SOCIETY OF ACTUARIES

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Clinton's LTC Initiative
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home and community-based care service that best fits beneficiaries' needs.

4) Offer quality private long-term care insurance to federal employees. The President is calling on Congress to pass a new proposal that allows the Office of Personnel Management to use its market leverage and set a national example by offering non-subsidized quality private long-term insurance to all federal employees, retirees and their families at group rates. The Office of Personnel Management anticipates that approximately 300,000 federal employees would participate in this program.

More details are available; however, many details are sketchy and there are numerous questions to be answered.

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Treatment for Alzheimer's Disease: Good News Or Bad News?

by Philip J. Barackman

Alzheimer's disease (AD) causes dementia and behavioral disorders which can lead to costly long term care (LTCI) insurance claims. New diagnostic and therapeutic approaches are being developed that are likely to influence future LTCI experience. These treatments may have a favorable or adverse effect on LTCI claims depending on the nature and degree of the therapeutic effect. This article seeks to review some of these developments and to encourage LTCI insurers to monitor ongoing progress in the treatment of AD.

Basics of AD

AD is one of the leading causes of dementia. The American Psychiatric Association defines *dementia* as memory impairment plus at least one additional problem related to language (aphasia), complex movement (apraxia), identification of objects (agnosia), or the making of everyday decisions (executive functioning). AD typically involves a progressive decline in cognitive function which may be accompanied by apathy, agitation, aggression, anxiety, sleep disorder, withdrawal, loss of appetite, and hallucinations.

It is estimated that 4 million people in the United States have AD, including 10% of persons over 65 and nearly half of those over 85, but AD can even strike people in their 30s and 40s. Life expectancy is eight years from the onset of symptoms, but some continue to live 20 years or more. U.S. society spends $100 billion annually on AD. AD costs U.S. employers $26 billion in lost productivity of caregivers. Seven out of 10 people with AD live at home. Family and friends provide 75% of home care for AD. Half of all nursing home patients suffer from AD or a related disorder.[1]

Many other disorders can have symptoms that mimic those of AD, including vascular dementia, AIDS dementia, frontotemporal dementia, Parkinson's disease, Pick's disease, progressive hemiatrophy, diffuse Lewy body disease, Huntington's disease, amyotrophic lateral sclerosis (ALS), progressive supranuclear palsy, meningitis, hypothyroidism, hydrocephalus, brain tumor, multiple sclerosis, drug toxicity, alcoholism, vitamin B12 deficiency, folate deficiency, depression, and psychosis.[2] Because some of these conditions are responsive to treatment and/or are partially reversible, an accurate diagnosis must be obtained if possible.

Evaluation of Patients with Symptoms of AD

AD is often a diagnosis of exclusion, i.e., diseases with similar symptoms are eliminated from consideration. In patients with symptoms of AD, routine blood tests are ordered to rule out hypothyroidism, alcohol abuse, AIDS encephalopathy, and other causes of dementia. Radiologic tests can rule out certain disorders (e.g., brain tumor, hydrocephalus) and sometimes even provide a diagnosis of AD. For example, late-stage AD can be diagnosed with magnetic resonance imaging (MRI), and pro- gress has recently been made in efforts to diagnose early-stage AD using high resolution MRI which measures neuroanatomic degeneration.[3] Positron emission tomography (PET) is another imaging technology with a high diagnostic accuracy for AD, even in patients with mild cognitive impairment. PET scans are particularly useful because they can differentiate between AD and vascular dementia (the disorder

most often confused with AD).[4]

In symptomatic patients, identification of genetic variants such as the ε4 allele of the apolipoprotein E gene and the presenilin-1 mutation supports a diagnosis of AD. The apolipoprotein E ε4 allele is also associated with a highly elevated risk of developing AD and an earlier onset of AD, but it is not an absolute predictor of AD.[5] More tests are anticipate as new genetic risk factors are discovered.

Neuropsychological testing is both a diagnostic tool as well as a method of tracking cognitive decline and the psychological disorders that often accompany AD, e.g., depression. Tests include the Mini-Mental Status Exam (MMSE), Blessed test, Alzheimer's Disease Assessment Scale (ADAS-Cog), Consortium to Establish a Registry for Alzheimer's Disease memory measures (CERAD), Neuropsychiatric Inventory (NPI), Geriatric Depression Scale (GDS), and Cornell Scale for Depression in Dementia (CSDD).[6] One of the more recent tests to appear is the 7 Minute Screen which includes the Benton Temporal Orientation Test, enhanced cued recall, clock drawing, and verbal fluency.[7] LTC underwriters have developed cognitive assessment tools based on elements of these and other tests such as the Short Portable Mental Status Questionnaire (SPMSQ).

Potential Impact of AD: Inferences from Population Data

Annual incidence of AD increases from approximately 1% for ages 70 to 75, to more than 8% for those aged 85 and older. The pre-valence of AD is about 5% at age 70, nearly 20% at age 80, and 50% at age 90.[8] These figures may vary depending on the method of diagnosis and possibly on other population characteristics. This high prevalence of AD is of concern to LTC underwriters, and U.S. insurers routinely request cognitive assessment screens on all LTC applicants above a specified age, typically age 75, although a somewhat lower age would appear to be justified.

Analysis of the National Long Term Care Survey of 5-year AD outcomes for three time periods (1984, 1989, 1992) sheds some light on the potential impact of AD on LTC experience. At the time of AD diagnosis, 22% of patients were institutionalized and 78% were living at home. Of those alive 5 years later, 49% were institutionalized and 51% were living at home. The annual probability of nursing home placement increased from about 12% during the 1st year after AD diagnosis to 36% during the 5th year. Clearly, AD is related to high utilization of institutional care. [9]

However, careful analysis is required. For example, discharges from nursing homes by primary diagnosis at time of admission does not directly support the fact that AD leads to lengthy institutional confinements. The 1985 National Nursing Home Survey (1985 NNHS) reported that the average nursing home stay in patients with a primary diagnosis of "AD and other …degeneration of the brain" was 373 days, compared to 401 days for all categories combined.[10] However, duration of stay was 1,005 days for "senility without psychosis" and 763 days for patients in the "unknown" diagnosis group. These latter categories may well include persons with early- to- mid-stage AD.

Another possible distorting factor relates to AD as a primary versus a secondary diagnosis. Patients may enter the nursing home with a primary diagnosis of the condition that prompted confinement (e.g., hip fracture), and a secondary diagnosis of early- to- mid-stage AD. Progression of AD in the nursing home may well become the primary reason for continued confinement.

Finally, nursing home stay durations do not translate directly to LTC benefit periods. One reason is that almost half of the live discharges in the 1985 NNHS (about one-third of total discharges) are attributed to short-stay hospitals. For many, these hospital stays represent only temporary interruptions in an otherwise lengthy nursing home confinement (e.g., a nursing home patient transfers to the hospital for treatment of an acute illness and later returns to the nursing home). The discontinuous lengthy confinement (nursing home-hospital-nursing home) is therefore recorded as multiple nursing home admissions of shorter duration. Another reason for the imperfect correlation between duration of nursing home stay and LTC benefit period is that admissions to nursing homes are frequently transfers from other nursing care facilities. The analysis of the 1985 NNHS by the Society of Actuaries Long Term Care Experience Committee links such confinements in order to approximate the benefit period concept.[11]

Factors with a Direct Bearing on Impact of AD

It is apparent from the prior discussion that general population data do not necessarily provide a clear basis for estimating the portion of LTC benefit costs that are causally related to AD. Similarly, although most insurers monitor cause of claim or maintain the necessary data to do so, results to date are typically not very meaningful because (1) the business is immature (both in respect to underwriting selection period and attained age), and/or (2) there is insufficient claims volume from which significant results can be drawn. However, one can identify certain factors that should have a direct bearing on the impact of AD on LTC experience.

Plan design

Clearly plan design plays a role, given that the maximum benefit period (or dollar amount) truncates the continuation of benefit payments on lengthy AD claims. It

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can also be argued that AD-related claim amounts would increase with plan designs that provide benefits for home care, as well as institutional care, because of the significant proportion of AD victims who are cared for in the home during the early- to- mid stages of the disease. Because much of the AD home care is informal, paying benefits to informal caregivers may prove to be more expensive than is currently anticipated. The often heard rationale that it is a lower cost alternative to institutional care would not apply to those AD victims who would not yet be institutionalized anyway.

Issue age, persistency, mortality, duration from issue
AD is primarily a disease of the elderly, so issue age, persistency, mortality, and duration from issue will affect AD experience as a cause of claim. Companies that issued LTC insurance to young and middle-aged adults would experience few AD-related claims for many years. However, if benefits were designed to keep up with inflation, then greater benefit payouts would be experienced in the years when AD would most likely develop. Effects of AD on ultimate claims experience and profits should therefore not be dismissed for younger issue ages.

Underwriting requirements
The method and degree of underwriting with respect to cognitive function will have a significant impact on the AD component of claims experience. Effectiveness of any underwriting is related to the extent of anti-selection at the point of sale, and also therefore to how the business was marketed. For example, an independent insurance agent may assess the applicant's condition in the context of underwriting practices of the companies for which the agent writes business, then sub-mit the application to the insurer(s) most likely to issue coverage. An LTC insurer that has a higher minimum age for cognitive assessment than its competitors would tend to attract business from those who wish to avoid the cognitive underwriting screen. Advanced genetic and other diagnostic or predictive tests may become more readily available to the market, and less available to the underwriter due to regulatory restrictions. This could present greater challenges to LTC risk classification in the future.

Policy wording
In wording LTC policies, special attention needs to be given to the definition of cognitive impairment as a benefit trigger, and claims administration should be based on clinical evidence and standardized tests of cognitive function, consistently and objectively applied. If LTC policies specifically cover AD (as opposed to do not exclude AD), then it may be difficult to avoid claims for which cognitive function is still quite normal once very early stage AD diagnosis becomes readily available.

Ultimate experience
Although somewhat speculative, one estimate is that 30-50% of claim payments could ultimately be related to AD under a comprehensive LTC plan design.[12] Thus, development of an effective prevention or cure for AD would have a dramatically favorable impact on future LTC experience. However, if properly underwritten, immature blocks of business would initially tend to see much lower percentages.

"Another possible distorting factor relates to AD as a primary versus a secondary diagnosis. Patients may enter the nursing home with a primary diagnosis of the condition that prompted confinement, and a secondary diagnosis of early- to- mid-stage AD."

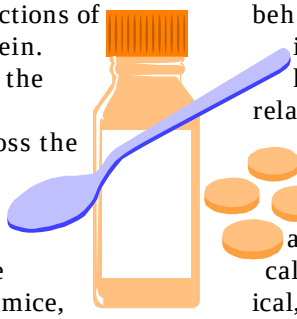
Treatment for AD

Currently, there is no effective prevention or cure for AD. However, many medications and other therapies have been shown to alleviate AD symptoms to varying degrees. Three medications are approved by the United States Food and Drug Administration (FDA) for treatment of AD: Tacrine (Cognex TM), Donepezil HCl (AriceptTM), and Risperidone (RisperidolTM). Many new drug applications are pending at the FDA including ENA-713 (Exelon), Metrifonate, and Physotigmine LA (Synapton). In addition, Idebenone is in Phase III trials, and a half-dozen medications are in Phase II trials. Other less conventional treatments include psychotherapy (early AD stages), aromatherapy (behavior), music therapy (attitude/behavior), herbal therapy (modest cognition improvement), electroconvulsive therapy (surprisingly, overall memory improvement in about half the cases), phototherapy (adjusted sleep-wake cycle), and wine (decreased incidence of AD is reported to be associated with moderate consumption).[13]

Tacrine, although shown to improve cognition in early AD, causes liver toxicity in almost one-half the patients, and only about one-third show a positive response.[14] Donepezil has been shown to benefit cognition and memory loss in patients with mild to moderate AD, and serious side effects and costs are less than with Tacrine. However, as with Tacrine, only about

one-third of patients respond, and there appears to be no prevention of the neurodegeneration that characterizes the progression of AD.[15] Both Tacrine and Donepezil are acetycholinesterase inhibitors. Risperidone is a serotonindopamine antagonist used to treat the behavioral disorders of AD, but there is mixed evidence regarding positive and negative impact on cognitive skills.[16]

Very recently, scientists at Elan Pharmaceuticals reported exciting experimental results that suggest a possible immunization for the prevention and even reduction of beta-amyloid protein accumulation within the brain—the suspected cause of AD. Surprisingly, the immunization simply involves injections of that very same protein. Apparently, some of the antibodies that are produced sneak across the blood-brain barrier and call other immune cells to action. Although the subjects to date are mice, testing on people is to be-gin by the end of this year.[17]



Impact of Treatment on LTC Insurance

Prevention or total cure would have a favorable and undoubtedly significant effect on LTC claims experience. What is unclear is whether current and emerging treatments will have a favorable impact. If a treatment has only a modest benefit and extends the period for which a claimant receives benefits (a situation favorable to the insured), one could argue that the impact on LTC experience could well be unfavorable to the insurer. One model predicts that if interventions could slow progression of AD by 20%, then, over a 5-year period, absolute survival would increase by 2%, ADL impairment would decrease by .25 ADLs (e.g., functional im-pairment for the entire cohort might average 3.65 ADLs rather than 3.90 ADLs), and the probability of institutionalization would decrease by about 5%.[9] These results ap-pear to be meaningful but not dramatic.

Significant LTC claim savings could result from any treatment that would delay institutionalization and make it possible for care to be provided at home and/or by informal caregivers. Home care is frequently limited to a lower daily maximum benefit (e.g., 50% of what would be paid for institutional care), and informal caregivers typically receive little or no payment from LTC insurance.

The proverbial "straw that breaks the informal caregiver's back," thus precipitating institutional placement, is often behavioral problems rather than cognitive dysfunction per se. Therefore, therapies that modify behavior may hold promise for reducing LTC claims. Neuro-leptics have been used to treat AD-related psychosis, aggression, and agitation, but these medications can have problematic side-effects. One interesting alternative is a non-pharmacological approach that focuses on medical, psychological, environmental, and social factors which contribute to the unwanted behaviors.[18]

Insurers interested in a managed care approach to LTC would do well to investigate this alternative for its potential in delaying transfer of care from the home to a more costly institutional setting. The insured would also benefit in terms of an enhanced quality of life, including an improved relationship with the informal caregiver.

Summary

Although the impact of AD on LTC underwriting results is without question highly significant, carefully designed experience studies will be needed to quantify its role as a cause of claim, especially in the context of medical advances that will make it possible to diagnose AD in patients who are not yet clinically demented. New treatments should be closely monitored by LTC insurers to determine if they will have a favorable or unfavorable impact on future experience. As managed care protocols for LTC continue to evolve, new diagnostic and therapeutic approaches should be investigated for their potential to enhance the efficiency of care, both in economic terms as well as for the insured's quality of life.

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12) Based on unpublished continu-

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ing care retirement community LTC experience in which nursing home stays accounted for 60-70% of claim days were related to dementia as a primary or secondary diagnosis, coupled with an estimate of AD as a cause of 50-75% of the dementia.
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LONG-TERM CARE FOR YEAR 2000

Planning has started for the Spring 2000 Pension/Health SOA meeting. We are looking for topics and also volunteers for the meeting. We want to develop a full track of Long-Term Care Insurance sessions/workshops. We need your help in order to finalize sessions prior to the end of September, 1999. Please send in your thoughts and ideas. E-mail to *mike.abroe@milliman.com* is preferable.

As a reminder, the following LTC sessions are scheduled for the annual meeting this fall:

LONG-TERM CARE—THE PARTNERING PRODUCT?

Some companies are looking to increase sales while lowering expense by packaging the sale of long-term care coverage with complementary products. Attendees discuss the feasibility and success achieved with this strategy. They address the relative package value of various products, such as Medicare supplement, disability income, life insurance, and medical insurance from both sales and administrative perspectives.

LONG-TERM CARE—REGULATORY DEVELOPMENTS

With the creation of Aqualified@ LTCI plans behind us, companies now have additional information regarding interpretations from the Treasury Department, regulations and directives from insurance departments, and feedback from the consumer. This session looks at what we have learned in the past two years and what state and federal regulatory changes may be on the horizon.

Long-Term Care Insurance Section Mission Statement

The mission of the Long-Term Care Insurance Section shall be to encourage and facilitate the professional development of its members through planning, implementing, and actively promoting educational programs and resources on Long-Term Care Insurance issues.

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1. Offer seminars
2. Participate and assist SOA committees in developing intercompany data studies
3. Assist in developing actuarial study materials
4. Develop a newsletter

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