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Multiple Hospitalizations Among Elderly Nursing Facility Residents: Is Rural Residence a Risk Factor?

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Established in 1992, the Maine Rural Health Research Center (MRHRC) is one of five national rural health services research and policy analysis centers funded by the federal Office of Rural Health Policy. The Center is also one of five rural managed care centers funded by the federal Agency for Health Care Policy and Research (AHCPR). The Center has three areas of special interest in its research agenda: (1) the availability, organization, and financing of rural mental health services, (2) institutional and community-based services for rural elders, and (3) changes in the organization and financing of rural health services.

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Recently Published and Forthcoming Working Papers:

Multiple Hospitalizations Among Elderly Nursing Facility Residents: Is Rural Residence a Risk Factor?

by Andrew F. Coburn, Ph.D, Robert G. Keith, Ph.D., and Elise J. Bolda, Ph.D., Muskie School of Public Service

This problem may be more prevalent among rural NF residents due to the higher rates of nursing home use, greater supplies of hospital beds, and lower physician supplies in rural areas

The problem of hospitalizations of nursing facility (NF) residents has important implications for both the cost and quality of care. Hospitalizations of NF residents pose serious health risks for residents, often placing them at greater risk of "cascading dependency." Although we know that over one quarter of all NF residents are hospitalized annually, geographic variations in hospitalization rates have not been reported in the literature. This problem may be more prevalent among rural NF residents due to the higher rates of nursing home use, greater supplies of hospital beds, and lower physician supplies in rural areas.

Recent Medicare payment policy changes may have important effects on the problem of multiple hospitalizations of nursing home residents. In 1997 the Balanced Budget Act required the implementation of a Medicare Skilled Nursing Facility (SNF) prospective payment system (PPS) beginning in 1998. Under this system, SNFs have been paid a case mix adjusted per diem rate which, with lower annual adjustments than had been experienced under prior payment rules, has resulted in significant reductions in the growth of payments to SNFs. In response to concerns about access to SNF services for high acuity patients, Congress modified some of the BBA changes in SNF payment policy in the Balanced Budget Refinement Act of 1999 (BBRA) increasing per diem payment rates for selected high acuity case mix categories and increasing the annual increases in per diem rates for fiscal years 2001 and 2002 to 4%.

Notwithstanding these changes, there continue to be serious concerns about the ability of many skilled facilities to achieve the significant cost reductions required under the BBA and the impact these reductions may have on SNF access and quality for Medicare beneficiaries. Smaller, rural SNFs may have a more limited ability to absorb cuts in SNF payment without significant reductions in staff or other services critical to the quality of care.

This Study

This study addresses two main questions: (1) Do rural NF residents experience higher rates of NF re-admission from a hospital than urban residents? and (2) If they do, to what extent do resident, facility and market/area characteristics contribute to NF re-admission rates from hospitalizations among rural and urban residents? Differences in rates of NF re-admissions from a hospital have important potential implications for the quality and outcomes of care for older rural residents. Understanding whether and why these rates differ is also important for gauging the potential impact of payment and other policy changes on the quality of care in rural NFs.

Study Methods

This study uses resident assessment data from the Minimum Data Set (MDS+) collected by states participating in the Health Care Financing Administration's, Multi-

This study was funded by a grant from the federal Office of Rural Health Policy, Health Resources and Services Administration, DHHS (Grant #CSUR00003-04). The conclusions and opinions expressed in the paper are the authors' and no endorsement by the University of Southern Maine or the funding source is intended or should be inferred. Working Paper #17, *Multiple Hospitalizations Among Elderly Nursing Facility Residents: Is Rural Residence a Risk Factor?* describes the policy and research background, methods and findings in depth, and is available from the Maine Rural Health Research Center.

state Case Mix Demonstration. MDS+ information includes: admission and discharge data, demographic characteristics, prior living arrangements and residential history, functional and cognitive status, vision, hearing, and communication patterns, mood and behavior, psychosocial well being, health status, oral and dental status, medications, and treatments. We used resident assessment data from calendar years 1994 and 1995 covering all residents and nursing facilities in Maine, Mississippi, and South Dakota and all skilled nursing facilities (SNFs) in New York. These data are linked with the Area Resource File and facility information from the states to obtain information on facility and area characteristics.

Summary of Results

Study results indicate that rural NF residents are more likely to have multiple re-admissions from a hospital. This association is evident in all four states and persists even after controlling for other factors, including state of residence and resident, facility and market-level characteristics. Further analysis indicates that the effect of rural residence on the probability of multiple NF re-admissions is greater among newly admitted rural residents than among rural residents not classified as new admissions.

In addition to rural residence, other factors associated with an increased likelihood of multiple NF re-admissions from a hospital include: state of residence, diagnosis of congestive heart failure, and no discharge planned at the time of admission. Residents classified in the "Rehab", Special Care", and "Clinically Complex" case mix groups all had a significantly greater likelihood of multiple NF re-admissions from a hospital. Older age (80+) and being in the "Cognitive" case mix group are associated with a lower likelihood of multiple hospitalization.

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Conclusions and Policy Implications

The literature leaves little doubt that multiple hospitalization of nursing home residents poses a significant health risk for residents (Castle and Mor 1996). The findings of this study, therefore, raise important quality of care concerns. Addressing this problem is complicated by several factors. Disentangling the many factors that contribute to this problem is difficult. In addition, implementation of facility-level or policy remedies may be compromised by staffing shortages, the need for staff education and training, and/or the need for greater physician involvement and support for medically complex NF residents. Changing and sometimes conflicting Medicare and Medicaid payment and regulatory policies and incentives may also make solving this problem more difficult.

The patterns of findings from this and other research suggest that there are a number of key factors influencing the decision to hospitalize a nursing home resident, including the clinical capacity of the facility, the overall acuity of the facility's residents, and the individual characteristics of residents. Other studies (Intrator et al. 1999) indicate that the presence of additional medical resources, either physicians or physician extenders, significantly reduces the risk of hospitalizations.

The limited availability of physicians in rural areas, their heavier workloads, and the limited reimbursement for care provided in nursing facilities will make it more difficult in rural areas to obtain greater physician attention to NF residents. Expanded availability and use of video and computer-based technologies such as telehealth may be useful in overcoming these limitations.

This finding suggests a strategy of enhancing the availability and use of physician and other medical services to reduce hospitalizations (Garrard et al. 1990). Implementing such an approach in rural nursing homes may be difficult, however. The availability of qualified health personnel (e.g. geriatric nurse practitioners, RNs) has typically been a problem in many rural areas. Likewise, the limited availability of physicians in rural areas, their heavier workloads, and the limited reimbursement for care provided in nursing facilities will make it more difficult in rural areas to obtain greater physician attention to NF residents.

Expanded availability and use of video and computer-based technologies such as telehealth may be useful in overcoming these limitations. Telehealth technologies can and are being used for home care and other applications that have the potential for enabling offsite diagnosis of medical and other problems, thereby reducing unnecessary emergency room use or hospitalization of NF residents (Cluff 1996). These technologies may have potentially useful applications in rural nursing homes (and other residential care settings) where access to specialty services is a known problem and likely contributor to the problem of hospitalizations.

The clinical and other characteristics of nursing facility residents are likely to continue to change as Medicare and state Medicaid programs move toward case mix-based payment systems for nursing facility care which encourage facilities to admit patients with heavier care needs

The clinical and other characteristics of nursing facility residents are likely to continue to change as Medicare and state Medicaid programs move toward case mix-based payment systems for nursing facility care which encourage facilities to admit patients with heavier care needs. State efforts to restrict eligibility for nursing home care to those with the greatest medical need, to create new residential care alternatives, such as assisted living, and to expand home and community-based service options for patients who might otherwise have been admitted to a nursing facility, will further contribute to these trends.

For all of these reasons, it is critical that we understand better the challenges of, and potential strategies for, caring for medically complex residents in rural NFs and to identify potential strategies for doing so more effectively. Such strategies might include greater use of geriatric nurse practitioners and other physician extenders, and increasing payments to physicians providing services in nursing homes (Freiman and Murtaugh 1995).

The feasibility and effectiveness of these strategies for addressing the problem of multiple hospitalization of NF residents will be significantly affected by the response of rural NFs to the SNF payment policy provisions of the BBA and the BBRA. There are serious concerns about the ability of many skilled facilities, including those in rural areas, to achieve the significant cost reductions required without reducing beneficiary access and/or the quality of care. Smaller, rural SNFs may be less able to absorb cuts in SNF payment without significant reductions in staff.

Any staffing reductions would, of course, run counter to the need suggested by this and other studies for increasing clinical resources. Similarly, for some financially vulnerable rural hospitals which have diversified into SNF level care, cuts in SNF payments will be difficult to absorb and may result in reductions in staffing or other behavioral responses that could jeopardize the quality of care.

It is critical that we understand better the challenges of, and potential strategies for, caring for medically complex residents in rural NFs and to identify potential strategies for doing so more effectively. Such strategies might include greater use of geriatric nurse practitioners and other physician extenders, and increasing payments to physicians providing services in nursing homes.
(Freiman and Murtaugh 1995).

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