

## Admission Severity and Mortality Rates among Rural and Urban Nursing Facility Residents with Dementia

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### The Policy Question

Limited access to home-based care and higher use of nursing facility services in rural communities are frequently cited as challenges to the development and delivery of long term care services in rural areas (Coburn and Bolda, 1999; Coward and Cutler, 1989). One specific challenge is meeting the needs of persons with dementia by offering alternatives to nursing facility level of care. Although there has been a growing array of community-based and in-home service options for persons with this condition, dementia continues to pose a significant risk for early nursing home admission.

The purpose of this study was to assess whether the potentially higher utilization of nursing facility services in rural communities (Shaughnessy, 1994) can be attributed to differences in use patterns by older adults with dementia. Specifically, we sought to answer the question of whether rural nursing facility residents with dementia are less impaired at the time of their admission to a nursing facility than urban residents with dementia. A parallel question concerned the comparison of rural versus urban mortality rates. If rural residents with dementia enter the nursing facility earlier than their urban counterparts, does it follow that they, as a group, experience lower mortality rates and therefore longer stays in nursing facilities?

### Study Methods

This study used the Minimum Data Set + (MDS+) assessment data for residents of nursing facilities in four states participating in the Health Care Financing Administration's Medicare and Medicaid Multistate Nursing Facility Case-Mix Payment and Quality Demonstration (Kansas, Maine, Mississippi, and South Dakota). MDS+ information includes: residential history, medical symptoms, diagnoses, medications, treatments, cognitive and physical functioning, and behavior, mood, and involvement indicators. We used resident data from nursing facilities in the four states from calendar years 1994 and 1995, excluding Medicare only nursing facilities in Kansas whose participation was voluntary and inconsistent. Our final sample included 14,450 nursing facility residents with a diagnosis of dementia. These data were linked with the Area Resource File and facility information from the states to obtain information on facility and area characteristics.

Bivariate analyses were conducted to compare the characteristics of residents in rural and urban areas at admission and multivariate Poisson regression models were estimated to evaluate the effect of rural residence on mortality, controlling for state and resident characteristics at baseline (admission), and time since admission.

### Summary of Results

Study results indicate that rural NF residents were less cognitively impaired and exhibited fewer behavior and mood problems at admission than their urban counterparts. They were slightly more physically impaired than urban NF residents although, on average, NF residents in both rural and urban areas did not need extensive assistance with activities of daily living. Despite their physical impairment, rural residents appeared more socially active and physically active in their customary routines than urban residents. Regarding their medical condition, rural residents had a higher prevalence of arteriosclerotic heart disease, congestive heart failure, cerebrovascular accident (stroke), and diabetes. However, fewer than 20 percent of the rural population had such conditions. Our findings indicate

that rural nursing facility residents with dementia may be experiencing lower mortality rates and therefore longer stays in nursing facilities compared to urban residents with dementia. The marginal statistical significance detected ( $p=.049$ ), however, suggests the need for further research in this area.

### Discussion and Policy Implications

These findings suggest that caregiver and/or community support may not be sufficient to enable rural persons to remain in the community as long as urban individuals. Additionally, expectations and/or preferences for use of nursing facility care and different understandings of options, availability of specialty support services, and provider (physician) knowledge of options may be factors influencing admission decision differences in rural and urban areas.

This analysis provides evidence of the potential for greater reductions in the dependence on nursing facilities for long term care in rural areas. By simply achieving nursing facility utilization patterns that more closely resemble those of urban nursing facilities, nursing facility use in rural areas can be reduced. In addition, individuals with early-stage dementias who are served in rural facilities may receive more appropriate assistance through home and community-based or non-medical residential long term care services. Consumer objectives and long term care policy goals can be enhanced through the development of rural long term care services targeted to meet the needs of individuals with dementia, and their family or other informal caregivers.

### References

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