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Long-Term Care Insurance Coverage: Educating Clients and Evaluating Its Merits as an Investment

An Actuary's Solution to the Consumer's Dilemma

by William A. Dreher

Introduction

Assessing the economic value of long-term care (LTC) coverage is an intriguing actuarial exercise. In my experience as an advisor to prospective purchasers of LTC coverage, it is also the missing element in most long-term care sales presentations.

A good LTC sales presentation will demonstrate the reality of long-term care as an end of life issue for most families, describe policy provisions and their practical significance and stress the psychological value of creating a financial firewall as a buffer against the huge cost of an extended nursing facility confinement.

Important as these are, without an understanding of the economic value of LTC insurance many natural LTC buyers—people who have significant assets to protect, have incomes sufficient to pay the premiums without strain and are old enough to have parents and neighbors currently in need for care—will turn away from the transaction. Their concerns about the tradeoff between premiums that will be paid early and for a long time and policy benefits that will be paid at the end of life and perhaps never make them hesitate and, frequently, turn away.

The long-term care economic analysis model described in this article has been effective in addressing this issue and convincing clients that LTC coverage is a sound investment decision. It has also proven to be a powerful educational resource in explaining LTC policy provisions and their practical significance. (I should also note that the model is an objective tool, not a promotional device that always delivers a “buy now” recommendation. For instance, for some age groups, for people with limited budgets or very high net worth and for individuals unable to buy tax-advantaged coverage, the answer may be to postpone the purchase or to self-insure the risk.)

The model relies on conventional actuarial techniques for assessing the financial implications of the LTC investment decision, but with a twist.

Investment strategists evaluate the prospects of different assets classes or individual securities by comparing the potential gain from the investment with the potential for loss, using statistical characteristics such as the volatility of returns as a proxy for the relative riskiness of the proposed investment. The phrase “risk vs. reward” expresses the process employed by investment strategists. A more appropriate characterization of the premise underlying our long-term care model might be “risk transfer and its rewards.”

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Assessing the economic value of long-term care (LTC) coverage is an intriguing actuarial exercise.

Inputs to the LTC Risk and Rewards Model

The model has five categories of input assumptions: personal, economic and financial, LTC policy design, claim scenario, and when applicable, health savings account (HSA) design.

The demographic and actuarial assumptions for a couple or an individual include date of birth, life expectancy and location. For couples, the joint life expectancy is included.

The model's economic and financial assumptions are income tax rate (personal or corporate), pre-tax investment return, effective investment tax rate, CPI growth rate, the current top skilled nursing facility (SNF) daily rate in the prospect's location and its projected growth rate. The buyer type and the cutoff age for tax-qualified plan deductions are also included, as is the current table of tax-qualified plan deductions for partners, sole proprietors and Sub-S corporations.

The policy design assumptions reflect the key features of an LTC policy and the annual premium for each individual. A plan feature recently added is waiver type, including joint waiver, survivorship and J&S waiver.

The claim scenario variables are length of claim, probability of claim, type of care (home or SNF) and home care expense as a percentage of SNF expenses.

The health savings account assumptions are medical plan deductible, either family or individual, marital status, HSA interest rate, Medicare tax rate and catch-up contributions.

Figure 1 on page 5 illustrates the input variables and codes for a representative long-term care buyer.

Mr. Smith is a partner of a New York law firm. The LTC policy design he and his wife selected was influenced by the rates currently charged by a well-regarded skilled nursing facility in the nearby area and by their conclusion that co-insuring about 15 percent of the expense was practical for them. So, a \$300 daily benefit with compound inflation was selected. From their experience in caring for Mrs. Smith's mother, who suffered from Alzheimer's disease and required custodial care for several years, they chose a lifetime benefit. Mr. Smith was particularly interested in having a survivorship waiver. Assuming the actuarial tables are correct, he is likely to be the first to

die and he values the assurance that her policy will be fully paid-up in that event.

Cash Flow Projections and Summary Display

From these input assumptions the spreadsheet projects the current annual LTC premium for each individual, the tax savings and the net LTC premium. The gross premium for each individual is projected with and without the impact of the applicable premium waiver option.

Using a hypothetical claim scenario for each spouse, the spreadsheet displays the annual cash flows for the possible LTC expense (assuming a 100 percent likelihood that the defined claim scenario actually occurs and that no LTC policy exists), the projected LTC expense (based on the assumed probability that the claim scenario occurs), the unrecovered LTC cost (i.e., the expenses incurred during the elimination period plus the expenses in excess of the claim reimbursements during the policy's benefit period plus any expenses occurring after the expiry of policy benefits) and the expense reimbursements from the LTC policy. The combined cash flows for both policies are calculated for four quantities: the possible (100 percent likely) LTC expense, the projected LTC expense, the unrecovered LTC expense and the expense reimbursements from the policy.

For each of these cash flow columns the spreadsheet shows the total cash flow, its net present value, the internal rate of return on the cash flows and the cumulative impact on the couple's estate. This last total assumes a full marital transfer on the first death and uses the couple's joint life expectancy to make its measurements.

A Specimen of the Summary Display and its Interpretation

An example of these summary items is presented in Figure 2 on page 6 based on the assumption set defined in Figure 1.

The claim scenario in this illustration reflects two possible outcomes: Mr. Smith will have a claim of less severity than national average statistics would indicate and receives care in a home setting; the wife has a severe and extended disability lasting five years that requires care in a skilled nursing facility, an outcome typical of cognitive dysfunctional illnesses. The likelihood of his claim was set at 40 percent; her long claim was assumed to have a 15 percent probability.

Figure 1—Input Assumptions: Long-Term Care Insurance—Economic Analysis

Personal Data:				Claim Scenario:		
Name	Jim Smith	Fran Smith	Joint	Length of Disability (months)	12	60
Year of Birth	1948	1948		Claim Duration (months)	9	57
Month of Birth	3	11		Probability of Claim	40%	15%
Life Expectancy (Years)	27	31	36	Cost % for HHC	80%	N.A.
Location	Westchester, NY			Care Location	Home	SNF
Economic and Financial Assumptions:				HSA Assumptions:		
Personal Tax Rate	45%			Medical Plan Deductible	\$5,100	
Pretax Investment Return	6.25%	6.25%		Deductible Type (Single/Family)	F	
Investment Tax Rate	28.00%	28.00%		Marital Status (Single/Married)	M	
Consumer Price Index	3.00%	3.00%		HSA Interest Rate	4.00%	
SNF Daily Rate Now @ Location	\$350	\$350		Medicare Tax Rate	1.35%	
SNF Inflation Rate	5.00%	5.00%		Catchup Contribution (Yes/No)	Y	
Buyer Type	C		C	Buyer Type		
Cutoff Age for Tax Deductions	65		65	Corporate	C	
				Partner or Proprietor	P	
				Individual or Family	I	
				LTC Benefit Inflation		
				Compound	C	
				Simple	S	
				Guaranteed Purchase Option	GPO	
				None	N	
				Waiver Type		
				Individual	I	
				Joint Only	J	
				Survivorship Only	S	
				Joint & Survivor	J&S	
LTC Policy Design:				===== Sub S/Partner Deductions =====		
Start Date	9/1/04	9/1/04		<u>Lowest</u>	<u>Max. Yr. 2004</u>	
Policy Issue Year	2004	2004		<u>Age</u>	<u>Premium</u>	
Daily Benefit	\$300	\$300		20	260	
Benefit Inflation Rate	5.00%	5.00%		41	490	
GPO Increase %	C	C		51	980	
Home Health Care %	100%	100%		61	2,600	
Benefit Period (years)	Life	Life		70	3,250	
Elimination Period (months)	3	3				
Waiver Type	S	S				
0 = Premiums paid until Eligible	0	0				
LTC Annual Premium:	\$3,924	\$3,733				

continued on page 6

The HSA provisions of DIMA are a great tax benefit for highly paid executives, successful professionals and business owners.

In this example, the net present value cost of Mr. Smith's policy is \$21,218. His premium cost is recovered, but the internal rate of return on the LTC investment is only 1 percent. For his wife, the LTC purchase has a positive net present value of \$36,372, representing a 7.6 percent net rate of return on her LTC premiums. For the couple, the return on their combined investment is 5.7 percent, somewhat exceeding the 4.5 percent assumed return on their other investments.

The full impact of this claim scenario is indicated by the column titled "Possible Cost." A credible risk of spending \$2.9 million on long-term care and diluting one's estate by over \$4.1 million now becomes a powerful incentive to purchase LTC policies.

Our model readily permits testing of alternative claim scenarios, including the possibility that no claim occurs. Visiting other hypotheses (living longer, buying through a corporate plan vs. buying with after-tax dollars, choosing a plan with greater or lesser benefits, demonstrating the effect of a survivorship waiver or changing the investment return and tax assumptions) adds other dimensions of analytical significance for potential buyers of LTC coverage and their advisors.

Communicating the Model's Major Messages

The potential for drowning a client in numbers is a serious downside constraint on the utility of our economic model. In an effort to reduce the MEGO threat we have used charts in many interviews. Chart 1 on page 7 shows the net cash flow for premiums to Mr. & Mrs. Smith and compares the prospective growth of daily rates for care in a skilled nursing facility with the projected daily benefit of the LTC policies.

Chart 1 illuminates several important issues:

- The net cost of coverage for a partner or S Corporation owner decreases each year as the schedule of tax deductions for tax-qualified plans increases.
- The cost of coverage will increase significantly when Mr. Smith retires at age 65.
- His premiums will stop when he goes on claim in policy year 27.
- Mrs. Smith's premiums end when she goes on claim the next year. (Note: with the Survivorship Waiver feature, her premiums would stop upon the husband's death even if she never went on claim.)

Figure 2

A. Summary		Possible Cost		== Based on Claim Assumptions ==	
		Without LTC Insurance	With LTC Insurance	Without LTC Insurance	LTC Cost Recovery
Jim Smith					
IRR%=					1.0%
Impact on Estate	(564,333)	(329,223)	(225,733)	(103,490)	
NPV	(115,704)	(67,500)	(46,282)	(21,218)	
Total Cash	(363,390)	(132,746)	(145,356)	12,610	
Fran Smith					
IRR%=					7.6%
Impact on Estate	(3,560,996)	(356,748)	(534,149)	177,401	
NPV	(730,105)	(73,143)	(109,516)	36,372	
Total Cash	(2,509,947)	(159,642)	(376,492)	216,850	
Combined					
IRR%=					5.3%
Impact on Estate	(4,125,329)	(685,972)	(759,883)	\$73,911	
NPV	(845,809)	(140,644)	(155,797)	\$15,154	
Total Cash	(2,873,337)	(292,388)	(521,848)	\$229,460	

- Compound inflation of the policy’s daily benefit will keep pace with the skilled nursing daily rate in their home area and maintain a fairly constant “coinsurance ratio.” (Note: The negative impact of buying a policy with no inflation adjustment of the daily benefit is particularly vivid with this type of chart.)

Two other charts present the annual cash flows implied by the assumed long-term care scenario, comparing self-insurance of the risk with the mitigating effect of LTC coverage.

Chart 2 shows the pattern of net premiums and the Smiths’ out-of-pocket costs for care during the elimination period plus the share of expenses not reimbursed by the LTC policies. The annual costs that a self-insured couple can anticipate under the defined claim scenarios are dramatically evident.

Chart 3 supplements the cash flows in Chart 2—which reflect the assumed 45 percent and 15 percent probabilities of claim—with the full expense of self-insuring the long-term care risk and actually suffering the two claims assumed in this scenario. The possible cost of self-insurance is over \$800,000 in year 27, followed by four years with annual expenses of around \$500,000. This “reality check” delivers a powerful message.

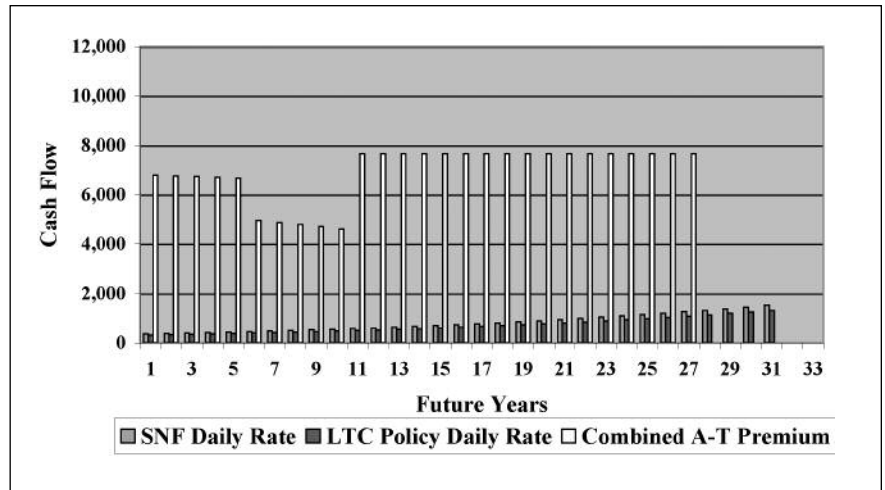
Another Approach to Presenting the Projected Outcomes

Combining the severity of a claim with the probability of its occurrence is a complex idea and some clients have found our model’s messages hard to understand. This difficulty led us to another presentation technique. We were encouraged to take this direction for two other reasons:

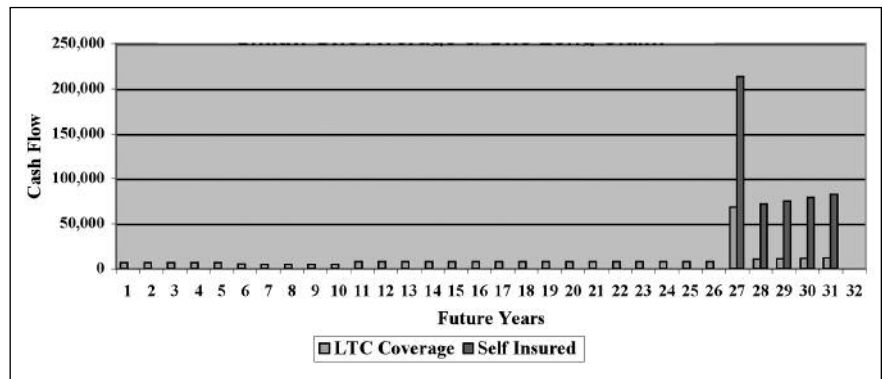
- To highlight the high probability that every couple will experience at least one LTC event.
- To confront directly the possibility that premiums will be paid and the couple will have the good fortune to never have a claim.

We settled upon a two-part presentation. First, using a pie chart to show a matrix of possible claim experiences—no claims; only the husband has a claim; only the wife has a claim; both have

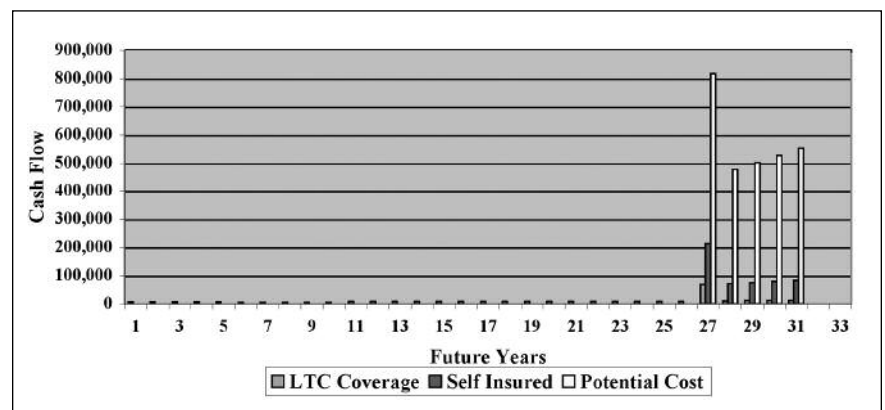
**Chart 1—Premium & Coinsurance Analysis
SNF Daily Rate vs. LTC Policy Daily Benefit
Combined After-Tax Premium for Mr. & Mrs. Smith**



**Chart 2—Economic Analysis
Comparison of LTC Policy vs. Self-Insured Smith:
One Average & One Long Claim**

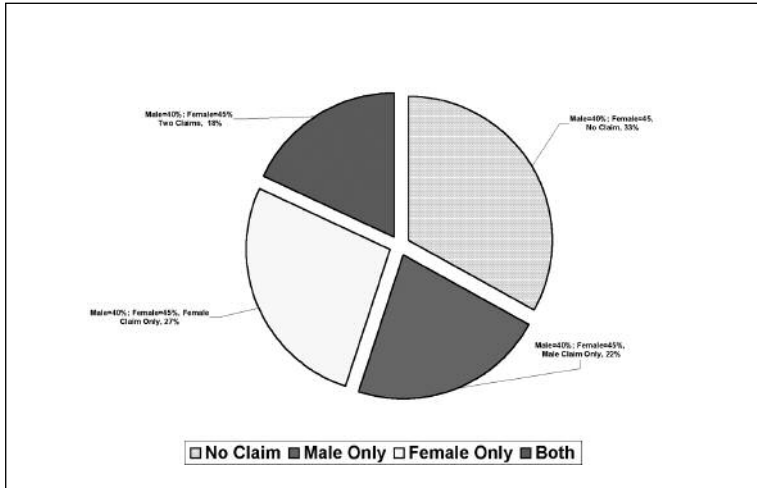


**Chart 3—Economic Analysis
Comparison of LTC Policy vs. Partially Self-Insured Smith:
One Average & One Long Claim**



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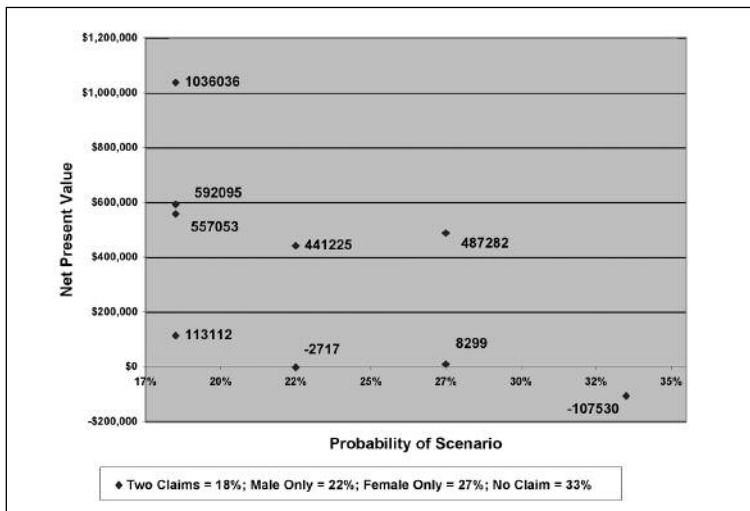
Chart 4—LTC Claim Probabilities



claims. Chart 4 illustrates this communication tool, working with the dual assumptions that the husband has a 40 percent chance on incurring a claim and the wife’s claim probability is 45 percent. The likelihood of no claims is 33 percent, but the 49 percent chance of one claim and the 18 percent chance of two claims forces a thoughtful person to recognize that the risk is real.

But, how long and costly might those claims be? No one knows, but a range of possible outcomes can be identified. We addressed the question by measuring the cost of a short claim, arbitrarily selecting a 14-month duration, and the cost of a 60-month claim based on the Smiths’ data set. (See Figure 1.) Chart 5 summarizes the net present value of the LTC purchase under each of the nine possible outcomes.

Chart 5—Risk Transfer & Its Reward Under Various Claim Scenarios Net Present Values @ 4.50%



One message to be taken from Chart 5 is that there is a 33 percent probability that the Smiths will not have a claim, but will pay premiums with a present value of \$107,000. However, if Mr. Smith is the only one with a claim and the duration of the claim is short, the combined cost of the transaction is essentially a wash or, put more positively, the risk of a worse outcome has been avoided at no cost to their assets and their estate. Similarly, if Mrs. Smith is the only claimant and the claim is limited, the LTC coverage has a small net positive present value, another inducement to transferring the large claim risk to the insurer. When both have a short duration claim, the \$113,000 net present value makes the transaction well worthwhile. When faced with the cost of even one large claim, dollar amounts in the \$400,000 to \$1,000,000 range quickly bring a client’s attention into sharp focus.

Chart 6—Risk Transfer & Its Reward Under Various Claim Scenarios Net Cash Flow

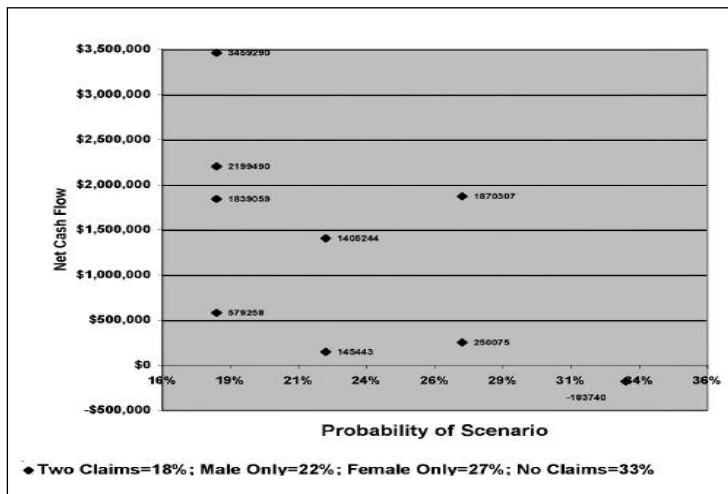


Chart 6 presents a similar display of net cash flows from the nine hypothetical outcomes, showing similar rewards from the risk transfer. The Smiths may be fortunate enough to avoid the need for long-term care and, if so, will have invested \$183,000 in their LTC policies without a cost recovery. This is a good news story. If they do need long-term care, the cost impact of care will be mitigated, possibly by as much as \$3.5 million.

Chart 7 on page 9 looks at the consequences from the perspective of their heirs. To what extent will their estate be protected as a result of the LTC investment? With no claims, it may be diminished by \$525,000. With a single short duration claim, the impact is neutral. All of the other outcomes benefit their heirs by amounts ranging from \$500,000 to \$5,000,000.

Leveraging the Economics of LTC with a Health Savings Account

The Smiths have decided to couple their LTC purchase with a health savings account, intending to build the Health Savings Account with pre-tax dollars while Mr. Smith is working and use it after he retires at age 65 to pay their long-term care insurance premiums. They can afford to self insure the first \$5,100 of annual medical expenses and have therefore dropped out of his firm's medical plan and purchased high deductible medical coverage to provide for any catastrophic medical needs.

The Medicare Prescription Drug, Improvement and Modernization Act of 2003 (nicknamed DIMA) includes an incentive for qualified individuals to accumulate pretax dollars in an HSA for later use to pay a wide range of medical expenses. The medical expenses qualified for payment from an HSA include the out-of-pocket cost of long-term care and any premiums paid for LTC insurance coverage.

The HSA provisions of DIMA are a great tax benefit for highly paid executives, successful professionals and business owners. Who else can afford to divert \$5,000 a year from current consumption? Who else will consider a high deductible in his or her medical plan a prudent risk? These are the same people who are the "natural buyers" of long-term care insurance coverage and the Smiths have recognized this opportunity.

Chart 7—Risk Transfer & its Reward Under Various Claim Scenarios Impact on Estate

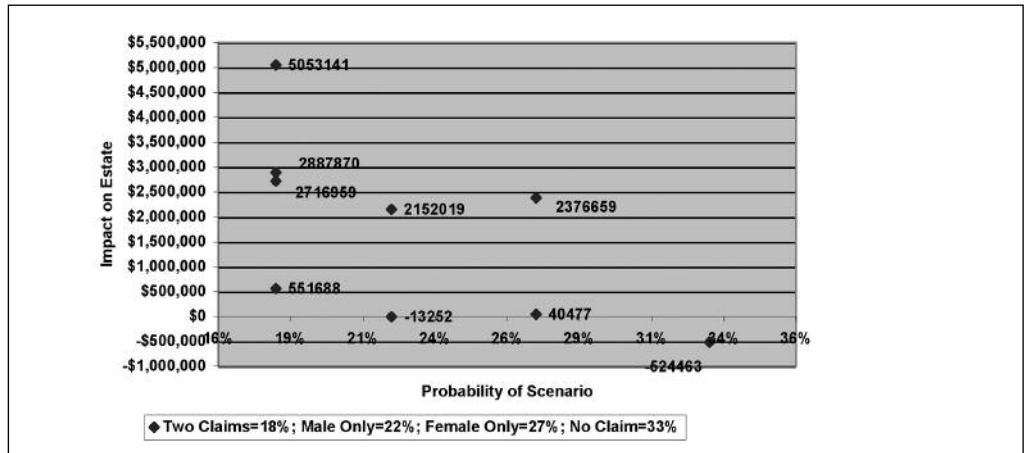


Figure 3 summarizes the projected outcome of an HSA/LTC combination. (It is based on the assumption set defined in Figure 1.) The projected net present value of their LTC policies is \$15,154. When coupled with the health savings account it increases to \$32,738. From a cash-on-cash perspective, the HSA adds \$48,508, a 21 percent improvement.

Figure 4 focuses on the impact of the HSA on their LTC premiums. The present value of the HSA transaction, \$17,584, offsets 16.2 percent of the present value of their projected LTC premiums. This improved outcome can be enough of an advantage to convince a hesitant LTC prospect to be a buyer.

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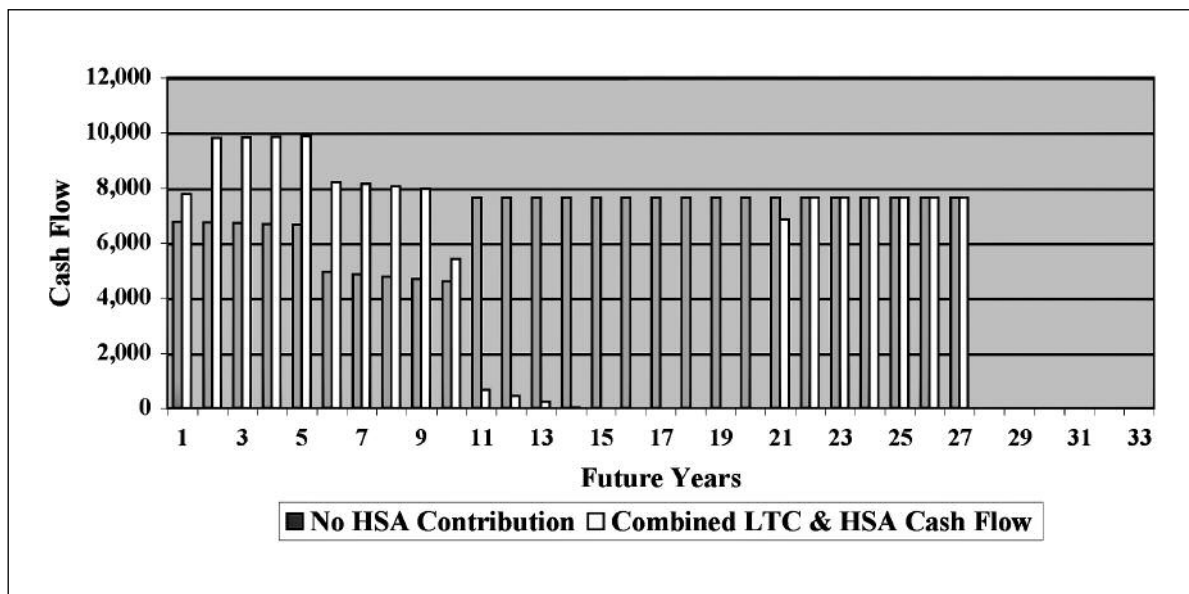
Figure 3

B. HSA Impact Program IRR%=	LTC Cost Recovery 5.3%	Stand Alone HSA 10.7%	HSA + LTC Combined	HSA Impact, as %
Impact on Estate NPV	\$73,911	\$85,766	\$159,677	116.0%
Total Cash	\$15,154	\$17,584	\$32,738	116.0%
	\$229,460	\$48,508	\$277,968	21.1%

Figure 4

C. HSA Impact on LTC Premiums IRR%=	LTC Premiums	Stand Alone HSA 10.7%	HSA Impact, as %	HSA + LTC Combined
NPV	(\$108,779)	\$17,584	-16.2%	(\$91,195)

Chart 8—Cash Flow Impact of Health Savings Account Comparison With and Without Health Savings Account



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Following Mr. Smith’s retirement, the couple can look forward to a 12-year LTC premium holiday, as Chart 8 demonstrates. (This is not quite accurate. DIMA limits on the deductibility of LTC premiums will require very minor cash out of pocket payments in the first three years of retirement.) This comparison of the total cash flow for a coordinated HSA-LTC financing program with the premiums for LTC coverage without the HSA component encourages a final observation: the increased cash cost prior to age 65 would be too heavy a burden for all but people in the Smith’s income bracket.

A Final Word ...

Charts and graphs on their own won’t make an LTC sale, but careful modeling and projection of the possible outcomes from a well-designed LTC policy will lead to better informed clients and sounder financial planning by thoughtful business executives and successful professionals. ✱