



Award Winner

Understanding the Evolving Financial and Actuarial Challenges of Long-Term Services and Support (LTSS)

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As the demographic structure of the United States continues to shift, with more individuals living longer lives and managing chronic conditions, the importance of long-term services and supports (LTSS) has grown profoundly. LTSS includes a wide range of care and support services required by individuals who, due to aging, chronic illness, or disability, need help with everyday activities such as bathing, dressing, eating, and managing medications. These services can be provided informally by family members or through formal paid caregiving either at home, in community settings, or in institutional environments like nursing homes. With increasing longevity and complex care needs, the demand and financial burden associated with LTSS is set to rise significantly. This essay explores the financial and actuarial implications of LTSS, particularly in the context of neurological-related diseases like Alzheimer's and other forms of dementia and offers a perspective on future dynamics and emerging challenges.

RISING DEMAND AND COST IMPLICATIONS OF NEUROLOGICAL CONDITIONS

Among the most financially burdensome drivers of LTSS are neurological diseases, especially Alzheimer's disease and other dementias. These conditions lead to progressive cognitive decline, requiring years of intensive, hands-on care that becomes more demanding as the disease advances. Unlike many other chronic illnesses, dementia care often involves both constant supervision and personal assistance with basic daily functions, placing it among the costliest long-term conditions.

According to the Alzheimer's Association (2025, p. 97), the total cost of caring for people with Alzheimer's and other dementias in the U.S. exceeds \$300 billion annually, and this number is expected to grow as the population ages. A large proportion of these costs are borne not by formal institutions but by families and informal caregivers. Unpaid caregivers, mostly family members, contribute billions of hours in care annually, at great personal financial and emotional cost (Kasper, Freedman, Spillman, & Wolff, 2015). Many reduce their work hours or leave the workforce entirely, forfeiting income and retirement savings. This loss of productivity and income contributes to a broader economic burden that is frequently underestimated.

In the actuarial context, this trend raises fundamental challenges for modeling lifetime financial needs, planning for retirement, and estimating the cost of long-term care insurance (LTCI) products. Actuaries must consider not only the direct costs of care but also indirect costs such as lost productivity, delayed retirement, and increased health expenditures for caregivers themselves.

THE DIVERGENT DYNAMICS OF INFORMAL AND FORMAL CARE

The dichotomy between informal (unpaid) and formal (paid) caregiving also presents distinct cost structures and risk exposures. Informal caregivers often experience emotional distress, health decline, and career setbacks (Roth, Fredman, & Haley, 2015). These "hidden" costs do not appear on balance sheets but are crucial for understanding the full economic impact of LTSS. On the other hand, formal care—whether through home health aides, adult day care, or nursing homes—imposes significant out-of-pocket expenses on families and insurers.

The actuarial implications are complex. For instance, the value of informal caregiving needs to be imputed and modeled in retirement planning scenarios. Meanwhile, formal caregiving costs are rising due to labor shortages, increased regulation, and higher expectations of care quality (Kople, 2023). Wages for direct care workers must rise to attract talent, yet this exacerbates the affordability crisis already facing many middle-income families.

POTENTIAL SHIFTS IN FUTURE COSTS

As LTSS continues to evolve, different components of its cost structure are likely to experience varied trends. Some areas of expense will likely increase significantly, while others may stabilize or even decline depending on technological, policy, and demographic shifts.

One area poised for growth is home- and community-based services (HCBS). As public policy and personal preference both increasingly favor aging in place over institutional care, the demand for HCBS will continue to rise (Henning-Smith et al., 2021). This trend will necessitate expanded infrastructure and a larger workforce, both of which contribute to rising costs. Additionally, the increasing complexity of patient needs—particularly for those with cognitive impairments—will require specialized services and caregivers with advanced training, further raising expenditures.

Similarly, the financial impact of specialized cognitive care is expected to intensify. As the prevalence of dementia increases, more individuals will need memory care units or services tailored to cognitive decline (Alzheimer's Disease International, n.d). These services are typically more expensive than general care due to higher staff-to-patient ratios and the need for secure environments and enhanced supervision.

Medical advancements may also shift cost dynamics. The introduction of new Alzheimer's treatments, such as monoclonal antibody therapies, while potentially effective in slowing disease progression, are currently high-cost interventions. Additionally, widespread use of advanced diagnostic tools like PET scans and emerging blood biomarkers will add upfront diagnostic costs, though they may ultimately contribute to better care planning and delayed institutionalization.

Conversely, some cost areas may experience moderation or decline. Institutional care expenditures might decrease in relative terms, not necessarily because unit costs fall, but due to reduced reliance on nursing homes as care increasingly shifts to home-based models. Hospitalization rates, too, could drop with improved at-home monitoring technologies and preventive care. Tools like wearable devices, remote health platforms, and smart home technologies offer the potential to detect health changes early and prevent emergencies, thereby lowering the frequency and cost of hospital stays.

Another area of potential cost containment is related to caregiver support. By expanding access to respite care, offering caregiver training programs, and encouraging flexible work arrangements, society may reduce the physical, emotional, and economic toll on informal caregivers. This, in turn, may lower associated healthcare costs and productivity losses, helping to mitigate one of the more hidden yet substantial components of LTSS-related expenses.

FINANCIAL PLANNING AND INSURANCE INNOVATION

Given the growing cost exposure, there is an urgent need for innovations in insurance and financial planning. Traditional LTCI has struggled due to underpricing, low interest rates, and adverse selection (Brewster and Gutterman, 2014). However, hybrid products that combine life insurance or annuities with long-term care benefits have shown promise (Marquand, 2024). Actuaries can consider new models that reflect updated longevity trends, cognitive disease prevalence, and multi-modal care preferences.

In addition, actuaries should consider modeling the integration of technology in care delivery. Predictive analytics, AI-based monitoring, and telehealth services could extend the duration of at-home care while delaying institutionalization. These innovations could lower costs over time but will require upfront investment and careful evaluation of their actuarial impact.

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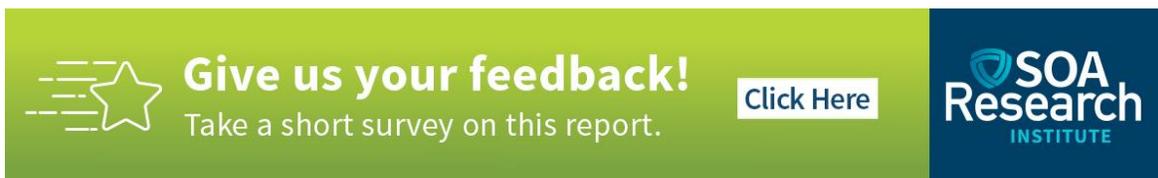
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