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System Factors Affecting Long Term Care Outcomes

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Over the past two decades U.S. nursing homes have been transformed from strictly residential care settings providing nursing and personal care to facilities in which patients recuperate following increasingly short acute hospital stays. This required substantial organizational changes including the philosophy of care and the introduction of new types of staff and new technologies. Accommodating the new population of short stay residents meant incorporating discharge planning into the structure of daily operations. As Arling and his colleagues note, community discharge is increasingly considered to be an outcome of effective post-acute care and clearly a goal for state and federal initiative seeking to “de-institutionalize” nursing home residents with relatively low care needs.[1] They seek to identify facility and market factors that influence residents' community discharge but incorporate the state's implementation of their home and community waiver program as an explanatory factor, meaning that they are really addressing how system factors affect patient outcomes. This is an important issue since, as the authors demonstrate, up and above the clinical characteristics of the residents, system factors are important determinants of variation in outcomes. While focused on hospitalizations, prior research clearly indicates that states' policies, the competitiveness of the market and the level of facility resources all affect the likelihood of hospitalization among both long stay residents and post-acute patients.[2–5]

Inter-state variation in Medicaid policies pertaining to long term care is substantial both with respect to nursing home reimbursement and investments in home and community based services. Additionally, the use of nursing home beds and the needs of the residents living in them varies tremendously from state to state. In 2007, according to ltcfocus.org, the proportion of residents in nursing homes the first week of April with “low care” needs (using the same definition that Arling etand colleagues used) ranged from 1.3% in Maine to 25.1% in Illinois.[6] States' policies make a difference in who is in nursing homes and how they are treated. For example, states that adopted Medicaid case-mix reimbursement have fewer low care residents and higher acuity in general.[7] The growth of short-stay, post-acute care, patients admitted to skilled nursing facilities has also affected facility acuity.

Arling and his colleagues noted that facilities with more Medicare days had higher rates of community discharges but this may merely reflect the concentration of first time NH admissions in some facilities. For example, based upon an analysis of the nation wide MDS data for 2009 undertaken by the author, of the 1.1 million new admissions to US nursing homes, 50% were admitted to only 17% of all facilities, indicating that some homes are specializing in post-acute patients almost all of whom are destined to return home. This same pattern of new admissions “sorting” into selected facilities was observed across most states. Some of these facilities literally have no long stay residents and like their forerunner,

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hospital based SNFs, represent a “step-down” unit from the hospital; one would not expect patients to remain in those facilities. Indeed, first time admissions are likely to select high Medicare facilities with most residents desirous of community placement following recuperation.

While Arling and his colleagues examined the influence of system factors on new admissions returning home in one year in one state, there is considerable inter-state variation as well as secular changes. Using ltcfocus.org, a web based data resource created by Brown University investigators under an NIA funded Program Project “Shaping Long Term Care in America”, between 2000 and 2007 the prevalence of “low care” residents dropped in virtually all states and five percentage points in Minnesota, from 20% to 15%. Since the proportion of low care residents on admission is highly correlated with the prevalence of such patients in the resident population, it is likely that predictors of outcome, particularly system factors, may be influenced by such secular trends.[6] One of the features in the ltcfocus.org web site information on selected state policies and their changes over time. While these are relatively gross summaries of generally distinct policy configurations, incorporating inter-state policy variation into models designed to explain differences in outcomes has been informative.[8, 9]

Among the most intriguing findings reported by Arling and his colleagues is the strong relationship between county level information on the extent of home and community based waiver services and patients' likelihood of home discharge. This finding is similar to a recent paper focused on Florida that matched county level data on home and community based services with facility information on the proportion of “low care” cases.[8] There are several advantages to using local information on the availability of, or investment in, home and community based services. First, the data will be more proximate to patients' homes, thus having greater statistical validity and a stronger signal. Second, national data on home and community based services combines services for different patient populations; e.g. the developmentally disabled and elderly. Finally, data on local home care service supply will reflect more than just services for Medicaid and dual eligible individuals. Hopefully, in the not too distant future county level data on the supply of home and community based services will be available both for the whole country and longitudinally thus making it possible to more clearly understand the effects of service system factors and policies on the outcomes experienced by long term care service users.

Patients' changing condition during their stay is another important predictor of their ability to return home. Unfortunately, we know little about patients' trajectories while in nursing homes. However, re-hospitalization, which has been growing over the past decade, means that patients' baseline predictors of returning home may change.[2] Yet the impact of re-hospitalization on the likelihood and time to return home has not been documented. Indeed, to really understand how clinical, facility quality and local service system and policy factors affect patients' outcomes it is necessary to incorporate a time varying perspective and to make predictions conditional upon an intervening re-hospitalization as well as on the fact that the patient is still in the facility. While diagnostic and symptoms are not regularly updated in the Minimum Data Set data stream, functional status assessments are updated at every assessment and these are particularly frequent while a patient is under Medicare. Thus, knowing whether and how much improvement in functioning is predictive of returning home would be very valuable as would knowing whether facilities providing more hours of therapy for such patients improve patients' odds of returning home, all other things being equal. Since all the evidence points to the crucial importance of the first 90 days in nursing home as the determinant of patients' future status, we need to better understand the various factors, both clinical and system, that impede this outcome.

One goal of identifying “low care” residents of nursing homes is to intervene to help them return to the community. As Arling and colleagues note, experience from efforts to discharge long stay residents with low care needs have proven more difficult than anticipated and increasingly emphasis is being placed upon preventing permanent institutionalization by insuring that patients' community housing arrangements are maintained. Since patients' condition can fluctuate substantially over the course of their stay, relying only on the baseline assessment information may miss patients who improve sufficiently that they could return home even though they might not have met selection criteria at baseline. Having “real time” assessment data would greatly facilitate this process by identifying patients whose status improved. Facility therapy and nursing staff obviously document changes in patients' condition as part of treatment, but these data are not generally used by discharge planners and as part of policy oversight, to update their perspective on patients' capacity to return home. However, at a minimum, having updated MDS assessments available in “real time” and applying discharge potential algorithms to this information could go a long way toward reducing the proportion of patients who get stuck in nursing homes.

In summary, Arling and colleagues have taken an important step toward improving our understanding of the role that system factors play in whether patients using the nursing home are able to return home. This is particularly important given the large increases in the use of nursing homes as an extension of acute hospitalization. While prevalent nursing home use has been dropping, particularly for whites, it is still possible for individuals with limited social support to get stuck in a facility, particularly absent aggressive discharge planning and available local community based services.[10]

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