and state regulations (Kane & Wilson, 2001). Whereas these policies set parameters for service provision and introduce some consistency within states, they allow for variability across states. For example, Florida requires that RC/AL residents be ambulatory, not require restraints, and be transferred if they need hospitalization or NH-level care. North Carolina has the same restriction about transfer, but with that one exception, the other three states in this sample differ from Florida in all these areas. Consequently, imposing a definition of AL is challenging. The benefit of the RC/AL sample used in the CS-LTC is that it is all-inclusive, uses facility types that can easily be related to those known by different names in various states, and improves on other strategies by having an empirical basis to differentiate new-model facilities from other facilities (see, e.g., Hawes et al., 1999; National Investment Conference, 1998).

Table 4. Case-Mix of Residential Care/Assisted Living (RC/AL) Facilities^a and Nursing Homes (NHs)

Resident Characteristic	≥16 Beds			Nursing Home ^b [Mean %]
	<16 Beds (<i>n</i> = 665) [Mean %]	Traditional (<i>n</i> = 648) [Mean %]	New-Model (<i>n</i> = 765) [Mean %]	
Demographic and health				
Age 85 and over	46	57	52	49
White	85	92	95	89
Female	76	77	75	72
Married	10	10	14	17
Heart condition ^c	38	48	49	48
Functional impairments				
Activities of daily living ^d	37	15	25	83
Cognitive ^e	42	23	35	51
Behavioral ^f	49	37	39	30

^aBased on the Collaborative Studies of Long-Term Care sample, *N* = 2,078.

^bSource: Krauss, N. A., & Altman, B. M. (1998). Characteristics of nursing home residents, 1996. MEPS Research Findings No. 5 (AHCPR Publication No. 99-0006). Rockville, MD: Agency for Health Care Policy and Research, U.S. Department of Health and Human Services.

^cIncludes congestive heart failure, myocardial infarction, heart attack, angina, arrhythmia, and other heart problems (RC/AL sample) and arteriosclerotic heart disease, cardiac dysrhythmias, cardiovascular disease, and congestive heart failure (NH sample).

^dImpairment in at least one of six activities of daily living including transfer, locomotion, dressing, eating, toilet use, and bathing.

^eFor the RC/AL cohort, cognitive impairment was scored as moderate or severe dementia, and assessed by a score <17 on the Mini-Mental State Examination; if unavailable, by a score >3 on the Minimum Data Set Cognition Scale (MDS-COGS); or, if both were unavailable, by a reported diagnosis of dementia. For the NH cohort, dementia was based on information recorded on the Minimum Data Set.

^fAt least one form of inappropriate or dangerous behavior (e.g., verbally or physically abuse, socially inappropriate behavior, wandering, or resistance to care), based on the Cohen-Mansfield Agitation Inventory.

Processes of care as practiced in NHs differ in expected and unexpected ways from RC/AL. For example, it is to be expected that NHs would be more encompassing in their admission policies than RC/AL facilities because NHs primarily exist to serve people with severe medical and disability problems (Krauss & Altman, 1998). It is also to be expected that NHs would provide more health and overall services to meet the needs of these residents. The fact that NHs do not differ from traditional and new-model RC/AL facilities in the provision of social/recreational services (e.g., exercise, outside entertainment, groups), policy clarity (e.g., holding orientations and staff meetings, distributing newsletters), and resident control (e.g., conducting resident meetings, involving residents in plans regarding activities and room changes) may speak to improvements that have been made in the philosophy of NH care—because of regulation or an evolution in response to consumer demand and the growth of RC/AL—and that may increasingly blur distinctions between NHs and RC/AL. However, NHs are significantly different from smaller RC/AL facilities in these same three areas and in all cases score higher than smaller RC/AL facilities. Similarly, new-model facilities score higher than small facilities across all domains of individual freedom and institutional order. These findings are similar to those of other researchers (e.g., Reschovsky & Ruchlin, 1993) who find that smaller homes are outperformed by larger homes on many objective measures of structure and process; consequently,

questions have been raised about the adequacy of assessing small facilities using models developed for health and institutional long-term care settings (Eckert & Morgan, 2001). Instead, assessment of the process of care that includes measures of staff/resident and resident/resident interactions, life satisfaction, and the degree to which the setting is like a “real” home or a “real” family might prove more meaningful.

NHs score significantly lower on the provision of privacy (e.g., prevalence of private rooms and baths, locks on doors) than all RC/AL facility types, and lower on policy choice (e.g., flexible seating at meals, flexible schedules, allowing personal furniture) than do new-model facilities. Also, new-model facilities score higher than traditional facilities in both privacy and policy choice. Differences in privacy are not unexpected, given the expense of NH care and the greater incapacitation of some of the residents. In relation to policy choice, it is evident that new-model facilities present the AL tenets of maximizing autonomy and independence and emphasizing individuals’ rights to make decisions about their own care (Assisted Living Quality Coalition, 1998; Wilson, 1996) to a degree that sets them apart from other RC/AL care. Of course, data presented here are reported policies, and it is not known to what extent these differences reflect actual or perceived practices. Assessing the validity of these data was beyond the scope of this study, but is an important next step before applying the findings.

The CS-LTC data indicate that residents in RC/

Table 5. Case-Mix Differences in Residential Care/Assisted Living Residents, by Facility Variables (N=2,078)

Facility Variable	Demographic and Health Characteristics					Mean Impairment Score ^a		
	Mean Age	% White	% Female	% Married	% Heart Condition	Functional Status (MDS-ADL)	Cognitive Status (MDS-COGS)	Behavioral Status (CMAI)
Type								
<16 beds	83.1	83	75	9	38	6.1	3.2	17.5
Traditional	84.3	92*	75	10	48**	3.0***	2.1***	16.6
New-model	84.5*	95***	75	14	49***	4.7 ⁺	2.8 ⁺	17.0
Bedsizes								
4–15 beds	83.1	84	72	9	37	6.1	3.3	17.5
16–56 beds	84.0	92*	74	12	47**	3.7***	2.3***	16.9
60–190 beds	85.0**	94*	77	12	51***	4.0**	2.7	16.6
Age								
0.5–5 years	83.6	91	79	14	45	7.0	3.6	17.9
6–15 years	84.3	87	74	11	43	5.0*	2.9*	17.2
≥16 years	83.0	86	73	5***++++	44	2.6***++++	1.8***++++	16.4*
Profit status								
Nonprofit	85.9	98	83	7	51	2.4	2.0	15.5
Profit	83.3***	86***	73***	12**	42**	5.6***	3.1***	17.6***
Acceptance of problem behaviors								
Low	83.9	84	77	8	41	4.7	2.6	16.8
High	83.8	91*	74	13**	47	5.2	3.1	17.6
Admission policies, ADLs								
Low	84.0	89	75	9	44	3.5	2.3	16.7
High	83.4	85	76	14*	45	7.9***	3.9***	18.3**
Admission policies, all								
Low	84.2	90	77	9	44	3.5	2.4	16.4
High	83.1***	85	72	13*	43	7.5***	3.7***	18.6***
Policy choice								
Low	82.7	82	71	9	39	5.5	3.2	17.7
High	84.9***	93***	78**	12	49**	4.4	2.5*	16.7
Policy clarity								
Low	83.1	85	74	10	39	5.6	3.1	17.6
High	84.5**	92*	76	11	49***	4.3	2.6	16.9
Provision of privacy								
Low	82.7	84	72	12	39	6.0	3.3	18.0
High	85.2***	94**	79*	9	50***	3.4***	2.2***	16.1***
Resident control								
Low	83.2	84	75	11	37	6.3	3.7	18.4
High	84.4*	92**	75	11	50***	3.7***	2.0***	16.0***
Provision of services, health								
Low	82.9	83	72	9	38	5.1	2.9	17.6
High	84.5*	92**	77	12	48**	4.9	2.8	16.9
Provision of services, social/recreational								
Low	82.9	84	73	8	39	5.1	3.1	17.3
High	84.8***	91*	77	13*	48**	4.8	2.6	17.0
Provision of services, all								
Low	83.0	83	73	8	40	5.0	2.9	17.4
High	84.5**	92**	76	12*	47*	4.9	2.8	17.0

Notes: MDS-ADL = Minimum Data Set ADL Self-Performance Index; MDS-COGS = Minimum Data Set Cognition Scale; CMAI = Cohen-Mansfield Agitation Inventory; ADLs = activities of daily living.

^aHigher scores indicate more impairment.

* $p < .05$; ** $p < .01$; *** $p < .001$. Asterisk indicates significance compared with the first category.

⁺ $p < .05$; +++ $p < .001$. Plus indicates significance compared with the second category.

AL are functionally impaired, albeit less so than those in NHs. Cognitive impairment is also less than in NHs, and the difference is likely to be more marked than reflected in Table 4, because whereas MDS-based data typically correlate moderately well with other measures, they do tend to underreport impairment (Gruber-Baldini, Zimmerman, Mortimore, & Magaziner, 2000). With this same caveat, behavioral problems are actually more prevalent in RC/AL than in NHs. Overall, it appears that RC/AL and NH populations are becoming increasingly similar relative to the characteristics first witnessed in 1983–1993 (Hawes, Mor, et al., 1995). What might be most important in reference to resident characteristics, however, are case-mix differences across different types of RC/AL facilities. For example, ADL, and cognitive and behavioral impairments are highest in younger facilities (less than 5 years old) and those that are for-profit; also, facilities with higher rates of resident impairment have more lenient admission policies, provide less privacy, and less resident control—all areas seemingly consistent with the realities of a more impaired population. Such findings may indicate a difference in both admission and discharge policies, selection on the part of prospective residents, or a matching of facility policies and resources to resident need. Although this study cannot postulate on the cause of these differences, the findings do indicate that different facility types may cater to different residents and that comparisons across RC/AL—both cross-sectional and outcome analyses—must carefully consider case-mix differences.

In addition to being unable to address the accuracy of reported policies or determine the cause of differences across facility types, data reported herein are limited because they do not include those from nonparticipating facilities, and they are specific to the four states under study. To the extent that the long-term care market is different in other states—a point known to be true, as, for example, in 1999, three states (North Carolina, Missouri, and New York) housed 75% of all individuals receiving Medicaid-supported RC/AL services (Nolin & Mollica, 2001)—resident and facility characteristics in both NHs and RC/AL may differ somewhat.

It is illuminating to return to the process of care data to make two final points. First, it is noteworthy that in only one instance (NH admission policies) are 100% of items endorsed, and within the individual freedom and institutional order domain, only 21%–78% of items within any area are endorsed. If these components really do reflect tenets of long-term care, scores higher than these may represent either a realistic ideal toward which to strive or an unrealistic ideal, given that policies are likely limited by the degree and variability of resident need; indeed, it must be recognized that these aggregate measures may not be expected to reach 100%, because within the framework of person–environment fit (Kahana,

1980), it is entirely likely that maximizing policies may be inconsistent with resident need. Second, among all CS-LTC facilities under study, nonprofit facilities score higher than for-profit facilities in reference to policy choice, clarity, and provision of privacy, and they have more restricted admission policies. Historically, the nonprofit NH sector has been praised for its adherence to ethical and social responsibilities before economic concerns, and for undertaking new programs that meet medical and social needs without regard to their efficiency and/or profitability (Vladeck, 1980). RC/AL facilities seem to follow suit, and may even be willing to forfeit revenues and refuse admission to more impaired residents if they cannot meet their needs.

It is helpful to be mindful of the opinion that the RC/AL industry evolved to address the “sterility and rigidity of nursing homes and the dread and despair they evoke in prospective or actual users” (Kane & Wilson, 2001, p. 8). There is a general sentiment that at the crux of AL is the impetus to not be a NH, but that effort will be required to avoid spillover. Given similarities in case-mix and service provision, the degree to which RC/AL (predominantly a private-pay industry) *differentiates* itself from NH care requires that conditions allow for differences, such as encouraging RC/AL oversight to evolve independently from NH oversight (Kane & Wilson, 2001). The degree to which RC/AL *substitutes* for NH care is in large part dependent on both the degree to which Medicaid programs will pay for RC/AL as an alternative to NH care and the extent to which research demonstrates differences in outcomes between the two settings (Zimmerman, Sloane, & Eckert, 2001). Already, 39 states covered services in RC/AL in 2000, and six more states planned to do so (Mollica, 2001a); new reports are finding few differences between RC/AL and NHs in rates of relocation to higher levels of care and outcomes related to function, psychological well-being, pain, and discomfort (Frytak et al., 2001; Pruchno & Rose, 2000). Investigators might be advised to examine outcomes separately for residents with different levels of need (such as those with and without dementia) to consider resident and family satisfaction and to recognize differences between RC/AL settings, when suggesting the optimal setting of care and components of care relevant to state policy. Hence, although just a beginning, research and policy are moving forward to help clarify the role of RC/AL vis-à-vis NHs in our nation’s system of residential long-term care.

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