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Managing the Risks at Extreme Age —

Underwriting at Ages 80+

by Stephen K. Holland, Patrick Snow and Janet Perrie

Underwriting at older ages has always been a challenging, subjective and daunting task, but little data exists on the underwriting and claims experience of those oldest individuals who apply for long-term care insurance (LTCI). Epidemiological data firmly establishes that the potential for functional and cognitive disability increases significantly as age increases and that life expectancy decreases with increasing age. Furthermore, conventional wisdom has it that adverse selection increases with age as premium increases to the point that a large proportion of those applying for coverage are willing to pay such high premium rates because they believe that they have a high probability of needing the benefit in their lifetime (e.g., adverse selection driven by special knowledge about their current medical condition).

Underwriting efforts that focus on very old LTCI applicants are comprehensive and in depth. At a minimum, they include a careful review of a detailed application, an attending physician statement from the applicant's primary care physician and often specialty physicians and an in-person assessment of activity, function and cognitive abilities. By the very fact that they are examined a great deal closer in underwriting, these older insureds may be actually "healthier" at entrance than those younger applicants that are accepted with less underwriting scrutiny (e.g., we've successfully excluded excess morbidity and mortality in the oldest applicants).

The underwriting impact of this may be compounded by the fact that the margin between functional independence and dependency may decrease significantly with increasing age. This margin can be thought of as the probability that someone can recover from an injury or illness (e.g., the health/functional reserve that allows someone to recover from an injury or illness). Thus we can conjecture that the "healthy" 90-year-old LTCI insured may be more prone to a prolonged disability when disabled by an injury or other illness than a "less healthy" 65-year-old with fairly robust reserves. We all have heard of someone's grandmother who was otherwise healthy and independent at the age of 95 who ends up in a nursing home in a dependent state for 10 years after a simple hip fracture.

Will LTCI underwriting's careful exclusion of significant co-morbidity in older applicants (e.g., an increased life expectancy) interact with a higher propensity for disability to produce a cohort of healthy but disabled individuals with an inherently higher propensity to produce claims of long duration? Is it truly profitable to insure those who apply for coverage at age 80 and older, and what are the underwriting and actuarial tools and assumptions that will help manage the risk in this older age group? We obviously need these older insureds to persist and pay premiums long enough to recover issue expenses, and thus it is imperative to carefully evaluate co-morbidity and functional abilities.

From a societal point of view, should the industry feel obligated to offer coverage to the very old? Is there so much profit and commission potential assumed in these older applicants that the industry doesn't see the extreme risks over presumptive profits? Is there underwriting and claims experience that can answer these questions, and what can an insurer do to limit the risks if they decide to do business at the extremes of older age?

Fraternal Long-Term Care Insurance Experience

Above age 85, the proportion of the U.S. population residing in nursing homes rises to 20 percent of females and 10 percent of males. Consequently, both the interest in LTCI and the risk for anti-selection are high in this age group.

Interesting observations can be drawn from the files of an insurer with over 12 years experience in writing LTCI policies. The policyholders are members of a large fraternal benefit society and applications are accepted up through 84 years of age. One unusual characteristic is that agents and applicants are often well acquainted because of attending the same church.

These applications are fully underwritten, the acceptance rate is high and there is an assumption that field underwriting is done by agents who have such an intimate knowledge of their customer base. In the segment of these policyholders over age 80, the following has been observed:

Greater Early Claims. It is not surprising that older policyholders have been determined to have a much higher percentage of LTCI claims occurring within two years of policy issue than do younger individuals.

Longer Claim Duration. Since life expectancy declines progressively as age increases, one might expect to see decreasing claim duration at advanced ages. An analysis of claims in this fraternal group has shown exactly the opposite to be true: claim duration increased moderately and progressively at older ages. This may be explained on the basis of health conditions that tend to accumulate with advancing age. By themselves, these conditions may have minimal effect on the ability for self care. But when new health problems arise, they may tip the scale towards a need for LTCI services. For example, the nursing home stay of a 90-year-old following hip surgery is more likely to become permanent because of a diminished reserve resulting from additional health conditions such as vision or cognitive problems. In contrast, a younger and more resilient individual is more likely to fully recover from their hip surgery and return home.

More Claims from Multiple Impairments. In this population, the top three discrete causes of LTCI utilization are dementia, stroke, and accidents. However, as age increases beyond 80 a progressively smaller percentage of claims is attributed to any single cause; a progressively higher percentage is attributed to a combination of several causes. These often include balance or vision problems, general weakness, nutrition problems, mild cognitive impairment, strokes, arthritis and/or Parkinson's disease. Oftentimes none of the combined causes would by themselves result in nursing home placement. But in combination, they may result in a frail 90-year-old with little reserve for maintaining independence.

Many 90+-Year-Old LTCI Claimants Were Very Healthy as 80-Year-Olds. At the time of policy issue (usually between ages 80 and 84) LTCI claimants between the ages of 85 and 89 often had serious disease, such as cardiovascular problems or significant arthritis. In striking contrast, individuals who first submitted LTCI claims at ages 90 and above were usually in excellent health at the time their policies were issued. Those healthy 80-year-olds have a greater likelihood of survival to age 90 and beyond, and to consequently develop a host of age-related conditions that lead to frailty and limit their independence. Lengthy LTCI placements may result, since these conditions are often non-life-threatening.

Can Future LTCI Needs be Predicted for 80 to 84 Year Olds? For 80-to 84-year-olds with conditions such as mild cognitive impairment, dementia or Parkinson's, the likelihood of needing LTCI remains high for the remainder of their lifetime. For most other individuals, a reasonable probability of future LTCI utilization can be predicted for three to five years. This can be based on information such as: a face-to-face evaluation to detect dementia and functional limitations; a review of medical records for stroke risk factors and conditions such as mobility or balance problems; and questioning regarding activities of daily living and instrumental activities of daily living. Eighty to 84-year-olds without significant medical conditions are more likely to survive beyond age 90 and ultimately constitute a large proportion of the future population utilizing LTCI services.

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Group Long-Term Care Insurance Experience

Though many individual and fraternal carriers cap their eligibility at 84 years of age, many group carriers and affinity groups have offered coverage to those 85 years and older. In fact, the special role or mission of some groups often pushes the group into offering coverage for all eligible members of the group regardless of their age (e.g., there is no upper age limit). An analysis of underwriting and claims experience of one such group is now presented to further illustrate the challenges of underwriting applicants 80 years and older.

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In this older age group the ratio of benefit payments to premium collected is approximately 60.2%

Group A is a self insured affinity group that has offered LTCI since 1995 to members of their affinity group who are active employees, spouses of eligible employees, retirees and their spouses and parents of active employees regardless. There is no upper age limit of who can apply. Group A offers a yearly open enrollment period with solicitation by mail—there is little if any opportunity for field underwriting, though a limited listing of potentially uninsurable conditions are in an "insurability" section on the LTCI application. Group A offers a comprehensive, tax-qualified LTCI policy and requires full underwriting for retirees, parents and all classes of spouses.

To date, Group A has enrolled over 160,000 individuals into its risk pool and the average age of its risk pool is 62.3 years of age. Today there are over 2,800 approved claims with approximately $2 million in monthly claims payment. Yearly actuarial studies have shown that overall the risk pool's claims experience is consistently 55-60 percent of expected in the risk pool's pricing models.

Higher Decline Rates than Expected. There have been over 7,500 individuals 80 years of age and older that have applied for Group A's LTCI product. These individuals are fully underwritten using a comprehensive LTCI application, an attending physician statement and a face-to-face assessment of function and cognitive status. Over the years, approximately 39 percent of applicants in this age group have been accepted and 61 percent have been declined. Age-specific accept and decline rates are as follows:

Table 1

Age	Accept	Decline
80-84	44%	56%
85-89	29%	71%
90-94	19%	81%
95+	10%	90%

Currently, there are over 2,100 policies in force for those 80 years and older and collectively they represent over 110,000 covered months of exposure. A review of reasons for underwriting declination shows a high degree of adverse selection in older age groups. Many individuals age 80 years and older applied for LTCI with medical conditions that predispose them to an imminent disability, while others applied in the midst of a disabling event or at a point that they needed LTCI services to maintain their independence. It could be said that these individuals had a sense that they currently or would soon need services and that this was a motivation to apply for coverage. A careful analysis of those accepted into Group A's LTCI risk pool showed them to be fairly healthy with mild and very stable medical conditions and all were active and completely functional and independent at the time they were issued a LTCI policy. In fact, when we compared a small number of older applicants with arthritis, cardiovascular and pulmonary disease to a younger group of applicants with the same diseases we found their chronic medical conditions to be far less severe than younger applicants who had been accepted with similar conditions.

Higher Claim Rates than Expected. A review of claims data for those 80 years of age and older who were accepted into Group A's LTCI risk pool shows that 522 claims have been submitted and that 399 are in a paid status. The claim rate for those 80 years or older is 41.4 claims per 1000 life years exposed with an average duration of closed claims of 329.5 days. Approximately 24 percent of beneficiaries recovered or died during their elimination period and to date, 42 percent have recovered or died while receiving benefits. In this older age group the ratio of benefit payments to premium collected is approximately 60.2 percent and the top four claimed diagnoses include stroke, dementia, cancer and fractures with lasting disability. Age specific claims rates are as follows:

Table 2

Age	Claims	Claim Rate/1000 Life Years Exposed
80-84	354	39.5
85-89	138	98.7
90-94	26	120.6
95+	4	639.4

Further analysis showed that for those who claim, average months-to-claim becomes shorter as the age of the injured at entrance into the risk pool increases (e.g., 37 months at age 80-84 years, 30 months at age 85-89 years, 27 months at age 90-94 years and 16 months at age 95 years and older). This seems to confirm a hypothesis that older applicants have less "functional reserve" and thus are prone to incur earlier claims than younger applicants. Finally the data shows a tendency for longer claims at older ages.

Table 3

Age	Months to Claims	Claim Duration in Days
80-84	354	536
85-89	138	698
90-94	26	599
95+	4	735

This finding is similar to the experience in that found in the Fraternal LTCI risk pool and is counter-intuitive to the fact that life expectancy decreases with increasing age.

Actuarial Perspective

Actuaries need to address issuing these policies from a profitability and risk standpoint. Since insurance products are (hopefully) priced to be profitable, risk factors particular to this age group need to be monitored as the experience develops.

As mentioned, tight underwriting is performed on this age group. Without the presence of field underwriting, Table 1 illustrates how severe the decline rate becomes at the oldest ages. If field underwriting occurs, the underwriting acceptance rates will be higher. However, whether a decision is made at the field or underwriter level, it is questionable whether pursuing coverage at these ages is worthwhile. High decline rates do not help your marketing efforts. By offering coverage at these ages you give the perception that coverage is available. But in the end, if few applicants are actually accepted, your sales force may feel misled.

Finally, the combination of tight underwriting and low acceptance rates causes the cost of underwriting per insured to be very high. A significant investment is made in underwriting to

Table 4

Assumption	Aggressive	Moderate	Conservative
Lapse			
Duration 1	10%	5%	3%
Duration 2	6%	4%	2%
Duration 3	4%	3%	1%
Duration 4	+4%	2%	0%
% Female			
Issued	60%	70%	100%

accept less than half those applying. To recover this cost, it is imperative that insureds persist without going on claim (when waiver of premium would commence).

Premiums and profitability are particularly sensitive to three risk factors in this age group: the lapse rate, the claims rate, and the gender distribution. We varied these assumptions to model aggressive, moderate, and conservative pricing levels as follows:

Without focusing on one particular level of claim frequency, each shift in claim frequency analyzed, from aggressive to moderate and from moderate to conservative, represents an approximate 10-percent increase in incurred claims. This shift is not too dramatic for this age group given the thin line between being functional and disabled. In addition, a significant portion of disabling events at the older ages is from fractures or falls, accidental events difficult or impossible to foresee in underwriting. Finally, you need to consider the overall size of the issue age group. If the decline rate is so high that only five people are issued in a given age band, you may not have the luxury of being only 10 percent off. In this case you are either right on or off by 20 percent%.

Table 5

Pricing	Annual Premium *	Daily Premium	Percent of MDB
Aggressive	$3,800	$10.40	8%
Moderate	$4,700	$12.90	10%
Conservative	$6,200	$17.00	13%

**Assuming maximum daily benefit of $130, nursing facility plan only, and issue age 82.*

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These pricing levels resulted in the following aggregate premiums:

You should monitor how closely the daily premium approaches the maximum daily benefit. The closer it comes, the more you risk being selected against. This would then result in a higher claims rate or a higher decline rate, neither of which are desirable. A potential insured would only purchase a policy this expensive if they really think they will need it, presumably with the hope that they will go on waiver of premium and receive more benefits than they paid in premiums. (This is an opinion that isn't substantiated. Hopefully someone will respond at some point.)

Table 6
Loss Ratio Changes

	Aggressive Pricing Moderate Experience	Moderate Pricing Conservative Experience	Aggressive Pricing Conservative Experience
Pricing	61%	62%	61%
Only Lapse Varies	63%	64%	66%
Only Claims Vary	70%	70%	79%
Only Gender Varies	64%	71%	72%
Experience	76%	81%	100%

As you would expect, if experience levels are at or better than what it was priced, each scenario is individually profitable. However, the danger is that the experience is worse than what was priced, particularly if experience is bad enough to lose money yet not bad enough to qualify for a rate increase under the forthcoming rate stability regulations.

Table 6 shows the effect on the loss ratio if a product is priced with one set of assumptions but experience is worse.

Although the number of issues over age 79 may not be a significant portion of the overall distribution of business, it should not be overlooked due to the severity of the potential losses. Experience must be monitored closely.

Conclusion

At the extremes of older age, careful underwriting can greatly reduce anti-selection in a traditional sense. However, it also drives higher declination rates, though this can be mitigated somewhat by field underwriting techniques.

Interestingly, the experience presented here shows that the healthiest 80+ year-olds accepted in LTCI risk pools are more likely to live longer than most their age. Although they are "healthy" and independent at time of acceptance the impact of advanced age places them at a much greater lifetime risk of developing multiple age-related impairments that lead to frailty, dependency and ultimately the need for hands-on assistance (e.g., diminished reserves at the time of injury or illness). It appears that careful underwriting of this age group may mean that we are building cohorts of older insureds who present a significantly increased risk of incurring LTCI claims of long duration.

Further study is necessary to determine if underwriting criteria and assumptions need to be adjusted for the older age group to include comorbidities that may mitigate very long claims.

Finally, actuarial assumptions should be reviewed to ensure that pricing is consistent with underwriting expectations.

LTCI applicants age 80 years and older present a formidable underwriting and actuarial challenge. As an industry, we should work toward promoting the need and benefits of LTCI coverage to younger age groups and this should in turn promote an increased uptake of LTCI products at younger issue ages. In so doing, a greater proportion of people will already have coverage once they reach age 80 and initial underwriting and issue will be less necessary at these extreme ages. ☐

Stephen K. Holland, MD, is senior vice president and Medical Director, Long Term Care Group, Inc. in Natick, MA.

Patrick Snow is vice president and Medical director, Aid Association for Lutherans/Lutheran Brotherhood.

Janet Perrie is an actuary with Long Term Care Group, Inc.