



Published in final edited form as:

J Am Geriatr Soc. 2018 October ; 66(10): 1866–1868. doi:10.1111/jgs.15546.

Defining and Measuring Nursing Home Placement

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Older adults, even those who are seriously ill, generally prefer living in their homes and avoiding institutionalization as long as possible.^{1,2} Because of this preference and the high cost of providing custodial care in nursing homes (NHs), the Affordable Care Act and other recent policy reform initiatives have focused on enabling persons to remain at home as long as possible. Similarly, research evaluating community service interventions that address the value of home care has almost always stipulated a primary goal to avoid NH placement. Numerous articles have attempted to identify care recipient factors (e.g., clinical, functional, demographic) and care provider factors (e.g., NH quality) as predictors of NH entry and longer-term residence. This research informs us about how to improve the well-being of this most vulnerable population and which long-term care (LTC) policies might advance this goal. This issue of the *Journal* includes 3 papers that focus on outcomes of NH placement.

Understanding the meaning of long-term NH placement as an outcome requires that we consider the transformation of the NH industry; over the last few decades, NHs have shifted from being LTC providers to providers of long-term and postacute care. Therefore, NH admission does not mean the same thing today that it meant decades ago. Between 1970 and today, the number of NH residents on any given day in the United States has declined from almost 6 per 100 persons aged 65 and older to approximately 3 per 100.³ Decreases in NH length of stay and occupancy rates (currently ≈85%) mean that the estimated number of long-stay residents in U.S. NHs is less than 1 million of the 1.4 million residents on any given day. Concurrently, the acuity and impairment level of NH residents has been rising rapidly; a brief examination of the proportion of “low care” residents using data from Brown University⁴ reveals a large decline in this proportion between 2000 and 2015 (from 18% to 12%, nationally). All of these trends suggest that persons receiving long-term custodial care in NHs are different from those in NHs only a few years ago.⁵

Byers and colleagues⁶ assembled a unique cohort to examine the effect of longitudinal changes in depression and other resident factors on the risk of becoming a permanent NH resident. They found that the occurrence of even mild depression increased the risk of NH

Author Contributions: VM, KST, MR: conceptualization and writing of editorial.

Conflict of Interest: None.

placement, controlling for other demographic and clinical factors. Wolff and colleagues⁷ are to be commended for addressing the complexities of combining the National Long-Term Care Survey with the National Health and Aging Trends Study to examine long-stay NH entry of community-dwelling older adults. They developed a prognostic model and simple scoring system based on resident and caregiver characteristics that predict long-term NH entry. Goodwin and colleagues⁸ examined newly admitted post-acute care recipients to determine the effect of provider factors and NH quality on risk of becoming “permanent” residents. They found the risk to vary widely across NHs and that it was much higher in individuals admitted to NHs with poor quality ratings. Although these articles address the same topic—long-term NH care—3 distinctions should be made when interpreting and integrating their findings.

First, each article measured the outcome, becoming a long-stay NH resident, differently. For years, the data necessary to differentiate between short-term admissions for postacute care from “institutional placement” as a permanent NH resident were difficult to obtain for national samples, leading to serious under- or overestimates of NH placement.⁴ These 3 articles each reveal the increasingly sophisticated methods researchers have applied in defining the outcome of becoming a NH resident, and each used different definitions and data sources. Byers and colleagues⁶ identified institutionalizations using physician and other Medicare Part B claims with “place of service” codes indicating that care was provided in a NH. Goodwin and colleagues⁸ also used a sophisticated definition of becoming a long-stay NH resident based upon the presence of a Minimum Data Set assessment after the discharge date on a Medicare skilled nursing facility claim, operationalized as occurring at least 90 days after admission. They also incorporated a rarely addressed phenomenon in defining “long-stay” residence status (being transferred from a facility specializing in postacute care to one that serves mostly long-stay residents). If this nuance is not addressed, and the transfer is treated like a discharge, it can result in underestimating rates of becoming permanent residents. Wolff and her colleagues⁷ included individuals who died without returning home (in NH or hospital) in their definition of “permanent” placement, thus including those entering a NH to die. Given the increasing proportion of all deaths of Medicare beneficiaries that occur while they are in a NH (even higher if one includes hospitalizations from the NH that end in death), this is an interesting shift in the definition of permanent NH placement and might yield a much higher rate of permanent placement over time.^{9–11}

Second, there are important differences between the cohorts that these articles examined. Byers and colleagues⁶ examined elderly white women over 20 years starting in 1986. Wolff and colleagues⁷ examined nationally representative samples of older adults in 1999 and in 2011. Although the authors used modern techniques to adjust for the competing risk of mortality and other sources of censoring, they assumed that the association between the predictors and the outcome of permanent NH placement remained constant over time. That said, associations between different predictors of becoming long-stay residents may have changed over time, because the rate of long-term NH use declined over the 3 decades of study. This is particularly a concern in white women, the focus of the Byers and colleagues’ study.⁶ In our opinion, the effect of cohort selection is fairly large. For example, all 3 articles assessed the association between the outcome and depression. Byers and colleagues⁶ found

that the odds of low levels of depression were 1.92 times as great and of moderate to high levels of depression were approximately 3 times as great. Goodwin and colleagues⁸ examined fee-for-service (FFS) beneficiaries in 2013 and found the odds of low levels of depression to be 1.13 times as great and of moderate to high levels of depression to be 1.37 times as great (Supplementary Table S1). Wolff and colleagues⁷ found depressive symptoms not to be associated with permanent NH placement (Supplementary Table S1). It may be that the definition of permanent placement resulted in less of a difference in the rates across the 3 different study samples; but given the large secular trends over the decade, it is likely that the declining base rates of becoming a long-stay resident might result in a different relationship between that outcome and depression over time.

Third, all 3 studies focused primarily on functional, clinical, and demographic factors and ignored contextual factors. Prior studies have established that home- and community-based services (HCBS) can substitute for long-term NH care to some degree for some individuals.^{12,13} For example, the availability of HCBS is negatively associated with the rate of NH admissions among young adults and the presence of NH residents with low-care needs.^{13–16} Additionally, the rapid growth of the assisted living industry,^{17,18} and the continued financing of other privately paid home care services reveal a strong willingness to pay to remain out of a NH. Similarly, consumers' perceptions of the quality of available NHs and the quality of the substitutes for NH care can play an important role.¹⁹ The effect of resident, caregiver, and facility factors on long-term NH placement can vary widely depending on the presence or availability of these services. Insurance status can play an important role as well. Our own research suggests that, of newly admitted post-acute care NH residents, Medicare Advantage enrollees have a much lower likelihood of becoming long-stay NH residents²⁰ than FFS enrollees even though they tend to be admitted to lower-quality facilities.²¹

In summary, these articles provide evidence of the increasing sophistication of researchers seeking to understand the determinants of NH placement once they are using more-complete data and longitudinal designs that integrate surveys with administrative data, which is essential to generating proper estimates of NH use. Nevertheless, differences between the studies in determinants of NH placement, and rates of becoming long-stay residents, underscore the importance of explicitly conceptualizing the outcome of NH placement, which we have long considered to be the ultimate goal. Perhaps it is time for the field to reconsider what constitutes an adverse outcome for persons needing LTC. Should we include moving to another residential setting, such as an assisted living community, in our definition? Are there circumstances in which homebound isolation should be considered an adverse outcome? Is the population rate of NH placement really relevant as a marker for policy change rather than as a measure of outcome for individuals and families? Ultimately, whose preferences are we trying to optimize in the face of rising functional dependence? When considering the outcome state of NH placement, it is important to recognize that, for some vulnerable, dependent persons, moving to a NH may result in greater safety and better quality of life. Now that we have sophisticated data and the ability to create detailed individual care trajectories, we owe it to ourselves to revisit our conceptualization of the outcome of NH placement.

ACKNOWLEDGMENTS

This work was supported by the National Institute on Aging (P01 AG027296 to VM) and a Career Development Award from the Health Services, Research, and Development Service of the Veterans Health Administration (CDA 14-422 to KST).

The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the National Institutes of Health, the Department of Veterans Affairs, or the U.S. government.

Sponsor's Role: None.

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