

Financial Costs of Caring for Alzheimer's Disease

Leon J, Cheng CK, Neumann P. Alzheimer's disease care: costs and potential savings. *Health Affairs* 1998;17:206-14.

Study Overview

Objective. To estimate costs of Alzheimer's disease care by disease stage and care setting and to explore potential areas of cost savings.

Design. Cross-sectional study with data collected from multiple sources, including caregiver report and Medicare data.

Setting and participants. 679 Alzheimer's disease patient/family caregiver pairs were recruited from four managed care plans, four academic medical centers, three nursing homes, and two assisted-living facilities in nine states. Patients were consecutively enrolled between July and December 1996 from among current patients who met National Institute of Neurological and Communicative Disorders and Stroke (NINCDS)/Alzheimer's Disease and Related Disorders Association (ADRDA) criteria for probable Alzheimer's disease. Patients were assessed for disease severity and comorbidities.

Main outcome measures. Use and cost of formal and informal services. Four formal services applied to all patients: (1) number of hospital days from overnight hospital stays; (2) number of emergency department (ED) visits; (3) average number of physician visits; and (4) total number of prescribed medications. Four additional services were included for patients in the community: (1) number of days at a skilled nursing facility (SNF); (2) number of days in an adult day care program; (3) average monthly use of a homemaker; and (4) average monthly use of personal care services. Formal services for residential patients included charges for 30 days of either intermediate nursing home care or residence in an assisted living facility. Family caregivers provided estimates of inpatient days, SNF days, ED visits, prescribed medications, and physician visits. Number of physician visits also was derived from the 1994 Medicare Current Beneficiary Survey; information on use of adult day care, paid personal care assistance, and homemaker services came from secondary sources. Estimates of unit costs were based on secondary sources representative of national cost estimates. All service costs were standardized to represent monthly costs and adjusted to reflect 1996 constant

dollars using Consumer Price Index adjusters for different categories of costs.

Informal care use and costs were defined as unpaid care provided to patients by a primary family caregiver; informal caregiving was measured by asking caregivers how much time they spent performing specific aspects of care. The items were condensed into two measures and standardized into hours per month: (1) time spent on activities of daily living (ADLs) and (2) time spent on household chores (instrumental activities of daily living, or IADLs). Hours of care were multiplied by national hourly wage rates. ADL costs were determined by multiplying total hours by the hourly rate for home health aides and personal care attendants (\$6.95); IADL costs were determined by multiplying total hours by the hourly wage rate for homemakers (\$6.08).

Main results. In 1996, the annual costs of caring for a patient with mild, moderate, or severe Alzheimer's disease were \$18,408, \$30,096, and \$36,132, respectively. The average total monthly cost of caring for an Alzheimer's patient in 1996 was \$2306: \$1827 for formal services and \$479 for informal care.

Conclusion

Use of medical resources and associated costs for Alzheimer's disease vary considerably depending on severity level. Leon and colleagues suggest that monthly savings of \$2029 in formal services are possible if disease progression can be slowed.

Commentary

The authors have done a fine job in attempting the very difficult task of measuring the economic burden associated with Alzheimer's disease with an eye toward determining where changes can be made in the health care delivery system that might reduce this burden. Criticisms can be leveled that certain costs are undervalued (ie, informal caregiver-related costs) or that costs vary by geographic region. Regardless, the methods used by the researchers are relatively transparent,

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and the values in this analysis can be adjusted as in a sensitivity analysis by those who wish to use their own experience to input values for units of service and unit cost.

Applications for Clinical Practice

Alzheimer's disease is indeed burdensome, both on the health care system and on family caregivers. This study

enables physicians managing the care of these patients to better appreciate the burden of the respective parties, and the trade-offs made by promoting care in different settings. It also may help physicians appreciate the value of forthcoming therapies that may slow the progression of Alzheimer's disease and thus reduce the resultant financial costs and use of services.

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