American Indians and Alaska Natives in Nursing Homes: Initial results from the 2008 Minimum Data Set

Mario D. Garrett, Dave Baldridge, and Erin Williams

Abstract

This study questions the assumption that American Indian and Alaska Natives (AIANs) provide care for their frail older adults within the community. Using the Minimum Data Set (MDS) this study examined the status of Native elders in nursing homes compared to the white residents. The initial results indicate that AIANs enter the nursing homes at earlier stages of need and are more likely to be independent than white patients. In addition, AIANs were more likely to have lived alone or in another nursing home or residential facility prior to their present nursing home. This study is a wake-up call to examine the continuum of care for American Indian and Alaska Native elders. With the migration of young people out of Native communities, and with a lack of social services infrastructure, Native elders are being placed in nursing homes much earlier than necessary and earlier than whites.

Keywords: Aging, Indigenous, American Indian, Alaska Native, nursing home, continuum of care, ADL, IADL, MDS, Minimum Data Set, independence, family, socializing, missing cohort, dementia, cognitive impairment, demographic

Introduction

An assumption persists that American Indian and Alaska Natives (AIANs) — similar to other minority populations — provide care for their frail older adults within the community. However, earlier studies show that a subtle but radical demographic transition, currently underway in some Native communities, may prevent them from doing so. In some communities, potential caregivers do not exist because they have migrated out of the reservation/trust land/Native lands to meet work, education, or family obligations (Garrett et al., 2008; Garrett and McGuire, 2008; Garrett et al., 2010). In these studies, using 2000 US Census data, the demographic makeup of 345 Native communities was examined to identify those communities with a deficit of potential caregivers. Earlier results showed that the communities with the lowest percentages of potential caregivers — reflecting higher outmigration — also have higher unemployment (Garrett et al., 2010).

Demographically, some Native communities are losing their capacity to care for frail older adults. Lacking services in general, and specifically lacking supportive home-based services — these communities have few options when dealing with isolated frail and impaired older adults. When family members have either migrated out of the reservation or exceeded their caretaking limits, external support is necessary. This external support can be a combination of informal (neighbours, friends, extended family) or formal (home help agencies, county and state services). When such external support cannot be accessed because it either does not exist or is

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unaffordable, the family is left with nursing home (NH) placement as the only viable option. This perspective argues that NH placement doesn’t necessarily mean that families have abandoned older adults, but that the elder requires care beyond that which the proximal family and community can provide.

The literature identifies two factors that predict NH placement — deterioration of the elder’s physical and mental state and/or the deterioration of the caregivers’ capacity to provide care. Previous studies have shown that because of migration there is an increased likelihood that vulnerable older adults have lost their familial support network. Currently, there are no studies evident that have looked at the deterioration of the AIAN elder’s physical and mental state prior to NH placement.

**ADLs**
Deterioration of the elder’s physical and mental state is usually measured by the level of help required for activities of daily living (ADL). Although assessment of ADL is crude, it remains a significant predictor of admission to a nursing home (Branch and Jette, 1982) as well as utilization of other services including: use of paid home care (Garber, 1989; Soldo and Manton, 1985); use of hospital services (Branch et al., 1981; Wan and Odell, 1981); living arrangements (Bishop, 1986); use of physician services (Wan and Odell, 1981); insurance coverage (Dunlop et al., 1989); and mortality (Manton, 1988). In this case the ability to perform ADLs has become a standard variable to include in analyses (Fillenbaum, 1987). Cognitive impairment and ADL status are separate, but correlated, dimensions of functioning (Fillenbaum et al., 1978). However, not all persons with substantial cognitive impairment have ADL needs and vice versa.

Although NH placement is usually set into motion by an elder or caregiver’s deteriorating physical or mental status, rather than a weakening of familial ties (Bowers, 1988), with AIAN communities — due to the migration of younger adults — this decision may occur earlier than in other ethnic groups. With fewer available caregivers, the level of burden on the remaining few caregivers may be exacerbated.

Caregivers’ burden has long been a topic of interest to researchers. Earlier studies have identified caregivers’ burden as arising from anxiety about managing in-home medical care to problems in dealing with psychosocial aspects of care, strains on family relations, and negative effects on personal health and well-being (Hennessy and John, 1996; John et al., 2011). As with the rest of the aging population, the older AIAN elders the more likely they are to develop disability and functional impairment, which cause significant burden to family caregivers who are less likely to have the appropriate home-based resources to assist them (Indian Health Service, 2001).

Without home-based supportive services, the tipping point for sending frail older adults to NHs may be far earlier than it would be for older adults residing in communities with home-based supportive services. In a review of the effectiveness of community-based assessments of geriatric patients (Smith et al., 1993) it was reported that some clients who met criteria for NH admission can still be cared for in the community without NH placement. Furthermore, the provision of home and community services may prevent or delay nursing home placement (Gunner-Svensson et al., 1984; Montgomery and Borgatta, 1989; Stuck et al., 1995). While tribes recognize the need for long-term care, only a few have the resources to develop tribal nursing homes (Administration on Aging, 2002). Consequently, most AIAN elders are either cared for at home or reside in non-native NHs, sometimes far from reservation or home. This suggests that AIANs enter NHs at earlier stages of need and therefore are more functional than other residents.

**FAMILY**
In the general population, families and friends often stay in contact with older adults following institutionalization. Families and friends continue to be involved with residents after placement by remaining emotionally close, continuing to provide basic care and/or support to residents, and participating in decision-making (Bitzan and Kruzich, 1990; Naleppa, 1996; Rowles and High, 2003; Schwartz and Vogel, 1990; Stull et al., 1997). This is, however, dependent on the proximity of the NH. If the NH is too far from the community, maintaining contact with the residents may be eroded. Proximity to the NH
has been linked to an increase in family visits (Bitzan and Kruzich, 1990; Gaugler et al., 2003; Greene and Monahan, 1982; Port et al., 2001; Yamamoto-Mitani et al., 2002).

There is no literature that examines the level of contact by family and friends with AIAN NH residents. If proximity to a NH is a determining factor for contact, then it is important to locate NHs in close proximity to Native communities. However, one recent survey reported that only 15% of tribes had nursing home services and 16% had assisted living services available for elders (Goins, 2010). Fewer than 16 tribally managed NHs exist among 568 tribes (IHS, 2010; Benson, 2002; Finke, 2002; Smith, 1993). Those that do exist often have limited services, lack certified doctors and staff, and are relatively small with an average bed capacity of about 50 (Finke, 2002). In addition, there are no known urban tribal nursing homes (Forquera, 2002). While only a few tribes have NHs on reservation or in close proximity to reservations, most NHs are located far away from tribal communities (Jervis et al., 2002; Manson and Callaway, 1988). If NHs are likely to be located away from the reservation/trust lands, this may have a detrimental effect on family and friends’ interaction with the AIAN NH resident.

SOCIALIZING
Elders in nursing homes far from their families often feel isolated and abandoned because families cannot visit on a regular basis. In addition, the lack of AIAN-managed and staffed NHs may translate to cultural needs being met inadequately or not at all. Most elders want to remain close to family members. Those that had a close family life before entering NH are more likely to continue to have close contact with their family once institutionalized (Friedemann et al., 1999; Bowers, 1988, Gaugler et al., 2003; Naleppa, 1996, Port et al., 2001, Yamamoto-Mitani et al., 2002). If family involvement is possible (or desirable) residents still report that they want to retain some of their normal behaviours such as eating familiar foods and practicing traditional rituals that bring them comfort (Jervis et al., 2002).

AIANs tend to be more group-oriented rather than individualistic (Joe and Malach, 1992; Brucker and Perry, 1998) and can be seen as being more concerned with other community residents than themselves. Whether this is retained in NHs is not known. Sharing has been documented to represent an expression of AIAN’s honour and respect (Brucker and Perry, 1998; Garrett and Garrett, 1994). Whether this remains true in NHs might be challenged.

DESIGN AND METHODS
The Minimum Data Set (MDS) is a standardized, uniform, comprehensive assessment of all residents in Medicare or Medicaid certified facilities mandated by federal law (P.L.100-203). The MDS is completed by each NH and electronically transmitted to state authorities, identifying potential resident problems, strengths, and preferences. Some 483 variables are collected by nurses on each patient that enters a NH (see Appendix 1 for list of variables).

The role of the MDS has expanded beyond its primary purpose of an assessment tool for individualized care plans. Data collected from MDS assessments are used for the Medicare reimbursement system, many state Medicaid reimbursement systems, and to monitor the quality of care provided to NH residents. The MDS, containing items that reflect the acuity level of the resident including diagnoses and treatments, and an evaluation of the resident’s functional status, is used to monitor the quality of care in the nation’s NHs.

Access to the MDS database is provided by The Research Data Assistance Center (ResDAC) at the University of Minnesota which contracts with the federal Centers for Medicare and Medicaid Services (CMS). A request for the data was submitted through ResDAC with payment of $5,000. Because the ethnic code is incorrect in the data file, the file was merged with a corrected ethnicity code from a private company, Buccaneer Incorporated. The resultant data file combines corrected ethnic codes and data from the beneficiary files.

For ethnicity, the MDS form uses six mutually exclusive categories: White not of Hispanic origin (hereafter referred to as white), Black or African American, Other, Asian or Pacific Islander, Hispanic (regardless of race, hereafter referred to as Latinos/Hispanic), and American Indian and Alaska Native (hereafter referred as AIAN).
**Study Measures**

To measure the racial and ethnic composition of the nursing home population, we used both the absolute number and the percentage share of residents in each racial and ethnic group, all at the national level. The analyses include cross tabulation of ethnic categories by all variables in the MDS.

**Limitations**

Our analysis was based on annual snapshots of the nursing home population, including everyone residing in a facility at a given period in time. We eliminated those that died during that year, in order to minimize the effect of increasing medical complications associated with moribund patients.

**Results**

There were 2,308,759 total cases in the MDS database for 2008, which translates to 2,308,759 residents in NHs. The category “Other” was cross-tabulated with state data. Most of these cases came from California (28.1%), Hawaii (9.7%), and Texas (4.4%). For parsimony, and to match other studies, the “Other” category was combined with “Latino/Hispanic.” We do not use this combined category in this study. Comparative analysis is conducted between AIAN and white. To minimize biases from moribund patients — those that are approaching death — NH residents who died that year were eliminated from the analyses. This reduced the data by 518,938 or 22.5% to 1,789,821. Duplicate entries on the basis of the beneficiary ID and state were culled and the latest entry retained. This dual filtering — residents who died that year and duplicate cases — is illustrated in Table 1.

Using these categories, cross-tabulations were run against all of the outcome variables. The initial results (Table 2) indicated significant differences between ethnic groups, with AIANs showing the highest or lowest rates in some variables. Table 2 shows a list (below) identifying all variables where AIAN showed significant differences when compared against all the other ethnic groups:

Identifying significant differences between ethnic groups across specific variables is interesting, but does not necessarily point to a trend. Therefore, the analysis categorized individual variables into groups related to ADLs, family, and socializing.

**ADLS**

Activities of Daily Living (ADL) was not administered as part of the Minimum Data Set. Instead a much more detailed review of the patient’s level of independence was conducted. This included the following variables:

- Bed mobility self performance
- Bed mobility support provided
- Transfer self performance
- Transfer support provided
- Walk in room self performance
- Walk in room support provided
- Walk in corridor self performance
- Walk in corridor support provided
- Locomotion on unit self performance
- Locomotion on unit support provided

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* Buchanan et al., 2008; ** Feng et al., 2011
Table 2: Variables from the Minimum Data Set for 2008 Found to be Significantly Different for American Indian and Alaska Native When Compared with Other Ethnic Groups (Parenthesis Includes Original MDS Variable Name)

<table>
<thead>
<tr>
<th>MDS Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(AB5A) Prior stay in this nursing home</td>
<td>(E4DB) Socially inappropriate behavior alterability (no)</td>
</tr>
<tr>
<td>(AB5B) Stay in other nursing home</td>
<td>(E4DB) Socially inappropriate behavior alterability (no)</td>
</tr>
<tr>
<td>(AB5D) MH/Psychiatric setting</td>
<td>(E5) Change in behavioral symptoms (deteriorated)</td>
</tr>
<tr>
<td>(AB5E) MR/DD setting</td>
<td>(F1A) At ease interacting with others</td>
</tr>
<tr>
<td>(AB7) Education (no schooling)</td>
<td>(F1E) Pursues involvement in life of facility</td>
</tr>
<tr>
<td>(AB9) Mental health history</td>
<td>(F1F) Accepts invitations into most group activities</td>
</tr>
<tr>
<td>(AB10A) No MR/DD</td>
<td>(F2A) Short term memory (OK)</td>
</tr>
<tr>
<td>(AC1B) Naps regularly during day</td>
<td>(F2E) Absence of personal contact with family/friends</td>
</tr>
<tr>
<td>(AC1E) Spends most of time alone/watching TV</td>
<td>(G1A) Bed mobility self performance (with bed rails)</td>
</tr>
<tr>
<td>(AC1J) Eats between meals at least weekly</td>
<td>(G1A) Bed mobility self performance (with bed rails)</td>
</tr>
<tr>
<td>(AC1M) In bedclothes much of day (with blacks)</td>
<td>(G1A) Bed mobility self performance (with bed rails)</td>
</tr>
<tr>
<td>(AC1N) Wakens to toilet most nights</td>
<td>(G1A) Bed mobility self performance (with bed rails)</td>
</tr>
<tr>
<td>(AC1O) Has irregular bowel movement pattern</td>
<td>(G1A) Bed mobility self performance (with bed rails)</td>
</tr>
<tr>
<td>(AC1P) Showers for bathing</td>
<td>(G1A) Bed mobility self performance (with bed rails)</td>
</tr>
<tr>
<td>(AC1W) Daily animal companion/presence</td>
<td>(G1A) Bed mobility self performance (with bed rails)</td>
</tr>
<tr>
<td>(AC1W) Involved in group activities</td>
<td>(G1A) Bed mobility self performance (with bed rails)</td>
</tr>
<tr>
<td>(B2A) Short term memory (OK)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(B5A) Easily distracted (with white present long term)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(B5B) Altered perception (not present)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(B5C) Disorganized speech (not present)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(B5E) Lethargy (not present)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(C3A) Speech (to communicate)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(C6) Ability to understand others</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E1E) Self depreciation (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E1J) Unpleasant mood (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E1L) Sad facial expressions (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E2) Mood persistence (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E3) Change in mood (improved)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E4AA) Wandering frequency (not exhibited this week)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E4AB) Wandering alterability (not present)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E4BA) Verbally abusive frequency (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E4BB) Verbally abusive alterability (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E4CA) Physically abusive frequency (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E4CB) Physically abusive alterability (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E4DA) Socially inappropriate behavior frequency (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E4DB) Socially inappropriate behavior alterability (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(E5) Change in behavioral symptoms (deteriorated)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(F1A) At ease interacting with others</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(F1E) Pursues involvement in life of facility</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(F1F) Accepts invitations into most group activities</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(F2E) Absence of personal contact with family/friends</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(F3A) Strong identifications with past roles</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J1A) Weight gain/loss of 3+ pounds</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J1D) Insufficient fluid</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J1E) Delusions</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J1O) Vomiting</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J3B) Bone pain</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J3D) Headache</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J3F) Incisional pain</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J3G) Joint pain</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J3H) Soft tissue pain</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J4B) Fell in past 31-180 days</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J5A) Conditions/disease make resident’s mood/behavior unstable</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(J5B) Resident experiencing episode of recurrent/chronic problem</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(K4A) Complains about the taste of many foods</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(L1F) Daily cleaning of teeth/dentures</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(M4E) Skin desensitized to pain/pressure</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(M5A) Pressure relieving devices for bed (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(M5B) Pressure relieving devices for bed (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(M5C) Turning/repositioning program (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(M5D) Pressure relieving devices for bed (no)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(M6A) Infection of foot</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(M6B) Infection of foot</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(M6C) Open lesions on foot</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(M6D) Nails/calluses trimmed on foot</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N2) Time involved in activities (more than 2/3 of time)</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N3A) Prefers own room</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N3B) Prefers day/activity room</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N3C) Prefers inside NH/off unit</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N3D) Prefers outside activity</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N3E) None of above preferred activity settings</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N4A) Cards/other games</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N4B) Crafts/arts</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N4C) Exercises/sports</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N4G) Trips/shopping</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N4H) Walking/wheeling outdoors</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N4K) Talking or conversing</td>
<td>(G2A) Bathing self performance</td>
</tr>
<tr>
<td>(N4L) Helping others</td>
<td>(G2A) Bathing self performance</td>
</tr>
</tbody>
</table>
• Locomotion off unit self performance
• Locomotion off unit support provided
• Dressing self performance
• Dressing support provided
• Eating self performance
• Eating support provided
• Toilet use self performance
• Toilet use support provided
• Personal hygiene self performance
• Personal hygiene support provided
• Bathing self performance
• Bathing support

For each of these variables the code 0 was designated for those patients that needed “no setup or physical help from staff.” If a patient recorded that they did not need any setup of physical help from staff, for all 22 variables listed above, they were identified as completely independent. There were 3,557 White and 31 AIAN NH patients who reported that they did not need any help with any of these activities.

The \( \chi^2 \) was significant (\( \chi^2 = 756.945, df = 1, \) two-tailed test \( p < 0.001 \)). The odds ratio (OR) shows that most patients in NHs are likely to be dependent (2.1 times more likely to be dependent; with a Confidence Interval (95% CI) of 1.48–3.0). AIANs are half as likely to be dependent as White patients in NHs (OR = 0.476; 95% CI = 0.335 - 0.676).

For these variables a score of “0” indicated that the “Behavior not exhibited this week” or “Behavior not present.” A variable was computed that aggregates all the variables where the resident was reported not to have any of these ten problematic behaviours. Those that scored “0” in all variables were placed in the category of non-problematic behaviours. The results show that there were 1,065,234 White and 4,359 AIAN who did not exhibit any problematic behaviours.

The \( \chi^2 \) was not significant. The odds ratio (OR) shows that most patients in NH are just as likely to have problematic behaviours as are not likely (OR=0.940; 95%CI=0.879-1004). AIANs are just as likely as White to not exhibit problematic behaviours.

Another indicator of independence was behaviour. The following ten variables were selected to identify problematic behaviours:
• Wandering frequency
• Wandering alterability
• Verbally abusive frequency
• Verbally abusive alterability
• Physically abusive frequency
• Physically abusive alterability
• Socially inappropriate behavior frequency
• Socially inappropriate behavior alterability
• Resists care frequency
• Resists care alterability

Table 3: Crosstabulating White and AIAN against Being Completely Independent in Nursing Homes

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>AIAN</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent</td>
<td>1310784</td>
<td>5413</td>
<td>1316197</td>
</tr>
<tr>
<td>% Within</td>
<td>99.6</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not</td>
<td>3557</td>
<td>31</td>
<td>3588</td>
</tr>
<tr>
<td>% Within</td>
<td>99.1</td>
<td>.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Independent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Within</td>
<td>.3</td>
<td>.6</td>
<td>.3</td>
</tr>
<tr>
<td>Race</td>
<td>1314341</td>
<td>5444</td>
<td>1319785</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Within</td>
<td>99.6</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Race</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4: Crosstabulating White and AIAN against Non-problematic Behaviour in Nursing Homes

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>AIAN</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behaviour</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problematic</td>
<td>249107</td>
<td>1085</td>
<td>250192</td>
</tr>
<tr>
<td>% Within</td>
<td>99.6</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Behaviour</td>
<td>1065234</td>
<td>4359</td>
<td>1069593</td>
</tr>
<tr>
<td>% Within</td>
<td>99.6</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Race</td>
<td>81.0</td>
<td>80.1</td>
<td>81.0</td>
</tr>
<tr>
<td>Non-problematic</td>
<td>1314341</td>
<td>5444</td>
<td>1319785</td>
</tr>
<tr>
<td>% Within</td>
<td>99.6</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Race</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
FAMILY

Four variables were used to assess family involvement prior to NH placement and during NH residence:

- Live alone prior to entry
- Prior stay in this nursing home
- Stay in other nursing home
- Other residential facility
- Openly express conflict With family/friends
- Absence of personal contact with family/friends

A recorded value of “0” in each of these variables denoted that the patient did not live alone or had any prior stay in this or any other NH or residential facility. Three other variables can be used as a proxy for family/friends involvement with the NH resident:

- Resident supported by someone
- Family participation in assessment
- Significant other participation in assessment

For these variables a “1” signified that there was someone to support the resident in NH. These nine variables were combined to create an additional variable that approximates prior ties with family and friends and current ties with family and friends, while in NH placement. The final variable was applied as an indication of the availability and proximity of family or friends to the NH resident. There were 36,283 White and 118 AIAN NH residents who did not live alone or in NH/residential facility prior to the present NH placement, and who had someone supporting them during the participation of the MDS assessment process.

The \( \chi^2 \) analysis was significant (\( \chi^2 = 7.1089, \, df = 1, \, p < 0.007 \)). The odds ratio shows that most NH residents were 78% less likely to not have lived alone or in NH/residential facility prior to the present NH placement, and less likely to have someone supporting them during the participation of the MDS assessment process (OR = 0.78; 95% CI = 0.65 - 0.937). AIANs were 28% more likely (OR = 1.28; 95% CI = 0.67 - 1.536) to have lived alone or in NH/residential facility prior to the present NH placement, and less likely to have someone supporting them during the participation of the MDS assessment process.

<table>
<thead>
<tr>
<th>Family</th>
<th>White</th>
<th>Race</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>1278058</td>
<td>5326</td>
<td>1283384</td>
</tr>
<tr>
<td>% Within Family</td>
<td>99.6</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>% Within Race</td>
<td>97.2</td>
<td>97.8</td>
<td>97.2</td>
</tr>
</tbody>
</table>

SOCIALIZING

There were no formal standardized tests of socializing activity. However the MDS does have a detailed review of the patient’s level of preference for activities that included the following variables:

- Prefers day/activity room
- Prefers inside NH/off unit
- Prefers outside activity
- None of above preferred activity settings
- Cards/other games
- Crafts/arts
- Exercises/sports
- Music
- Reading/writing
- Spiritual/religious activities
- Trips/shopping
- Walking/wheeling outdoors
- Watching TV
- Gardening or plants
- Talking or conversing
- Helping others

If a patient recorded that they undertook any of these activities a “1” was recorded for that variable. Combining all variables, a new variable was created identified as “social,” the higher the number the more activities within this list that the patient performed. There were 131,328 White and 538 AIAN NH patients who reported that they performed all of these activities, and these were designated as social in the analysis.

Table 5: Cross-tabulating White and AIAN against Having Strong Family Ties Prior and during Nursing Home Placement

<table>
<thead>
<tr>
<th>Family</th>
<th>White</th>
<th>Race</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>36283</td>
<td>118</td>
<td>36401</td>
</tr>
<tr>
<td>% Within Family</td>
<td>99.7</td>
<td>.3</td>
<td>100.0</td>
</tr>
<tr>
<td>% Within Race</td>
<td>2.8</td>
<td>2.2</td>
<td>2.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total</th>
<th>White</th>
<th>Race</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>1314341</td>
<td>5444</td>
<td>1319785</td>
</tr>
<tr>
<td>% Within Family</td>
<td>99.6</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>% Within Race</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The χ² analysis was not significant. The odds ratio (OR) shows that most patients in NH are just as likely to be social as not social (OR=0.988; 95% CI=0.904-1.08). The same result comes out for the analysis comparing AIAN being more social than White (OR=1.012; 95% CI=0.926-1.106).

**Table 6: Cross-tabulating White and AIAN against being completely Social in Nursing Homes**

<table>
<thead>
<tr>
<th>Race</th>
<th>White</th>
<th>AIAN</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count</td>
<td>1183013</td>
<td>3013</td>
<td>1187919</td>
</tr>
<tr>
<td>% Within Social</td>
<td>99.6%</td>
<td>4%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

**Social**

| Count | 131328 | 538 | 131866 |
| % Within Social | 99.6% | 4% | 100.0% |

**Not Social**

| Count | 1314341 | 5444 | 1319785 |
| % Within Social | 99.6% | 4% | 100.0% |

**Discussion**

The analysis resulted in three significant findings. AIANs are more likely to be independent than White patients in NHs. AIAN NH residents are a third more likely to have lived alone or in another NH/residential facility prior to the present NH placement. And the final finding in this study was that AIAN NH residents are less likely to have someone supporting them during the participation of the MDS assessment process. The general premise of this analysis is therefore that family or friend involvement is limited prior to, and during NH placement, but that AIANs are more likely to be independent and require "no setup or physical help from staff."

**Conclusion**

Tribes acknowledge the need to build new nursing homes on reservations, support or enhance existing tribal nursing homes, and work with non-Indian homes to bring traditional foods, language, and activities to the elders who reside there. However, these identified needs cannot be filled with current limited resources (Benson et al., 2002). It is also difficult to address the migration of adults out of reservation or trusts lands to find work when reservations have chronic unemployment.

Demographic changes have repercussions. Social upheaval results when younger cohorts move away from a reservation to find work. These young migrants are likely to be better educated and healthier, and their departure leaves noticeable gaps in their community. We have started to examine only one aspect of this vacuum; elder care. Other repercussions from this demographic transition may involve the status of younger children, economic development, and cultural discontinuity. Moving to more urban communities with better infrastructures, employment prospects, and higher standards of living means that few are prepared to return home and accept the conditions at their original communities. The impression is that these conditions will be long-rather than short-term.

This study looked at an aspect of these implications on NH placement among AIANs. The implications from this demographic transition suggest that AIANs enter NHs at earlier stages of need. The analysis satisfied this premise. AIANs are more likely to be independent than White patients in NHs.

That AIANs were a third more likely to have lived alone or in NH/residential facility prior to their present NH placement attests to the likelihood that they did not have caregivers within the community. Again this does not seem to be a temporary phenomenon. Because AIAN NH residents were less likely to have someone supporting them during the MDS assessment process it is likely that contact with family and friends in NH is more limited than for White residents.

This study raises a number of potential issues with AIANs in NHs. Of interest is the sequence of events before AIAN elders are admitted to a NH. While residing in NHs it would be of interest to examine what barriers exist for family and friends to visit, and to examine transportation issues.

This study is a wakeup call to examine the continuum of care for American Indian and Alaska Native elders. Demographic changes within the community have direct repercussions on AIAN elders. Delaying entry to nursing homes might be
a reachable goal among Native communities. With the migration of young people out of Native communities, and with a lack of social services infrastructure, Native elders are being placed in nursing homes much earlier than is necessary.

**Acronyms**

AIAN American Indian and Alaska Native  
MDS Minimum Data Set, an intake form used to evaluate all patients in Nursing Homes  
NHs Nursing Homes  
ResDAC The Research Data Assistance Center, at the University of Minnesota  
CMS Centers for Medicare and Medicaid Services, a federal agency

**REFERENCES**


**APPENDIX 1**

1. Resident Internal ID
2. State ID
3. Encrypted CCW BENE_ID
4. (A10B) Do Not Resuscitate
5. (A7G) Self/Family Pay Full Per Diem
6. (A9A) Legal Guardian
7. Matched on CCW RES_INT_ID/STATE_ID
8. (A5) Marital Status
9. (A9C) Power of Attorney/Health Care
10. (A9D) Power of Attorney/Financial
11. (A9E) Family/Member Responsible
12. (A9F) Patient Responsible for Self
13. (A9G) None of Above Legal Guardian
14. (A10A) Living Will
15. (A10C) Do Not Hospitalize
16. (A10D) Organ Donation
17. (A10E) Autopsy Request
18. (A10F) Feeding Restrictions
19. (A10G) Medication Restrictions
20. (A10H) Other Treatment Restrictions
21. (A10I) None of the Above Advanced Directives
22. (AA3) Birth Date
23. (AAA) Race/Ethnicity
24. (AB1) Date of Entry
25. (AB3) Lived Alone Prior to Entry
26. (AB4) ZIP Code of Prior Primary Residence
27. (AB5A) Prior Stay in This Nursing Home
28. (AB5B) Stay in Other Nursing Home
29. (AB5C) Other Residential Facility
30. (AB5D) MH/Psychiatric Setting
31. (AB5E) MR/DD Setting
32. (AB5F) None of Above Residential History
33. (AB6) Lifetime Occupation
34. (AB7) Education
35. (AB8A) Language
36. (AB8B) Other Language
37. (AB9) Mental Health History
38. (AB10A) No MR/DD
39. (AB10B) Downs Syndrome
40. (AB10C) Autism
41. (AB10D) Epilepsy
42. (AB10E) Other Organic Condition Related to MR/DD
43. (AB10F) MR/DD with No Organic Condition
44. (AB11) Background Information Completed Date
45. (AC1A) Stays Up Late at Night
46. (AC1B) Naps Regularly During Day
47. (AC1C) Goes Out 1+ Days a Week
48. (AC1D) Stays Busy With Hobbies/Reading/Fixed Daily Routine
49. (AC1E) Spends Most of Time Alone/Watching TV
50. (AC1F) Moves Independently Indoors
51. (AC1G) Use of Tobacco Products at Least Daily
52. (AC1H) None of Above Cycle of Daily Events
53. (AC1I) Distinct Food Preferences
54. (AC1J) Eats Between Meals
55. (AC1K) Use of Alcoholic Beverages at Least Weekly
56. (AC1L) None of Above Eating Patterns
57. (AC1M) In Bedclothes Much of Day
58. (AC1N) Wakens to Toilet Most Nights
59. (AC1O) Has Irregular Bowel Movement Pattern
60. (AC1P) Showers for Bathing
61. (AC1Q) Bathing in PM
62. (AC1R) None of Above ADL Patterns
63. (AC1S) Daily Contact with Relatives/Close Friends
64. (AC1T) Usually Attends Church/Temple/Synagogue
65. (AC1U) Finds Strength in Faith
66. (AC1V) Daily Animal Companion/Presence
67. (AC1W) Involved in Group Activities
68. (AC1X) None of Above Involvement Patterns
69. (AC1Y) Unknown Customary Routine
70. (B1) Comatose
71. (B2A) Short Term Memory
72. (B2B) Long Term Memory
73. (B3A) Current Season
74. (B3B) Location of Own Room
75. (B3C) Staff Names/Faces
76. (B3D) That He/She is in Nursing Home
77. (B3E) None of Above are Recalled
78. (B4) Daily Decision Making Skills
79. (B5A) Easily Distracted
80. (B5B) Altered Perception
81. (B5C) Disorganized Speech
82. (B5D) Restlessness
83. (B5E) Lethargy
84. (B5F) Varied Mental Function
85. (B6) Change in Cognitive Status
86. (C1) Hearing
87. (C2A) Hearing Aid Present and Used
88. (C2B) Hearing Aid Present and Not Used Regularly
89. (C2C) Other Receptive Communication Techniques Used
90. (C2D) None of Above Communication Devices
91. (C3) American Sign Language/Braille
92. (C3D) Signs/Gestures/Sounds
93. (C3E) Communication Board
94. (C3F) Other Mode of Expression
95. (C4) None of Above Modes of Expression
96. (C5A) Making Self Understood
97. (C5B) Speech Clarity
98. (C5C) Ability to Understand Others
99. (C5D) Mood Persistence
100. (C5E) Mood Stability
101. (C7) Change in Communication/Hearing
102. (D1) Vision
103. (D2A) Side Vision Problems
104. (D2B) Experiences Seeing Halos/Rings Around Light/Flashes of Light
105. (D2C) None of Above Visual Limitations
106. (D3) Visual Appliances
107. (E1A) Negative Statements
108. (E1B) Repetitive Questions
109. (E1C) Repetitive Verbalizations
110. (E1D) Persistent Anger
111. (E1E) Self Depreciation
112. (E1F) Unrealistic Fears
113. (E1G) States Something Terrible About to Happen
114. (E1H) Repetitive Health Complaints
115. (E1I) Repetitive Anxious Complaints
116. (E1J) Unpleasant Mood
117. (E1K) Insomnia
118. (E1L) Sad Facial Expressions
119. (E1M) Crying
120. (E1N) Repetitive Physical Movements
121. (E1O) Withdrawal
122. (E1P) Reduced Social Interaction
123. (E2) Mood Persistence
124. (E3) Change in Mood
125. (E3A) Wandering Frequency
126. (E3B) Wandering Alterability
127. (E3C) Verbally Abusive Frequency
128. (E3D) Verbally Abusive Alterability
129. (E4A) Physically Abusive Frequency
130. (E4B) Physically Abusive Alterability
131. (E4C) Socially Inappropriate Behavior Frequency
132. (E4D) Socially Inappropriate Behavior Alterability
133. (E4E) Resists Care Frequency
134. (E4F) Resists Care Alterability
135. (E5) Change in Behavioral Symptoms
136. (F1A) Accepts Invitations Into Most Group Activities
137. (F1B) At Ease Doing Planned Activities
138. (F1C) At Ease Doing Self-Initiated Activities
139. (F1D) Establishes Own Goals
140. (F1E) Pursues Involvement in Life of Facility
141. (F1F) Accepts Invitations Into Most Group Activities
142. (F1G) None of Above Sense of Initiative
143. (F2A) Expresses Sadness/Anger Over Lost Roles
144. (F2B) Unhappy With Roommate
145. (F2C) None of Above Unsettled Relationships
146. (F2D) Openly Express Conflict with Family/Friends
147. (F2E) Absence of Personal Contact with Family/Friends
148. (F2F) Recent Loss of Close Family Member/Friend
149. (F2G) Does Not Adjust Well Easily to Change in Routine
150. (F3A) Strong Identifications with Past Roles
151. (F3B) Expresses Sadness/Anger Over Lost Roles
152. (F3C) Perceived Daily routine is Very Different from Prior Pattern
153. (F3D) None of Above Past Roles
154. (F3E) Does Not Adjust Well Easily to Change in Community
155. (G1A) Bed Mobility Self Performance
156. (G1B) Bed Mobility Support Provided
157. (G1C) Transfer Self Performance
158. (G1D) Transfer Support Provided
159. (G1E) Walk In Room Self Performance
160. (G1F) Walk In Room Support Provided
161. (G1G) Walk In Corridor Support Provided
162. (G1H) Walk In Corridor Support Provided
163. (G1I) Locomotion on Unit Self Performance
164. (G1J) Locomotion on Unit Support Provided
165. (G1K) Locomotion off Unit Self Performance
166. (G1L) Locomotion off Unit Support Provided
167. (G1M) Dressing Self Performance
168. (G1N) Dressing Support Provided
169. (G1O) Eating Self Performance
170. (G1P) Eating Support Provided
171. (G1Q) Toilet Use Self Performance
172. (G1R) Toilet Use Support Provided
173. (G1S) Personal Hygiene Self Performance
174. (G1T) Personal Hygiene Support Provided
175. (G2A) Bathing Self Performance
176. (G2B) Bathing Support
177. (G2C) Balance while Standing
178. (G2D) Balance while Sitting
179. (G2E) Neck Range of Motion
180. (G2F) Arm Range of Motion
181. (G2G) Arm Voluntary Movement
182. (G2H) Arm Voluntary Movement
183. (G2I) Hand Range of Motion
184. (G3A) Hand Voluntary Movement
185. (G3B) Hand Voluntary Movement
186. (G3C) Leg Range of Motion
187. (G3D) Leg Voluntary Movement
188. (G3E) Foot Range of Motion
189. (G3F) Foot Voluntary Movement
190. (G4A) Other Limitation of Range of Motion
191. (G4B) Other Limitation of Voluntary Movement
192. (G4C) Cane/Walker/Crutch
193. (G4D) Wheelchair Self
194. (G4E) Wheelchair Self
195. (G4F) Wheelchair Support
196. (G4G) Wheelchair Support
197. (G4H) Bed Rails Used for Bed Mobility/Transfer
198. (G4I) Lifted Manually
199. (G4J) Lifted Manually
200. (G4K) Lifted Mechanically
201. (G4L) Lifted Mechanically
202. (G4M) Transfer Aid
203. (G4N) Transfer Aid
204. (G4O) Transfer Aid
205. (G4P) None of Above Modes of Locomotion
206. (G4Q) None of Above Modes of Locomotion
Mario D. Garrett is Chairman of the Department of Gerontology, San Diego State University, CA USA; and Visiting Professor at Onemda, Center for Health and Society, Faculty of Medicine, Dentistry and Health Sciences, Melbourne, Australia. A former United Nations International Institute on Ageing deputy director, he has been working with indigenous health and demographic data for the past 20 years.

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