The Relationship Between Past Medical History and Time to Discharge in an Assisted Living Setting

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The Relationship Between Past Medical History and Time to Discharge in an Assisted Living Setting

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Background and Purpose. Assisted living (AL) is one residential option for people as they age. State and facility regulations and numerous individual factors may impact a person's ability to reside in the AL setting and age in place. The purpose of this study was to investigate the relationship between past medical history and time to discharge in an AL setting. **Subjects.** Study subjects were 88 women and 21 men with a mean age of 86.4 years (SD= 6.5) and mean number of medical comorbidities of 7.3 (SD= 2.9) admitted to and discharged from one assisted living setting between June 1, 2003 and December 31, 2008. **Methods.** A retrospective observational study was conducted using closed medical records. Age, gender, height, weight change, location admitted from, location discharged to, medical diagnoses, and total number of medical comorbidities were collected. The time to transition/length of stay (LOS) in days was the dependent variable. A stepwise logistic regression analysis was run to determine any relationship between the variables. **Results.** Mean LOS was 487 days (SD =381) or 16.2 months, with the mean LOS for men being 657 days (SD =456) and women 446 days (SD =352). Those age 70-74 upon admission had a longer LOS compared with subjects older than 75. Regression analysis identified gender and diagnoses of depression, dementia, and/or psychosis as correlates of changes in time to transition/LOS. **Conclusions.** Of the numerous medical diagnoses present in this sample, psychosis and dementia correlated with a longer LOS and depression correlated with a shorter LOS. Early recognition of signs and symptoms of these disease processes and implementation of appropriate interventions may allow for improved outcomes at the assisted living level of care.

Keywords: Assisted living; assisted living facility; medical history; dementia; depression; gender; length of stay; aging in place; discharge; skilled nursing facility.

Introduction

As the population ages individuals who can no longer reside independently in their homes or with family will seek alternative living arrangements. They may reside in retirement communities, senior apartments, assisted living (AL), or a skilled nursing facility (SNF). There are numerous factors that impact which type of facility is appropriate for someone including, but not limited to, mobility status, medical conditions, cognitive status, finances, and state and facility regulations. When family and/or in-home assistance is no longer appropriate, moving to AL may be a choice to delay or prevent the need to move to a skilled nursing facility (SNF).[1]

Assisted Living has been defined in the literature many ways. One definition encompasses "all group residential programs not licensed as nursing homes that provide personal care in activities of daily living (ADL) and can respond to unscheduled needs for assistance."[2] The Assisted Living Quality Coalition from 1998 offered the following definition:

> "A congregate residential setting that provides or coordinates personal services, 24-hour supervision, and assistance (scheduled or 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. (p. 65)"[3]

The New York State and the National Center for Assisted Living include in their definition of AL that care must be provided for five or more adults unrelated to the

caregiver in a homelike setting while promoting independence, privacy, dignity, autonomy and a personalized plan of care that incorporates a resident's preferences and their physical and mental state.[4] Food service, 24-hour on-site monitoring, assistance with personal care, and case management services must be included.[4]

Definitions in use show variability with regard to the type of room or apartment, whether they are shared or private, what level of assistance staff may provide, and the resident's rights to refuse services offered.[5] Not only do consumers experience a variety of definitions of AL, but they also must contend with many different terms used for AL, including adult care home, enriched housing, personal care home, and resident care homes. There are subtle differences within the definitions and regulations that guide each of these types of settings. Generally speaking, AL can be a facility with a "philosophy that emphasizes some form of resident independence, autonomy, and privacy, and that endorses aging in place for the seniors in the facility."[1]

As the term "assisted living" and the development of assisted living facilities (ALF) emerged during the early 1990's a 15-20% annual growth rate during the late 1990's was predicted as it was thought to be one of the fastest growing types of senior housing in the United States.[5] The National Center for Assisted Living (NCAL) reported in 2007 that there were approximately 975,000 people residing in 38,000 AL residences in the United States.[6] The average facility had 54 rooms or units and the average monthly fee for a private room in 2009 was $3,022.[6] Another national survey of ALF reported monthly cost averages ranging from $1338-$7130.[7] The majority of facilities involved in this particular survey were private pay, which limited the access to lower income elders.[7] Within the state of New York in 2009

there were 485 facilities with the capacity to house 39,030 residents; 31,365 beds were occupied.[4]

State regulatory guidelines for admission and retention are highly variable, and often individual facilities have further restrictions in place regarding those whom they will admit and allow to continue to reside at the facility.[8-10] AL has been viewed by many as a transitional step between independent living and the need for a higher level of care, such as that provided by a SNF. One of the many draws to AL is the hope that one could "age in place" with the assistance from staff for meal preparation, medication management, and other services offered, so that the need for the higher skilled care of a nursing home would not be necessary. To avoid the need for discharge to a higher level of care, facilities may need to adjust the level of care provided to their residents and provide medication and nursing assistance on a consistent basis.[5] The ability to age in place strongly depends on facility protocols and the extent to which the facility can provide the increased level of care needed, even allowing for hospice care. There is a small number of states that allow those that are unable to leave their bed, require 2 people for mobility assistance, or who need continuous nursing care to continue to reside at the AL level.[8] Ball et al[8] reported that a key to aging in place is the management of resident decline, done by both preventing decline and responding to decline when it occurs. Increased care, primarily provided in a SNF, is reported necessary for between 20-43% of those residing in AL.[3] Considering that often times residents move to AL due to decline related to chronic disease, the facility as well as family can assist with health promotion, dietary compliance, medication management, and the consideration for other additional services.[8] One mechanism of assessing how resident decline is managed through various interventions is to look at the length of stay (LOS) at an ALF.

There has been a range of data reported for the AL community with regard to LOS. In 1998, the National Investment Conference reported the average LOS in AL was 30.8 months.[5]; in 1999 the American Seniors Housing Association reported 18 months.[8] In 2003, 30 months was the estimated average LOS reported in one outcomes study,[2] which is similar to the NCAL 2009 report of 28.3 months.[11] The NCAL also reported that 59% of ALF residents will eventually transfer to a SNF while 33% will expire.[11]

Many factors impact LOS; when investigating the role that AL plays in providing a home and care for the aging population these factors must be explored. Facility specific characteristics, staffing, and environmental factors have been researched and found by some to be unrelated to the relative risk of mortality, morbidity, hospitalization, nursing home transfers and resident outcomes.[10,12,13] However, other researchers have identified factors which affect LOS. The pilot program of a Veterans Administration cohort did make note that residents of an AL unit within a multilevel facility had fewer hospital stays and shorter stays when hospitalization was necessary as compared with those that reside in a stand alone ALF.[13] Facilities that have a full time registered nurse were found to have lower odds of SNF transfer than those without a full time registered nurse.[3] Many facilities include activity staff; higher activity participation has been reported to be associated with longer LOS.[14]

Functional limitations in the AL population can impact LOS and may be related to modifiable factors that could allow for better care, quality of life, and satisfaction. One research article that focused on ALF in the state of Kansas (one of 9 states with the broadest parameters regarding level of care for admission and retention) reported the most frequent reasons for discharge were increased care needs that could not be met, behavioral problems, improved function, lack of funds, and death/move of spouse.[5] Data taken from the

Collaborative Studies of Long Term-Care which studied 2078 residents in 193 facilities in 4 states for 1 year similarly reported that the primary reason for discharge was an increase in health care needs and the second most frequent reason was behavior changes such as elopement or wandering.[2] One national survey of approximately 1500 facility administrators reported 72% of the facilities would not allow continued residency for someone who required nursing care for greater than 14 days and 76% would not retain residents if they demonstrated behavioral changes, primarily wandering.[7] Ball et al[8] found that one third of the discharges in their study population were due to unsafe, disruptive behaviors related to dementia and approximately 7.5% of those discharged were transferred to a dementia care unit. Any wandering behavior resulted in quick discharge from AL as did incontinence and other increased ADL requirements.[8]

Cognitive function or a diagnosis of dementia is one of many factors that may impact ones ability to successfully reside and age in place at an ALF. As members of the aging population move into AL, signs and symptoms of cognitive decline may be commonly present. Results from The Center for Disease Control National Health Interview Survey of 2008 included data on the limitation of activity caused by selected chronic health conditions among non-institutionalized older adults.[15] "Senility or dementia" was reported in 1% of those 65-74 years old, 3% of those 75-84 years old, and approximately 8% of those 85 and older.[15] A cross sectional study of 134 residents in 22 facilities estimated that 45-63% of the AL population has a dementia diagnosis when measured via a direct in-person assessment of cognitive function.[16] Another study reported that as many as 66% of residents in AL have a dementia, yet only half of those residents receive proper treatment interventions and many residents have an undiagnosed dementia.[17] Lyketsos et al[17] reported that residents with

dementia had an approximately 7.5 month shorter LOS at AL as compared to those without dementia. Overall global cognitive function was found to be a strong predictor of functional impairment in the AL setting.[18] Early detection and treatment for cognitive decline in AL is important to assist with improved quality of life and increased LOS.[17]

Physical functioning and safety can deteriorate in relation to cognitive decline. When factors impacting transfers out of dementia-specific ALF were studied the following were considered to be significant predictors of transfer to a SNF: 1) increased dependence in ADL, 2) decreased gait speed, 3) decreased Mini Mental Status Exam score and 4) decreased score on the Berg balance test.[19] Medical conditions that increase fall risk, physical activity level and use of psychotropic medications were also considered important in relation to the ability to maintain residency at the ALF.[19] The first 3 months post-admission have been reported to have the highest incidence of transition out of the dementia specific ALF, and falls with or without a fracture were the most common reasons.[20] Eighty-six percent of the residents that transferred permanently to a SNF had an ER or hospital visit/stay beforehand.[20] A national study reported in 2003 that looked at 1,483 residents in 278 facilities (not just dementia specific units) found that at a 7 month follow up 19% had expired or changed location.[3] Those who had expired or were in a SNF at follow-up were significantly more likely to have cognitive impairment, and/or require assistance with their ADL.[3]

Depression severity and medical comorbidity may be independent predictors of functional limitations in this population.[18] Depression may impact socialization, cognitive presentation, behaviors, appetite, and functional mobility. Staff must remain alert to behavior and socialization changes with the goal of providing assistance and support to decrease the risk of negative outcomes.[12] Depression has been seen to increase and subjective reports of

quality of life decrease as chronic health conditions increase or begin to impact one's functional abilities.[1] Generally, residents with better overall health status, mobility and higher cognitive function would be more apt to have a longer LOS in an AL setting.[14]

Studies have shown that those residing in AL may be more functionally impaired, older, and require a greater level of care.[8] Between the years 2000 and 2010 it was estimated that there would be a 33% increase in the over 85 year old American population.[14] The 2009 NCAL reported the average age of those residing in AL was 86.9 years.[11] Functional abilities and care requirements in this older geriatric population, who tend to have multiple comorbidities, may be greater as compared with the younger geriatric population.[14] As this aging population continues to seek alternative living arrangements and various levels of assistance facility staff will need an understanding of the population they are caring for. There is limited data in the literature regarding specific medical diagnoses and the impact these diagnoses may have on LOS in the AL setting. A descriptive cross-sectional report identified the most prevalent medical diagnoses in one AL facility: hypertension, diabetes, gastrointestinal disease, osteoarthritis, osteoporosis/osteopenia, hyperlipidemia, Afib/arrhythymia, anemia, dementia, renal disease.[21] However, the relationship between these diagnoses and LOS was not explored. Having some knowledge of how medical diagnoses and comorbidities impact the ability to age in place may allow for improved satisfaction and care in the AL setting. The purpose of this study is to examine the relationship between past medical history and time to discharge from one ALF.

Methods

Setting

This is a retrospective observational study utilizing closed medical records from one AL center in upstate New York. The ALF is a part of a multilevel campus which includes a 59 unit retirement community, an 80 bed SNF in which 40 beds are designated as a memory impairment unit, and an adult day program. This campus is one of many owned by a parent company serving the health care needs in local communities via acute care hospitals, sub-acute rehabilitation, retirement homes, ALF, SNF, Visiting Nurses Association, and various physician services. The AL unit was opened in 2003 and includes private studio-style apartments with private bathrooms and a kitchenette area. Two units are larger with a separate bedroom area; there are also 2 units designated for respite admissions only. The capacity of the facility is 69 residents; at the time of this research there were 65 residents in place. The AL units are arranged in a 4-story section of the campus with 2 elevators and multiple stairwells. The entrance and exits to the facility are secured via key locks or key coded. This ALF is primarily funded by private payor sources and does not participate in the state assisted living program provided via Medicaid reimbursement. The cost per month ranges from $3,380 for the lowest level of assistance to $6,000 for the highest level of assistance provided.

There is a campus administrator who oversees all of the levels of care, as well as an AL specific administrator who is a registered nurse. Daily staffing includes a licensed practical nurse on the 7am-3pm shift accompanied by 3-4 resident assistants. During the 3pm-11pm hours there are 2-3 resident assistants while 2 resident assistants work the 11pm-7am shift. The nursing and assistant staff complete mandatory yearly in-services as well as

medication certification and life enrichment training. The resident assistants and licensed practical nurse are responsible for providing assistance with medications, as well as ADL assistance. The level of assistance with daily tasks provided is based on a basic ADL assessment/review form that was developed by the facility to assist with providing the appropriate level of care to each individual. The form is completed during the pre-admission interview, and again after readmission from a hospital or rehabilitation setting, annually, and for any significant change. The assessment covers 13 care areas; based on the responses there are 3 tier levels of care available. (See Appendix A.) Tier 1 is the lowest level of assistance provided while tier 3 would place the person in the highest level of care available.

Environmental services staff are available daily to assist with laundry and housekeeping needs within each individual's apartment as well as the communal areas. Maintenance staff members assist with all mechanical systems throughout the campus and any general "handy man" needs. Food services include three meals a day provided in a main dining room with wait staff as well as continental breakfast and snacks provided in the living area. Menu planning and general nutritional status is monitored by a full time registered dietician on site. Medications can be delivered to the campus from one contracted pharmacy source within the system. At the time of this investigation 90% of those residing at the facility had their medications provided by this pharmacy, while the remaining 10% utilized mail-order or other local pharmacies. There is a monthly events calendar with activity staff on site 7 days a week for on-site activities as well as off site outings. There is van transportation provided for medical appointments, shopping and community trips for those that no longer drive.

Any rehabilitative therapy needs are provided via an outpatient clinic located on the same street; for those unable to travel, a Visiting Nurses Association provides services on site. There is not a medical director at the ALF; therefore medical care is sought from different medical providers within the community. Medical assessment forms are completed as a requirement for pre-admission, when a change in condition warrants a reassessment, and annually. When appropriate, referrals are made for podiatry and psychology services, both provided on campus. A "chart" or medical record is kept on an ongoing basis for all residents of the facility and archived upon their discharge.

Admission and retention criteria for this facility follow the state regulations as reported in Part 488: Adult Care Facilities Standards for Enriched Housing.[22] These criteria include those that need consistent skilled or acute management of medical conditions, those that are chronically chair- or bedfast, those that are unable to manage urinary or bowel incontinence, those that pose a danger to themselves or others at the facility, and a number of other physical, social and psychological areas. (See Appendix B.)

Data Collection and Extraction

Data were obtained from the archived medical records of one ALF in upstate New York. This was a convenience sample associated with a multilevel of care campus as previously described. To begin, the administrator's chronological admission and discharge registers were reviewed to determine the time period required to obtain approximately 100 records for analysis. The register was started on April 21, 2003 when the facility opened in its current form. Prior to April 2003 the campus had 2 separate apartment complexes with differing levels of assistance provided. The register did not include original admission dates to the 2 separate apartment areas, therefore those residents that were listed as admitted on or

before April 21, 2003 were not included in the study. The time period from June 1, 2003 through December 31, 2008 was chosen and allowed for 110 medical records to be reviewed as of October, 2009. One record was excluded as it did not contain a complete medical history to allow for full analysis, leaving 109 records. Any residents who were admitted during the chosen time period and continued to reside at the facility were not included in the data collection as there was not a discharge date available for data analysis and to allow for consistent use of closed medical records only.

Review of all medical records was completed within the archives at the assisted living facility and the following data were extracted from each record: 1) gender, 2) age upon admission, 3) ethnicity, 4) weight at admission and discharge, 5) height, 6) where admitted from, 7) date of discharge, 8) where discharged to, 9) past medical history, and 10) total number of medical diagnoses. Admission and discharge dates were taken from the admission/discharge log maintained by the AL administrator and LOS in days were calculated. All names, dates of birth, and any other data that would specifically identify cases reviewed were excluded to ensure that the confidentiality of data was maintained. Data were also coded to assist with data analyses.

The dependent variable of interest was the time to transition/LOS from the assisted living facility. This was the length of time between the resident's date of admission and the final day at the facility due to death or discharge. The variable was presented as LOS in days and was a continuous variable. Two groups of independent variables were used in the analysis: resident characteristics (gender, age, weight change, prior living arrangement, location discharged to) and past medical history including the total number of comorbidities.

We did not modify, regroup, or exclude any medical history data that was in any individual's medical record.

Data Analysis

Descriptive statistics were computed to characterize the resident data for age, gender, weight, weight change, height, admission and discharge locations, LOS, total number of medical diagnoses and the medical diagnoses present. The dependent variable of interest was the LOS, in days, at the ALF. The phi correlation coefficient for dichotomous data was used to assess the bivariate relationships between the 83 medical diagnoses extracted from the medical records. As there was not a strong correlation found between any one diagnosis and another, further analysis was performed. Factor analysis was used and the component score coefficient matrix was analyzed to determine if the large number of diagnoses could be collapsed into categories for further analysis. A stepwise linear regression analysis was performed to determine which variables were associated with the LOS. Microsoft Office Excel® 2003* was used for tabulating data and for initial frequency analysis. The Statistical Package for Social Sciences® (SPSS) version 17+ software package was used for all other statistical analyses.

Results

The residents ranged in age from 55 to 103, with the mean age of 86 years (SD= 6.5). The one individual aged 55 was an outlier in this sample as the remaining 108 cases had an age range of 74 to 103. Eighty-eight (81%) were female while 21 (19%) were male. Mean height was 1.6 m (SD =0.1); mean admission weight was 61.0 kg (SD =13.3). For those who gained weight during their stay in AL (n=74), the average weight gain was 4.3 kg (SD =4.1);

* Microsoft Corporation, One Microsoft Way, Redmond, WA 98052-7329.
+ SPSS Inc., 233 South Wacker Drive, 11th Floor, Chicago, IL 60606-6412.

for those who lost weight (n=22), mean weight loss was 4.7 kg (SD =3.9). There was no change in weight documented for 13 subjects. Prior to residing at the ALF the majority of residents lived in their own home, a retirement community, or had a SNF stay. Table 1 provides further data. The overall mean time to transition/LOS was 487 days (SD =381) or 16.2 months. Table 2 reports LOS data for each age range with noted shorter LOS for the older individuals as well as for the one case < 69 years of age. When stratified by gender the mean time to transition for men was 657 days (SD =456) and women was 446 days (SD =352). Upon discharge from the facility the majority of clients transferred to a SNF (60%), hospital (17%), or expired (9%), while approximately 4% were able to move to a more independent setting. Table 3 provides more detail regarding ages and location of discharge.

There were a total of 80 different medical diagnoses found through the review of the individual's medical examination forms. Originally 83 diagnoses were listed, however 3 diagnoses were removed as they were absent in all cases. The factor analysis of these 80 diagnoses resulted in 33 factors being identified, demonstrating that the diagnoses did not collapse into a small number of categories. The number of diagnoses residents had ranged from 2 to 15, with the overall mean of 7.3. When analyzed specifically by gender, men averaged 8 diagnoses and women averaged 7.2. Of all cases 14.7% had between 11 and 15 diagnoses, 57.8% had between 6 and 10 medical comorbidities, and 27.5% has 5 or fewer diagnoses. Figures 1 and 2 detail the distribution of diagnoses for all cases as well as the average number of diagnoses for each age range. The 10 most frequent diagnoses present in this AL setting included hypertension, dementia, falls, depression, osteoarthritis, osteoporosis, atrial fibrillation, anemia, cancer (all types), and congestive heart failure. The complete list of diagnoses, frequency and percentage of the sample with each diagnosis is

provided in Table 4. The terms used and any combining of conditions noted in the table were based on the specific documentation by the physicians on the medical evaluation forms.

Stepwise linear regression analysis with significance set at 0.05 revealed only 4 predictors for LOS: gender, and diagnoses of psychosis, depression or dementia. The constant in the LOS model was 923 days. Psychosis ($p = .006$) was found to add 975 days to LOS. There was a high standard error (346) reported with this value, and although this diagnosis was identified by the analysis to be a predictor of LOS, this was interpreted to be a spurious result as there was only 1 case with this medical diagnosis in our cohort. Gender ($p= .004$) was shown to differentially decrease LOS. For a man, 242 days would be subtracted from the LOS; for a woman, 484 days would be subtracted. LOS was decreased by 233 days for those with a diagnosis of depression ($p =.001$). The final diagnosis identified by this regression model was dementia. Those with a dementia diagnosis had an increase of 171 days ($p =.014$). To better understand this regression the following examples demonstrate the addition or loss of LOS days based on the variables. All estimates start with the constant value of 923 days. If a woman with depression was admitted, we would subtract 484 days for gender and 233 days for a diagnosis of depression, leaving the LOS estimate for this individual (923-484-233)=206 days. If a man with dementia was admitted, 242 days for gender would be subtracted and 171 days for the dementia diagnosis would be added to the constant, leaving the LOS estimate for this individual to be (923-242+171)= 852 days. The proportion of variance in LOS which can be explained by the independent variables in this regression is reported as $R^2 = 0.234$, or 23.4%. In other words, 23% of the variability in LOS for residents in AL can be predicted by gender and the presence or absence of these three diagnoses. Table 5 is the summary of the stepwise regression analysis with the coefficients

and significance. Table 6 is the model summary with the R, R^2 and adjusted R^2 values. Table 7 is the ANOVA for the regression analysis. The statistical output in Tables 5, 6 and 7 are from SPSS.

Discussion

In our cohort, we identified specific medical diagnoses from client medical charts which could be used to predict LOS in an ALF. Specifically, gender and diagnoses of psychosis, depression, and/or dementia impacted LOS. In addition, the data extracted provides descriptive information about residents in this ALF. The average age of those residing in the AL facility of interest was 86 years old, similar to the NCAL and 2009 Overview of Assisted Living reports of 86.9 as the average age in the assisted living population.[11,23] The resident profile from NCAL & the Overview also showed 73-74% of those residing in ALF are women.[11,23] This is slightly lower than the 81% in this research sample. However, the gender ratio is continually changing based on admissions and discharges from the ALF and at times may be similar to the NCAL & the Overview reports. With regard to the weight gain or loss of those during their AL stay it was noted that only 22 cases (20.2%) lost weight. One explanation for the small number of residents with weight loss that occurred in spite of the aging process and possible medical comorbidities present is that 53% of the residents in this sample were admitted from their private home where they may have struggled to maintain proper nutrition and meals for themselves. Once admitted to the AL, 3 balanced meals a day were provided as well as supplements, with a registered dietician monitoring each resident to ensure proper nutritional management.

The percentage of admissions from various settings in this sample are comparable to those reported by the Overview 2009 where 58.7% resided at home, 10.9% in

retirement/independent living facilities, and 13% were in a SNF prior to admission to AL.[23] In this study 53.2% resided at home, 14.7% in a retirement apartment, and 14.7% were in a SNF prior to admission to the AL.

Many studies in the AL setting have not provided data regarding the most frequent medical diagnoses present. Of the 10 most frequent medical diagnoses present in this sample there were numerous similarities to the health conditions present reported in the Overview. Hypertension (66%), arthritis (42%), coronary heart disease (33%), depression (30%), osteoporosis (27%), and cancer (13%) were the highest percentages reported from the approximately 500 AL settings in the Overview.[23] Our sample had a similar breakdown of diagnoses: hypertension (67%), arthritis (31%), coronary heart disease (16%), depression (33%), osteoporosis (42%), and cancer (19%); all but coronary artery disease (rank=13) were among the ten most frequent diagnoses in our sample as well. Of interest was the exclusion of the diagnosis of dementia in the overview report when it was present in approximately 40% of the cases in our study, as well as reported to have a high prevalence in the AL setting by numerous authors.[24-26] Comparable to the 40% seen in our sample was the 40-67% prevalence of dementia reported by Hyde, Perez and Forester.[26] A study of 161 AL residents with dementia further delineated the level of impairment with about 28% mild impairment, 34% moderate impairment and 28% severe impairment.[26] Skilled nursing settings tend to have a higher rate of severe and terminal dementia as those residents tend to have higher care needs as compared with the higher frequency of mild to moderate dementia in the AL setting.[26]

Researchers gathered data from 15,977 Minimum Data Set (MDS) assessments upon admission to a SNF to compare residents admitted from ALF, a private home, hospital, and

from an acute hospital stay.[24] Residents admitted from an ALF demonstrated an increased likelihood of dementia, depression and tended to be older than those admitted from other settings. There were also an increased number of admissions to an Alzheimer's special care unit from the AL setting. The most common medical diagnoses of those admitted from ALF included dementia (35%), depression (34%), arthritis (29%), and Alzheimer's (21%). The LOS at the AL level of care prior to transfer to SNF was not reported.[24]

Rosenberg et al[25] reported a mean LOS of 37 months for 198 participants from ALF in Maryland that were evaluated and monitored by phone every 6 months for up to 26 months. During the study 29 participants transferred to SNF. When seeking risk factors for discharge from AL to SNF, declining medical health, chronic pain, appetite changes, and a lack of a living spouse were identified.[17,25] None of these factors were specifically addressed in our current study. Of interest in relation to our current study is that Rosenberg et al reported that 2/3 of the cases had a diagnosis of dementia; however, neuropsychiatric symptoms frequently associated with dementia did not relate to transfer to SNF.[25]

A diagnosis of dementia was identified as a predictor of LOS in our regression analysis and added approximately 171 days to LOS in AL as compared with those without a dementia diagnosis. Considering the progressive nature of dementia and the frequency of increased assistance with ADL care, risks of wandering and other behaviors, and general decline associated with the disease process, the longer time to transition was a surprising result. One possible explanation for the longer LOS related to dementia is that those admitted to AL may have had a mild to moderate dementia upon admission and with the increased assistance and supportive care provided by staff at the AL they were able to maintain a higher functional level for a longer period of time. Burdick et al[18] reported that

residents of ALF with dementia had higher functional impairment as compared to those without dementia. With regard to specific cognitive deficits, attention deficits didn't predict decline as strongly as others.[18] This may be explained by the verbal cues, supervision and assistance provided by the ALF staff that can allow for compensation of attention deficits. Numerous authors have reported the importance of recognizing compensation strategies that may be present as someone begins to have a cognitive or functional decline such as decreased socialization/self isolation, decreased activity participation, and mood changes.[8,12,25] Specific training for staff regarding dementia management has been recommended to allow for early recognition and management of the disease.[25] The facility described in our study has all staff members undergo a dementia-specific training program providing them with the skill set to better serve this population, which may positively impact the time to transition and quality of life of residents.

Depression was the fourth most prevalent medical comorbidity in this sample and was found to correlate to LOS, with those depressed having a stay 233 days shorter than those without depression. Depression was diagnosed in 33% of the 109 cases. This is comparable to the 2009 Overview report that 30% of those in ALF have a diagnosis of depression.[23] A larger range of between 10-40% of those >65 years old having symptoms of depression that could result in functional impairment has also been reported.[27] Watson et al[27] studied 2,078 residents from 193 ALF and found 13% were depressed, 5% severely depressed, and only 18% and 38% of those respectively were receiving an antidepressant. Increased dependence in ADL care, recent hospital stay, social withdrawal, cognitive impairment, having greater than 5 medical comorbidities, living at a facility for less than 1 year, agitation and psychosis were all associated with a diagnosis of depression.[27] Residents with depression had a 1.5

times greater rate of transfer to a skilled nursing setting as compared with those who were not depressed, and this rate jumped to 2.3 times greater for those who resided in a dementia-care specific ALF.[27] In contrast to this aforementioned increased rate, a small cohort study with 100 residents in a dementia-specific AL reported that depression was not associated with transfer to a SNF.[19] However, the authors did note that medical conditions that increase fall risk, psychotropic medication use and not maintaining physical activity could impact the ability to reside at an ALF.[19] All of these previously mentioned risks may be seen with someone who is depressed. Data from the Maryland Assisted Living Study included 196 AL residents, of whom 47 (24%) were found to be depressed.[28] Antidepressants were prescribed for 43% of those with a depression diagnosis and only 40% had consistent psychiatric care, leading to the concern that depression was common in this setting, yet it was undertreated.[28] Depression was significantly related to need for ADL assist, increased days spent in bed, increased number of medical comorbidities, and less activity participation, all of which can be factors in the increased risk of transfer to a skilled nursing setting.[28]

To address the issue of depression related to shorter LOS in the ALF staff must be able to recognize early signs of depression and work promptly to provide, or set up ancillary services/support to assist with minimizing the negative impact depression may have. The World Health Organization had predicted that by 2010 depression would globally be the second most frequent disease behind heart disease.[27] In our facility, psychological services are available on site when a referral is made and psychiatric services are available within the network of care and may be used when deemed appropriate. Frequently in our facility those moving into the AL have come to do so after a life-changing experience, whether it is the death of a spouse, a medical or physical decline, a hospital stay, or the sale of or move from a

longtime family home. Sensitivity to the life stress in such situations and recognition of the impact it may have on the person physically and mentally is imperative. Watson et al[27] reported decreased depression rates for those that resided at a facility for greater than 1 year. This could possibly be accomplished by having trained staff available and support services in place to assist with the transition to AL.

Other diagnoses that were not identified as significant predictors of LOS in the regression analyses may be of interest, and are worth noting. Diabetes mellitus (DM) (p= .055) and insomnia/sleep apnea (p= .030) were shown to relate to a longer time to transition while GI bleed (p= .041) was related to a shorter time to transition when included in a regression model with gender, psychosis, depression, and dementia. Clinically, those with DM may have improved diet control and monitoring of insulin levels and fewer complications related to DM in the AL setting as compared to more independent living environments. The same may be true for the management of sleep patterns and related insomnia. The acute nature and complications of a GI bleed may explain the decreased LOS related to this condition.

Although the ultimate goal for many who move to an AL setting would be to age in place, in this study 66 residents (60.6%) transferred to a SNF, 19 (17.4%) transferred to a hospital and did not return, and 8 (7.3%) transferred to a dementia-specific AL. Ten (9.2%) residents expired at their AL apartment. This high percentage of residents requiring a higher level of care from this setting demonstrated the difficult nature of true aging in place. The hospital transfer rate in our study was higher than the 6.9% reported by the Overview.[23] Residents from the AL setting admitted to an acute care for elders hospital unit in one study were found to be at a higher risk for depression, functional decline and falls as compared

with community elders.[29] Greater than 75% of those hospitalized from AL were discharged to a skilled setting, and although some admissions were for rehabilitation, the number able to eventually return to their AL setting was unknown.[29] Based on data from the admission and discharge register at our facility none of those reported as being discharged to a hospital returned to the AL. When residents had a brief acute care stay this was documented in their medical record, but not on the discharge register. The percentage of the residents in our study who were discharged to a SNF was similar to that reported in the 2009 Overview where 58.9% of those discharged went to a nursing home.[23] Studies reviewed from Assisted Living Federation of America and National Center for Assisted Living reported 33-36% transfer from ALF to a SNF, 11-18% were discharged to a hospital and 28% expired in the ALF.[9,30] LOS data for these cases were not included. Data from baseline to a follow-up period 7 months later provided by the National Study of Assisted Living for the Frail Elderly showed that 81% continued to reside at the AL level, while 19% expired or moved.[3] Of those who moved, 78% needed a higher level of care and 59.2% of them found that care in a SNF.[3]

Recognition of the many reasons for discharge from the AL level of care is important when attempting to promote aging in place. Often the cause is multifaceted, incorporating increased care needs, behavioral problems, increased medical comorbidity with complications, and cognitive decline. The Overview reported that 46.8% transfer out of AL due to health reasons while approximately 33% expire while an AL resident.[23] These figures are slightly higher than those reported in 2007 when approximately 26% expired in the AL setting, and higher than the 9.2% found in our sample.[26]

Individual state and facility rules and regulations regarding admission and retention criteria impact the ability to age in place. Hawes et al[7] reported that most ALF would discharge residents when they consistently required assistance with transfers, and/or demonstrated a moderate/severe cognitive impairment and behavioral symptoms. Our facility has guidelines similar to those reported by Hawes; however it does allow for short term higher assistance levels and the use of ancillary VNA services for acute illnesses/episodes. To assist with promoting aging in place many authors have recommended nursing interventions that include early recognition of depression and facilitation of proper management[24,28], early detection and treatment of dementia[8,17,24], the addition of adaptive equipment for promotion of ADL management[24], assessment and treatment of incontinence[5,8,24], recognition of behavioral and social changes[8,12,24], and environmental modifications to aid with safe mobility.[8,24] Incorporation of an early mobility screen with exercise and physical activities regularly available to improve physical performance and decrease the risk of increased disability, and the need for a higher level of care have also been recommended to aid with aging in place.[31]

In this sample of 109 AL residents there were 80 medical diagnoses documented with a mean of 7.3 comorbidities per person that could impact physical, cognitive, and social functioning as well as quality of life. Each resident presents with their unique personality, family and social history as well as medical conditions that can positively or negatively impact their success residing at an AL. A clinical implication of the present study's results is the importance of early recognition and management of depression and dementia, especially in women. Utilization of a reliable and valid screening tool for this population upon admission and at regular intervals during their residency may assist in maintaining a higher

functional independence level and quality of life, thereby minimizing the need for transfer to a higher level of care.

Limitations

The results of this study are limited to the population from which the sample was selected. As this was a convenience sample of one AL there may be limited generalizability to other facilities of differing sizes and with differing admission and discharge criteria. The facility was also a part of a multilevel care campus and a larger health care company which may allow for ancillary support services not readily available to a smaller privately-owned AL home. We have attempted to provide as much detail as possible regarding the facility and protocols to allow for comparison with other facilities of interest. Currently, there are no specific rules and regulations guiding AL at the federal level, so regulations reported from New York State in this study may not pertain to other states.

All subjects in this study were Caucasian, thereby limiting comparisons to other ethnic groups. The monthly costs of residency and the lack of participation in the state-assisted funding program also limit comparisons to those elders that would be considered lower income. Lower income elders may have a different history regarding the level of health care they have received, thereby impacting their medical comorbidities and health outcomes.[12]

This is a retrospective study which used closed medical records. All medical diagnoses for each resident were collected from the medical evaluation forms in their medical records. These forms were filled out by their community physicians. There was no way to control for accuracy or ensure that the medical evaluation forms were all-inclusive with regard to comorbidities as the data could not be confirmed with communication with the

physicians, residents, or family members. There was no attempt to evaluate the medication management of the medical conditions of residents in this study, as with a retrospective study there is an inability to confirm the accuracy of medications listed, nor can one assess each resident's compliance with their medications.

Due to the large number of medical diagnoses and the sample size of 109 cases there was very limited strength of correlations reported through statistical analysis. Ideally, a robust analysis of 80 diagnoses would require approximately 800 subjects.

Recommendations for Further Research

Future research with a larger sample size, incorporating more facilities of similar characteristics, or comparisons with a facility of differing characteristics would be recommended. Multi-state studies from various regions within the United States could provide insight into differences in prevalence of medical conditions from region to region, and how these differences impact time to transition. Research focusing on the most prevalent diagnoses reported within this study and incorporating the medication management of these diagnoses may also provide helpful information and insight into optimal management of those conditions within the AL setting. Prospective longitudinal studies would be most beneficial to track residents from admission through their stay at an AL with regard to their medical conditions and the factors that may impact time to transition. Specifically for the facility described, a prospective longitudinal study following those admitted with dementia and depression to assess the admission evaluation process, resident description, preventative management, overall care management and LOS/discharge data would be recommended.

Conclusions

In conclusion, for residents in one ALF, medical history was found to correlate with time to transition/LOS. Specifically, male gender and/or a diagnosis of dementia were related to an increased time to transition/longer LOS. A decreased time to transition/shorter LOS was found related to female gender and/or a diagnosis of depression. Early recognition and management of dementia and depression in this setting may allow for a longer, more successful LOS at this level of care allowing residents the benefits associated with aging in place.

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Table 1. Age, gender, and prior residence of assisted living residents

Prior Residence Location	Hospital (N=9)	Private Home (N=58)	Family Member Home (N=3)	Skilled Nursing Facility (N=16)	Assisted Living Facility (N=7)	Retirement Apartment (N=16)
Proportion of residents admitted from each type of prior residence, %	8.26%	53.21%	2.75%	14.68%	6.42%	14.68%
Age: (Total %)						
<69 (0.92)		1				
70-74 (0.92)		1				
75-79 (12.84)	2	7		3	1	1
80-84 (18.35)	3	11	1	1		4
85-89 (34.86)	2	21	1	7	3	4
90-94 (20.18)	2	10	1	3	3	3
95-99 (11.01)		6		2		4
>=100 (0.92)		1				
Gender:						
Male	5	9	0	4	1	2
Female	4	49	3	12	6	14

Table 2. Mean length of stay by age

Age Ranges	Mean LOS (Days)	Mean LOS (Months)
< 69	29	1.0
70-74	939	31.3
75-79	553	18.4
80-84	528	17.6
85-89	511	17.0
90-94	423	14.1
95-99	395	13.2
>=100	330	11.0
Overall: all ages	487	16.2
Shortest:	3	0.1
Longest:	1600	53.3

Table 3. Age, gender, and discharge location for those discharged from assisted living

Discharge Location	Hospital (N=19)	Private Home (N=2)	Family Member Home (N=1)	Skilled Nursing Facility (N=66)	Assisted Living Facility (N=2)	Retirement Apartment (N=1)	Dementia Specific Assisted Living (N=8)	Expired (N=10)
Proportion of residents discharged to each type of residence, %	17.43%	1.83%	0.92%	60.55%	1.83%	0.92%	7.34%	9.17%
Age: (Total %)								
<69 (0.92)					1			
70-74 (0.92)				1				
75-79 (12.84)		1		11			1	1
80-84 (18.35)	3		1	11		1	2	2
85-89 (34.86)	7	1		20	1		5	5
90-94 (20.18)	7			14			1	
95-99 (11.01)	2			8				2
>=100 (0.92)				1				
Gender								
Male	4	1	0	10	1	1	1	3
Female	15	1	1	56	1	0	8	7

Table 4. Medical diagnosis, number of residents and percentage of total residents with each diagnosis, (N=109)

Medical Diagnosis	Total N	% of N	Medical Diagnosis	Total N	% of N
HTN	73	66.97%	Syncope	9	8.26%
Dementia	44	40.37%	Comp fracture	8	7.34%
Falls	40	36.70%	BPH	7	6.42%
Depression	36	33.03%	Insomnia/sleep apnea	7	6.42%
Osteoporosis	36	33.03%	TIA	7	6.42%
OA	34	31.19%	Cognitive impairment	6	5.50%
Atrial fibrillation	27	24.77%	Incontinence	6	5.50%
Anemia	25	22.94%	Spondylosis	6	5.50%
CA (all types)	21	19.27%	PVD	6	5.50%
CHF	20	18.35%	Aneurysm	5	4.59%
Fractures	18	16.51%	Chronic pain	5	4.59%
Hyperlipidemia	18	16.51%	Pneumonia	5	4.59%
CAD	17	15.60%	DJD	5	4.59%
COPD	17	15.60%	Ulcers pressure/stasis)	5	4.59%
HOH	17	15.60%	Venous/stasis changes	5	4.59%
Cataracts/macular degeneration	16	14.68%	Vertigo/BPV	5	4.59%
Hypothyroid	16	14.68%	CABG	4	3.67%
Anxiety	15	13.76%	DVT	4	3.67%
UTI	15	13.76%	IBS	4	3.67%
Glaucoma	14	12.84%	TAH	4	3.67%
Pacemaker	14	12.84%	Cellulitis	3	2.75%
ASHD	13	11.93%	Asthma	3	2.75%
GERD	13	11.93%	Bipolar disorder	3	2.75%
CVA	12	11.01%	Essential tremor	3	2.75%
DM	12	11.01%	Gout	3	2.75%
Diverticulosis & diverticulitis	10	9.17%	Herpes zoster	3	2.75%
Joint replacements	10	9.17%	Inguinal hernia	3	2.75%
CRI/CRF	9	8.26%	MI	3	2.75%
GI bleed	9	8.26%	Neuropathy	3	2.75%

Table 4. Medical diagnosis, number of residents and percentage of total residents with each diagnosis, (N=109) – (continued)

Medical Diagnosis	Total N	% of N	Medical Diagnosis	Total N	% of N
Spinal stenosis	3	2.75%	SDH	2	1.83%
URI	3	2.75%	Seizures	2	1.83%
Emphysema	3	2.75%	Bulbar palsy	1	0.92%
Bradycardia	2	1.83%	Cerebellar atrophy	1	0.92%
Constipation	2	1.83%	Neurogenic bladder	1	0.92%
Crohns	2	1.83%	Obesity	1	0.92%
Dehydration	2	1.83%	Psychosis	1	0.92%
Esophagitis	2	1.83%	PTSD	1	0.92%
ETOH	2	1.83%	PUD	1	0.92%
Parkinson's	2	1.83%	Rhabdomyolysis	1	0.92%
RA	2	1.83%	Sciatica	1	0.92%

Table 5. Stepwise regression analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
4	(Constant)	922.689	156.767		5.886	.000
	psychosis	974.876	345.694	.245	2.820	.006
	M/F	-241.831	82.779	-.251	-2.921	.004
	depression	-233.349	71.357	-.289	-3.270	.001
	dementia	171.097	68.642	.221	2.493	.014

a. Dependent Variable: LOS in days.

Table 6. Stepwise regression analysis, R values

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
4	.484[d]	.234	.205	339.90472

d. Predictors: (Constant), psychosis, M/F, depression, dementia

Table 7. Stepwise regression analysis, ANOVA results

ANOVA[e]

Model		Sum of Squares	df	Mean Square	F	Sig.
4	Regression	3676278.012	4	919069.503	7.955	.000[d]
	Residual	1.202E7	104	115535.220		
	Total	1.569E7	108			

e. Dependent Variable: LOS in days

Figure 1. Mean number of medical diagnoses by age group

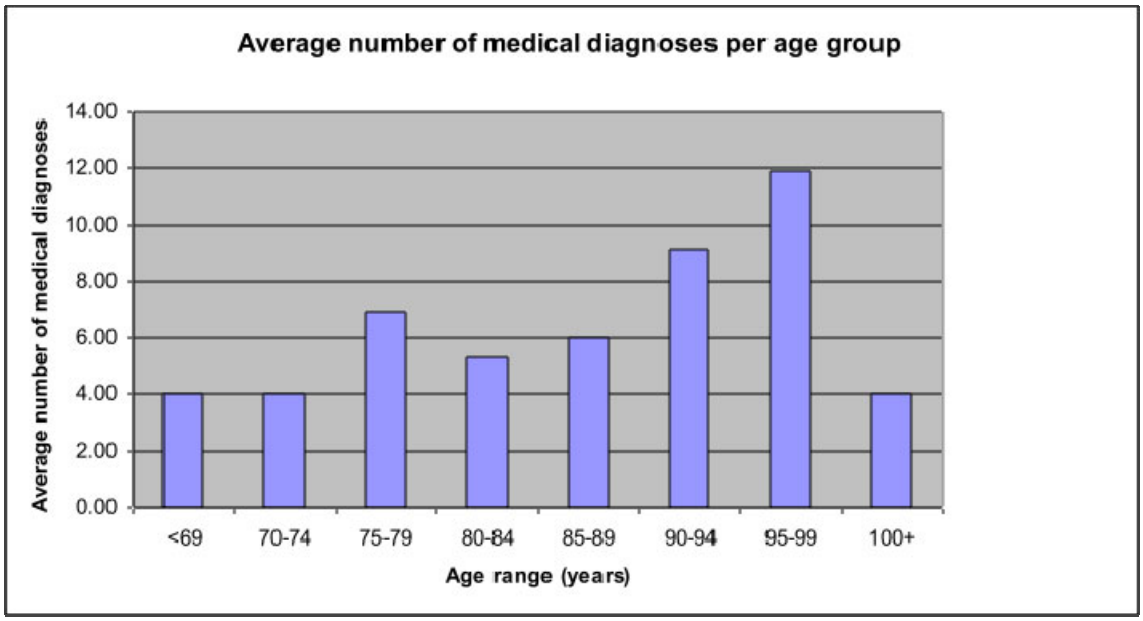
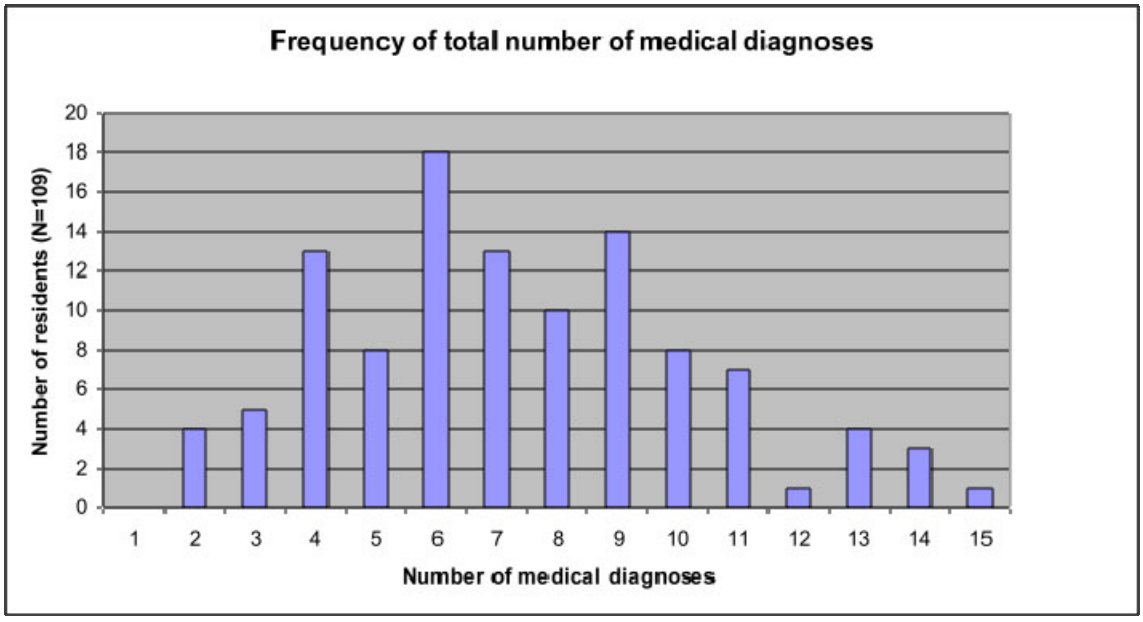


Figure 2. Frequency of total number of medical diagnoses



Appendix A. Tier level assistance questionnaire used at the setting in this study

Pre-Screening Questions for Tier Assessments

When you are screening a resident, you want to open the door by asking them to tell you about their medical history and how they are currently managing their care at home. Do they have family assistance? Do they have home health aides coming in to help them? Ask them about their medications. Do they manage their own? What type of medication are they on?

When conducting a telephone assessment, in person assessment or a pre-screen, the following questions should be asked:

1. Does the resident use any medical equipment? (i.e. oxygen, colostomy bag, nebulizer). Can you use this equipment yourself or do you need someone to do this for you?
If a resident has an oxygen concentrator, can they fill their portable tanks without assistance?

2. Does the resident have a diagnosis of diabetes? If so, are they taking insulin? Can they self inject their insulin? Do they need to have their insulin syringes prefilled? Do they have an order for fingersticks? If so, can they self manage their own fingersticks?

3. Does the resident have a history of seizures? If so, do they take medication for them? How often do they occur? When do they occur? Does the resident experience an aura?

4. Does the resident have a history of falls? If so, when was the last fall. Under what conditions did the falls occur?

5. Does the resident require visiting nurse services for any reason? (i.e. Procrit injections or any other injections, dressings, physical therapy, occupational therapy).

6. Is the resident incontinent of bowel and / or bladder? If so, can they self manage this incontinency? Do they wear any type of depend or protection from urinary incontinence?

7. Does the resident have any behavioral issues? If so, what are they? Describe in detail what they are. When did they last occur? What medications are they taking?

8. If a family is stating they will be responsible for administering a very specific medication, (i.e. procrit or insulin or glucometer fingersticks), a **very** specific back up to the back up program must be in place. DOH frowns upon this. Very specific care planning must occur and you are held accountable to follow it to the letter.

Name: _____ Date: /_____

Reason for Assessment: Pre Admission Interview ____ Readmit from hosp/rehab ____ Sig Change ____ Annual ____

Individuals Present at Pre Admission Interview/Relation to Resident: _____

BASIC ADL ASSESSMENT / REVIEW

(1) BATHING *(BA)*

Category Score: _____

Check	Service	Code
	No Assistance/Prompting or Reminding only	BA101-01
	Set up / Preparation	BA202-02
	Assist to/ from shower	BA203-02
	Standby for steadying / safety	BA304-03
	Light washing (<1/3 body)	BA305-03
	Moderate washing (2/3 body)	BA406-04
	Significant washing (full body)	BA507-05
	Other	BA008-00
Schedule: x _____ Daily _____ Weekly _____		

(2) HOUSEKEEPING *(HK)*

Category Score: _____

Check	Service	Code
	No assistance beyond regularly scheduled service	HK101-01
	Occasional additional housekeeping assistance	HK202-02
	Occasional laundering of clothes	HK203-02
	Daily light assistance (bedmaking, cleaning, laundering, etc.)	HK304-03
	Regular additional, moderate assistance, may have occasional, moderate accidents.	HK405-04
	Regular, significant housekeeping, cleaning or laundering / Occasional or regular, heavy accidents.	HK506-05
	Other	HK007-00
Schedule: x _____ Daily _____ Weekly _____		

(3) GROOMING *(GR)*

Category Score: _____

Check	Service	Code
	No Assistance	GR101-01
	Prompting / reminding to groom (make up, brushing teeth, combing hair, shaving, etc.)	GR202-02
	Set up for grooming	GR303-03
	Steadying / Light assistance	GR404-04
	Partial / moderate assistance	GR405-04
	Significant / full assistance	GR506-05
	Other	GR007-00

(4) DRESSING *(DR)*

Category Score: _____

Check	Service	Code
	No Assistance	DR101-01
	Prompting / reminding in dressing	DR202-02
	Occasional physical assistance with zippers, shoes, stockings, etc.	DR203-02
	Regular standby service	DR304-03
	Regular, light assistance (daily) with dressing / resident able to offer significant assistance	DR305-03
	Moderate regular assistance / puts clothing on / off with assistance at all times / can offer some assistance	DR406-04
	Fully dependent / regular full assistance / resident offers little, if any, assistance	DR507-05
	Other	DR008-00

(5) AMBULATION / TRANSFER *(AM)* Category Score: _____

Check	Service	Code
	No Assistance / Prompting only	AM101-01
	Occasional monitoring	AM102-01
	Regular monitoring of movement / not always steady	AM203-02
	Standby for steadying / safety	AM304-03
	Occasional minor assistance	AM305-03
	Regular supervision / light to moderate assistance with ambulation or transfer	AM406-04
	Scheduled ambulation / walks	AM407-04
	Moderate ambulation assistance / ambulated to meals and events	AM408-04
	Significant assistance with ambulation or transfer / ambulated to meals and events	AM509-05
	Other	AM010-00

Ambulation Devises Used: _____

(6) AM / PM PREPARATION *(AP)* Category Score: _____

Check	Service	Code
	No Assistance	AP101-01
	Prompting / reminding	AP202-02
	Awaken in morning	AP203-02
	Standby assistance	AP304-03
	Assistance out of bed	AP305-03
	Daily check	AP306-03
	Assistance into bed at night	AP407-04
	Frequent checks throughout the day	AP408-04
	Overnight checks	AP409-04
	Total care / all wake-up and bedtime tasks are assisted with	AP510-05
	Other	AP011-00

Usual Wake-Up Time (if applicable): _____ **Usual Time To Bed (if applicable):** _____

(7) TOILETING *(TL)* Category Score: _____

Check	Service	Code
	No Assistance	TL101-01
	Occasional prompting / reminding to toilet	TL202-02
	Regular prompting / reminding to toilet / checking	TL203-02
	Assist on / off toilet	TL304-03
	Standby assistance	TL305-03
	Maintain toileting schedule	TL306-03
	Light assistance in changing undergarments	TL407-04
	Light assistance in toileting (undressing, cleaning, etc.)	TL408-04
	Full changing of undergarments / or toileting	TL509-05
	Assistance with stoma bags or catheter bags	TL510-05
	Other	TL011-00

Wears Protective Undergarments? _____YES _____NO
Is On Toileting Schedule? _____YES _____NO

MENTATION, SOCIALIZATION & BEHAVIOR ASSESSMENT / REVIEW

(8) MENTATION *(MT)*

Category Score: _____

Check	Service	Code
	No Assistance in orientation / intervention	MT101-01
	Occasional orientation assistance / light intervention (slight impairment)	MT202-05
	Regular orientation and/or intervention / supervision outside facility is likely (mild to moderate impairment)	MT303-15
	Frequent orientation / intervention / supervision outside facility (moderate impairment)	MT404-25
	Frequent orientation and/or intervention / supervision outside facility (significant impairment)	MT505-45
	Constant, significant intervention / disruptive, displays abnormal behavior, severe impairment, may be threat to self or others, or combative	MT506-45
	Other	MT007-00

(9) SOCIALIZATION *(SZ)*

Category Score: _____

Check	Service	Code
	No assistance in socializing / personal affairs	SZ101-01
	Occasional, minimal prompting / reminding to socialize / participate or management of personal affairs	SZ202-02
	Supervision / regular reminding or instruction in managing of personal affairs	SZ303-03
	Consistent encouragement to socialize	SZ304-03
	Supervision / light assistance on regular basis in managing personal affairs	SZ405-04
	Assistance in social situations / instruction , etc.	SZ406-04
	Complete and extensive assistance in managing personal affairs / socializing	SZ507-05
	Other	SZ008-00

(10) BEHAVIOR MANAGEMENT *(BV)*

Category Score: _____

Check	Service	Code
	No assistance in managing / controlling behavior	BV101-01
	Minimal intervention / occasional monitoring	BV202-03
	May wander, occasional episodes, light monitoring	BV203-03
	Moderate intervention / regular monitoring	BV304-07
	Minimal outside support may be indicated	BV305-07
	Likely to wander, monitor, moderate episodes	BV306-07
	Supervision / regular monitoring to avert episodes / active, consistent behavior management	VB407-08
	May be an elopement threat, light monitoring	BV408-08
	Does wander, frequent monitoring and episodes	BV409-08
	Does try to elope, frequent monitoring and episodes	BV510-10
	Total, significant management of behavior	BV511-10
	Significant outside support likely required	BV512-10
	Other	BV013-00

DINING SERVICES ASSESSMENT / REVIEW

(11) DINING *(DN)*

Category Score: _____

Check	Service	Code
	No dining assistance necessary	DN101-01
	Light, occasional or regular assistance, such as opening cartons, wrappers, cutting meats, etc.	DN206-02
	Minor assistance needed in dining, may have to encourage to eat	DN310-03
	Moderate assistance in dining, steadying, guidance, etc.	DN411-04
	Significant to full assistance in dining	DN515-05
	Other	DN022-00

CASE MANAGEMENT & MEDICATION ASSESSMENT / REVIEW

(12) CASE MANAGEMENT *(CM)* Category Score: _____

Check	Service	Code
	No case management assistance	HT101-01
	Light assistance with case management and planning, (i.e., making doctor appointments, contacting physicians and other health providers, and/or advising resident) (once a week)	HT305-06
	Moderate assistance with case management and planning (2-4 times a week)	HT407-08
	Stable health conditions which require consistent attention, monitoring, and intervention	HT408-08
	Significant assistance with case management and/or planning (5 or more times a week)	HT509-10
	Other	HT011-00

13) MEDICATION ASSISTANCE *(MD)* Category Score: _____

Check	Service	Code
	No assistance, manages own medication	MD101-01
	Light management in ordering, changing medications with/from professionals (1 hour or less per month)	MD304-03
	Moderate management in ordering, changing medications with/from professionals (more than 1 hour, but less than 2 hours, per month	MD406-06
	Significant management in ordering, changing medications with/from professionals (more than 2 hours per month)	MD508-09

Tier I: 1 - 25 Tier II: 26 - 45 Tier III: 46 - 65

*This resident does / does not meet the admission/retention standards of an enriched housing environment. The services required are those which the operator is certified to provide

_____
Assessor Signature

Appendix B. 488.4 (b) Admission and retention standards; as stated in *Part 488 Adult Care Facilities Standards for Enriched Housing*[22]

An operator must not accept nor retain any person who:

(1) needs continual medical or nursing care or supervision as provided by an acute care facility or a residential health care facility certified by the Department of Health;

(2) suffers from a serious and persistent mental disability sufficient to warrant placement in an acute care or residential treatment facility operated or certified by an office of the Department of Mental Hygiene;

(3) requires health, mental health, or other services which cannot be provided by local service agencies;

(4) causes, or is likely to cause, a danger to himself/herself or others;

(5) repeatedly behaves in a manner which directly impairs the well-being, care or safety of the resident or other residents or which substantially interferes with the orderly operation of the enriched housing program;

(6) requires continual skilled observation of symptoms and reactions or accurate recording of such skilled observations for the purpose of reporting on a medical condition to the resident's physician;

(7) refuses or is unable to comply with a prescribed treatment program, including but not limited to a prescribed medications regimen when such refusal or inability causes, or is likely to cause, in the judgment of a physician, life-threatening danger to the resident or others;

(8) is chronically bedfast;

(9) is chronically chair fast and unable to transfer or chronically requires the physical assistance of another person to transfer;

(10) is chronically in need of the physical assistance of another person in order to walk;

(11) is chronically in need of the physical assistance of another person to climb or descend stairs, unless assignment on a floor with ground-level egress can be made;

(12) has chronic unmanaged urinary or bowel incontinence;

(13) suffers from a communicable disease or health condition which constitutes a danger to other residents and staff;

(14) is dependent on medical equipment unless it has been demonstrated that:

(i) the equipment presents no safety hazard;

(ii) use of the equipment does not restrict the individual to his/her room, impede the individual in the event of evacuation, or inhibit participation in the routine activities of the home;

(iii) use of the equipment does not restrict or impede the activities of other residents;

(iv) the individual is able to use and maintain the equipment with only intermittent or occasional assistance from medical personnel;

(v) assistance in the use or maintenance of the equipment, if needed, is available from local social services agencies or approved community resources;

(vi) each required medical evaluation attests to the individual's ability to use and maintain the equipment;

(15) has chronic personal care needs which cannot be met by enriched housing staff or approved community providers;

(16) is not self-directing; i.e., requires continuous supervision and is not capable of making choices about his/her activities of daily living; or

(17) engages in alcohol or drug use which results in aggressive or destructive behavior.