U.S. Department of Health and Human Services
Assistant Secretary for Planning and Evaluation
Office of Disability, Aging and Long-Term Care Policy

Do Services and Staffing in Residential Care Facilities Vary With Resident Needs?

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Office of the Assistant Secretary for Planning and Evaluation

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DO SERVICES AND STAFFING IN RESIDENTIAL CARE FACILITIES VARY WITH RESIDENT NEEDS?

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ACRONYMS

ADL	Activity of daily living
CMS	Centers for Medicare and Medicaid Services
HCBS	Home and community-based services
HPRD	Hours per resident day
IADL	Instrumental activity of daily living
LPN	Licensed practical nurse
LVN	Licensed vocational nurse
MSA	Metropolitan statistical area
NSRCF	National Survey of Residential Care Facilities
OLS	Ordinary least square
RCF	Residential care facility
RN	Registered nurse

EXECUTIVE SUMMARY

For policy makers and consumer advocates seeking to enable individuals with long-term services and supports needs to remain in the community and to reduce the use of nursing homes, residential care facilities (RCFs) may offer an alternative for people who cannot live independently but do not need the level of care provided in nursing homes. For RCFs to meet these objectives, the services offered and staffing provided must correspond with the needs of the residents.

To help determine whether this correspondence is the case, this study uses newly available data from the 2010 National Survey of Residential Care Facilities--the first nationally representative survey of a broad range of RCFs--to profile RCF residents' health and functional status. It then examines the relationship between health and functional status, and: (1) the services available at the facilities and used by residents; and (2) the staffing levels of the facilities. Although not specifically designed to answer this question, the survey is the best available source of nationally representative data on RCFs.

The study results indicate that RCF residents in both the under and over-65 age groups have high rates of chronic conditions, although some of the most prevalent specific conditions vary by age. Most notably, those ages 65 and over are characterized by high rates of Alzheimer's disease and other dementias, hypertension, and depression. Among residents under age 65, serious mental illness, depression, hypertension, and intellectual and developmental disabilities predominate. (Facilities that exclusively serve individuals with severe mental illness and intellectual and developmental disabilities were excluded from the survey and are not part of this study.) Although the estimates use different data sources for comparing health status and disability levels across care settings, this study found that compared with nursing home residents, RCF residents have lower rates of chronic conditions and lower levels of activity of daily living needs.

The results also suggest that RCFs offer a wide range of services that reflect facility case mix. Overall, residents with higher levels of functional and cognitive impairments are more likely to reside in facilities that offer more services and are more likely to use those services than are people with lower levels of functional and cognitive impairment. RCF residents in both age groups also use substantial amounts of hospital, emergency room, rehabilitation facility, and nursing home services.

Staffing adequacy is a key factor that helps to ensure quality of care for RCF residents. Residents with higher levels of functional and cognitive impairment were more likely to live in facilities with higher staffing levels than were people with lower levels of functional and cognitive impairment.

Finally, this study examined the predictors of total direct care staffing in RCFs and found that for-profit status and a large proportion of residents receiving assistance with bathing, eating, or transferring are associated with higher direct care staffing ratios. Larger facilities and chain facilities are likely to have lower total direct care staffing ratios. Although in the regression analysis we controlled for bed size, ownership type, and whether the facility is part of a chain, doing so may not fully control for the large effects on staffing of including direct care administrator hours in small facilities and the correlation among other variables. We also found that, controlling for all other factors, there are no statistically significant differences in direct care staffing ratios between facilities located in a rural or urban areas, and or between facilities with dementia units or those that exclusively serve people with dementia and facilities that do not. Direct care staffing ratios were also not related to the proportion of residents with short-term memory problems. Controlling for a variety of facility characteristics, this analysis found no evidence that facilities serving Medicaid residents have lower staffing levels than facilities not serving Medicaid residents.

In conclusion, there appears to be a relationship between resident disability levels and facility services and staffing levels. Although the mechanism of this relationship is unclear, it is likely to be a combination of several factors: (1) facilities adjusting to the needs of residents; (2) residents' selection of facilities that meet their needs; and (3) relocation or discharge of residents for whom the facility does not provide needed services. States' long-term services and supports rebalancing efforts and individuals' preference to receive long-term care services outside of institutions will likely lead to RCFs playing a larger role in the long-term services and supports' delivery system. Understanding the functional status of RCF residents, the types and amount of services provided and used in RCFs, and the staffing available to serve residents is a first step in determining the appropriate role of RCFs.

1. INTRODUCTION

Residential care facilities (RCFs) are an important part of the long-term services and supports system. In 2010, 31,100 RCFs served 733,300 residents of all ages and with a wide variety of physical and mental impairments (Caffrey et al., 2012; Park-Lee et al., 2011). By comparison, in the same year, the United States had 15,682 nursing homes serving 1,396,448 residents (Kaiser Family Foundation, 2012).

States vary in the degree to which they have developed an array of home and community-based services (HCBS) that includes a substantial role for RCFs (Stone & Reinhard, 2007). In some states, such as Oregon and Washington State, RCFs play an important role in the HCBS system, specifically to reduce nursing home use and to increase service options for individuals who want to live in the community (Kane & Cutler, 2008; Wiener & Lutsky, 2001). Thus, RCFs are a critical component of efforts to alter the balance between institutional and HCBS spending.

At its core, the key policy questions are where RCFs fit in the range of long-term services and supports and what role they should play. Some view RCFs as community-based residential settings for individuals who cannot be safely served at home for any number of reasons but do not yet need to be cared for in a nursing home. Others view RCFs as settings that can serve a more severely disabled population, substituting for nursing home care in some instances. This latter view is reflected in the provision of residential care services as part of Medicaid HCBS waivers (O'Keeffe et al., 2010).

An assessment of the current and future role of RCFs is complicated by the multitude of ways in which states regulate facilities (Mollica, Sims-Kastelein, & O'Keefe, 2007; Polzer, 2011; Wiener, Lux, Johnson, & Greene, 2010). Unlike nursing homes, there are no minimum federal standards as to what services RCFs must provide. Little is known about the health, functional, and cognitive characteristics of the people who live in the facilities; what services are offered by facilities and used by residents; and what levels and types of staffing are provided. Importantly, it is unknown whether the services offered by facilities and used by RCF residents and the staffing provided by these facilities match the health, functional, and cognitive needs of the residents. In other words, do residents with greater health, functional, and cognitive needs live in facilities that provide more services and higher levels of staffing? Until recently, little current, nationally representative data has been available to inform policy makers on these issues (Hawes, Phillips, & Rose, 2000; Stone & Reinhard, 2007). This report analyzes these issues using the most current and comprehensive data available, the 2010 National Survey of Residential Care Facilities (NSRCF).

1.1. What Is the Health, Functional, and Cognitive Status of Residential Care Facility Residents?

Although most research on RCF residents is quite old, some studies found that RCF residents are less impaired than nursing home residents, and others found that RCF residents have substantial impairment (Zimmerman et al., 2003), in some cases similar to that found in nursing home residents. A more impaired RCF population may result from both allowing residents to "age in place" and admitting more impaired residents (Stone & Reinhard, 2007). A study of primarily elderly residents of RCFs with 11 or more beds in the late 1990s also found that RCF residents were generally healthier and had less impairment than nursing home residents. This study indicated that, on average, 23.6 percent of residents of assisted living facilities, which are a subset of RCFs, were considered by administrators to be "heavy care" (i.e., they received assistance with three or more activities of daily living [ADLs]), and 34 percent had moderate to severe cognitive impairment (Hawes, Phillips, Rose, Holan, & Sherman, 2003). In a more recent study using the 2010 NSRCF, 38 percent of RCF residents received assistance with three or more ADLs (Caffrey et al., 2012).

RCFs are major providers of services to people with Alzheimer's disease and related dementias. Analysis of data from the 2010 NSRCF found that 42 percent of RCF residents had Alzheimer's disease (Caffrey et al., 2012). The findings of several studies indicate that about half of all elderly RCF residents had Alzheimer's disease, another condition that causes dementia, or cognitive impairment (Hawes et al., 2003; Rosenblatt et al., 2004; Sloane, Zimmerman, & Ory, 2001). One study suggested cognitive impairment rates in RCFs ranging from 45 percent to 63 percent (Morgan, Gruber-Baldini, & Magaziner, 2001). A study of 192 residents in 22 RCFs in Maryland found that the prevalence of dementia ranged from 63 percent to 81 percent, with facilities of 16 or fewer beds having a higher percentage of residents with dementia (Leroi et al., 2007).

Other studies compared RCF residents with residents in nursing facilities. One study comparing Medicare beneficiaries living in either nursing homes or RCFs found that RCF residents are generally less impaired than nursing home residents and have a lower prevalence of chronic diseases (Spillman, Liu, & McGilliard, 2002). A set of studies of 347 residents with dementia in 45 RCFs and nursing homes in four states found that: (1) 56 percent of RCF residents had behavioral symptoms related to dementia, compared with 66 percent of nursing home residents (Boustani et al., 2005); and (2) 24 percent of RCF residents had depression, compared with 27 percent of nursing home residents (Gruber-Baldini et al., 2005). A study using the same data found that 49 percent of RCF residents had moderate to high mobility impairments, compared with 53 percent of nursing home residents (Williams et al., 2005). In these studies of four states, although the results show that RCF residents had lower rates of these conditions than nursing home residents, the differences between the two populations were not large.

1.2. What Services Do Residential Care Facilities Offer and Residents Use? Do Services Vary With the Needs of Residents?

States differ in what services they require to be licensed. Beyond those minimum requirements, facilities vary in what services they provide and in what services residents actually receive. Hawes and colleagues (2000) defined a set of "basic" services that RCFs offer that included two meals a day, housekeeping, 24-hour staff oversight, and assistance with either medications and at least one ADL *or* assistance with two or more ADLs. The study classified all RCFs as high, low, or minimal-service facilities. The minimal-service facilities, which did not provide any basic services, composed 5 percent of all facilities nationally; low-service facilities, which provided some but not all basic services, composed 65 percent of all facilities; and high-service facilities, which provided all basic services, composed 31 percent of all facilities. The survey data at the time showed that 99 percent of all facilities offered housekeeping services and at least two meals a day; 92 percent provided medication reminders; 97 percent provided assistance with bathing; 94 percent provided assistance with dressing; and 71 percent of all facilities had any full or part-time licensed nurse on staff (registered nurse [RN] or licensed practical nurse [LPN]), with 79.5 percent of facilities providing any care or monitoring by RNs or LPNs (Hawes et al., 2003).

Analyses of the 2010 NSRCF found that--although nearly all facilities provide personal care, basic health monitoring, incontinence care, social and recreational activities within the facility, special diets, and personal laundry services--provision of skilled nursing care, occupational and physical therapy, and social service counseling is less common (Park-Lee et al., 2011). It is important to note that offering ADL assistance or health-related services like medication management was one of the criteria for inclusion in the survey.

In the late 1990s, the National Survey of Assisted Living found that 75 percent of individuals leaving RCFs over a 7-month period did so because they needed more care (Phillips et al., 2003), indicating that the level of care provided was not sufficient to meet their needs. Some of this finding could be explained by state licensing rules that prohibit the provision of nursing care in RCFs. Although this study reported many positive aspects about RCFs, it also found that needs for assistance were unmet by 26 percent of residents for using the toilet, 12 percent for locomotion, and 12 percent for dressing.

1.3. What Staffing Is Available in Residential Care Facilities? Does It Vary With the Needs of Residents?

Staffing is a key variable in determining whether a facility has enough resources to meet the needs of its residents. In the late 1990s, the National Survey of Assisted Living found that 29 percent of facilities had no licensed nurse on staff and 65 percent did not have an RN on staff at least 40 hours a week (Hawes et al., 2003). A 2002 study of six states that use Medicaid to pay for services in RCFs found that virtually all

stakeholders had concerns about insufficient numbers of staff, untrained staff, and the potential negative impact of these staffing patterns on the quality of care (O'Keeffe, O'Keeffe, & Bernard, 2003). Other researchers have argued that because RCFs often lack professional staff, they may not adequately address the functional and health care needs of persons with dementia (Pruchno & Rose, 2000). Few states establish staffing ratios for RCFs, preferring to give facilities the flexibility to vary staffing patterns based on residents' care needs. No consensus exists about the appropriate type and level of staffing needed in RCFs, particularly nurse staffing. A major problem in reaching such a consensus is that the type and amount of care provided varies significantly across settings, as do the needs of the residents (O'Keeffe & Wiener, 2005).

2. RESEARCH QUESTIONS

This study analyzes the 2010 NSRCF to address three research questions of interest to federal and state policy makers:

1. What are the health conditions and functional and cognitive status of RCF residents and how do they compare with those of nursing home residents? How do health conditions and functional and cognitive status of RCF residents vary by age?

2. What services do RCFs offer, and what services do RCF residents use? Do the offer of services and their use vary with residents' health conditions and functional and cognitive status?

3. What are facility direct care staffing levels, and do they vary with resident functional and cognitive status?

3. DATA

This study uses merged facility and resident data from the 2010 NSRCF, which was sponsored by the U.S. Department of Health and Human Services (the National Center for Health Statistics, the Office of the Assistant Secretary for Planning and Evaluation, the Agency for Healthcare Research and Quality), the U.S. Department of Veterans Affairs, and other federal agencies (Moss, Harris-Kojetin, & Sengupta, 2011). The NSRCF, the first nationally representative survey of United States residential care providers, collected a broad array of data on facilities and residents. To be eligible for the survey, facilities had to be licensed, registered, listed, certified, or otherwise regulated by a state; have four or more beds; and have at least one resident currently living in the facility. The facilities had to provide room and at least two meals a day, round-the-clock onsite supervision, and help with ADLs (e.g., bathing, eating, and dressing) or health-related services (e.g., medication management). Facilities also had to serve primarily an adult population. Facilities that served exclusively people with severe mental illness or people with intellectual and developmental disabilities were excluded because, besides serving a different population than other RCFs, these facilities are believed to offer a different set of services than the facilities included in the NSRCF. As a result, the survey sample excludes a large proportion of RCF residents who are younger than 65 years of age. Because of the varied regulatory framework across states, sampled facilities included those regulated under many names, including assisted living residences, board and care homes, congregate care facilities, enriched housing programs, homes for the aged, and personal care homes.

The NSRCF was conducted between March and November 2010 using a two-stage probability sampling design in which RCFs were sampled first and then, depending on facility size, 3-6 current residents from each facility were sampled. In-person interviews were conducted with facility directors and designated staff members. Information on individual residents was collected from staff knowledgeable about the residents; no interviews were conducted with residents.

Data were collected on 2,302 facilities and 8,094 current residents. The facility weighted response rate was 81 percent and the resident weighted response rate was 99 percent. For this study, we merged the NSRCF facility and resident files so that resident-level analysis could be conducted, including resident and facility characteristics that are not included in the public use file. The merge and data analyses were conducted at the Research Data Center of the National Center for Health Statistics, with the help of its staff. The Research Data Center follows special procedures to protect the confidentiality of respondent facilities and residents.

Comparison data on nursing home resident medical conditions and functional status were obtained from publicly available Centers for Medicare and Medicaid Services (CMS) information from the Minimum Data Set. The Minimum Data Set

routinely collects a large amount of functional status measures on all nursing home residents, regardless of source of payment. CMS publishes online Minimum Data Set Active Resident Information Reports, from which we selected data from the third quarter of 2010 to match the time period for the data collection for the NSRCF (CMS, 2011).

4. METHODS

We conducted descriptive and multivariate analyses for this study. For the descriptive analysis, frequencies for categorical variables and means for continuous variables were calculated and tested for statistical differences using chi-square tests for categorical variables and t-tests for continuous variables.

For this study, we constructed several variables:

1. Residents were categorized as having cognitive impairment if they had a diagnosis of Alzheimer's disease or dementia, exhibited any related behavioral symptoms,[1] or had short or long-term memory impairments.

2. Functional limitations were measured by an ADL scale (0-5) and by individual ADL variables: receiving assistance with bathing, dressing, eating, transferring, and toileting. ADLs were measured by receipt of human assistance.

3. Functional limitations were also measured by an instrumental ADL (IADL) scale (0-5) and by individual IADL variables: limitations in taking medications, managing money, shopping, housekeeping, and using a telephone.

4. Direct care staffing was measured by the ratio of RN, LPN/licensed vocational nurse (LVN), personal care aide, and direct care administrator hours per resident day (HPRD).

5. Nursing care staffing was measured by the ratio of RN/LPN/LVN HPRD.

This study presents descriptive analysis at the resident and facility levels as well as regression modeling at the facility level. Much of the descriptive analysis is done at the resident level. However, facility-level descriptive analysis is done for the independent variables included in the regression model.

For the multivariate analysis, we estimated an ordinary least squares (OLS) regression model. For the OLS regression model, we use total direct care staffing per person per day as the dependent variable and present the beta coefficients of the predictor variables along with their corresponding t-test p-values.

[1] Behavioral symptoms measured in the survey are: Refusing to take prescribed medicines at the appropriate time or in the prescribed dosage, creating disturbances or being excessively noisy by knocking on doors or yelling, wandering or moving aimlessly about in the building or on the grounds, refusing to bathe or clean oneself, rummaging through or taking other people's belongings, verbally threatening other persons including staff or other residents, removing clothing in public, and making unwanted sexual advances toward staff or other residents.

We follow National Center for Health Statistics conventions by presenting only those estimates that are statistically reliable and have the appropriate sample size. All analyses were conducted in SUDAAN® software for statistical analysis of correlated data (Research Triangle Institute, 2008). The stratification variables of number of beds and census region, in addition to the final sample weights for the facilities and residents and the sampling design method, were incorporated into the SUDAAN procedures to account for the complex sampling design. Only weighted results are presented.

RCFs are characterized by a large number of small facilities (4-10 beds) that serve a relatively small proportion of residents. More specifically, 50 percent of RCFs are small, but they serve only 10 percent of residents (Park-Lee et al., 2011). Therefore, most RCF residents live in larger facilities even though small facilities account for half of facilities. To obtain a full understanding of RCFs and their residents, data are presented from several perspectives with different units of analysis. We show facility characteristics with the facility as the unit of analysis; then, to present a perspective that more closely aligns with the number of persons served and to represent the perspective of people living in RCFs, we present data on the characteristics of facilities in which people live with the resident as the unit of analysis. All charts and ***Table 1***, ***Table 2*** and ***Table 3*** include data where the resident is the unit of analysis. ***Table 4*** shows facility characteristics both ways: first as a proportion of facilities with this characteristic, and then as a proportion of residents who live in facilities with the same characteristic. ***Table 5*** and ***Table 6*** present data with only the facility as the unit of analysis.

TABLE 1. Percentage of Residents Who Live in Residential Care Facilities That Offer Specific Services, by Functional Limitations and Cognitive Impairment								
Services Offered by RCFs Where Residents Live	**Total RCF Population (n=8,094)**	**No Need for ADL Assistance (n=1,934)**	**Need for Assistance with 1-2 ADLs (n=2,944)**	**Need for Assistance with 3+ ADLs (n=3,216)**	**Stat. Sign.**	**No Cognitive Impairment (n=2,391)**	**Cognitive Impairment (n=5,702)**	**Stat. Sign.**
Special diets	89.3	85.2	88.8	92.6	***	86.4	90.7	***
Skilled nursing	39.8	39.4	37.9	41.9	*	38.4	40.5	ns
Basic health monitoring	96.5	94.3	97.3	97.3	**	94.9	97.3	**
Assistance with ADLs	99.7	99.0	99.8	100.0	**	99.6	99.7	ns
Incontinence care	94.2	89.4	93.2	98.5	***	91.7	95.5	***
Transportation to medical appointments	84.4	89.3	84.0	81.5	***	86.6	83.3	**
Transportation to stores or elsewhere	85.9	92.2	86.4	80.9	***	90.0	83.9	***
Transportation to educational programs	33.6	40.2	33.3	29.4	***	38.4	31.3	***
Transportation to a sheltered workshop, work training program, or supported employment	19.1	21.3	18.7	18.1	ns	20.3	18.6	ns
Social services counseling	44.1	45.4	47.9	39.4	***	46.4	43.0	*
Case management services	64.2	65.3	65.3	62.3	ns	65.5	63.5	ns
Occupational therapy	52.9	53.2	51.4	54.1	ns	54.1	52.3	ns
Physical therapy	55.9	55.9	54.8	57.0	ns	57.1	55.4	ns
Personal laundry services	99.3	98.6	99.4	99.8	**	99.0	99.5	ns
Social or recreational activities in the facility	99.7	99.5	99.9	99.6	*	99.7	99.7	ns
Social or recreational activities outside the facility	89.9	92.4	91.5	86.6	***	92.5	88.6	***

SOURCE: RTI analysis of the NSRCF.
NOTES: Stat. Sign.: statistical significance. "Cognitive impairment" signifies residents with any indication of cognitive impairment, including Alzheimer's disease or other dementia diagnosis, behavioral symptoms, or memory problems.

*p<0.1, **p<0.05, ***p<0.0001, ns: not statistically significant ($p \geq 0.1$).

TABLE 2. Percentage of Residents With Functional Limitations and Cognitive Impairment Who Use Specific Services								
Services Used by Residents[1]	**Total RCF Population (n=8,094)**	**No Need for ADL Assistance (n=1,934)**	**Need for Assistance with 1-2 ADLs (n=2,944)**	**Need for Assistance with 3+ ADLs (n=3,216)**	**Stat. Sign.**	**No Cognitive Impairment (n=2,391)**	**Cognitive Impairment (n=5,702)**	**Stat. Sign.**
Special diets	30.7	21.1	26.9	41.0	***	24.4	33.8	***
Skilled nursing	12.5	5.7	10.1	19.6	***	7.4	15.1	***
Basic health monitoring	75.1	60.8	77.7	82.3	***	67.4	78.9	***
Assistance with ADLs	69.2	22.6	73.9	96.5	***	49.3	79.0	***
Incontinence care	37.6	4.5	19.5	78.3	***	14.7	48.9	***
Transportation to medical appointments	58.9	59.3	60.6	56.9	ns	58.8	58.9	ns
Transportation to stores or elsewhere	39.3	53.2	42.5	26.6	***	47.3	35.4	***
Social service counseling	15.8	15.9	17.2	14.5	ns	13.8	16.8	**
Personal laundry services	86.6	69.6	89.9	95.0	***	78.5	90.6	***
Social or recreational activities in the facility	80.3	71.4	81.4	85.4	***	75.4	82.7	***
Social or recreational activities outside the facility	44.7	54.9	46.6	35.8	***	50.0	42.1	***

SOURCE: RTI analysis of the NSRCF.

NOTES: Stat. Sign.: statistical significance. "Cognitive impairment" signifies residents with any indication of cognitive impairment, including Alzheimer's disease or other dementia diagnosis, behavioral symptoms, or memory problems.

1. The list of services used by residents in Table 6 is derived from the resident-level NSRCF file. This list of services is slightly different from the list of services offered by facilities in Table 5, which is derived from the facility-level NSRCF file.

**p<0.05, ***p<0.0001, ns: not statistically significant ($p \geq 0.1$).

TABLE 3. Facility Staffing Ratio, by Staff Type		
Types of Staff	**Mean Staff HPRD Facility Level**	**Mean Staff HPRD: Facilities Where Residents Live**
All direct care staff	4.15	2.32
RN care	0.13	0.08
LPN or LVN	0.12	0.16
All nursing care[1]	0.26	0.24
Personal care aide direct care	2.96	1.81
Administrator/assistant administrator direct care	0.93	0.27

SOURCE: RTI International analysis of the NSRCF.
NOTE:
1. Nursing care staffing was measured by the ratio of RN/LPN/LVN hours per resident day.

TABLE 4. Total Facility Direct Care Staffing Ratio, by Facility Characteristics		
Facility Characteristics	**Mean HPRD: Facility Level**	**Mean HPRD in Facilities Where Residents Live**
Overall	4.15	2.32
Facility size	***	***
Small (4-10 beds)	5.81	5.17
Medium (11-25 beds)	3.43	3.16
Large (26-100 beds)	2.20	2.01
Extra-large (over 100 beds)	1.65	1.59
Facility is owned by a chain, group, or multifacility system	3.30***	2.13***
Non-chain facility	4.67	2.57
Serving Medicaid residents	4.18	2.30
Not serving Medicaid residents	4.11	2.35
Facilities with more than 50% of residents needing help with either bathing, eating, or transferring	5.17***	3.09***
Facilities with less than 50% of residents needing help with bathing, eating, or transferring	3.07	1.90
Private, for-profit ownership	4.39***	2.48***
Private non-profit or state, county, or local government	3.04	1.85
Facility has a distinct unit, wing, or floor designated as a dementia or Alzheimer's special care unit or serve only adults with dementia or Alzheimer's disease	2.40***	2.09***
Facility without a special dementia unit	4.37	2.42
Metropolitan Statistical Area (MSA) location	4.52**	2.69**
Non-MSA location	3.54	2.36

SOURCE: RTI International analysis of the NSRCF.
NOTES: Metropolitan statistical area (urban setting); Stat. Sign.: statistical significance. Direct care hours include nursing, personal care aide, and direct administrator hours per patient per day.

**p<0.05, ***p<0.0001.

TABLE 5. Facility Staffing Levels for the Facilities in Which Residents Live, by Residents' Need for Assistance With Activities of Daily Living and by Cognitive Impairment Status: Hours per Resident per Day								
	All Residents (n=8,094)	**No Need for ADL Assistance (n=1,934)**	**Need for Assistance with 1-2 ADLs (n=2,944)**	**Need for Assistance with 3+ ADLs (n=3,216)**	**Stat. Sign.**	**No Cognitive Impairment (n=2,391)**	**Cognitive Impairment (n=5,702)**	**Stat. Sign.**
Staff Type	HPRD	HPRD	HPRD	HPRD	HPRD	HPRD	HPRD	HPRD
All direct care staff[1]	2.32	1.79	2.11	2.90	***	1.87	2.54	***
RN care	0.08	0.06	0.08	0.09	***	0.07	0.09	**
LPN/LVN care	0.16	0.13	0.17	0.18	***	0.15	0.17	**
All nursing care[2]	0.24	0.19	0.25	0.27	***	0.22	0.25	***
Personal care aide direct care	1.81	1.38	1.64	2.28	***	1.45	1.90	***
Administrator/assistant administrator direct care	0.27	0.21	0.22	0.35	***	0.20	0.30	***
Facilities without nursing staff	**%**	**%**	**%**	**%**	**---**	**%**	**%**	**---**
No RNs on staff	45.8	43.1	45.6	47.9	ns	45.1	46.2	ns
No LPNs or LVNs on staff	38.7	39.5	36.6	40.3	*	36.8	39.7	*
No nurses of any type on staff	19.5	19.2	16.9	22.2	***	17.4	20.5	**

SOURCE: RTI analysis of the NSRCF.

NOTES: Stat. Sign.: statistical significance. "Cognitive impairment" signifies residents with any indication of cognitive impairment, including Alzheimer's disease or other dementia diagnosis, behavioral symptoms, or memory problems.

1. Direct care staffing was measured by the ratio of combined RN, LPN, LVN; personal care aide; and direct care administrator HPRD.
2. Nursing care staffing was measured by the ratio of RN, LPN, and LVN HPRD.

*p<0.1, **p<0.05, ***p<0.0001, ns: not statistically significant ($p \geq 0.1$).

TABLE 6. Facility Characteristics: Sample Description for Multivariate Analysis			
Facility Characteristics	**Unweighted N**	**Weighted N**	**Weighted %**
All facilities	2,302	31,134	100
Facility size	---	---	---
Small (4-10 beds)	626	15,439	49.6
Medium (11-25 beds)	654	4,947	15.9
Large (26-100 beds)	803	8,656	27.8
Extra-large (over 100 beds)	219	2,092	6.7
Facility is owned by a chain, group, or multifacility system	974	11,724	37.7
Non-chain facility	1,328	19,410	62.3
Serving Medicaid residents	1,292	17,609	43.1
Not serving Medicaid residents	998	13,358	56.9
Facilities with more than 50% of residents needing help with either bathing, eating, or transferring	976	16,058	51.7
Facilities with less than 50% of residents needing help with bathing, eating, and transferring	1,320	14,994	48.3
Percentage of residents with short-term memory problems	2,288	30,973	43.9
Private, for-profit ownership	1,776	25,648	82.4
Private non-profit or state, county, or local government	526	5,486	17.6
Facility has a distinct unit, wing, or floor designated as a dementia or Alzheimer's special care unit or serves only adults with dementia or Alzheimer's disease	329	3,430	17.0
Facility without a special dementia unit	1,972	27,669	83.0
MSA location	1,525	23,382	80.5
Non-MSA location	558	5,660	19.5
SOURCE: RTI International analysis of the NSRCF. **NOTES**: Numbers may not add to 100% due to rounding.			

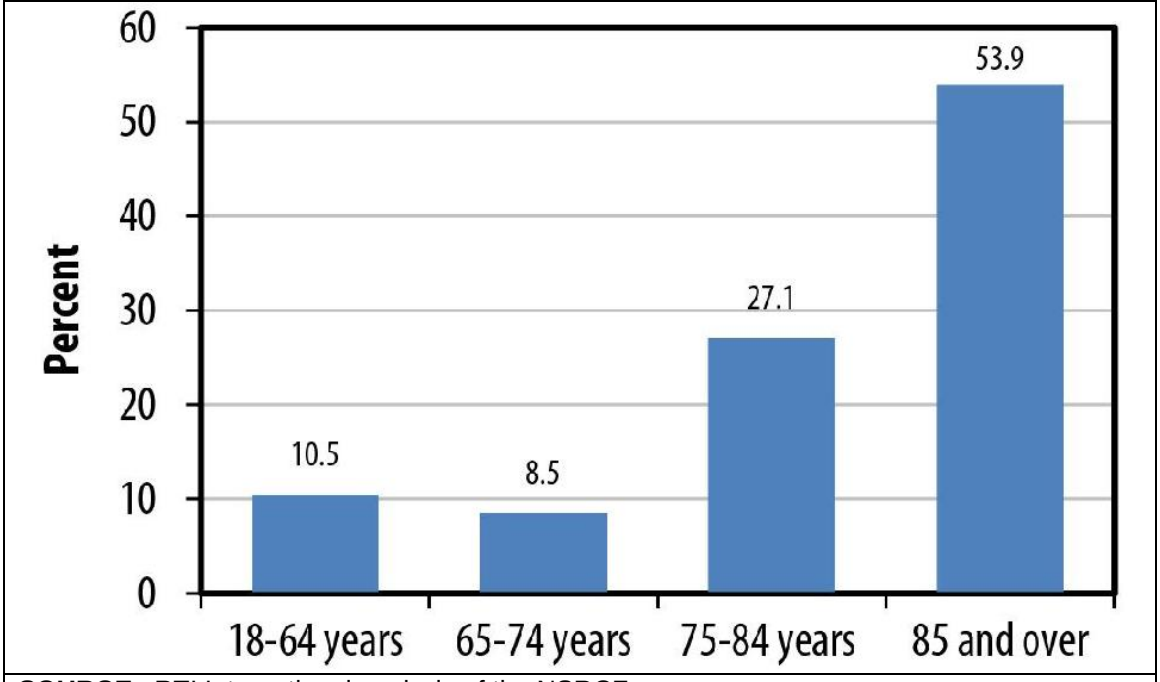
5. RESULTS

5.1. What Is the Health, Functional, and Cognitive Status of Residential Care Facility Residents by Age? How Do These Statuses Compare With Those of Nursing Home Residents?

5.1.1. Residential Care Facility Residents: Health Conditions and Functional and Cognitive Status

One of this study's goals is to provide a comprehensive picture of RCF residents--their age, health, and functional status--and examine how health, functional, and cognitive profiles of RCF residents under the age of 65 compare with those for residents ages 65 and over. ***Figure 1*** presents the age distribution of RCF residents. Although more than half (53.9 percent) of all RCF residents are ages 85 and over, 10.5 percent are under age 65, and 8.5 percent are 65-74 years of age. This age distribution is comparable to that in nursing homes (CMS, 2010). Nationally, 77,218 younger residents ages 18-64 live in RCFs.

FIGURE 1. Age Distribution of Residential Care Facility Residents

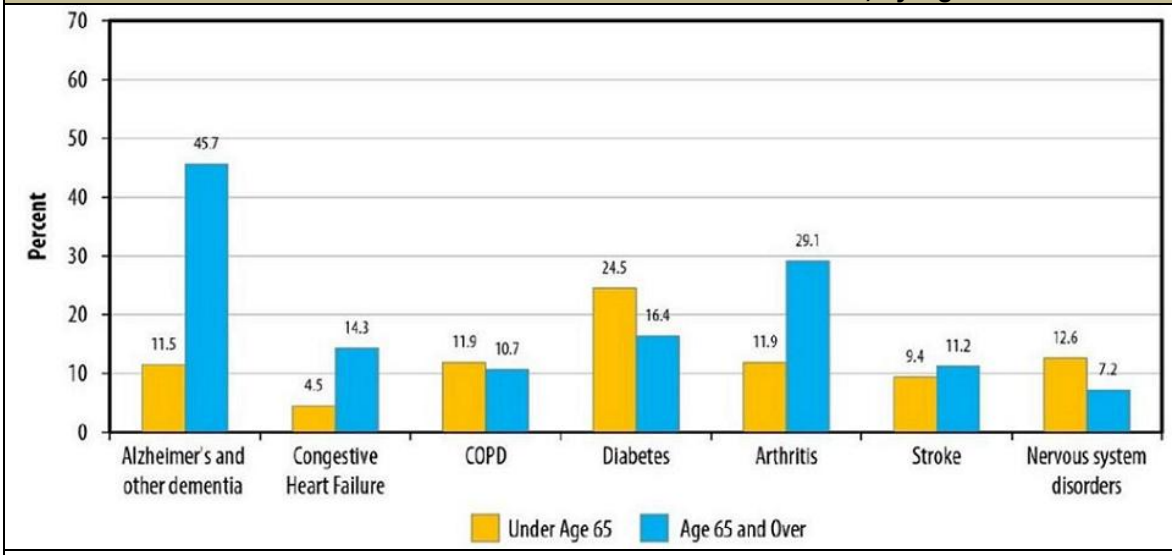


SOURCE: RTI International analysis of the NSRCF.

Figure 2 presents selected common chronic health conditions by age. The prevalence of chronic conditions is high. Almost half (45.7 percent) of residents ages 65 and older are believed to have Alzheimer's disease or other dementia (compared with 11.5 percent of those under the age of 65). Almost a third of all residents ages 65

or older have arthritis. Rates of diabetes are higher in the under-65 group than among residents who are 65 or older (24.5 percent and 16.4 percent, respectively), and the under-65 group has almost double the rate of nervous system disorders. The rates of chronic obstructive pulmonary disease and stroke are about the same for the two age groups.

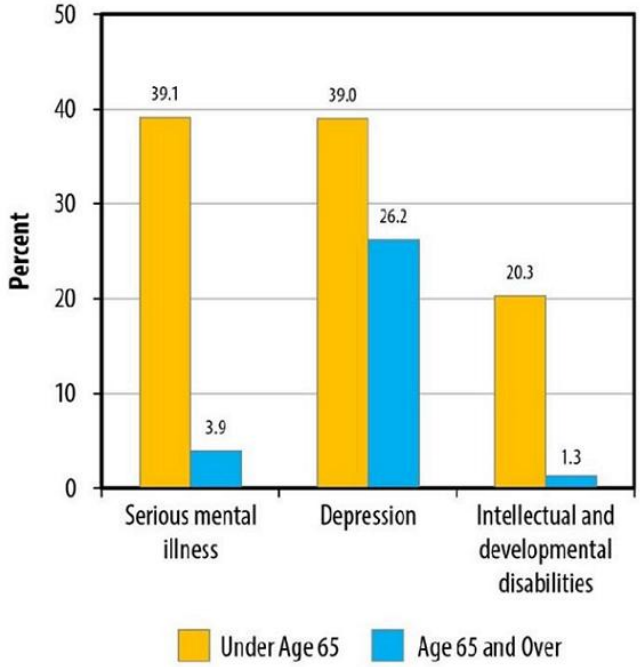
FIGURE 2. Residents' Selected Chronic Conditions, by Age



SOURCE: RTI International analysis of the NSRCF.
NOTE: COPD: chronic obstructive pulmonary disease.

Figure 3 presents selected mental health conditions by age. Substantial portions of RCF residents have severe mental illness, depression, or intellectual and developmental disabilities. Under age 65 RCF residents have substantially higher rates of serious mental illness, depression, and intellectual and development disabilities than older RCF residents. Severe mental illness includes such conditions as schizophrenia or psychosis. Intellectual and developmental disabilities include mental retardation, Down syndrome, and severe autism.

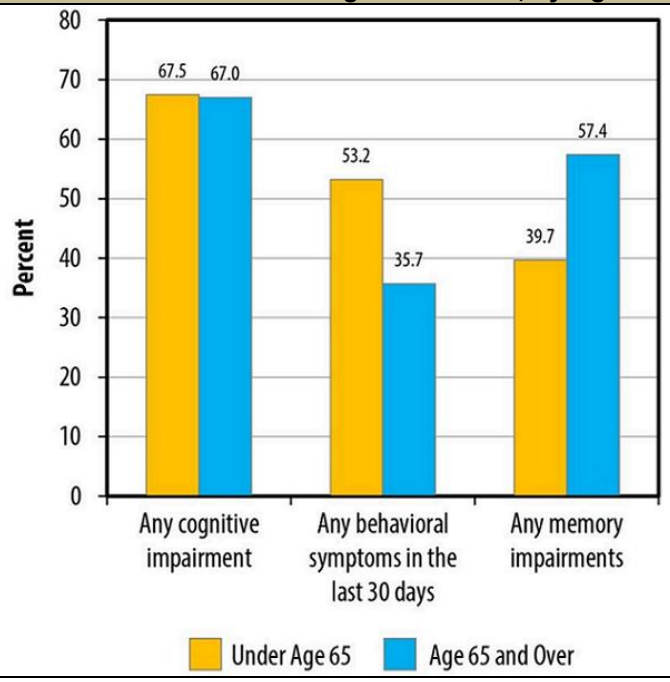
FIGURE 3. Residents' Selected Mental Health Conditions, by Age



SOURCE: RTI International analysis of the NSRCF.

Figure 4 presents residents' cognitive status by age. Sixty-seven percent of residents have some cognitive impairment, which includes having an Alzheimer's disease or other dementia diagnosis, behavioral symptoms, or short or long-term memory impairment. Large proportions of both older and younger RCF residents were reported to have exhibited problem behaviors, but the cause may differ by age. For older residents, behavior problems may result from dementia; for younger residents, they may result from a serious mental illness or an intellectual or other developmental disability.

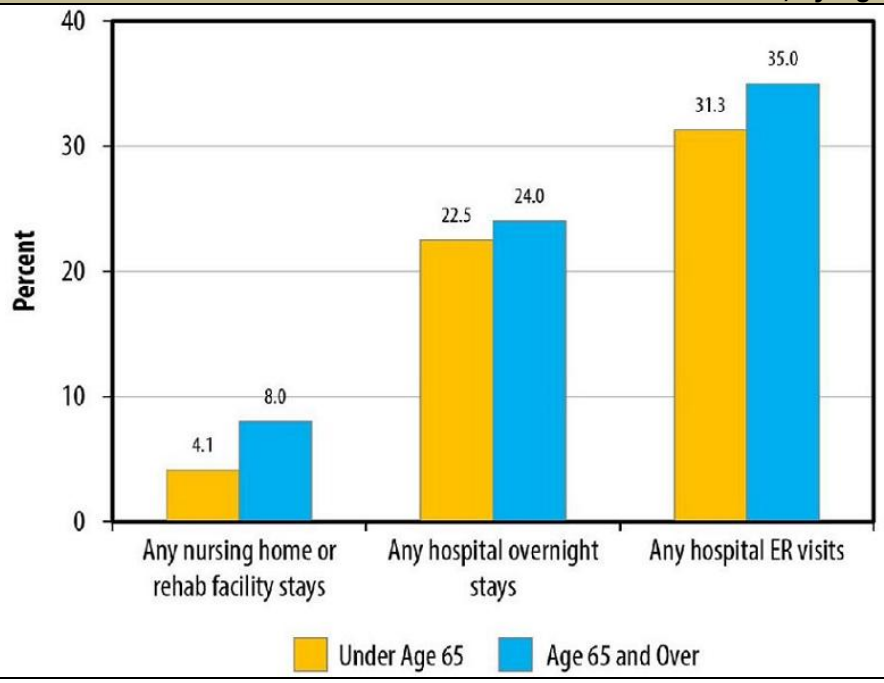
FIGURE 4. Resident Cognitive Status, by Age



SOURCE: RTI International analysis of the NSRCF.

Figure 5 presents residents' use of acute and post-acute care services in the prior 12 months by age. RCF residents use substantial amounts of these services, with about a third of residents having had an emergency room visit in the past year, and about two-fifths of these emergency room users having more than one visit (not presented in graph). Use of emergency room visits raises questions about whether additional health services or better coordination with health services is needed. A quarter of residents had a hospital stay in the 12 months before the survey. Only a small proportion of residents--4.1 percent of people under age 65 and 8.0 percent of people ages 65 and over--used any rehabilitation facility or nursing home stays in the prior 12 months.

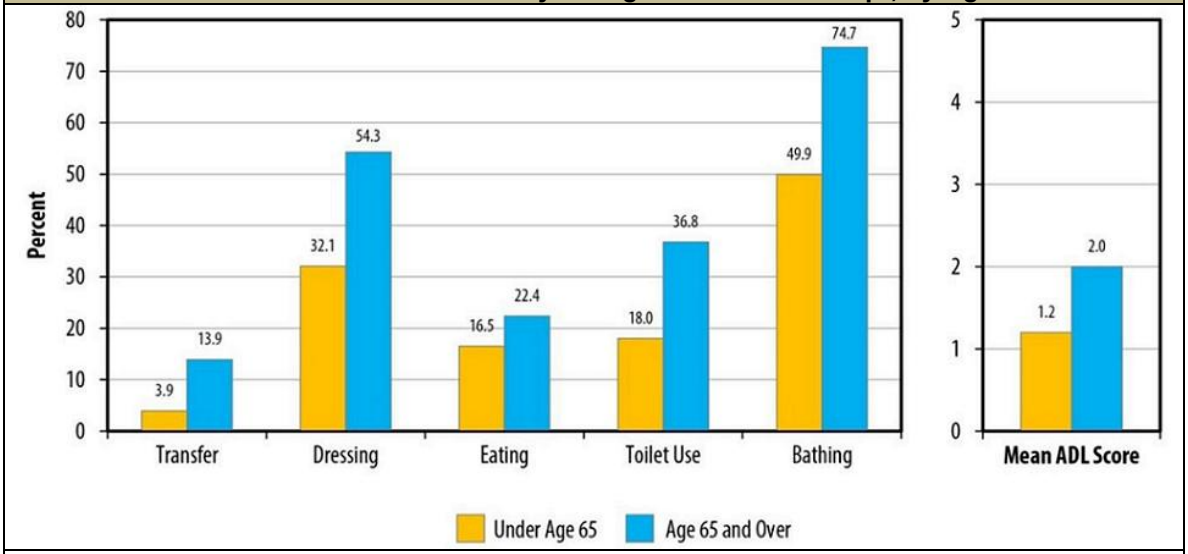
FIGURE 5. Resident Health Service Utilization in the Last Year, by Age



SOURCE: RTI International analysis of the NSRCF.
NOTE: ER: emergency room.

Figure 6 and ***Figure 7*** present need for assistance with ADLs by age, and ***Figure 8*** and ***Figure 9*** present limitations in IADLs by age. Fifty-four percent of RCF residents under age 65, and 77 percent ages 65 and over, receive assistance with at least one ADL. The ADL that residents most commonly need assistance with is bathing, followed by dressing and toileting. Younger RCF residents receive significantly less assistance overall and for each activity type. On average, residents receive help with 1.9 ADLs (1.2 for the younger group and 2.0 for the older group). Nationally, almost 20 percent of the younger population and 39.5 percent of the older residents received assistance with three or more ADLs. Almost all RCF residents require assistance with IADLs. There is little difference between the needs for overall IADL assistance between younger and older residents (97.4 percent and 94.9 percent, respectively).

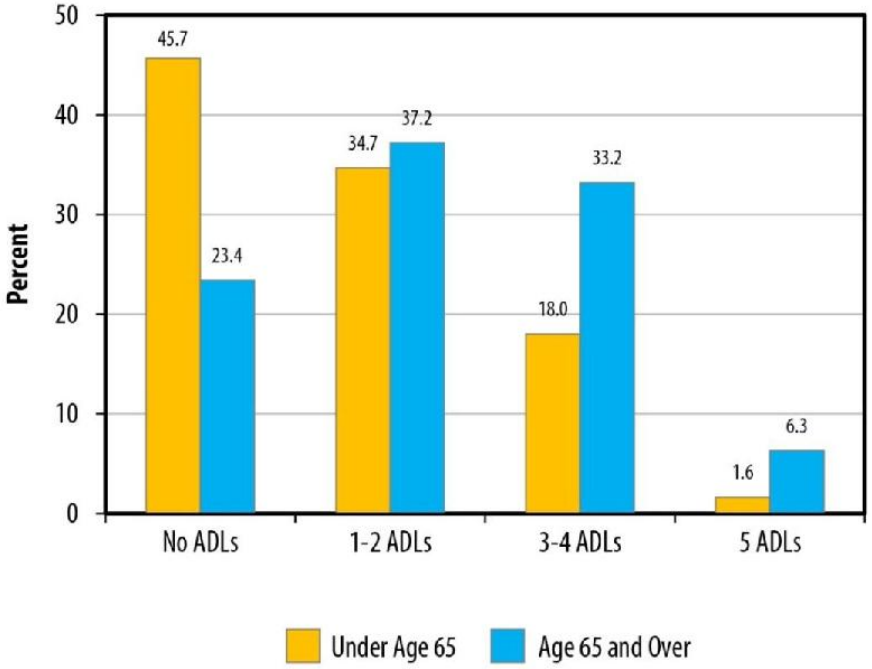
FIGURE 6. Activities of Daily Living Assistance Receipt, by Age



SOURCE: RTI International analysis of the NSRCF.

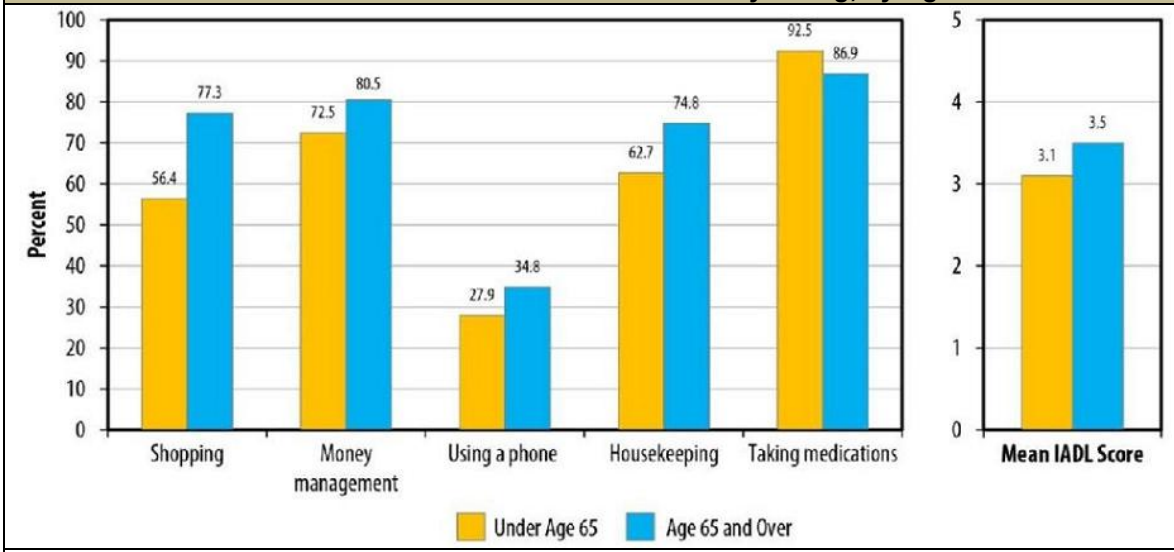
Figure 7 presents the RCF resident levels of assistance on ADLs by age. Almost 46 percent of RCF residents under 65 do not receive assistance with ADLs, compared with only 23.4 percent of those ages 65 and over. At the other extreme, almost 20 percent of residents under the age of 65 require assistance with three or more ADLs, as did almost 40 percent among those age 65 or older.

FIGURE 7. Levels of Assistance With Activities of Daily Living, by Age



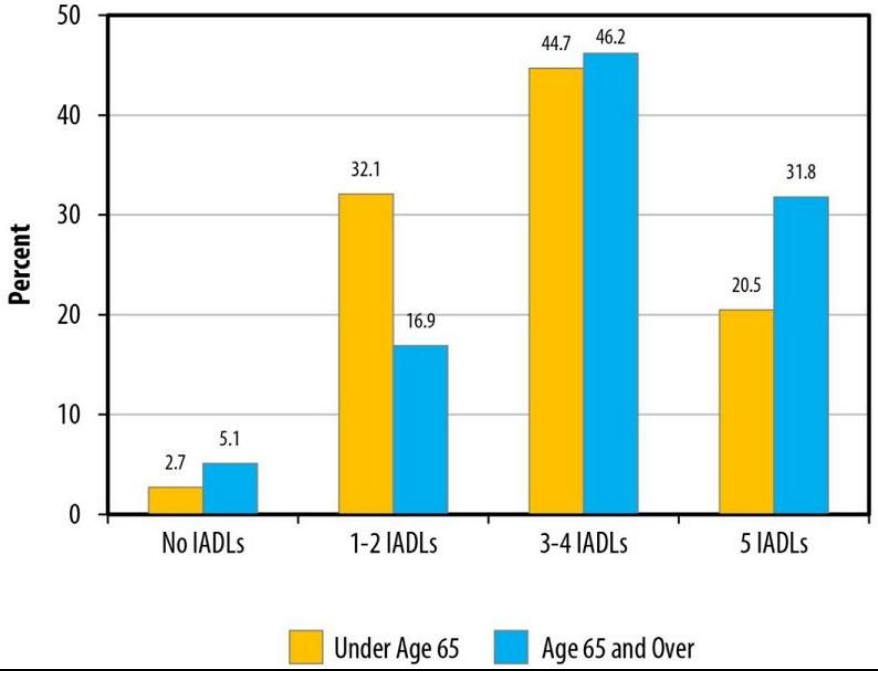
SOURCE: RTI International analysis of the NSRCF.

FIGURE 8. Instrumental Activities of Daily Living, by Age



SOURCE: RTI International analysis of the NSRCF.

FIGURE 9. Instrumental Activities of Daily Living: Levels of Impairment, by Age



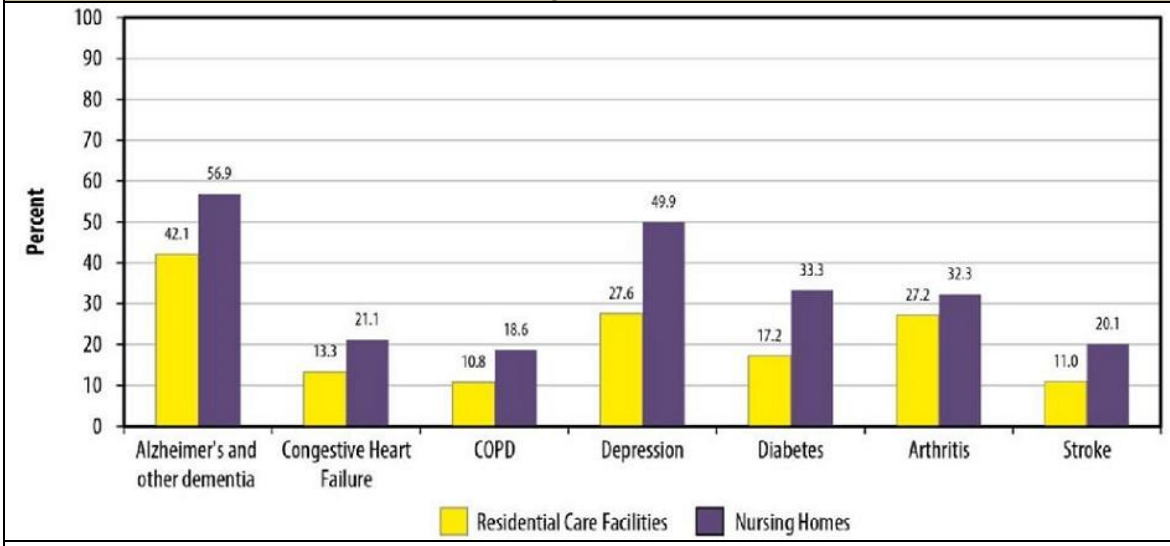
SOURCE: RTI International analysis of the NSRCF.

Virtually all RCF residents have IADL impairments: less than 5 percent of the total sample is reported not to have any IADL limitations. In fact, a great majority of RCF residents have multiple IADL limitations: 65.2 percent of those under 65 and 78 percent of those ages 65 and older are reported to have limitations on at least three IADLs, such as difficulties with taking medications, managing money, shopping, housekeeping, and using a telephone.

5.1.2. Comparisons of Residential Care Facility and Nursing Home Residents

The resident populations of RCFs and nursing homes overlap. ***Figure 10*** and ***Figure 11*** present data on selected common chronic conditions and ADLs among residents in the two settings. Nursing facility residents have higher prevalence of all chronic conditions examined. On average, nursing home residents have much higher levels of ADL need.[2] The average number of ADL limitations requiring assistance is twice as high for nursing home residents as for RCF residents.

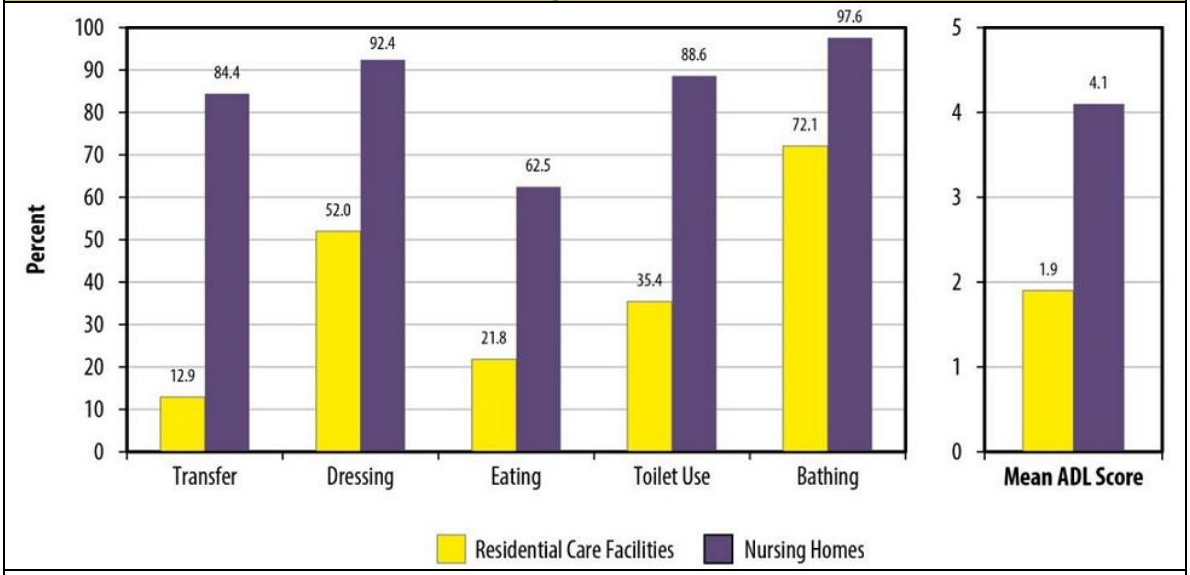
FIGURE 10. Selected Chronic Conditions: Comparison of Residential Care Facility and Nursing Home Residents



SOURCE: RTI International analysis of the NSRCF and CMS (2012).
NOTE: COPD: chronic obstructive pulmonary disease.

[2] ADL measures differ between the NSRCF and the Minimum Data Set. The NSRCF measures *need for ADL assistance* and the Minimum Data Set measures *any difficulty for each ADL activity*.

FIGURE 11. Need for Assistance With Activities of Daily Living, Residential Care Facility and Nursing Home Residents



SOURCE: RTI International analysis of the NSRCF and CMS (2012).

5.2. What Services Do Residential Care Facilities Offer and Residents Use? Do Services Vary With the Needs of Residents?

A primary purpose of the study is to determine whether the availability and receipt of nursing and supportive services in RCFs vary with the health and functional characteristics of residents. We expect that people with high health, functional, and cognitive needs will be in facilities that provide more services, and we hypothesize that people with high health and functional needs will receive more services than people with lower levels of need.

Table 1 presents data on the percentage of residents who live in facilities that offer specific services by residents' ADL assistance levels and cognitive status. More facilities will offer a particular service than the percentage of residents who will receive the service, because not all residents will need a particular service. At least 90 percent or more of residents live in RCFs that offer basic health monitoring (blood pressure and weight checks), assistance with ADLs[3] and incontinence care, laundry services, and social and recreational activities in the facility. Seventy-five percent to 89 percent of residents live in RCFs that offer special diets and transportation to and from medical appointments, stores, and social and recreational activities outside the facilities. About two-thirds of all residents have access to case management services, and 44 percent have access to social services counseling. Only 40 percent of residents live in facilities

[3] Most facilities in the survey offer ADL assistance because offering ADL assistance or health-related services like medication management was a criterion for inclusion in the survey.

that provide skilled nursing care;[4] slightly more than half live in facilities that provide occupational and physical therapy.

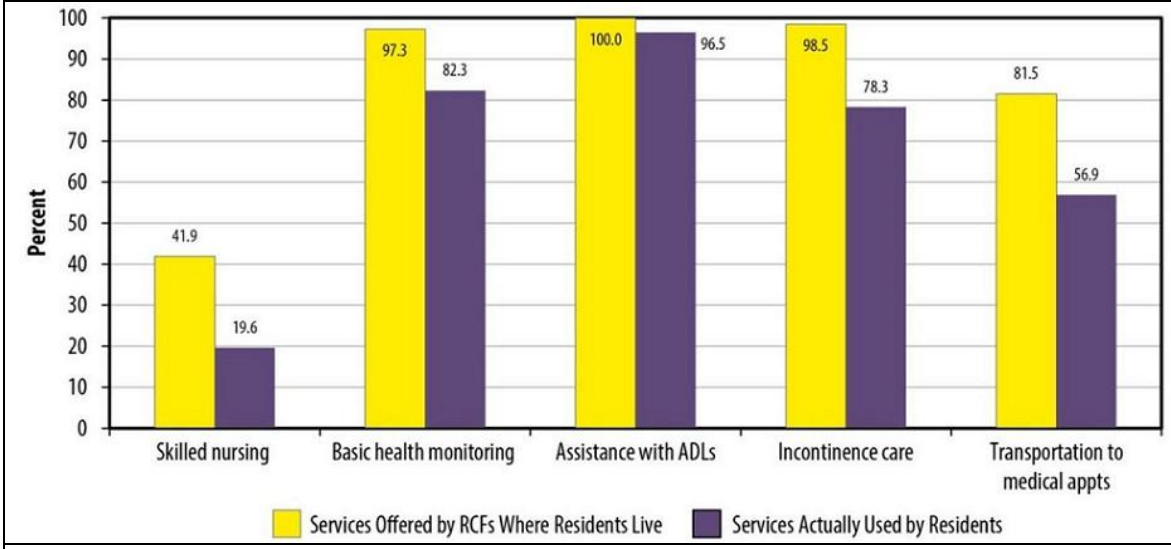
In general, when residents are stratified by ADL assistance received, there is little relationship between higher disability level and the likelihood that a resident will live in a facility that offers more services, but that is largely because a very high proportion of facilities report that they offer most services. Individuals with higher disability levels are slightly more likely to live in facilities offering skilled nursing and special diets, but less likely to live in facilities offering various types of transportation and social service counseling. When service availability is examined by cognitive status, a higher proportion of residents with cognitive impairment or behavioral symptoms than those without live in facilities that provide special diets, basic health monitoring, incontinence care, and medical and non-medical transportation.

Table 2 presents data on service use by resident functional and cognitive status. At least 75 percent of residents receive basic health monitoring and assistance with bathing; 69.2 percent receive assistance with ADLs, 59.0 percent use transportation to and from medical appointments; 37.6 percent receive incontinence care; and 30.7 percent receive special meals. Only a small proportion of residents receive skilled nursing care and social service counseling: 12.5 percent and 15.8 percent, respectively.

There is a strong relationship between resident disability level and use of services. With the exception of transportation to medical appointments and social service counseling, residents with higher ADL dependence were more likely to use a variety of services, including special diets, skilled nursing, basic health monitoring, assistance with ADLs, incontinence care, social service counseling, personal laundry services, and social or recreational services in the facility. For example, among residents who do not receive any ADL assistance, only 5.7 percent receive skilled nursing services in the facility, compared with 10.1 percent of those receiving assistance with one or two ADLs and 19.6 percent of those in the three or more ADLs assistance group. A significantly higher proportion of residents in the cognitively impaired group (i.e., diagnosed with Alzheimer's disease or dementia, exhibited behavioral symptoms, or had memory impairment) received skilled nursing, health monitoring, assistance with ADLs, incontinence care, and special diets compared with those not so impaired. ***Figure 12*** compares service availability and use for residents receiving assistance with three or more ADLs. Among these residents, 42 percent live in facilities that offer skilled nursing care, but only 20 percent are using this service. Whereas 97 percent of this highly disabled population lives in facilities that offer basic health monitoring (e.g., regular blood pressure and weight checks), 82 percent receive the service.

[4] Skilled nursing services are those that must be performed by an RN or LPN and are medical in nature.

FIGURE 12. Service Availability and Use by Most Impaired Residential Care Facility Residents (three or more activities of daily living)



SOURCE: RTI International analysis of the NSRCF.

Other findings are noteworthy. Although virtually all residents--99 percent--live in facilities that provide incontinence care, only 78 percent of those with the need for assistance with three or more ADLs receive incontinence care, at least partly because not all residents in the highest frailty category suffer from incontinence. Transportation to medical appointments is an important service that allows people with ADL impairments to age in place; 82 percent of all residents live in facilities where this service is available, but only 57 percent of those receiving assistance with three or more ADLs use this service. It is not known if relatives or friends took the residents to their medical appointments rather than relying on facility transportation.

5.3. What Are Facility Direct Care Staffing Levels? Do They Vary With Resident Functional and Cognitive Status?

5.3.1. Staffing Levels by Unit of Analysis: Facilities vs. Facilities in Which Residents Live

Staffing is another measure of the services provided to residents. As noted above, many RCFs are small, but they serve only a small proportion of residents. The large majority of residents live in a smaller number of larger facilities. Data on the facilities in which people live more closely aligns with the experience of residents. Table 3 presents estimates for staffing hours by staff type in two ways: facility-level and for facilities in which residents live (resident-level). If averaged across facilities, the direct care staffing ratio is 4.15 hours per person, but if averaged across residents, calculating staffing ratio in facilities where these residents live, the direct care staffing ratio is 2.32 hours per person.

Table 4 presents resident and facility-level estimates of the total direct care staffing ratios by facility characteristics. The resident-level estimates are for the facilities in which the residents live. The staffing ratio varies from 5.81 hours per day in small facilities (4-10 beds) to 1.65 hours per day in very large facilities (more than 100 beds). The large differences in average staffing between the two ways of examining the data are largely the result of differences in staffing by facility size and the relative number of residents that facilities of different size serve. For example, with facilities as the unit of analysis, facility-level administrator hours for direct care are 1.64 hours per person per day in small facilities (4-10 beds), but 0.12 hours per person per day in extra-large facilities (100 or more beds; results not shown on table). Similarly, personal care aide hours are 3.93 hours per person per day in small facilities, but 1.30 hours per person per day in extra-large facilities (results not shown on table).

For both the facility and resident levels of analysis, chain facilities have significantly lower staffing ratios than independent facilities, and for-profit facilities have higher staffing ratios than non-profit facilities. Facilities that serve a high percentage of residents who receive assistance with bathing, eating, or transferring, and those that do not have a special dementia unit, have higher staffing ratios. RCFs in urban areas have higher staffing levels, on average, than those in non-urban areas. We found no statistically significant differences in staffing ratio between Medicaid and non-Medicaid facilities.

5.3.2. Staffing Levels in the Facilities in Which Residents Live

All other things being equal, people with higher levels of disability require more staff time than residents with lower levels of disability. Table 5 provides data on the average number of hours of direct staff care per resident per day in the facilities in which residents live, by ADL level and cognitive status. The unit of analysis is the resident, not the facility. Care hours are provided for all staff combined and for four discrete staff categories--RNs, LPNs/LVNs, personal care aides, and administrators. Administrators are included because they provide some hands-on care, especially in the large number of small facilities (4-10 beds). Although the survey directed the respondents to include only the hours of direct care provided by the administrator, these estimates may be unreliable because most respondents were administrators who provided the estimates themselves; however, their main responsibilities are not providing direct care.

Comparisons with nursing home staffing should be done with caution and may be misleading for two reasons. First, care hours provided by administrators are included in our measure of total hours of care for RCFs, but they are not usually included for nursing homes. Second, on average nursing homes serve a more medically complex and disabled population than do RDFs, but with our available data it is not possible to control for those differences in case mix.

On average, RCF residents live in facilities that provide 2.32 hours of direct care per resident per day--including nurses, personal care aides, and administrators. The

large majority of care provided is delivered by personal care aides, who provide an average of 1.81 hours per person per day. Administrators, mostly in small facilities, provide about 0.27 hours of direct care per person per day. Including residents who receive no RN and no LPN/LVN care, RCF residents live in facilities that provide an average of 0.08 hours of RN care per person per day and 0.16 hours of LPN/LVN care. This is about 5 minutes of RN care and about 10 minutes of LPN/LVN care. Residents live in facilities that deliver an average of 0.24 hours of total nursing care per person per day--14.4 minutes.

When we stratify residents by ADL status, we find that residents with higher levels of ADL assistance (three or more ADLs) live in facilities with significantly higher care hours than residents with lower levels of ADL assistance. Residents not needing any ADL assistance live in facilities with an average of 1.79 hours of total direct care per day, compared with an average of 2.11 hours for residents with a need for assistance with one or two ADLs and 2.90 hours for residents receiving assistance with three or more ADLs. All differences in staffing hours by ADL assistance are statistically significant. Most of the increase in total hours is the result of an increase in personal care aide hours. Although the RN staffing ratio changes across levels of ADL assistance, the actual increases in minutes with higher frailty levels are small--from 0.06 hours for persons with no ADLs to 0.08 hours for persons with one or two ADLs and 0.09 hours for residents with three or more ADLs. Compared with residents without cognitive deficits, those with cognitive deficits reside in facilities that have significantly higher staffing ratios.

Finally, Table 5 presents the proportion of residents who live in facilities without nursing staff. A total of 45.8 percent of residents live in facilities without any RNs on staff, 38.7 percent live in facilities without LVNs/LPNs on staff, and 19.5 percent live in facilities with no licensed nursing staff.

5.3.3. Staffing Levels With the Facility as the Unit of Analysis

Multivariate analysis was conducted to disentangle the determinants of staffing at the facility level. Only facility-level regression was estimated, as individual characteristics of RCF residents cannot be used to predict overall facility staffing rates. The dependent variable is total direct care staffing HPRD.

To predict the facility-level direct care staffing ratio, we estimated an OLS regression using the following model:

> *Direct care RCF staffing ratio = f (RCF size, RCF chain status, RCF profit status, RCF Medicaid participation, RCF urban status, % residents with short-term memory problems, high percentage of residents needing help ADLs, presence of a ADRD Unit/RCF serving only adults with ADRD) + error term,*

where resident care mix includes: (1) the percentage of a facility's residents who have short-term memory impairments; (2) an indicator of whether more than half of all residents in a facility require assistance with bathing, eating, or transferring; and (3) an

indicator whether a facility (a) has a distinct unit, wing, or floor designated as a dementia or Alzheimer's special care unit or (b) serves only adults with dementia or Alzheimer's disease. RCF characteristics include facility size (number of beds), ownership and chain status, rural or urban location, and the provision (or not) of long-term services and supports to Medicaid residents.

Table 6 provides descriptive data about facility characteristics for the variables used in the multivariate analysis.

About half of facilities nationwide are small (4-10 beds); extra-large facilities (100+ beds) represent only 7 percent of all facilities. Medium and large facilities together make up 44 percent of all facilities. Most facilities are for-profit (82 percent), and 38 percent are part of a chain. The NSRCF defines a "chain" as two or more facilities under common ownership or management. Most facilities (81 percent) are located in urban areas. Forty-three percent of all facilities serve at least one resident on Medicaid; half of all facilities serve an impaired population, in which half or more of all residents require help with bathing, eating, or transferring. Eleven percent of all facilities have a distinct unit, wing, or floor designated as a dementia or Alzheimer's special care unit or serve only adults with dementia or Alzheimer's disease.

Table 7 presents the results of the multivariate analysis to predict direct care staffing ratios in RCFs. Overall, the equation explains 13 percent of the variance.

TABLE 7. Multivariate Analysis: Predictors of Facility Direct Care Staffing Ratio

Variables	Beta Coefficient (total staff HPRD)	Stat. Sign.
Intercept	4.08	***
Facility Characteristics	---	---
Number of beds	-0.05	***
Facility is owned by a chain, group, or multifacility system	-0.44	**
Facility has private, for-profit ownership	0.42	**
Facility serves Medicaid residents	0.20	---
Facility is located in a MSA	0.39	---
Case Mix Characteristics	---	*
Percentage of residents with short-term memory problems	<0.005	---
Facilities with more than 50% of residents needing help with bathing, eating, or transferring	1.18	***
Facility with an Alzheimer's disease and related dementia unit or that serves only adults with Alzheimer's disease and related dementias	0.26	*
Model fit	R^2 = 0.130	---

SOURCE: RTI International analysis of the NSRCF.
NOTES: Stat. Sign.: statistical significance. Direct care hours include nursing, personal care aide, and direct administrator HPRD.

*p<0.1, **p<0.05, ***p<0.0001.

This multivariate analysis found that two characteristics are statistically significantly associated with a higher direct care staffing ratio at the 0.05 level or better. Facilities with more than 50 percent of residents needing help with bathing, eating, or transferring tend to have more than an hour average higher care staffing than facilities where such residents compose less than 50 percent of the total census. In addition, for-profit facilities are significantly more likely to have a higher direct care staffing ratio than facilities that are non-profit or government owned.

Two factors were found to be statistically significantly associated with lower staffing ratios. Larger facilities have a significantly lower direct care staffing ratio than smaller facilities. In particular, each additional bed is associated with a 0.05-hour decrease in the direct care staffing ratio, which suggests that a 20-bed increase in bed size is associated with a 1 hour per resident per day decrease in staffing. RCFs that are owned by chains have significantly lower direct care staffing ratios than do individually owned facilities.

Controlling for all other factors, there is no statistically significant difference in direct care staffing ratios between facilities that do and do not serve Medicaid residents. In other words, this analysis found no evidence that facilities serving Medicaid residents have lower staffing levels than facilities not serving Medicaid residents. Nor were there differences by rural or urban location, the proportion of residents with short-term memory problems, the presence or absence of a special dementia unit, or between facilities that do or do not exclusively serve persons with dementia.

6. CONCLUSIONS

For policy makers and consumer advocates seeking to: (1) enable individuals with long-term services and supports needs to remain in the community; and (2) reduce the use of nursing homes, RCFs may offer an alternative for people who cannot live independently. For RCFs to meet these objectives, the services offered and staffing provided must match the needs of the residents. To help address whether this is the case, this study used newly available data from the NSRCF--the first nationally representative survey of a broad range of RCFs--to profile RCF residents' health and functional status. It then examined the relationship between health and functional status, and: (1) the services available at the facilities and used by residents; and (2) the staffing levels of the facilities.

The results indicate that RCF residents in both the under and over-65 age groups have high rates of some chronic conditions, although some the most prevalent specific conditions vary by age. Most notably, those ages 65 and over are characterized by high rates of Alzheimer's disease and other dementias (65.7 percent), hypertension (59.1 percent), and depression (39.0 percent). Among those under 65, serious mental illness (39.1 percent), depression (26.2 percent), hypertension (39.8 percent), and intellectual and other developmental disabilities (20.3 percent) predominate. Facilities that serve exclusively individuals with severe mental illness and intellectual and developmental disabilities, which predominantly serve people under 65, were excluded from the survey and are not reflected in these estimates.

RCF residents also have substantial levels of cognitive impairment, IADL impairment, and ADL needs (measured by the amount of services received). RCF residents in both age groups also use substantial amounts of hospital, emergency room, rehabilitation facilities, and nursing home services.

Although this study found that RCF residents have high disability and dementia rates, on average, they have lower rates of chronic conditions and lower levels of ADL needs than do nursing home residents. Because the publicly reported nursing home data do not report the distribution of nursing home resident health, functional, and cognitive status, it is not possible to determine the degree of overlap between RCFs and nursing homes without further analyses.

The results suggest that residents live in facilities offering a wide range of services that reflect facility case mix. Overall, we found that residents with higher levels of functional and cognitive impairments are more likely to reside in facilities that offer more services, and are more likely to use those services, than people with lower levels of functional and cognitive impairment. For example, our analyses found that RCF residents needing assistance with three or more ADLs and those with cognitive impairment live in facilities that offer a wider range of services, and they use more

services, than residents who receive assistance with fewer ADLs and have no cognitive impairment.

Staffing adequacy is a key factor that helps to ensure quality of care for RCF residents. Our analysis found that residents with higher levels of functional and cognitive impairment were more likely to live in facilities with higher staffing levels than people with lower levels of functional and cognitive impairment. For example, on average, residents needing help with three or more ADLs live in facilities that have 2.90 hours of staffing per resident per day, compared with people with no ADL needs, who live in facilities that provide 1.8 hours of staffing per resident per day.

Consistent with other findings, RN staffing is a very small proportion of total staffing. Indeed, 45.8 percent of all residents live in facilities that do not have *any* RNs on staff, and about 20 percent live in facilities without any nurses--RNs or LVN/LPNs--on site. Using data collected in 1998, Hawes and colleagues showed that at the time, 71 percent of all facilities had any full or part-time licensed nurse on staff (RN or LPN), with 79.5 percent of facilities providing any care or monitoring by RNs or LVNs (Hawes et al., 2003). The absence or low availability of skilled nursing care on site may be an obstacle to addressing the health needs of RCF residents. It may also explain the emergency room use by residents under age 65.

Finally, this study examined the predictors of total direct care staffing in RCFs in a multivariate analysis and found that for-profit status and a large proportion of residents receiving assistance with bathing, eating, or transferring are associated with higher direct care staffing ratios. Larger facilities and chain facilities are likely to have lower total direct care staffing ratios. Although in the regression analysis we controlled for bed size, ownership type, and whether the facility is part of chain, doing so may not fully control for the large effects of including administrator direct care hours in small facilities and the correlation among variables. Direct care staffing ratios were also not related to the proportion of residents with short-term memory problems (the only measure of cognitive impairment available in the survey at the facility level). We also found that, controlling for all other factors, there are no statistically significant differences in direct care staffing ratios between facilities located in a rural or urban areas, and facilities with or without a special dementia unit or which exclusively serve people with dementia. Finally, controlling for other available facility level factors, there is no difference in direct staffing levels between facilities that do and do not serve Medicaid residents. This analysis found no evidence that facilities serving Medicaid residents have lower staffing levels than facilities not serving Medicaid residents.

Although these analyses used the most recent and comprehensive data available on RCFs, this study has several limitations. First, the study was not explicitly designed to address questions of the adequacy of RCF services and staffing. Residents were not directly interviewed for this survey; facility staff reported resident health and functional status on the basis of their knowledge of the residents and facility records. Thus, it is not possible to determine actual level of need and whether those needs are being met; survey data on functional limitations and resident service use do not include resident

perspective. In general, because the residents were not interviewed for this survey, the study is able to examine service availability and receipt, but not unmet need for services, adequacy of staffing in responding to resident needs, or resident satisfaction with level and amount of service.

Second, although state licensure requirements vary by state, the NSRCF is not designed to produce state estimates or to assess how RCFs vary by individual state. Third, staffing levels reported by facilities are not verified by any third-party source; studies of nursing find that self-reported staffing ratios are often inaccurate (Abt Associates Inc., 2001; Kash, Hawes, & Phillips, 2007). Finally, consistent with longstanding National Center for Health Statistics policy, the NSRCF is not designed to produce facility-level estimates of resident characteristics. Only a few measures are available, and these are obtained from the administrator rather than by aggregating individual resident data. Thus, the case mix variables available for our multivariate analysis of staffing ratios are limited.

In conclusion, there appears to be a relationship between resident disability levels and facility services and staffing levels. It is likely to be a combination of adjustment by facilities to the needs of residents, selection of facilities that meet their needs by residents, and relocation or discharge of residents for whom the facility does not provide needed services. States' long-term services and supports rebalancing efforts and individuals' preference to receive long-term care services outside of institutions will likely lead to RCFs' playing a larger role in the long-term services and supports delivery system. Understanding the functional status of RCF residents, the types and amount of services provided and used in RCFs, and the staffing available to serve residents is a first step in determining the appropriate role of RCFs.

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