



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



RESIDENTS LEAVING ASSISTED LIVING:

DESCRIPTIVE AND ANALYTIC RESULTS FROM A NATIONAL SURVEY

June 2000

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This report was prepared under contracts #HHS-100-94-0024 and #HHS-100-98-0013 between HHS's ASPE/DALTCP and the Research Triangle Institute. Additional funding was provided by American Association of Retired Persons, the Administration on Aging, the National Institute on Aging, and the Alzheimer's Association. For additional information about this subject, you can visit the DALTCP home page at http://aspe.hhs.gov/_/office_specific/daltcp.cfm or contact the ASPE Project Officer, Gavin Kennedy, at HHS/ASPE/DALTCP, Room 424E, H.H. Humphrey Building, 200 Independence Avenue, S.W., Washington, D.C. 20201. His e-mail address is: Gavin.Kennedy@hhs.gov.

RESIDENTS LEAVING ASSISTED LIVING: Descriptive and Analytic Results From a National Survey

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June 2000

Prepared for

Office of Disability, Aging and Long-Term Care Policy

Office of the Assistant Secretary for Planning and Evaluation

U.S. Department of Health and Human Services

Contracts #HHS-100-94-0024 and #HHS-100-98-0013

This report was prepared under contracts HHS-100-94-0024 and HHS-100-98-0013 from the Office of Disability, Aging and Long-Term Care Policy, Office of the Assistant Secretary for Planning and Evaluation (ASPE), U.S. Department of Health and Human Services. AARP, The Alzheimer's Association and the National Institute on Aging have also provided support for this project. AARP provided special support for this analysis. The views expressed in this report do not necessarily reflect the views of any of the sponsoring organizations other than DHHS/ASPE.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	iii
I. BACKGROUND	1
II. RESEARCH METHODS	3
A. Research Questions.....	3
B. Sampling and Data Collection	3
C. Measurement Issues	4
D. Statistical Analyses	7
III. RESULTS	9
A. Descriptive Analysis for Residents Leaving an ALF	9
B. Factors Affecting Outcome After Discharge	12
IV. DISCUSSION	17
V. CONCLUSIONS.....	19
REFERENCES.....	21
APPENDICES	
APPENDIX A: Variable Descriptions, Scale Descriptions and Methodological Notes.....	A-1
APPENDIX B: Survey Instruments.....	A-5

LIST OF EXHIBITS

EXHIBIT 1:	Departures from Assisted Living Facilities Between Baseline and Follow-up.....	10
EXHIBIT 2:	Residence Following Departure from an Assisted Living Facility	10
EXHIBIT 3:	Reasons for Leaving the ALF -- All That Applied	11
EXHIBIT 4:	Ranking Important Aspects of an ALF.....	12
EXHIBIT 5:	Descriptive Data for Residents with Known Discharge Status	13
EXHIBIT 6:	Service Level and Status After Discharge.....	14
EXHIBIT 7:	Multivariate Analysis of Living Arrangement at Follow-up Using Facility-level Indicators.....	14
EXHIBIT 8:	Multivariate Analysis of Living Arrangement at Follow-up Using Facility-level and Individual-level Indicators	15
EXHIBIT A-1:	Variables Included in Initial Multivariate Analyses.....	A-3

EXECUTIVE SUMMARY

Assisted living is the fastest growing sector of “housing with supportive services.” While aging in place is an important tenet of the assisted living philosophy, departures or discharges from assisted living are a fact of life; but there is little information available about the reality of movement out of assisted living facilities (ALFs).

This report provides information on departures from assisted living, the reasons for departure, and those resident and facility characteristics that affected the likelihood of various resident outcomes associated with departure. The report focuses on a nationally-representative sample of ALFs in 1998 that offered either a relatively high level of services or a relatively high level of privacy or both high services and high privacy. This special group of ALFs represents about 40 percent of places calling themselves assisted living facilities.

Our best estimates from this national sample indicate that in 1998 approximately 24 percent of residents left an ALF over the course of 12 months. The results indicate that roughly one-third of the residents who left a study ALF between baseline and follow-up (roughly 8 percent of all residents on a yearly basis) either died in the ALF or elsewhere prior to follow-up contact. The bulk of the remainder who left went to a nursing home or some other residential care setting or ALF. On an annualized basis, 8 percent of all residents went to a nursing home and 4 percent of all residents moved to some other residential care setting. The need for more care was the most common reason cited by respondents for leaving an ALF. Very few respondents indicated that they or their family member left the original ALF because they could no longer afford to remain in the facility.

We estimated that roughly one-quarter of ALF residents left their facility over the course of 12 months.

The most common reason given for leaving an ALF was the need for more care.

Those who left a study ALF were most likely to have died or gone to a nursing home.

This research also provided some heretofore unavailable information on the characteristics of residents and facilities that affect individuals’ movement out of assisted living. In the multivariate analyses that controlled for both individual and facility characteristics, age and marital status affected a resident’s likelihood of death prior to follow-up. Although only a small percentage of ALF residents were married, they were twice as likely as unmarried residents to die prior to the follow-up interview. The only individual-level variable that affected an individual’s likelihood of entering a nursing home was cognitive status.

In the multivariate models, facility characteristics also had an impact. No facility characteristics had a significant impact on a resident’s likelihood of death. However, residence in a for-profit ALF was highly associated with movement into another residential care setting other than a nursing home. Also, residing in an ALF with a full-

time RN who provided care to residents reduced a resident's likelihood of going to a nursing home or to some other setting roughly by half.

These results have a number of relatively interesting policy implications. For policy-makers interested in developing an assisted living industry that can delay nursing home use, creating incentives for facilities to provide a higher level of service could be productive. However, such a policy stance would mean encouraging the development of higher cost ALFs, yet how to develop ALFs that are affordable for individuals with low or moderate income is now becoming a major issue. In addition, if higher cost ALFs are encouraged, then the specific amount of delay in nursing home use (i.e., the number of person-months) that results from these increased costs becomes a critical parameter

for policy discussions. In addition, one must consider any additional home health, ambulatory care, medications, or acute care that are required during the delay and might have been avoided by placement in a nursing home.

For consumers intent on avoiding or delaying nursing home placement, seeking out ALFs that have full-time RNs and provide nursing care with their in-house staff may represent a good choice in an ALF. For consumers interested in aging in place, choosing a facility with a full-time RN active in direct care is one way to reduce the likelihood that they will have to move to a nursing home, or another ALF or residential care setting.¹

Most people entering an ALF are not as disabled as those entering a nursing home. This means that the choice to enter an ALF with a full-time RN active in direct care may only be important to more impaired residents or to residents over the course of time as they age in place. Thus, many consumers might end up paying “at the front-end” for services that will only be important to them later, if they stay in the same facility.

One must also remember that this analysis focused on facilities that chose at a specific point in the evolution of the industry to have a full-time RN and provide direct care with in-house nursing staff. These services seem to have had a direct impact on resident outcomes. However, the results of these services in facilities that add such services as a marketing tool, as the result of some reimbursement incentive, or because of a regulatory mandate may differ.

¹ Some “unmeasured” facility characteristic that is very highly correlated with our service measure (i.e., a full-time RN who does direct care) may be driving this relationship, either wholly or partially. However, this relationship does not appear when one uses other service measures, so any unobserved variable must be correlated with this specific measure and not with overall RN staffing, aide staff, the willingness to arrange for RN care, or simply having an RN on staff. Such a characteristic is relatively hard to conceive of, so the authors’ best judgment, until other evidence is provided, is that the observed relationship is driven by the measured characteristic--the presence of a full-time RN providing direct care.

The finding that cognitive impairment has such an important impact on nursing home placement may also have substantial policy implications. To the degree that the industry is encouraged to care for more severely cognitively impaired residents, then savings in nursing home costs may accrue. However, the industry's ability to provide appropriate care to this population is unproven.

As the discussion above indicates, the policy issues here are complex, and our knowledge base is limited. This is, after all, a single study. Even though it is based on a nationally-representative sample of higher service or higher privacy facilities, an appropriate measure of caution should be used when considering these results in the policy-making process.

I. BACKGROUND

In the “service niche” between a personal dwelling where someone receives home health services and the nursing home, one finds a range of institutions classified under the broad rubric of “housing with supportive services.” This service sector’s considerable growth over the last two decades has been driven by a number of factors. Policy-makers and professionals have begun to recognize that frail elderly and younger individuals with disabilities both deserve and will utilize a wide range of choices in their living arrangements. At the same time, concern grows about the cost of nursing home care for a burgeoning elderly population (Pynoos & Liebig, 1995).

In the United States in recent years, the fastest growing segment of this service sector has been the assisted living industry (American Seniors Housing Association, 1998). According to the Assisted Living Quality Coalition (1998), a coalition representing both consumer and provider groups, assisted living is:

“A congregate residential setting that provides or coordinates personal services, 24-hour supervision, and assistance (scheduled and unscheduled), activities, and health related services; designed to minimize the need to move; designed to accommodate residents’ changing needs and preferences; designed to maximize residents’ dignity, autonomy, privacy, independence, and safety; and designed to encourage family and community involvement.”

Assisted living is an industry that largely serves individuals who can pay for their care with private resources, but States are becoming increasingly willing to pay for personal care services provided in these facilities through their Medicaid programs (Mollica, 1998; Mollica & Snow, 1996).

Assisted living appeals to both payors and frail elders. The appeal of assisted living to payors is quite clear. They have great hopes that increased use of these facilities may decrease nursing home use and reduce their outlays for long-term health care for the elderly. In fact, some relatively recent research suggests that States might reap considerable savings in their Medicaid budgets by increasing the length of stay for individuals with cognitive impairment residing in assisted living (Leon, Cheng & Neumann, 1998). The appeal to individuals is equally clear when one remembers that some recent research indicates that 30 percent of adults would rather die than become a permanent resident in a nursing home (Mattimore et al., 1997). Moreover, assisted living facilities (ALFs) offering private accommodations meet important consumer preferences for privacy (Jenkins, 1997; Kane et al., 1998).

The assisted living industry is committed, at least philosophically, to individuals “aging in place” (Assisted Living Quality Coalition, 1998). ALFs are also filled with individuals who believe that they will be able to age in place. Recent results from a national survey indicate that just over 98 percent of the residents in ALFs in 1998

expected to live in those facilities as long as they wished (Phillips, Rose & Hawes, 2000).

The reality, of course, is that many individuals will leave ALFs to receive more care in some other setting. Most frequently, that setting will be a nursing home. Depending on the study being reviewed, somewhere between 20 percent and 43 percent of assisted living residents leave the facility because they need the level of care provided in a nursing home (Gulyas, 1997; Hodlewsky, 1998).

However, a variety of questions about aging in place and the assisted living industry's ability to substitute for nursing home care remain unanswered at this time. First, the most basic information about discharges is quite fragmentary. For example, we currently lack information on why residents exit. Even for those who move to a nursing home, we do not know whether they have decided that they needed a different level of care or the facility decided that they needed a different level of care. In addition, none of the information currently available provides data that are national in scope.

Second, no research is available that indicates what specific characteristics of ALFs might affect the rates at which residents are discharged to a higher level of care. This is a crucial question for both policy-makers and consumers. Public payors may want to encourage, should it exist, the type of ALF that reduces a resident's likelihood of discharge to a nursing home. Consumers may want to use their market power to support such facilities, given their aversion to the idea of residence in a nursing home.

This research addresses the issues of discharge from ALFs and aging in place with data from a national sample of ALFs offering relatively high levels of service or high levels of privacy. It first provides descriptive data on a sample of individuals discharged from the study ALFs. It then addresses the more complex analytic issues concerning a resident's likelihood of being discharged to a nursing home from an ALF and the facility characteristics associated with individuals aging in place in assisted living.

The data used for this analysis are part of *A National Study of Assisted Living for the Frail Elderly*. This project was funded by the Office of Disability, Aging, and Long-Term Care Policy in the Office of the Assistant Secretary for Planning and Evaluation of the U.S. Department of Health and Human Services. Additional support for these specific analyses was provided by the Public Policy Institute, Research Group at AARP.

II. RESEARCH METHODS

A. Research Questions

This research addresses two basic issues concerning departures from ALFs. First, what were the rates and dynamics of discharges from assisted living, based on our national sample? Second, did facility characteristics, especially the level of service resources available on-site (e.g., a full-time RN), affect resident outcomes? In this specific instance, did differences among facilities affect a resident's likelihood of going into a nursing facility?

B. Sampling and Data Collection

A three-stage stratified sample was used in the selection of our nationally-representative sample of residents. Geographic areas (counties or county-equivalents) were selected at the first stage. Facilities were the second-stage sampling units, and residents, their families, and facility staff were the third-stage sampling units. The data collection effort included telephone interviews with administrators and on-site data collection by research staff in 300 facilities in 40 geographic areas. Baseline data collection occurred during the Summer and Fall of 1998. The on-site baseline data collection involved an additional in-person interview with the operator or administrator, interviews with a sample of staff members, and resident interviews. The final resident-level sample included interviews with 1,581 residents or their proxy respondents if the resident was unable to respond. Proxies included both a staff direct caregiver and a family member if they were knowledgeable and available. Twenty-four (23.9) percent of the resident-level responses at the baseline interview came from proxies. The population to which inferences can be made from this sample included an estimated 192,046 residents in 4,309 ALFs across the nation offering high levels of service or high levels of privacy.

Each of the facilities included in the on-site data collection was contacted again between seven and 11 months after the initial interviews. The administrator indicated which of the residents interviewed at baseline were still in the facility, had died in the facility, or had been discharged during the intervening months. Those residents who had been discharged, or their families, were contacted by research staff and interviewed. The vast majority of these interviews (94 percent) were completed with family members. So few residents were reached in follow-up because many had died, many others were in nursing homes and could not be reached by phone, and some were cognitively impaired and could not respond for themselves. Whether a resident or a family member was the respondent should make little difference for some information (e.g., date of departure, current location). For other information (e.g., satisfaction, reason for discharge, involvement in the decision concerning departure), it is important to remember that almost all of the respondents were family members, not the residents

themselves. The re-interview response rate was 84 percent (Survey Research Division, 1999).²

C. Measurement Issues

Defining Assisted Living

Defining what one means by “assisted living” is something of a treacherous task. Even the States that are licensing these facilities lack a common definition of exactly what they might be (Hodlewsky, 1998; Mollica, 1998). In this study, an ALF was a residential setting that had more than 10 beds and served mainly an elderly population. The facility must have described or represented itself as being an ALF or met a specific set of inclusion criteria when it did not explicitly represent or describe itself as an ALF. These inclusion criteria required that the facility provided 24-hour supervision, at least two meals a day, and help in at least two of the following areas of personal needs: bathing, medications, or dressing.

These criteria generated the initial sample used for telephone interviews with the administrator. The results of the telephone survey and a more detailed discussion of survey and sampling methods appears elsewhere (Hawes, Rose & Phillips, 1999; Iannacchione et al., 1999). Based on the telephone survey results, additional exclusion criteria were applied to determine which facilities would be included in the more elaborate on-site data collection that involved staff, families, and residents. Three types of facilities were excluded from the on-site data collection:

1. those that had any rooms or apartments housing three or more unrelated persons (offered minimal privacy),
2. those that did not offer assistance with at least two of three activities - medications, bathing, and dressing (offered minimal services), and
3. those facilities that offered both low services (i.e., no RN on staff and no willingness to provide even temporary nursing care) and low privacy (i.e., fewer than 80 percent of the resident accommodations were private).

The rationale for the exclusion of these facilities was that they resembled traditional “board and care” homes more than ALFs as they are conceived of today by the industry and consumers. In addition, the lack of high levels of services or of higher privacy indicated that these facilities did not really operate within the boundaries of what most recognize as the “philosophy of assisted living.” These criteria obviously restricted the ALF sample to what might be considered “higher end” facilities. Thus, only approximately 40 percent of the facilities included in the telephone survey were eligible for inclusion in the on-site data collection.

² The sampling weights for the re-interviews were adjusted for non-response within six weighting classes representing facilities of different sizes, service levels and privacy levels.

Determining Discharge Rates

Facilities were contacted again between seven and 11 months after the baseline interviews concerning which sampled residents had left the facility. Contact with either the facility administrator, the departed resident, or the resident's family gave the research team information on when residents left. To calculate a monthly discharge rate, the research team looked at resident departures during the seven-month period from baseline to first follow-up contact. This constituted the time period for which complete data on exit were available for all residents in sampled facilities. Eighty percent of all departures occurred during this time period. (See Appendix A for a further discussion of these calculations.)

Measurement Issues in the Multivariate Analysis

Multivariate modeling was used to investigate individual-level and facility-level factors that had an effect on residents' living arrangements or outcomes after discharge. Residents were classified into one of four groups according to their status at follow-up: still in their original ALF, in a nursing home, deceased, or in some other setting. The category of this dependent variable into which a resident was classified was considered to be partially a function of the resident's individual characteristics. The characteristics investigated were largely drawn from the literature on nursing home admissions (Black, Rabins & German, 1999; Coward, Horne & Peek, 1995; Fortinsky et al., 1999; Rudbert, Sager & Zhang, 1996). The specific indicators used in our initial analyses included the residents':

- age,
- gender,
- marital status,
- length of stay in the ALF,
- baseline functional status,
- baseline cognitive status,
- baseline satisfaction with the ALF,
- history of hospital use in 12 months prior to baseline interview,
- history of ER use in 12 months prior to baseline interview, and
- resident income.

All of the resident-level data used in our analyses came from the baseline resident/proxy interview conducted by research staff. These characteristics included binary, categorical, and interval indicators; the specific coding for each indicator appears in Appendix A. Three scales were also constructed for these analyses. The baseline satisfaction scale, which exhibited good internal consistency ($\alpha=.72$), was comprised of four items reflecting resident or proxy satisfaction with the facility as a whole, as well as facility staffing, food, and activities. The ADL or functional status scale included six items indicating whether the resident needed assistance or supervision with bathing, dressing, locomotion, eating, transfer, or toileting. The scale ranged from zero to six and exhibited good internal consistency in these data ($\alpha=.83$). The cognitive

function scale for residents was comprised of three categories based on residents' responses to the Short Blessed (Katzman et al., 1983). For those residents with a proxy respondent, a version of the Cognitive Performance Scale (Morris et al., 1994) was calculated and then cross-walked onto the three categories formed by the Short Blessed scores (Katzman et al., 1983). Additional information on these scales also appears in Appendix A. In some instances there was a considerable amount of missing data on an item (e.g., income). In the multivariate models, such items were treated as nominal variables with two categories representing whether the respondents' values were above or below the mean. A third category was used to indicate if a respondent had missing data on that variable.

In addition, a resident's outcome was considered a partial function of the characteristics of the facility in which she or he resided. We have no available information in the research literature on what facility characteristics might affect discharge from an ALF to a nursing home. However, logic and anecdotal information provide us with a range of factors that might affect a facility's performance. We investigated various aspects of these dimensions as factors affecting ALF performance in this area. The facility factors investigated in our preliminary analyses of departures from assisted living included:

- facility ownership arrangement,
- whether the facility was affiliated with a nursing home,
- whether the facility was part of a multi-facility system,
- the nature of the facility's discharge policies,
- the acuity of the resident case-mix in the facility,
- facility occupancy,
- staff turnover, and
- the staffing level for the facility.

All of the facility-level data came from surveys of administrators or operators. (The facility-level items are described in greater detail in Appendix A.) For these analyses, ownership was classified as not-for-profit or for-profit. Information about whether the ALF was affiliated with other ALFs or with a nursing home was included in the model using binary indicators. Facility occupancy was entered as a continuous variable. The facility case-mix indicator was a scale that reflected how many of a total of seven areas of ADL performance were problematic for 25 percent or more of a facility's residents ($\alpha=.80$). The discharge policy indicator was an additive scale ($\alpha=.71$) that summarized a facility's answers to a number of queries concerning the willingness to retain residents with specific problems (e.g., aggressive behavior, incontinence).

One important dimension of our analysis looked at the service level in facilities. Facility staffing was initially represented in the models by two variables--a binary variable that indicated whether the facility had a full-time RN on staff who provided nursing care to residents and the number of full-time aide equivalents per resident. Staff turnover was initially represented by the percent of aides who had worked at the facility for less than six months.

Facilities were included in our on-site data collection if they provided or arranged at least two meals a day, housekeeping, 24-hour staff oversight, and some ADL assistance. In our on-site sample, if the facility had a full-time RN on staff and delivered nursing care with its own staff, then in other reports we classified that facility as a high service facility (Hawes, Rose & Phillips, 1999). The research team also used this difference among facilities as the basis for one of the facility-level variables tested in the multivariate modeling described below.

D. Statistical Analyses

In the multivariate modeling, the emphasis was on determining what factors affected a resident's discharge and entry into a nursing home. These analyses were completed using a multicategorical logit model (Fahrmeir & Tutz, 1993). In the multicategorical logit model, the dependent variable was represented as four mutually exclusive categories, classifying residents as:

- Remaining in the original facility,
- Dying between baseline and follow-up,
- Residing in a nursing home, or
- Residing in some other setting.

In these analyses, each of the three equations estimated the impact of each independent variable on the likelihood that a resident remained in the original facility or experienced one of the alternative outcomes (i.e., dying, going to a nursing home, going to some other setting). Though the emphasis here was on the likelihood of going to a nursing home, dying and moving to another setting were included in the analysis because they represented likely alternatives and, as such, constituted competing risks.

A potentially important analytic issue that must be addressed in this discussion is the possibility that selection bias might have affected the results of the analyses. Selection bias is a potential problem because residents were not randomly assigned to facilities. Instead, they could, or should, have entered those facilities that best met their needs. So, residents with the highest levels of care needs, who are more likely to be discharged to a nursing home, may have chosen to live in facilities with better and more highly trained staff. If that were the case, then the estimates of the effects of facility characteristics on discharges to nursing homes might have been distorted.

However, if the important factors related to residents' choices of facility were included in our model, then the differences among residents in the different types of facilities are not a threat to the validity of our results. In more technical terms, this means that "treatment assignment" is strongly ignorable (Gelman et al., 1995; Rosenblum and Rubin, 1983). In this instance, the database contains considerable baseline information on just those factors most likely to have affected a resident's

choice of facility and to have introduced bias--functional status, cognitive status, and recent history of emergency room and hospital use.

To test for the impact of these individual characteristics, the multivariate model was first estimated with only the facility-level variables, then with both facility and individual variables. Little or no change in the effects of the facility variables in the presence of these important individual indicators will be taken to imply that selection bias is not a serious threat to the validity of our results.

All of the statistical analyses were carried out using SUDAAN, a statistical software package expressly designed to provide appropriate estimates of variance and standard errors for data derived from multi-stage samples (Shah, Barnwell, and Bieler, 1997).

III. RESULTS

A. Descriptive Analysis for Residents Leaving an ALF

The first portion of the analyses involved developing descriptive statistics for that subset of residents who were discharged. Prevalence estimates and their 95 percent confidence intervals were estimated. These data provide insight into the rates and dynamics of departure from ALFs that were among the top in the industry in terms of services or privacy.

It is important to remember that the discharge data come from a cross-sectional sample. Such samples tend to oversample longer-stay residents and generate length of stay (LOS) estimates that are somewhat higher than estimates derived from an admission sample. For example, a facility may open with 100 single-occupancy apartments. Ninety of these apartments fill immediately and do not turn over throughout the course of a year, but the other ten turn over three times each. With an admission sample, LOS for the year would be calculated on the basis of all 120 admissions, 30 of whom would have relatively short LOS. With a cross-sectional sample, LOS would be calculated on the basis of the 100 residents there at a single point in time, only ten of whom would have a shorter LOS. The calculations for each sample are equally “correct.” They are simply different ways of looking at the same issue, but one must be aware of the effects of these different approaches.

In the period between the baseline interviews and the follow-up contacts, 19.0 percent (s.e. = 1.25) of the sample left their original facility (see Exhibit 1). Exhibit 1 reports on the data from the entire follow-up period. Since that period varied for facilities over a range of seven to eleven months, calculating standard rates was somewhat complicated (see Appendix A). When the research team developed a standardized monthly discharge rate for this study, the results indicated that roughly 2 percent of residents in these ALFs were discharged on a monthly basis and that the annual discharge rate was approximately 24 percent. Included within this figure is an annual death rate for ALF residents of approximately 8 percent. On an annualized basis, 7.6 percent of ALF residents left assisted living for a nursing home, while 3.6 percent departed for some other residential care setting. The median length of stay in the ALF for those who left was 19.6 months. When considering these results, it is important to keep in mind both that they were based on a sample of higher service or higher privacy ALFs and that the results came from a cross-sectional sample.

In our discussions of where people go when they leave ALFs and why they leave, 12.1 percent of those who left an ALF are not included because we were unable to contact them for follow-up. Analyses indicate that these residents were quite similar to those residents for whom we had information. They did not differ significantly at baseline from other individuals who left their original ALF in terms of their cognitive status, ADL function, satisfaction, or recent contact with family.

EXHIBIT 1: Departures from Assisted Living Facilities Between Baseline and Follow-up (N=188,097)	
Resident Status	Prevalence % (s.e.)
Remained in same ALF	81.0 (1.3)
Deaths in the facility	2.2 (0.6)
Deaths after discharge	4.3 (0.6)
Moved to another setting	10.2 (1.0)
Discharged, status unknown	2.3 (0.4)

Exhibit 2 provides information on those who left one of the sample ALFs between the baseline and follow-up contact. As it indicates, most surviving residents who left an ALF resided in a nursing facility. The next most common site was another ALF or some other residential care setting. Almost 7 percent of the residents who left a sampled ALF moved to a relative's home or apartment, but only 1.1 percent returned to their own home.

EXHIBIT 2: Residence Following Departure from an Assisted Living Facility (N=21,941)	
Resident at Follow-up	Prevalence % (s.e.)
Hospital	1.3 (0.9)
Rehab or sub-acute	3.4 (1.4)
Nursing home	59.2 (5.4)
Other residential care or ALF	27.8 (4.5)
Own home	1.1 (0.7)
Relative's home	6.5 (2.5)
Other	0.7 (0.5)

One issue of interest is what proportion of discharged residents resided in a setting clearly providing more care services (i.e, hospital, nursing home, rehab or sub-acute setting). In this sample, three out of five (63.9 percent) residents who left an ALF and did not die were found in these obviously more service-rich environments. This figure constitutes a minimum estimate for those moving to a setting offering more services because some of those residents going to other settings (e.g., another ALF) could have also moved into living arrangements that offered more services than their previous residence. They could, for example, have moved from an ALF providing a lower level of service to an ALF offering a higher level of service.

These results are consistent with the explanations offered by those discharged from our ALFs offering more services or more privacy. Exhibit 3 presents the responses to a query concerning why the resident left the ALF. It is important to remember here that these responses are largely from family members. By far, the most commonly given reason for leaving the facility was that the resident needed more care. The next most common set of responses involved some indication of dissatisfaction--with the quality of care, price, or some other aspect of the facility. A total of 24.1 percent (s.e. = 4.8) of the respondents indicated that dissatisfaction of some type was part of the reason for their departure. Another relatively common reason for leaving was the desire to move to a location closer to friends or relatives.

EXHIBIT 3: Reasons for Leaving the ALF -- All That Applied (N=22,470)*	
Resident Status	Prevalence % (s.e.)
Needed more care	78.0 (4.3)
Location closer to loved ones	14.1 (3.2)
Ran out of money	8.8 (2.2)
Dissatisfied with care	12.0 (3.4)
Dissatisfied with price	8.0 (2.5)
Other dissatisfaction	11.0 (2.6)
Facility's request/unknown reason	5.4 (3.0)
Other	3.1 (1.4)

* The results total more than 100% because respondents could give more than one answer.

Even though assisted living is an expensive type of long-term care and draws almost exclusively on the financial resources of the resident or his or her family, few residents indicated they left because they no longer had the financial means to continue living in the facility. Only 8.8 percent of the respondents indicated, even in conjunction with other reasons, that the resident left the ALF because she or he had exhausted her or his financial resources.

The respondents, largely family members, indicated that the decision to leave the facility was most often a mutual decision involving the facility and the family (45.5 percent; s.e. = 5.3). In just over three out of ten departures (30.3 percent; s.e. = 5.1), the respondent reported that the decision to leave was largely a resident or family decision. However, in almost a quarter of the cases (24.2 percent; s.e. = 5.3), the decision to leave the facility was described as mainly the facility's decision.

One important contrast about which the discharge respondents provided useful information concerned change over time in the importance of various characteristics of the ALF. Respondents were asked to indicate which factors were of greatest importance on entry to the facility and whether the importance of different characteristics changed over time. Exhibit 4 presents information on what the respondents indicated were the four most important factors at the beginning of the stay. It also presents, for that minority whose priorities changed, the four factors that the respondents indicated became more important during the stay. On entry to an ALF a private bath and bedroom were of the greatest importance, followed relatively closely by the availability of monitoring and the quality of the direct care staff.

For the majority of those who left an ALF, the respondents indicated that their priorities did not change. But, for 35.5 percent of those who left an ALF, their priorities did change after admission. For these individuals (column three of Exhibit 4), the facility's ability to provide more or different services as the resident's needs changed became of primary importance, followed closely by the presence of an RN on staff and the quality of the direct care staff. For those reporting a change, what seems to have increased most in importance was the intensity and diversity of care resources available to meet a resident's changing needs.

EXHIBIT 4: Ranking Important Aspects of an ALF		
Facility Characteristic	Ranks at Admission (N=25,536)	Ranks When Priorities Changed (N=9,076)*
Private bath	1	--
Private bedroom	2	--
Monitoring	3	4
Quality of staff	4	3
RN on staff	--	2
Facility changes services as resident's needs change	--	1

* Only those who indicated a change in priorities during their stay.

The respondents, who were almost all family members, were on the whole quite happy with “their” assisted living experience. Eighty-one percent (s.e. = 3.9) indicated that the experience was either better than or about the same as they had expected. Only 8.2 percent (s.e. = 1.8) indicated that they wished the stay had been shorter. Probably most tellingly, 79.8 percent (s.e. = 3.2) of the respondents would recommend their facility to a friend with the same type of needs and interests.

B. Factors Affecting Outcome After Discharge

Exhibit 5 presents a series of bivariate comparisons of the characteristics of the residents who left their ALF and were in different settings at follow-up. The statistical test results presented in that table indicate whether the values for another group of residents differ significantly from the values for residents who remained in the same facility. Standard errors of the estimates appear in parentheses beside the estimates. Since these are bivariate comparisons, they can only provide us with some initial sense of the relationships. Final judgment on the significance of any relationships observed in these bivariate results will depend on the results derived from the multivariate models.

These initial results indicated that advanced age was associated with both death and transfer to a nursing home. Discharges to other settings (e.g., to another ALF) were more likely to occur among residents who had been in the ALF for a shorter period of time. Also, individuals with higher levels of cognitive impairment were more likely to leave their baseline living arrangement. One additional difference seems worthy of attention. Individuals with greater needs for assistance with ADLs seem more likely to leave an ALF.

Exhibit 5 also presents similar comparisons for a range of facility characteristics and residents’ post-discharge living arrangements. These results indicate that there may be more movement out of for-profit facilities into other settings. Also, lower staff turnover seemed to be related to discharge to a nursing home. This result is counterintuitive and demands attention in the multivariate modeling. Beyond that, at least in these bivariate comparisons, many facility characteristics seem to play little role in determining where individuals reside after leaving an ALF.

EXHIBIT 5: Descriptive Data for Residents with Known Discharge Status (N=191,577)					
Baseline Characteristics	All Residents (N=191,577)	Residents in the Same ALF (N=155,540)	In a Nursing Facility (N=11,533)	In Other Setting (N=7,999)	Deceased (N=12,556)
Individual-Level					
Average age	84.4 (0.37)	84.1 (0.40)	86.3 (0.69)**	83.0 (1.74)	87.9 (0.63)**
% female	78.4 (1.16)	78.9 (1.49)	80.5 (4.42)	76.5 (6.00)	73.8 (6.01)
% married	11.8 (1.23)	11.1 (1.24)	7.6 (2.99)	17.2 (6.63)	22.0 (6.45)
Average length of stay	40.1 (1.96)	41.5 (2.08)	32.8 (4.79)	22.2 (2.30)***	35.7 (6.12)
Functional status	1.0 (0.08)	0.9 (0.09)	1.4 (0.21)*	1.2 (0.21)	1.5 (0.35)
Cognitive status	1.4 (0.05)	1.4 (0.05)	1.6 (0.12)*	1.6 (0.12)*	1.6 (0.14)
Satisfaction	32.4 (0.35)	32.5 (0.36)	31.5 (1.00)	30.9 (0.98)	32.5 (0.63)
% hospitalized in past year	32.8 (2.10)	32.6 (2.31)	29.1 (5.36)	38.2 (8.03)	37.0 (6.23)
% used ER in past year	24.5 (1.96)	23.4 (2.04)	24.6 (7.81)	25.6 (5.33)	36.3 (7.53)
Resident income	4.6 (0.12)	4.5 (0.13)	4.3 (0.19)	4.6 (0.26)	4.1 (0.32)
Facility-Level					
% for-profit	50.0 (5.46)	48.9 (5.26)	42.7 (9.50)	75.6 (8.53)**	51.2 (10.05)
% affiliated with nursing home	47.7 (3.79)	48.0 (3.83)	54.8 (6.93)	44.4 (9.20)	33.9 (6.23)*
% chain	47.1 (4.16)	47.2 (4.19)	44.9 (9.38)	48.7 (7.60)	42.8 (7.57)
Discharge policy	5.8 (0.20)	5.8 (0.02)	5.8 (0.36)	5.9 (0.33)	6.0 (0.39)
% staff turnover	25.7 (1.92)	25.8 (2.03)	20.4 (2.79)*	28.2 (3.31)	27.3 (3.77)
Facility case-mix	1.3 (0.13)	1.3 (0.12)	1.1 (0.25)	1.7 (0.34)	1.6 (0.36)
* p<.05; ** p<.01; *** p<.001					

When one looks at the service levels of these facilities, one of the major distinctions among facilities is the presence of a full-time RN on staff and the provision of nursing care with facility staff. This distinction marks the difference between Low Service and High Service facilities that was the basis for some analyses in an earlier project report (Hawes, Rose & Phillips, 1999). As Exhibit 6 indicates, 39 percent of the residents were in lower service facilities, while 61 percent were in higher service facilities. Of those who remained in the same ALF, 38 percent were in lower service ALFs and 62 percent were in higher service ALFs. For those residents who died prior to the follow-up, the proportions varied only slightly from the population figures above. However, for both moving to another setting (e.g., relative's home or another ALF) or to a nursing home, one sees higher rates of departure in the lower service facilities which did not have a full-time RN and did not provide nursing care with in-house staff. This difference is most notable with movement into a nursing home, where almost half of those who went there had been in lower service facilities.

EXHIBIT 6: Service Level and Status After Discharge (N=187,628)		
Discharge Site	Lower Service	Higher Service
All residents	39%	61%
Remained in the same ALF	38%	62%
Deceased	34%	66%
Other setting	45%	55%
Nursing home	49%	51%

Again, as interesting as these results may be, the true test of any facility effects on discharge must come from multivariate analysis using a multilevel logit model. Initial results using the important facility-level indicators appear in Exhibit 7. After a series of analyses including all of the facility-level variables noted above, a reduced model was estimated, which included those facility characteristics that were statistically significant across a variety of models that were tested. That model included only three variables: whether the facility was operated as a for-profit enterprise, whether the facility had a full-time RN on staff and provided nursing care with its staff, and whether the facility had aide turnover that was higher or lower than average. The significance level for turnover in this reduced model was marginal ($p = .066$). As the results in Exhibit 7 indicate, residents in a for-profit facility were significantly more likely than were other residents to move to some other setting (e.g., back home or to another ALF). Also, residents in a facility that had a full-time RN and that provided nursing care with its own staff (i.e., higher service) were significantly less likely to be in a nursing home at follow-up. There was some indication that residents of lower service facilities may also have been more likely to be in some other setting at follow-up ($p = .056$).

However, we must be concerned that some of the relationships between the outcomes and the facility characteristics may have derived from differences in the types of residents different facilities served. To determine if the facility-level results were so affected, we carried out an analysis of the individual characteristics that might affect someone's living arrangement at follow-up. After performing a range of analyses using all of the individual indicators noted above, the results indicated that only four individual-level variables had consistently significant effects across the various model specifications. These variables were residents' age, the number of ADLs with which they needed assistance, their cognitive status, and their marital status.

EXHIBIT 7: Multivariate Analysis of Living Arrangement at Follow-up Using Facility-Level Indicators^a (N=158,625)			
Facility	Nursing Home	Other Setting	Died
Lower Service	1.87* (1.09-3.23)	1.68 (0.99-2.85)	0.89 (0.43-1.86)
Low Staff Turnover	1.73 (0.96-3.10)	1.04 (0.53-2.05)	0.82 (0.38-1.76)
For-Profit	0.73 (0.40-1.32)	3.33** (1.43-7.79)	1.01 (0.53-1.92)
* = <.05; ** = <.01			
a. Relative odds-ratios with 95% confidence intervals in parentheses displayed. Each column represents one of the equations estimated in the polytomous logistic regression. Higher service, higher turnover, and not-for-profit status were the reference categories.			

Exhibit 8 presents the results of the multicategorical logit analysis in which these individual-level factors were added to the model containing the facility-level independent variables. None of the individual characteristics have an effect on a resident's likelihood of moving to some other type of residential care setting. The model results indicate that an ALF resident's likelihood of dying prior to the follow-up was affected by three of the individual characteristics. Younger residents (under 70) who were single were significantly less likely to have died between baseline and follow-up. Though very few ALF residents were married, these few were more than twice as likely to have died prior to follow-up.

EXHIBIT 8: Multivariate Analysis of Living Arrangement at Follow-up Using Facility-Level and Individual-Level Indicators^a (N=156,362)			
Indep. Variable	Nursing Home	Other Setting	Died
Low Service	1.95* (1.13-3.37)	1.81* (1.01-3.24)	0.90 (0.48-1.69)
Low Staff Turnover	1.71 (0.96-3.05)	1.05 (0.55-1.99)	0.79 (0.32-1.51)
For-Profit	0.68 (0.41-1.12)	3.57** (1.44-8.90)	1.03 (0.54-1.98)
Age			
<70	0.45 (0.05-3.73)	0.85 (0.23-3.23)	0.00** (0.00-0.00)
70-80	0.73 (0.41-1.33)	0.67 (0.31-1.45)	0.38 (0.14-1.03)
ADL Help			
Zero	0.63 (0.28-1.44)	0.60 (0.18-2.01)	0.41* (0.19-0.90)
One	1.38 (0.67-2.84)	0.70 (0.25-1.96)	0.92 (0.42-2.00)
Cognitive Impairment			
Mild	0.37** (0.19-0.74)	0.58 (0.20-1.73)	0.70 (0.23-2.13)
Moderate	0.48 (0.22-1.03)	0.97 (0.40-2.34)	2.09 (0.75-5.82)
Married	0.69 (0.28-1.70)	1.85 (0.56-6.14)	2.40* (1.17-4.91)
* = <.05; ** = <.01			
a. Relative odds-ratios with 95% confidence intervals in parentheses displayed. Each column represents one of the equations estimated in the multicategorical logit model. Over 80, assistance in more than one ADL, severe cognitive impairment, unmarried, high service, higher turnover, and not-for-profit were the reference categories for the categorical indicators.			

The findings for the facility-level indicators remained fundamentally the same when their effects were estimated in the presence of the individual characteristics. Three parameters for facility variables were statistically significant at our chosen level of less than .05. Individuals in for-profit facilities were more than three times as likely as residents in not-for-profit facilities to move to some other residential care setting. Also, residents in lower service ALFs, which did not have a full-time RN and did not offer

nursing care with their own staff, were twice as likely to enter a nursing home between baseline and follow-up. The effect of this service or staffing variable did not vary depending on the specific characteristics of the resident. For example, no significant interaction was observed between this service indicator and a resident's level of cognitive impairment.

Also, other formulations of this service indicator, including one that emphasized providing or arranging for RN services, had no significant impact (see Appendix A). In addition, this variable was significant in the equation related to movement to another setting other than a nursing home. Residents in facilities without a full-time RN involved in direct care were 80 percent more likely to move to some other residential setting than were residents in a facility with such services.

IV. DISCUSSION

Our analyses of this national sample of higher service or higher privacy ALFs provide a number of new insights into the dynamics of movement out of an ALF. Though the vast majority of residents came to a sampled ALF from their own home, they did not return there when they left. The most likely outcomes were death or movement to a nursing home or another residential care setting. Roughly one-third of the residents who left the study ALFs between baseline and follow-up either died in the ALF or in the follow-up period. The bulk of the remainder were in a nursing home (59 percent) or another residential care setting or ALF (28 percent). Respondents reported that, by far, the most common reason for leaving the ALF was that the resident needed more care. Very few respondents (9 percent) indicated that one of the reasons that the resident left the original ALF was that she or he could no longer afford to remain.

This research also provided some heretofore unavailable information on the characteristics of residents and facilities that affect individuals' movement out of assisted living. A number of individual characteristics had an impact. Age, ADL needs, cognitive function and marital status affected an individual in assisted living's likelihood of death. Younger, less impaired residents were less likely to die. The finding that marital status was associated with a higher likelihood of death may, at first glance, seem somewhat strange. But, on reflection, the finding seems more reasonable. Married couples are much less likely to enter an ALF than are single individuals. Those few who are married and go into an ALF probably have more serious health problems than those who are unmarried and enter an ALF.

The only individual-level variable affecting an individual's likelihood of entering a nursing home was cognitive status. Individuals with severe cognitive impairment were roughly three times more likely to enter a nursing home than were those ALF residents with little or no cognitive impairment.

Some facility characteristics also affected residents' living arrangements after they left an ALF. None of the facility characteristics had a significant impact on a resident's likelihood of death. However, residence in a for-profit ALF was highly associated with movement into another setting other than a nursing home. Remembering that the most common reason for leaving a facility was the need for more care, the for-profit sector of the industry may be less committed to, or capable of, meeting the changing needs of residents.

The other significant factor affecting residents' outcomes was whether the ALF had a full-time RN and provided nursing care with its own staff.³ In such settings, the likelihood of going to a nursing home was roughly one-half of that experienced by residents in ALFs not offering this level of care. This finding is extremely relevant to the

³ This result was quite robust. It was statistically significant across all specifications of the model, save one in which its significance level rose to .07.

current debate over whether ALFs can substitute for or delay movement to nursing homes. It seems that they may be able to do so, but only if they provide some of the nursing services that one would expect at a nursing home.

In addition, the presence of a full-time RN providing direct care also made it significantly less likely that a resident would move to some residential care setting other than a nursing home.⁴ Thus, staffing or service level may have some impact on a resident's ability to age in place, given that the most common reason given by respondents for leaving a facility was the need for more care.

Of course, there is always the possibility that the observed relationships between our staffing/service measure and living arrangement after discharge derived from some facility characteristics not included in our model but for which our measure was a "proxy." However, the research team believes this situation is relatively unlikely for two reasons. First, when different formulations of the staffing/service variable were used in our analyses (e.g., any RN staffing, RN hours per resident, aide staffing, arranging for nursing care), the relationship between services and outcome was not significant. So, any variable for which our measure might be a proxy would have to appear only in facilities with a full-time RN who does direct care and not in just better-staffed facilities. It is somewhat difficult to conceive of what such a facility characteristic might be.

Finally, as in all field studies that do not involve randomization, selection bias must be considered. Possibly, the residents in facilities with full-time RNs involved in direct care were different from other residents in ways that had an important effect on their likelihood of going to a nursing home or some other ALF. Should that be the case, then our results might reflect the differences in resident populations rather than differences in facilities.

A number of factors make it unlikely that these results are a function of selection bias. First, the research team has, in the multivariate analysis, used a wide range of resident characteristics as covariates (e.g., age, functional status, cognitive status, demographic characteristics, length of stay, satisfaction, and prior utilization of acute-care services) to adjust for this possibility. Second, the most likely form that selection bias would take in this environment would be for more impaired individuals with a higher likelihood of nursing home placement to enter high-service facilities. Thus, as a result of selection bias, one would expect higher rates of nursing home admission from higher service facilities. However, our findings suggest exactly the opposite. Residents in higher service facilities were less likely to enter a nursing home.

⁴ This finding was somewhat less robust than that for discharge to a nursing home. In the final model, it was significant, but in some other models it was not statistically significant.

V. CONCLUSIONS

These results may have a number of relatively interesting policy implications. For policy-makers interested in developing an assisted living industry that can reduce nursing home costs, it may be that creating incentives for facilities to provide a higher level of service (e.g., a full-time RN who provides direct care) could be productive. However, such a policy stance would mean encouraging the development of higher cost ALFs, when a major issue is now becoming how to develop these types of facilities for individuals with more limited income. In addition, if higher cost facilities are encouraged, then the specific amount (i.e., the number of person-months) of delay in nursing home use that results from these increased costs becomes a critical parameter for policy discussions. In addition, if costs are the crucial issue, one must consider any additional home health, ambulatory care, medications, or acute care that are required during the “delay” and might have been avoided by placement in a nursing home.

For consumers intent on avoiding nursing home placement, seeking out ALFs that have full-time RNs and provide nursing care with their in-house staff may constitute a good choice in an ALF. Also, for consumers interested in aging in place, being in a facility with a full-time RN active in direct care may significantly reduce the likelihood that one will move to some other ALF or care setting other than a nursing home.

Since most people entering an ALF are not as disabled as those entering a nursing home, however, this means that the choice to enter an ALF with a full-time RN active in direct care may be important only to more impaired residents or to residents as they age in place. Thus, many consumers who enter higher service facilities might end up paying “at the front-end” for services that will only be important to them later in their stay in a facility. Facility discharge policies also become an important issue in such circumstances. One does not wish to see consumers paying for these higher costs services when they are not really using them and then being asked to leave the facility when the services could mean the difference between aging in place and going to a nursing facility.

However, it is important to remember that even though the findings indicate that the presence of an RN providing direct care has an important impact on the rates at which residents leave an ALF, we have little idea at this time why facilities choose to provide this level of services. It may be that all the sampled facilities with a full-time RN on staff providing direct care had a strong commitment to residents aging in place, and the RN allowed them to realize their goal. It may also be that a full-time RN providing direct care in a facility with no such commitment would be much less effective. Facilities that add such services as a marketing tool, as the result of some reimbursement incentive, or because of a regulatory mandate may not show the same effect.

The impact of cognitive impairment on a resident’s likelihood of going to a nursing home also has potential policy implications. To the degree that the industry is encouraged to configure itself to care for those with more severe cognitive impairment,

nursing home use may be reduced. However, the industry's ability to provide adequate and appropriate care is unproven. Encouraging the industry to provide care to this population, which often presents serious challenges to caregivers, without specifying what appropriate care is and without assuring its provision, might place a very vulnerable population at risk of inappropriate or poor care.

As the discussion above indicates, the policy issues here are complex, and our knowledge base is relatively limited. This is, after all, a single study. Even though it is based on a nationally-representative sample of higher service or higher privacy facilities, an appropriate measure of caution should be used when considering these results in the policy-making process.

REFERENCES

- Assisted Living Quality Coalition. (1998). Assisted living quality initiative: Building a structure that promotes quality. Washington, DC: Author.
- American Seniors Housing Association. (1998). Seniors housing construction report - 1998. Washington, DC: Author.
- Black, B.S., Rabins, P.V., & German, P.S. (1999). Predictors of nursing home placement among elderly public housing residents. The Gerontologist, 39(5), 559-568.
- Coward, R.T., Horne, C., & Peek, C.W. (1995). Predicting nursing home admissions among incontinent older adults: A comparison of residential differences across six years. The Gerontologist, 35(6), 732-743.
- Fahrmeir, L., & Tutz, G. (1993). Multivariate modeling based on generalized linear models. New York: Springer.
- Fortinsky, R.H., Covinsky, K.E., Palmer, R.M. & Landerfeld, C.S. (1999). Effects of functional status changes before and during hospitalization on nursing home admission of older adults. Journal of Gerontology, Medical Sciences 54A(10), M521-526.
- Gelman, A., Carlin, J.B., Stern, H.S., & Rubin, D.B. (1995). Bayesian data analysis. London: Chapman & Hall.
- Gulyas, R. (1997). The not-for-profit assisted living industry: 1997 profile. Washington, DC: American Association of Homes and Services for the Aging.
- Hawes, C., Rose, M., & Phillips, C.D. (1999). A national study of assisted living: Results of a national survey. Beachwood, OH: Myers Research Institute, Menorah Park Center for Senior Living. [<http://aspe.hhs.gov/daltcp/reports/facres.htm>]
- Iannacchione, V., Byron, M., Lux, L., Wrage, L. & Hawes, C. (1999). A national study of assisted living: Final sampling and weighting report. Beachwood, OH: Myers Research Institute, Menorah Park Center for Senior Living. [<http://aspe.hhs.gov/daltcp/reports/sampweig.htm>]
- Hartmaier, S., Sloane, P., Guess, H., Koch, G., Mitchell, C.M., & Phillips, C. (1995). Validation of the Minimum Data Set Cognitive Performance Scale: Agreement with the Mini-Mental Status Examination. The Journals of Gerontology: Medical Sciences, 50A, M128-M133.

- Hodlewsky, R.T. (1998). Facts and trends: 1998 - The assisted living sourcebook. Washington, DC: National Center for Assisted Living, American Health Care Association.
- Jenkins, R. (1997). Assisted living and private rooms: What people say they want. Washington, DC: American Association of Retired Persons, Public Policy Institute.
- Kane, R. et al. (1998). Consumer perspectives on private versus shared accommodations in assisted living settings. Washington, DC: American Association of Retired Persons, Public Policy Institute.
- Katzman, R., Brown, T., Fuld, P., Peck, A., Schechter, R., & Schimmel, H. (1983). Validation of a short-orientation-memory-concentration test of cognitive impairment. American Journal of Psychiatry, 140, 734-739.
- Leon, J., Cheng, C-K., & Neumann, P.J. (1998). Alzheimer's disease care: Costs and potential savings. Health Affairs, 17, 206-216.
- Mattimore, T.J, Wenge, N.S., Besbiens, N.A., Teno, J.M., Hamel, M.B., Liu, H., Califf, R., Connors, A.F., Lynn, J., & Oye, R.K. (1997). Surrogate and physician understanding of patients' preferences for living permanently in a nursing home. Journal of the American Geriatrics Society, 45, 818-824.
- Mollica, R. (1998). State assisted living policy: 1998. Portland, ME: National Academy for State Health Policy. [<http://aspe.hhs.gov/daltcp/reports/1998/98state.htm>]
- Mollica, R., & Snow, K. (1996). State assisted living policy: 1996. Portland, ME: National Academy for State Health Policy. [<http://aspe.hhs.gov/daltcp/reports/96state.htm>]
- Morris, J., Fries, B., Mehr, D., Hawes, C., Phillips, C., Mor, V., & Lewis, L., (1994). MDS cognitive performance scale. The Journals of Gerontology: Medical Sciences, 49, M174-M182.
- Phillips, C.D., Rose, M., & Hawes, C. (2000). A national study of assisted living for the frail elderly: Assisted living residents, staff, and facilities -- Data from a national sample. Beachwood, OH: Myers Research Institute, Menorah Park Center for Senior Living.
- Pynoos, J. & Liebig, P.S. (1995). Housing policy for frail elders: Trends and implications for long-term care. In J. Pynoos & P.S. Liebig (Eds.), Housing frail elders: International policies, perspectives and prospects. Baltimore: The Johns Hopkins University Press.
- Rosenbaum, P.R., & Rubin, D.B. (1983). The central role of the propensity score in observational studies for causal effects. Biometrika, 70, 41-55.

Rudberg, M.A., Sager, M.A., & Zhang, J. (1996). Risk factors for nursing home use after hospitalization for medical illness. Journal of Gerontology: Medical Sciences, 51A(5), M189-M194.

Survey Research Division, Research Triangle Institute. (1999). A national study of assisted living for the frail elderly: Discharged residents telephone survey data collection and sampling report. Beachwood, OH: Myers Research Institute, Menorah Park Center for Senior Living. [<http://aspe.hhs.gov/daltcp/reports/drtelesy.htm>]

APPENDIX A: VARIABLE DESCRIPTIONS, SCALE DESCRIPTIONS, AND METHODOLOGICAL NOTES

Developing Rates of Departure. The timing of baseline interviews, the timing of follow-up interviews, and the time between baseline and follow-up in facilities varied over a period of months. For example, the time from baseline to follow-up ranged from 7.4 months to 11.4 months. To estimate a monthly discharge rate, we looked only at those residents who left their facilities during the 7.4 months following their baseline interview. A total of 248 residents had discharge dates, and 199 had discharge dates less than or equal to 7.4 months. These 199 represented 80 percent of all those who left a baseline ALF before their follow-up interview. We also had 33 residents who we knew were discharged, but about whom we had no other follow-up information. In calculating our discharge rates, we estimated that 80 percent of these 33 were also discharged during a period less than or equal to 7.4 months following baseline. However, these 33 cases, because of the lack of other information, were not used in any further computations related to status following departure from the ALF.

Measuring Service Levels and Their Impact. One of the major issues addressed in this report was the impact of facility characteristics, especially service levels. The results indicate that residents in facilities with a full-time RN and that provide nursing care with their in-house staff are significantly less likely to enter a nursing home. This was the original formulation of the service level variable used in previous reports (Hawes, Rose & Phillips, 1999; Phillips, Rose & Hawes, 2000). However, other formulations of this staffing or service indicator were also tested. We looked at RN hours per resident, whether a facility had any RN hours versus none, and whether a facility would provide or arrange RN care or not. None of these other formulations of the service variable had a significant impact on a resident's likelihood of entering a nursing home. It seems that the presence of a full-time RN actively involved in providing care to residents versus other staffing or service patterns was the necessary distinction for purposes of reducing the likelihood of a nursing home admission.

Determining Residents' Cognitive Status. A three-level scale was used to represent the cognitive function of individuals in the resident sample. Level one indicated no impairment or only mild impairment in cognitive function. Level two implied moderate impairment, and level three indicated severe impairment. The scores on this scale were based either on a resident's score on the Short Blessed (Katzman et al., 1983) or a slightly modified version of the MDS Cognitive Performance Scale or CPS (Morris et al., 1994). The process described below relates to our activities with the full resident sample and is not restricted to the discharged resident sample.

The Short Blessed was used to determine the cognitive status of residents who could be interviewed. The Short Blessed scores could range from 0-28. A score of 8 or less was categorized as minimal impairment, a score of 9-19 was categorized as moderate impairment, and a score of 20 or more indicated severe impairment (Katzman

et al., 1983). Eighty-five percent of the sampled residents (1,341) were classified using the Short Blessed.

For those 15 percent (n=240) of the residents who could not participate in the interview because of some physical problem or a high degree of cognitive impairment, a different scale was used. For these individuals, a proxy respondent, usually a staff person, provided data so that they could be scored on a modified version of the CPS (Morris et al., 1994). The modified version of the CPS was computed with the receptive communication item (i.e., the ability to understand others) rather than an expressive communication item (i.e., the ability to make oneself understood by others) from the MDS. Other than that small difference, the scale was identical to the traditional CPS.

To cross-walk these two different scales into a common metric, two steps were taken. First, the research team reviewed the validation research for each scale (Katzman et al., 1983; Morris et al., 1994; Hartmaier et al., 1995). Second, the research team analyzed data on those residents for whom both the Short Blessed and the modified CPS could be calculated. Approximately 10.5 percent of the residents interviewed had complete data for calculation of a Short Blessed score and had complete data provided by a proxy respondent for calculating a modified CPS score. The categorized Short Blessed and modified CPS scores were cross-tabulated for these residents. The results indicated that a large majority of those with CPS scores of 0-2 fell into the moderately impaired category on the Short Blessed, and that the majority of those with CPS scores of 3-6 fell into the severely impaired category on the Short Blessed. These cut-points on the CPS were used to create a common three-level scale for the two groups of residents. Thus, no individuals with proxy respondents were classified as cognitively intact.

EXHIBIT A-1: Variables Included in Initial Multivariate Analyses			
INDIVIDUAL-LEVEL VARIABLES			
Indicators	Response Codes/Format	Formats Tested	In Final Model
Resident age	Continuous (in years) Categorical (<70, 70-80, >80)	Continuous Categorical	No Yes
Gender	1: Female 2: Male	Categorical	No
Marital Status	1: Married 2: Widowed 3: Divorced/separated 4: Never married	Categorical	Yes
ADL scale	No. of ADLs (bathing, dressing, toileting, locomotion, transfer, and eating) in which resident received supervision or physical assistance in the last week. Ultimately coded as zero, one, or more than one.	Continuous Categorical	No Yes
Cognitive scale	1: Mild 2: Moderate 3: Severe (based on Short Blessed or the MDS Cognitive Performance Scale)	Categorical	Yes
Satisfaction with facility	Summed scale based on sum of four items that dealt with overall facility, staff, activities, and food (individual items coded 0-10). Higher values reflected greater satisfaction.	Continuous Categorical (at mean)	No No
Hospitalization w/in last 12 months	1: yes 2: no	Categorical	No
ER visit w/in last 12 months	1: yes 2: no	Categorical	No
Resident income	1: <\$1,200 2: \$1,201-\$4,999 3: \$5,000-\$8,999 4: \$9,000-\$13,999 5: \$14,000-\$24,999 6: \$25,000-\$50,000 7: >\$50,000	Categorical	No
Relative helped select ALF	1: yes 2: no	Categorical	No
Length of stay	Continuous (in months)	Continuous	No
FACILITY-LEVEL VARIABLES			
Variable	Response Code	Format Tested	In Final Model
Ownership of ALF	1: For-profit 2: Not-for-profit 3: Joint venture Ultimately coded for-profit and other	Categorical	Yes
Nursing Home affiliated w/ALF	1: yes 2: no	Categorical	No
ALF is part of a chain	1: yes 2: no	Categorical	No

EXHIBIT A-1 (continued)			
FACILITY-LEVEL VARIABLES			
Variable	Response Code	Format Tested	In Final Model
Any current Medicaid or SSI residents	1: yes 2: no	Categorical	No
Annual rate of aide turnover	Percent of aides who must be replaced on an annual basis.	Continuous Categorical (at mean)	No Yes
Facility retention policy scale	Continuous summed scale based on seven binary individual items, higher values reflected a larger number of conditions that might occur and not affect resident's ability to remain in ALF.	Continuous Categorical (at mean)	No No
Case-mix scale for facility, from administrator responses	Continuous summed scale based on seven binary items indicating whether over one-quarter of an ALF's residents had a specific need; higher values reflected a higher percentage of residents who have conditions requiring staff assistance.	Continuous Categorical (at mean)	No No
Full-time equivalent hours for RNs per resident	Based on reported RN hours	Continuous Categorical (at mean)	No No
Number of full-time aides per resident	Based on reported aide hours	Continuous Categorical (at mean)	No No
Number of aides per resident	Based on reported number of aides	Continuous	No
Level of service rating	1: lower 2: higher Based on presence of a full-time RN and facility's willingness to provide nursing care with in-house staff.	Categorical	Yes
Percent of facility residents who are cognitively impaired	1: less than 25% 2: 26-50% 3: 51-75% 4: over 75%	Categorical	No
Occupancy rate	Percent of total beds filled	Continuous Categorical (at mean)	No No
Presence of any RN time	1: no RN on staff or contract 2: RN on staff or contract either part of full-time	Categorical	No
Provision of nursing services	1: no nursing services or only arrange nursing services 2: only provide nursing services or both arrange and provide nursing services	Categorical	No

APPENDIX B: SURVEY INSTRUMENTS

OMB Number: 0990-0217
Expires: _____

ASSISTED LIVING DISCHARGED RESIDENT TELEPHONE INTERVIEW

Respondent ID Label

Facility Name: _____

Interviewer Name: _____

Interviewer ID # _____

Date of Interview: ____/____/____
Month Day Year

Start Time: ____:____ am/pm

End Time: ____:____ am/pm

Paperwork Reduction Act Statement

A federal agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the necessary data, and completing and reviewing the collection of information. Send comments regarding the burden estimate of any other aspect of this collection of information to the OS Reports Clearance Officer, ASMB/Budget/PIOM, Room 503H HHH Bldg., 200 Independence Avenue, SW, Washington, DC 20201.

INTERVIEWER INSTRUCTIONS:

Unless you know that the resident is deceased, ask to speak with the resident.

If the resident is deceased, ask to speak with a family member who has the most information about the resident's experience in the assisted living facility/residential care home and use the Discharged Resident Proxy Interview Form.

Read introduction/consent below before you begin with the questions.

INTRODUCTION

You are being asked to participate in a national study of assisted living and residential care for the frail elderly. About six months ago, we interviewed you in-person while you were a resident at _____. This is a follow-up interview for all residents in the study who subsequently left any of the several hundred facilities in the study.

As you may remember, this study is being conducted for the U.S. Department of Health and Human Services to learn more about the role that assisted living and residential care facilities can play in meeting the needs of older persons. Determining the experiences of residents who have left such facilities will help the government understand the role such facilities play in providing long-term care for older persons.

The follow-up study is being conducted for the government by Research Triangle Institute (RTI). RTI is a nonprofit university-affiliated research organization in North Carolina.

As before, your participation is voluntary. You may refuse to answer any question we ask. In addition, all your responses are confidential and will not be disclosed except as required by law. The information you provide will not be reported in any way that identifies you or the facility. This interview will take about 10 minutes. It asks about your experience and views, including why you left the facility.

We hope you will agree to participate, since your views and experiences are important in helping us learn more about how to provide good care for older persons.

1. On what date did you leave _____ ?

 / / / / / / / / / / / / /
 MO DAY YR

2. Which of the following best describes the place where you are currently staying?

- Acute care hospital 01
- Nursing home 02
- Rehabilitation facility or subacute care unit 03
- Another residential care or assisted living facility 04
- Own home or apartment 05
- Home or apartment of a relative 06
- Some other place (SPECIFY) _____ 07

3. Did you go anyplace else between leaving _____ [FACILITY] and where you currently are staying?

- YES 01
- NO 02 (SKIP TO Q. 5)

4. Which of the following best describes the place (or places) you went between leaving _____ [FACILITY] and where you are currently staying? (CIRCLE ALL THAT APPLY)

- Hospital (*acute care hospital*) 01
- Nursing home 02
- Rehabilitation facility or subacute care unit 03
- Another residential care or assisted living facility 04
- Own home or apartment 05
- Home or apartment of a relative 06
- Some other place (SPECIFY) _____ 07

5. Which of the following best describes the decision to leave the facility? Would you say the decision was:

- Mainly mine or my family's decision 01
- Mainly the facility's decision 02
- Mutual 03
- DK 04

6. All in all, how much control did you have over the decision to leave _____ [FACILITY]?
Would you say you had....

- Complete or almost complete control 01
- Some control 02
- Little or no control 03

7. Please tell me which of the following statements describe the reasons you left ____ [FACILITY]:
(CIRCLE ALL THAT APPLY)

- Required hospital care 01
- Needed nursing home care 02
- Required more care than the facility could provide 03
- Preferred location closer to family or friends 04
- Exhausted my resources and had to leave because of money .. 05
- Dissatisfied with the quality of care 06
- Dissatisfied with the price or charges 07
- Dissatisfied with some other aspect of the Facility 08
- It was the facility's request for unknown reason 09
- Is there any other reason not mentioned here?
(SPECIFY)_____ 10

8. Which of the following statements best describes your feeling about the timing of your departure from _____ [FACILITY]?
- Wish I had left sooner 01
 - Wish I had been able to stay there longer 02
 - Left at just the right time 03
9. When you moved into ____ [FACILITY], did you expect that you would be able to remain in that facility as long as you wanted to? Sometimes this is called being able to “age in place.”
- YES 01
 - NO 02
10. When you entered _____ [FACILITY], did someone discuss with you the conditions under which you would be asked to leave or when the facility would NO longer be able to meet your care needs?
- YES 01
 - NO 02 (SKIP TO Q. 12)
 - DK -4 (SKIP TO Q. 12)
11. Which of the following best describes the facility’s policies about discharge?
- Very unclear - what the facility promised and what it actually did were very different 01
 - Unclear - you didn’t know what to expect because the terms were very vague 02
 - Adequate - you had a general idea of what to expect 03
 - Very Clear - facility policies were clear, and the facility lived up to what it promised 04
12. Use any number on a scale from 0 to 10, with 0 being the worst and 10 being the best. How would you rate the facility’s performance in terms of meeting your need for personal assistance or health care?
- _____ Score
- DK -4

13. Use any number on a scale from 0 to 10, with 0 being the worst and 10 being the best. How would you rate the facility's performance in terms of meeting your expectations about how much it would cost on a monthly basis?

_____ Score

DK -4

14. Think back to when you moved in to _____ [FACILITY]. Which of the following were important to you? (CIRCLE ALL THAT APPLY) *(The facility selected may not have had all the things the resident wanted, but the responses should reflect preferences.)*

YES NO

Having a private bedroom 01 02

Having a private bathroom 01 02

Being able to bring your own furniture to the facility 01 02

Having access to a place to store and cook food 01 02

The attractiveness and amenities of outside areas 01 02

The attractiveness and amenities of the indoor public spaces 01 02

The availability of monitoring, for example if you fell or needed help with medications 01 02

The quality of the direct care staff (knowledge, training, attitudes, staffing level) 01 02

Whether the facility had a Registered Nurse on staff 01 02

The ability of the facility to provide more or different services if your needs changed 01 02

The availability of a nursing home on the same campus 01 02

The activities that were available 01 02

Location 01 02

Price 01 02

NONE OF THE ABOVE 77

15. Did your opinion of what was most important to you change over time, as you lived in the facility?
- YES 01
- NO 02 (SKIP TO Q. 17)

16. Which of the following became *MORE* important to you as you lived at _____ [FACILITY]?
 (CIRCLE ALL THAT APPLY) (If the facility did not offer something but the resident wanted it or
 needed it, the response for that item should be a "YES.")

	YES	NO
Being able to have a private bedroom	01	02
Being able to have a private bathroom	01	02
Being able to bring your own furniture to the facility	01	02
Having access to a place to store and cook food	01	02
The attractiveness and amenities of the outside areas	01	02
The attractiveness and amenities of the indoor public spaces	01	02
The availability of monitoring, for example if you fell or needed help with medications	01	01
The quality of the direct care staff (knowledge, training, attitudes, staffing level)	01	02
Having a Registered Nurse on staff	01	02
The ability of the facility to provide more or different services if my needs changed	01	02
The availability of a nursing home on the same campus	01	02
The activities that were available	01	02
Location	01	02
Price	01	02
NONE OF THE ABOVE		77

17. Did you find that charges at ____ [FACILITY] increased at a faster rate than you expected or that there were additional, unexpected charges, over and above the monthly rate?

YES 01

NO 02

18. Which of the following were better than you expected at _____ [FACILITY]? (CIRCLE ALL THAT APPLY)

The accommodations 01

The price 02

The activities 03

The transportation that was offered 04

The staff (quality and number) 05

The availability of services or assistance you needed 06

19. Which of the following were worse than you expected at _____ [FACILITY]? (CIRCLE ALL THAT APPLY)

The accommodations 01

The price 02

The activities 03

The transportation that was offered 04

The staff (quality and number) 05

The availability of services or assistance you needed 06

20. Overall, which of the following statements best describes your experience at _____ [FACILITY]? Would you say it was

Better than you expected 01

Worse than you expected 02

About the same as you expected 03

21. Would you recommend this facility to a friend who had the same type of needs and interests you had?

YES 01

NO 02

END

Thank you for your assistance in helping us understand the role of assisted living and other residential care settings in providing care to older persons.

Discharged Resident Telephone Interview

PROBLEM SHEET

Item	Comments

Discharged Resident Telephone Interview

**ASSISTED LIVING DISCHARGED RESIDENT PROXY
RESPONDENT TELEPHONE INTERVIEW**

Respondent ID Label

Facility Name:

Name of Discharged Resident: _____

Interviewer Name: _____

Interviewer ID # _____

Date of Interview: ____/____/____
Month Day Year

Start Time: ____:____ am/pm

End Time: ____:____ am/pm

Public Reporting Burden Statement

A federal agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Public reporting burden for this collection of information is estimated to an average of 12 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the necessary data, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information to the OS Reports Clearance Officer, ASMB/Budget/PIOM, Room 503H HHH Bldg., 200 Independence Avenue, SW, Washington, DC 20201.

INTERVIEWER INSTRUCTIONS:

Unless you know that the resident is deceased, ask to speak with the resident and use the Discharged Resident Interview.

If the resident is deceased or too physically ill or cognitively impaired to respond, ask to speak with a family member who has the most information about the resident's experience in the assisted living facility/residential care home.

Read introduction below before you begin with the questions.

INTRODUCTION

You are being asked to participate in a national study of assisted living and residential care for the frail elderly. About six months ago, we interviewed one of your family members, _____ [RESIDENT]. This is a follow-up interview about all residents in the study who have left the facility or who are deceased.

This study is being conducted for the U.S. Department of Health and Human Services,. This agency is sponsoring the study to learn more about the role that assisted living and residential care facilities can play in meeting the needs of the elderly. Determining the experiences of residents who have left such facilities or who died while a resident there will be very helpful in understanding the role such facilities play in providing long-term care to elders. Research Triangle Institute (RTI) is conducting the study on behalf of the government. RTI is a nonprofit university-affiliated research organization in North Carolina.

Your participation is voluntary, and you may refuse to answer any question we ask. In addition, all your responses are confidential and will not be disclosed except as required by law. Your responses will also not be reported in any way that identifies you or your family member. This interview will take about 12 minutes. It asks about the experience of your family member in the facility and your views of the care HE/SHE received.

We hope you will agree to participate, since your views and experiences are important in helping us learn more about how to provide good care to elders.

1. What is/was your relationship to ____ [RESIDENT]? Are you his/her...
- Spouse 01
 - Child 02
 - Child-in-law 03
 - Sibling 04
 - Grandchild 05
 - Niece/nephew 06
 - Other (SPECIFY) _____ 07

2. Reason for not conducting the interview with resident?

(IF POSSIBLE, CODE WITHOUT ASKING BASED ON INFORMATION PROVIDED BY TELEPHONE SURVEY LOCATORS)

- Resident had proxy respondent in original interview 01
- Resident is deceased 02
- Resident is too cognitively impaired to respond 03 (SKIP TO Q.3)
- Resident is too physically ill to respond 04 (SKIP TO Q. 3)
- Resident is too hard of hearing to respond to a telephone interview 05 (SKIP TO Q. 3)
- Other (e.g., language) (SPECIFY) _____ 06 (SKIP TO Q. 3)

2a. On what date did ____ [RESIDENT] die/pass on?

/ / /	/ / /	/ / / / /
MO	DAY	YR

2b. Did ____ [RESIDENT] die/pass on at ____ [FACILITY]?

- Yes 01 (SKIP TO Q. 2e)
- No 02

2c. On what date did _____ [RESIDENT] leave _____ [FACILITY]?

/ / /	/ / /	/ / / / /
MO	DAY	YR

Discharged Resident Proxy Respondent Telephone Interview

2d. Which of the following describe where _____ [RESIDENT] went between leaving _____ [FACILITY] and when he/she died? (CIRCLE ALL THAT APPLY)

- Hospital (*acute care hospital*) 01
- Nursing home 02
- Rehabilitation facility or subacute care unit 03
- Another residential care or assisted living facility 04
- Own home or apartment 05
- Home or apartment of a relative 06
- Some other place (SPECIFY) _____ 07

2e. Did he/she receive hospice care while living at _____ [FACILITY]?

- Yes 01 (SKIP TO Q. 9)
- No 02 (SKIP TO Q. 9)

3. On what date did _____ [RESIDENT] leave _____ [FACILITY]?

 / / / / / / / /
 MO DAY YR

4. Which of the following best describes the place where _____ [RESIDENT] is currently staying?

- Hospital (*Acute care hospital*) 01
- Nursing home 02
- Rehabilitation facility or subacute care unit 03
- Another residential care or assisted living facility 04
- Own home or apartment 05
- Home or apartment of a relative 06
- Some other place (SPECIFY) _____ 07

5. Did _____ [RESIDENT] go anyplace else between leaving _____ [FACILITY] and where he/she is currently staying?

- YES 01
- NO 02 (SKIP TO Q. 7)

6. Which of the following best describes the place (or places) he/she went between leaving _____ [FACILITY] and where you are currently staying? (CIRCLE ALL THAT APPLY)

- Hospital (*acute care hospital*) 01
- Nursing home 02
- Rehabilitation facility or subacute care unit 03
- Another residential care or assisted living facility 04
- Own home or apartment 05
- Home or apartment of a relative 06
- Some other place (SPECIFY) _____ 07

7. Which of the following best describes the decision to leave the facility? Would you say the decision was:

- Mainly relative or our family's decision 01
- Mainly the facility's decision 02
- Mutual 03
- DK 04

8. Please tell me which of the following statements describe the reasons your relative left ____ [FACILITY]: (CIRCLE ALL THAT APPLY)

- Required hospital care 01
- Needed nursing home care 02
- Required more care than the facility could provide 03
- Preferred location closer to family or friends 04
- Exhausted his/her resources and had to leave because of money 05
- Dissatisfaction with the quality of care 06
- Dissatisfaction with the price or charges 07
- Dissatisfaction with some other aspect of the facility 08
- It was the facility's request for unknown reason 09
- Relative died/passed on 10
- Is there any other reason not mentioned here? (SPECIFY) _____ 11

9. When _____ [RESIDENT] moved into ____ [FACILITY], did you expect that he/she would be able to remain in that facility as long as you wanted to? Sometimes this is called being able to "age in place."

- YES 01
- NO 02

Discharged Resident Proxy Respondent Telephone Interview

10. When your relative entered _____ [FACILITY], did someone discuss with you the conditions under which he/she would be asked to leave or when the facility would no longer be able to meet his/her care needs?

- YES 01
- NO 02 (SKIP TO Q. 12)
- DK -4 (SKIP TO Q. 12)

11. Which of the following statements best describes the facility's policies about discharge?

- Very unclear - what the facility promised and what it actually did were very different 01
- Unclear - you didn't know what to expect because the terms were very vague 02
- Adequate - you had a general idea of what to expect 03
- Very Clear - facility policies were clear, and the facility lived up to what it promised 04

12. Which of the following statements best describes your feeling about the length of your relative's stay in _____ [FACILITY]?

- Wish he/she had left sooner, for example to go to a nursing home 01
- Wish he/she had been able to stay there longer 02
- Left at just the right time 03

13. Use any number on a scale from zero to ten, with zero being the worst and 10 being the best. How would you rate the facility's performance in terms of meeting your relative's need for personal assistance or health care?

- _____ Score
- DK -4

14. Did you help your relative select _____ [FACILITY]?

- YES 01
- NO 02 (SKIP TO Q. 18)

15. Think back to when your relative moved into _____ [FACILITY]. Which of the following were important to you? (CIRCLE ALL THAT APPLY) *(The facility selected may not have had all the things the family member or resident wanted, but the responses should reflect preferences.)*

	Yes	No
Private bedroom	01	02
Private bathroom	01	02
Ability to bring his/her own furniture to the facility	01	02
Having access to a place to store and cook food	01	02
The attractiveness and amenities of the outdoor areas	01	02
The attractiveness and amenities of the indoor public spaces	01	02
The availability of monitoring, for example if your relative fell or needed help with medications	01	01
The quality of the direct care staff (knowledge, training, attitudes, staffing level)	01	02
Whether the facility had a Registered Nurse on staff	01	02
The ability of the facility to provide more or different services if your relative's needs changed	01	02
The availability of a nursing home on the same campus	01	02
The activities that were available	01	02
Location	01	02
Total Cost (Price plus any extra charges)	01	02
All were equally important		77

16. Did your opinion of what was most important change over time, as your relative lived in the facility?

- YES 01
- NO 02 (SKIP TO Q. 18)

17. Which of the following became *MORE* important to you over time? (CIRCLE ALL THAT APPLY)

	Yes	No
Private bedroom	01	02
Private bathroom	01	02
Ability to bring his/her own furniture to the facility	01	02
Having access to a place to store and cook food	01	02
The attractiveness and amenities of the outdoor areas	01	02
The attractiveness and amenities of the indoor public spaces	01	02
The availability of monitoring, for example if your relative fell or needed help with medications	01	01
The quality of the direct care staff (knowledge, training, attitudes, staffing level)	01	02
Whether the facility had a Registered Nurse on staff	01	02
The ability of the facility to provide more or different services if your relative's needs changed	01	02
The availability of a nursing home on the same campus	01	02
The activities that were available	01	02
Location	01	02
Total cost (Price plus any extra charges)	01	02
NONE OF THE ABOVE, All were equally important		77

18. In the two months before your relative left the facility/dies, how often were you able to go to ____ [FACILITY] and visit?

Daily	01
Several times a week (3 or more times) but not daily	02
1-2 times a week	03
2-3 times a month	04
Once a month or less	05

19. Did you have any knowledge about the charges at ____ [FACILITY]?

YES	01
NO	02 (SKIP TO Q. 22)

Discharged Resident Proxy Respondent Telephone Interview

20. Did you find that charges at ____ [FACILITY] increased at a faster rate than you expected or that there were additional, unexpected charges, over and above the monthly rate?
- YES 01
- NO 02
21. Use any number on a scale from 0 to 10, with 0 being the worst and 10 being the best. How would you rate the facility's performance in terms of meeting your expectations about how much it would cost on a monthly basis?
- _____ Score
- DK -4
22. Which of the following were better than you expected at _____ [FACILITY]? (CIRCLE ALL THAT APPLY)
- The accommodations 01
- The price 02
- The activities 03
- The transportation that was offered 04
- The staff (quality and number) 05
- The availability of services or assistance you needed 06
- None of the above 07
23. Which of the following were worse than you expected at _____ [FACILITY]? (CIRCLE ALL THAT APPLY)
- The accommodations 01
- The price 02
- The activities 03
- The transportation that was offered 04
- The staff (quality and number) 05
- The availability of services or assistance you needed 06
- None of the above 07
24. Overall, which of the following statements best describes your feelings about your relative's experience at _____ [FACILITY]? Would you say it was
- Better than you expected 01
- Worse than you expected 02
- About the same as you expected 03

Discharged Resident Proxy Respondent Telephone Interview

25. Would you recommend this facility to a friend who had the same type of needs and interests that your relative had?

YES 01

NO 02

END

Thank you for your assistance in helping us understand the role of assisted living and other residential care settings in providing care to older persons.

Discharged Resident Proxy Respondent Telephone Interview

PROBLEM SHEET

Item	Comments

Discharged Resident Proxy Respondent Telephone Interview

To obtain a printed copy of this report, send the full report title and your mailing information to:

U.S. Department of Health and Human Services
Office of Disability, Aging and Long-Term Care Policy
Room 424E, H.H. Humphrey Building
200 Independence Avenue, S.W.
Washington, D.C. 20201
FAX: 202-401-7733
Email: webmaster.DALTCP@hhs.gov

RETURN TO:

Office of Disability, Aging and Long-Term Care Policy (DALTCP) Home
[\[http://aspe.hhs.gov/office_specific/daltcp.cfm\]](http://aspe.hhs.gov/office_specific/daltcp.cfm)

Assistant Secretary for Planning and Evaluation (ASPE) Home
[\[http://aspe.hhs.gov\]](http://aspe.hhs.gov)

U.S. Department of Health and Human Services Home
[\[http://www.hhs.gov\]](http://www.hhs.gov)

NATIONAL STUDY OF ASSISTED LIVING FOR THE FRAIL ELDERLY

Reports Available

A National Study of Assisted Living for the Frail Elderly: Discharged Residents Telephone Survey Data Collection and Sampling Report

HTML
PDF

<http://aspe.hhs.gov/daltcp/reports/drtelesy.htm>
<http://aspe.hhs.gov/daltcp/reports/drtelesy.pdf>

A National Study of Assisted Living for the Frail Elderly: Final Sampling and Weighting Report

HTML
PDF

<http://aspe.hhs.gov/daltcp/reports/sampweig.htm>
<http://aspe.hhs.gov/daltcp/reports/sampweig.pdf>

A National Study of Assisted Living for the Frail Elderly: Final Summary Report

HTML
PDF

<http://aspe.hhs.gov/daltcp/reports/finales.htm>
<http://aspe.hhs.gov/daltcp/reports/finales.pdf>

A National Study of Assisted Living for the Frail Elderly: Report on In-Depth Interviews with Developers

Executive Summary
HTML
PDF

<http://aspe.hhs.gov/daltcp/reports/indpthes.htm>
<http://aspe.hhs.gov/daltcp/reports/indepth.htm>
<http://aspe.hhs.gov/daltcp/reports/indepth.pdf>

A National Study of Assisted Living for the Frail Elderly: Results of a National Study of Facilities

Executive Summary
HTML
PDF

<http://aspe.hhs.gov/daltcp/reports/facreses.htm>
<http://aspe.hhs.gov/daltcp/reports/facres.htm>
<http://aspe.hhs.gov/daltcp/reports/facres.pdf>

Assisted Living Policy and Regulation: State Survey

HTML
PDF

<http://aspe.hhs.gov/daltcp/reports/stasvyes.htm>
<http://aspe.hhs.gov/daltcp/reports/stasvyes.pdf>

Differences Among Services and Policies in High Privacy or High Service Assisted Living Facilities

HTML
PDF

<http://aspe.hhs.gov/daltcp/reports/alfdiff.htm>
<http://aspe.hhs.gov/daltcp/reports/alfdiff.pdf>

Family Members' Views: What is Quality in Assisted Living Facilities Providing Care to People with Dementia?

HTML
PDF

<http://aspe.hhs.gov/daltcp/reports/fmviews.htm>
<http://aspe.hhs.gov/daltcp/reports/fmviews.pdf>

Guide to Assisted Living and State Policy

HTML <http://aspe.hhs.gov/daltcp/reports/alspguide.htm>
PDF <http://aspe.hhs.gov/daltcp/reports/alspguide.pdf>

High Service or High Privacy Assisted Living Facilities, Their Residents and Staff: Results from a National Survey

Executive Summary <http://aspe.hhs.gov/daltcp/reports/hshpes.htm>
HTML <http://aspe.hhs.gov/daltcp/reports/hshp.htm>
PDF <http://aspe.hhs.gov/daltcp/reports/hshp.pdf>

National Study of Assisted Living for the Frail Elderly: Literature Review Update

Abstract HTML <http://aspe.hhs.gov/daltcp/reports/ablitrev.htm>
Abstract PDF <http://aspe.hhs.gov/daltcp/reports/ablitrev.pdf>
HTML <http://aspe.hhs.gov/daltcp/reports/litrev.htm>
PDF <http://aspe.hhs.gov/daltcp/reports/litrev.pdf>

Residents Leaving Assisted Living: Descriptive and Analytic Results from a National Survey

Executive Summary <http://aspe.hhs.gov/daltcp/reports/2000/alresdes.htm>
HTML <http://aspe.hhs.gov/daltcp/reports/2000/alresid.htm>
PDF <http://aspe.hhs.gov/daltcp/reports/2000/alresid.pdf>

State Assisted Living Policy: 1996

Executive Summary <http://aspe.hhs.gov/daltcp/reports/96states.htm>
HTML <http://aspe.hhs.gov/daltcp/reports/96state.htm>
PDF <http://aspe.hhs.gov/daltcp/reports/96state.pdf>

State Assisted Living Policy: 1998

Executive Summary <http://aspe.hhs.gov/daltcp/reports/1998/98states.htm>
HTML <http://aspe.hhs.gov/daltcp/reports/1998/98state.htm>
PDF <http://aspe.hhs.gov/daltcp/reports/1998/98state.pdf>

Instruments Available

Assisted Living Discharged Resident Telephone Interview

HTML <http://aspe.hhs.gov/daltcp/instruments/ALDRTI.htm>
PDF <http://aspe.hhs.gov/daltcp/instruments/ALDRTI.pdf>

Assisted Living Discharged Resident Proxy Respondent Telephone Interview

HTML

<http://aspe.hhs.gov/daltcp/instruments/ALDRPRTI.htm>

PDF

<http://aspe.hhs.gov/daltcp/instruments/ALDRPRTI.pdf>

Facility Screening Questionnaire

HTML

<http://aspe.hhs.gov/daltcp/instruments/FacScQ.htm>

PDF

<http://aspe.hhs.gov/daltcp/instruments/FacScQ.pdf>