Modeling Hospital Bed Utilization:

The Effect of Cultural Treatment Preferences at End of Life Situations on Hospital Bed Use

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By

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The cost of hospital care is a critical component of industrialized countries’ ever increasing health care expenditures, in excess of one third of these expenditures for most countries. Spending on construction and staffing of hospital bed capacity is a crucial factor in hospital costs: once a hospital bed is constructed and staffed, many of the costs become fixed in the short run and vary little with changes in utilization. Therefore, it is important to understand the factors that influence demand for hospitals and predict how they will evolve in the future.

The study’s main objectives are twofold: (1) to investigate cultural effects on hospital bed utilization at end of life situations among Medicare beneficiaries; and (2) to suggest a method for adding the cultural component into hospital bed prediction models.

The segmented assimilation theory provides the theoretical framework for this study. It suggests that different groups of immigrants experience different assimilation/acculturation processes that may lead to different outcomes, especially in sensitive situations in the life course, such as end-of-life situations, where beliefs and attitudes play a major role. This is supported by qualitative evidence. Hence, consolidating immigrants and their descendants under broad ethnic categories may distort the true effect of cultural preferences on health services utilization, and eventually may distort predictions of hospital services use.

The conceptual framework for the first part of the study is a modification of the classical behavioral model of health services utilization formalized by Andersen in 1968, and modified by Andersen and other researchers over the years. Then, using a modification on a hospital bed prediction model used in Manitoba, Canada, I demonstrate how the cultural effects found in the first model could be integrated into models that predict hospital bed utilization in the US.

My empirical analysis utilizes a 5% sample of Medicare Claims for the years 1999-2004 to examine acute hospital services use by Medicare beneficiaries in their last year of life; the volume of this dataset ensured the tests have sufficient statistical power after controlling for important explanatory variables.

I find, consistent with the literature, that in most cases, during the last year of life minorities utilize hospital beds more than non-Hispanic Whites. There are significant differences between races and ethnicities in hospital bed utilization, payments associated with it, and intensity of care.
Importantly, the differences among beneficiaries of the same race/ethnicity but from different countries of origin were found to be significant for both Hispanics and Asians. These results are robust to controlling for predisposing, enabling and need factors. The magnitude of the cultural effects on hospital bed utilization demonstrates the importance of inclusion of finely defined ethnic categories in prediction models. This is especially true in areas with growing minority populations.

These findings could be beneficial to policy makers, Medicare officials and hospital executives when predicting hospital bed utilization. It will become increasingly important as the prevalence of minorities in the US increases, and especially among the Medicare population, whose hospital utilization rates are higher than among any other age group and depend on public financing.

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