



# Long-Term Care News

ISSUE 28 MAY 2011

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## The Relationship Between Cognitive Impairment and Mortality Rates Among Long-Term Care Insurance Applicants

by Marc A. Cohen, Xiaomei Shi and Jessica S. Miller

**Editor's Note:** *This article is based on a full paper scheduled to be published as part of the 2011 Living to 100 and Beyond monograph by the Society of Actuaries later in 2011.*

**P**opulation aging presents important challenges for long-term care service providers, payers and policymakers, who together must find new ways to meet the growing service needs of older people. As age-specific mortality continues to decline for the age 65 and over population, people are living long enough to face an increasing risk of becoming functionally and/or cognitively impaired. There is already well established evidence that indi-

viduals with functional impairments and dementia face a higher risk of mortality than those who are not impaired.<sup>1,2,3,4,5,6,7,8</sup> What is less well-known, however, is the association between the very earliest stages of cognitive decline—having mild cognitive impairment—and subsequent mortality experience.

### PURPOSE

The purpose of this research is to analyze the relationship between being classified as cognitively impaired by two alternative cognitive screens and mortality rates among long-term care (LTC) insurance applicants. More specifically, we answer the following research questions:

# LTC Section Council—Looking Ahead and Leading the Way

by Bruce A. Stahl



Bruce A. Stahl, ASA, MAAA, is vice president and actuary at RGA Reinsurance Company in Chesterfield, Mo. He can be reached at [bstahl@rgare.com](mailto:bstahl@rgare.com).

Anyone who purchases a Long-Term Care Insurance (LTCI) policy is looking ahead and leading the way. These individuals are looking ahead to a time in their lives where they will remain self-reliant in the sense that they had the foresight to finance the cost of long-term care, even though they may depend on others for ordinary activities of living. Perhaps even more importantly, this group of people are leading the way by setting an example of self-reliance that their children, their grandchildren and their great-grandchildren can aspire to and put into practice in their own lives.

The LTCI Section Council is another group of forward-looking individuals who are leading the way both in ideas and in action. The Council is looking ahead to a time when the proportion of people needing long term-care insurance may be at an all-time high. At the same time, the insurance industry will provide the mechanism for those people to finance that care. How can this work? The Council is carving a sizeable path by initiating projects that aim to produce information that will orient insurance products and practices toward building this mechanism. For example, the Council recently initiated a project to consider the implications of applying the Genetics Information Nondiscrimination Act to long-term care insurance.

This issue of the newsletter includes an editorial from our chairperson David Benz that addresses the need for such leadership regarding important issues and encourages others to get involved in the process. He addresses all LTCI Section members as he writes, “Are we satisfied to leave the solutions to the national and state governments knowing that they face huge financial deficits and often the political courage to do anything radical? Do we have the patience to pursue change and see it through to fruition?”

The need for our involvement and leadership has never been more important. We need to serve as agents of change for the betterment of all.

## Long-Term Care News

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This newsletter is free to section members. Current issues are available on the SOA Web site ([www.soa.org](http://www.soa.org)). To join the section, SOA members and non-members can locate a membership form on the LTCI Web page at [www.soaltci.org](http://www.soaltci.org).

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Furthermore, the LTCI Section Council hopes to encourage others involved in financing long-term care, and it has helped fund a research colloquium with this in mind. An article in this issue introduces us to this particular research and discusses how we can build bridges to help make positive changes in this area.

Finally, the Society of Actuaries as a whole encourages research. The SOA's Reinsurance Section co-sponsored the Living to 100 Symposium in January, in which several individuals reported on research related to LTCI. This issue provides a summary of one of the Living to 100 research papers, identifying a relationship between mortality and mild cognitive impairment.

We hope the information in this issue is helpful and encourages you to participate in section activities, submit an article idea for us to consider for publication in our newsletter, or motivate you to thinking about ways you can make a positive difference in the health care industry, long-term care in particular. ■

**The Council is looking ahead to a time when the proportion of people needing long term-care insurance may be at an all-time high.**

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# Now What?

by David R. Benz



David R. Benz, FSA, MAAA, is pricing leader – long term care at Employers Reassurance Corporation in Appleton, Wis. He can be reached at *david.benz@ge.com*.

It is a great privilege to write to you as the new chairperson for the Long-Term Care Insurance Section. I have spent the great majority of my 21-year actuarial career working on various aspects of long-term care insurance. I, like many others, have been through the early years of tentative baby steps as companies moved from Medicare-based triggers in nursing home-only plans to activity of daily living triggers, pot of money maximums, and coverage expansion to a wide array of services. Everything was new and the prospects were exciting.

The mid to late 1990s brought tremendous growth in the industry as the public and government became more aware of the risk and more accepting of our solutions. Carriers entered the market and it seemed many years of solid growth were demographically ordained. However, the new century brought the gloom of adolescence. Tighter regulation (e.g., rate stabilization), declining interest rates, and a realization that policy termination rates were going to be much lower than anticipated led to higher premiums and began a decade-long sales decline. Carriers and agents exited the market in spurts. Rate increases raised the ire of consumer advocates, policyholders and regulators.

The industry now stands like a recent college graduate, certainly wiser for past experiences but also unsure of how best to use this new knowledge. Millions of Americans (and more around the globe) face significant long-term care risks, but do we know how to help a meaningful share of them? The question for the LTCI industry as it moves forward is simple, “Now what?”

That is just one of the questions I have for all our section members. Now what? Are we content to let the private LTCI market continue at the status quo or do we have better ways to address the risks? Do we have the passion necessary to identify the items that need to change—regulation, design, pricing, marketing—and the energy to pursue the changes? Are we satisfied to leave the solutions to the national and state governments knowing that they face huge financial deficits and often the political courage to do anything radical? Do we have the patience to pursue change and see it through to fruition?

Your Section Council believes the risks facing an aging world population are too great for us to ignore now. We believe there are things we can do better and ways we can better promote the good we already do. A number of initiatives have been started to address these issues and we invite you to be part of the process and solution. Look for updates in future newsletters, on our LinkedIn group board, and through e-mail. Actively seek to get involved to move this industry forward and feel free to contact me or any of the LTC Insurance Section Council members with feedback or ideas.

I look forward to a tremendous 2011! ■

- What is the relationship between being classified as cognitively impaired and subsequent mortality experience?
- Holding age and gender constant, what is the magnitude of the effect of cognitive impairment on mortality rates?
- What is the difference in relative mortality ratios for individuals classified as cognitively impaired versus those classified as cognitively intact?

Where data permits, among a sub-set of Long-Term Care Insurance (LTCI) applicants, we will also analyze whether there is a relationship between having limitations in activities of daily living (ADLs) and subsequent mortality rates.

## DATA

To answer these questions, we focus on a sample of individuals applying for long-term care insurance policies. Approximately 250,000 individual LTC insurance policies are currently issued in the United States on an annual basis<sup>9</sup> and there are about 8 million policies in force. Over the past two decades, LifePlans has deployed one of two cognitive screens as predictive measures for cognitive decline. One, the Delayed Word Recall (DWR), was developed by Dr. David Knopman at the University of Minnesota. For the most part this instrument has been valuable in identifying individuals with mild to moderate dementia and less sensitive in capturing those with Mild Cognitive Impairment (MCI). A previous study based on a much smaller sample of applicants with fewer exposure years established the relationship between DWR scores and mortality.<sup>10</sup> The current study builds on this prior study by focusing on a much larger sample followed for up to 14 years of experience.

In recent years, a test based on the CERAD battery—the “gold-standard” for Alzheimer’s and related dementia screening—has been used by the LTC insurance industry. Developed by Alzheimer’s researcher Dr. William Shankle at the University of California Irvine, this test, which is called the Enhanced Mental Skills Test (EMST), has been in use since 2004. It identifies those having Mild Cognitive Impairment (MCI).<sup>11</sup>

Our research relies on in-person and telephonic underwriting assessment data which were collected between Jan. 1, 1996 and Dec. 31, 2008. This data, comprising 896,756 lives, includes Social Security numbers as well as cognitive and some limited functional information. This dataset was linked to the latest Social Security Administration’s Death Master File, which enabled us to determine who, during this roughly 14-year time period, died and their date of death. Given that the vast majority of the sample is comprised of individuals age 65 and over, a significant number of deaths have occurred over the period (See Table 1 on page 6). Total deaths in the sample were 162,518, almost all from older DWR data. The data set has over 5.8 million exposure years of experience for the DWR sample and roughly 376,000 exposure years of experience for the EMST sample.

## ANALYTIC METHODS

We employed a number of analytic techniques including descriptive statistics and Survival Analysis, to examine and model the time it takes for death to occur and the relationship with cognitive classification results. Because our data is right censored, and we are interested in estimating the effects of covariates such as age, gender, and cognitive classification on the survival time, we use the Cox Proportional Hazards Model which is broadly applicable and is the most widely used method of survival analysis.

To assess the impact of cognitive classification on mortality across various age and gender groups, we calculated actual-to-expected mortality ratios for each group and these ratios were then standardized to enable cross-group comparisons. Relative mortality ratios were derived by dividing the actual-to-expected ratios for specific age and gender categories by the underlying aggregate actual-to-expected sample ratio.<sup>12</sup> These represent the denominators in subsequent analyses of relative mortality ratios.

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Table 1: Characteristics of the Dataset



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	DWR Data	EMST Data
<b>Number of Lives</b>	764,037	132,719
<b>Year Assessed</b>		
1996	1%	
1997	2%	
1998	8%	
1999	12%	
2000	15%	
2001	17%	
2002	19%	
2003	12%	
2004	6%	2%
2005	5%	18%
2006	2%	12%
2007	1%	33%
2008		35%
<b>Average Age at Assessment</b>	71	64
Under age 65	27%	48%
Age 65-74	29%	36%
Age 75-79	28%	11%
Age 80+	16%	5%
<b>Gender</b>		
Male	43%	45%
Female	57%	55%
<b>Tests Scores</b>		
0 recalled	2%	N.A.
1-2 recalled	2%	N.A.
3-4 recalled	7%	N.A.
5-6 recalled	28%	N.A.
7+ recalled	61%	N.A.
Pass	89%	93%
Fail	11%	7%
<b>ADL Limitations</b>		
0 limitations	97%	N.A.
1 limitation	3%	
<b>Deaths</b>		
Total Number	160,255	2,263
Total Rate	21%	1.7%

## RESULTS

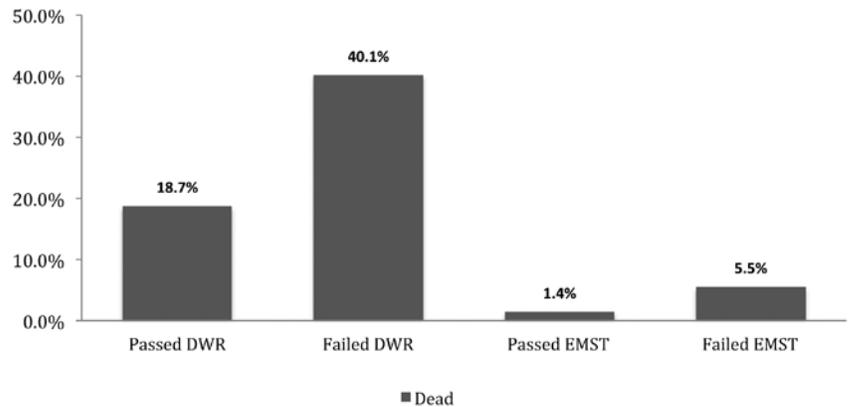
We present findings for applicants who completed the DWR as well as for those who completed the EMST. Someone is classified as cognitively impaired by the DWR if they are shown to be unable to recall at least five words on a 10-word recall list, which they have practiced in sentences two times prior to the recall exercise. The EMST has an underlying algorithm based on Correspondence Analysis that classifies people as “passing” or “failing” the test. Figure 1 shows the mortality status of individuals passing or failing each test.

As shown and without accounting for differences in age and gender, the proportion of individuals who were classified as cognitively impaired using both DWR and EMST have higher relative mortality compared to those who are classified as cognitively intact. These differences are statistically significant at the .001 level across a variety of measures of correlation including the Pearson Chi-Square, Fisher’s Exact Test, and the Linear-by-Linear Association test. The implication is that the correlation between classification result and subsequent mortality is statistically significant at the 99 percent confident level, which means that there is a less than 1 percent chance that the observed results are due to chance.

Another way to view the data is to focus on cognitive classification results among those who remain alive and those who have died. Figure 2 shows that, among individuals who died during the study period, between 20 percent and 22 percent of them had been classified as cognitively impaired. In contrast, among those who were still alive, between 7 percent and 9 percent had been classified as cognitively impaired, depending on the particular screen use. These differences are statistically significant as indicated previously for Figure 1. This highlights the positive relationship between mortality status and cognitive classification.

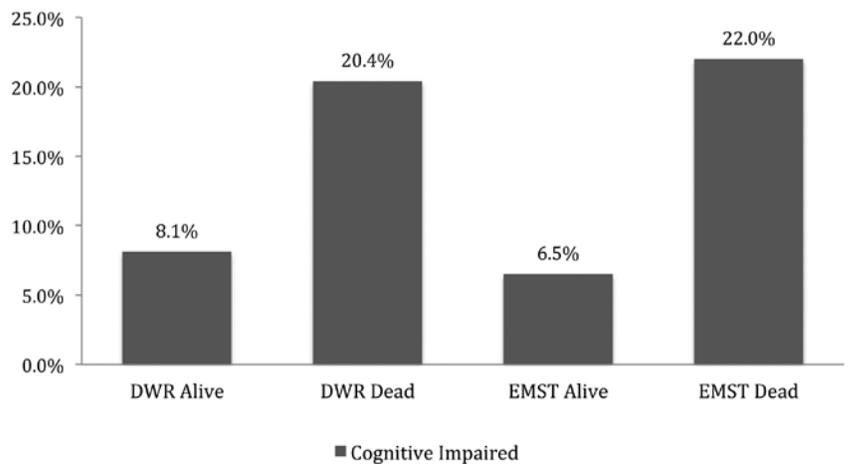
While the univariate analysis does suggest a strong correlation between cognitive impairment classification and subsequent mortality, we have not yet taken into account any age or gender differences. It may be the case that those who are cognitively impaired are also older and thus it would be difficult to untangle the impact of age on mortality from

**Figure 1: Classification Results for Deaths During the Study Period by Test Type**



Note: Differences are significant at the .001 level.

**Figure 2: Mortality Status Among Those Classified as Cognitively Impaired by Test Type**



Note: Differences are significant at the .001 level.

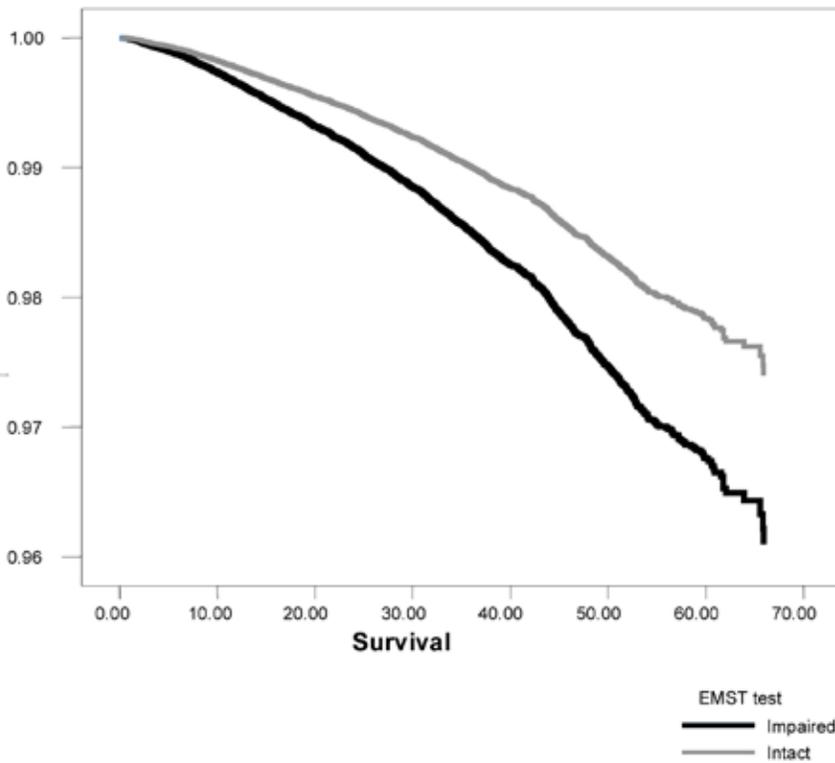
the impact of cognitive status. To address this issue, we employ the Cox Proportional Hazards Model, which enables us to evaluate the independent effect of specific variables on the probability of surviving and also develop Survival and Death Hazard functions.

CONTINUED ON PAGE 8

**Table 2: Cox Proportional Hazards Results for DWR and EMST Cognitive Screen**

	DWR Results			EMST Results		
	B	Sig.	Exp(B)	B	Sig.	Exp(B)
Cognitively Intact as measured by Screen	-.534	.000	.586	-.411	.000	.663
Age	.109	.000	1.115	.102	.000	1.108
Female	-.385	.000	.680	-.447	.000	.640
Have an ADL limitation	.518	.000	1.679	N.A.	N.A.	N.A.

**Figure 3: Survival Function Patterns for EMST Classification Results**



The dependent variable in this analysis is the survival time through the end of the observation period, which is March 31, 2010 for individuals who were still alive and the death date for those who

died during the period. The results in Table 2 show that age, gender, and whether one is assessed to be cognitively intact or impaired are all related to the probability of dying. Other variables held constant, individuals who pass the EMST, that is, are classified as “Normal” are less likely to die than are those who fail the test. In fact, someone who “passes” the EMST has only .66 times the death hazard as someone who fails the test. Holding age and gender constant, an applicant classified as cognitively impaired has a death hazard that is 1.52 times greater than someone who is cognitively intact. Similarly, the death hazard is increased by roughly 11 percent for each additional year of age, and the death hazard for females is about 36 percent smaller than that of males.

When age, gender and ADL status are held constant, someone who passes the DWR has only .59 times the death hazard as someone who fails the test. That is, they are far less likely to die than individuals who have failed the test. Figure 3 shows the survival function for those who are classified as cognitively impaired or cognitively intact by the EMST. As shown, those who are classified as cognitively impaired have a lower survival curve, hence greater mortality hazard. Because the EMST is a far more sensitive tool in uncovering mild cognitive impairment among applicants than is DWR, the analysis based on the EMST can more firmly establish the relationship between being classified as having mild cognitive impairment and being at significantly greater mortality risk.

**RELATIVE MORTALITY RATIO RESULTS**

In Table 3 on page 9 we present the relative mortality ratio analysis for each of the two cognitive tests. Again, relative mortality ratios for sub-groups were derived by dividing the actual-to-expected ratios for specific age and gender categories by the underlying aggregate actual-to-expected sample ratio based on the 2001 Commissioners Standard Ordinary (CSO) Composite table. This allows the ratios to be standardized so that comparisons across groups can be made.

There are a number of important findings. First, the results show that across all age and gender groups, higher relative mortality ratios are found among individuals classified as cognitively impaired compared to those classified as cognitively intact. This is true for both of the cognitive tests analyzed.

However, on an age and gender-adjusted basis, individuals identified by the EMST as cognitively impaired have higher relative mortality ratios than those identified by the DWR. This likely reflects the fact that the EMST is far more sensitive in identifying individuals with mild cognitive impairment so that a more accurate classification occurs.

Second, for the most part, differences in relative mortality ratios are greater for females than for males. Third, although not uniform across all age categories, the results suggest that as the average age of the applicant increases, the differential in relative mortality ratios increases. The implication is that at older ages, identifying an individual with cognitive impairment has a more immediate impact on mortality than at younger ages.

**Table 3: Relative Mortality Ratios by Age, Gender, Test Sample, and Classification Result**

Classification	Grand Total EMST	Male Total EMST	Female Total EMST	Female <65 EMST	Female 65-69 EMST	Female 70+ EMST	Male <65 EMST	Male 65-69 EMST	Male 70+ EMST
Cognitively Impaired	202%	161%	236%	209%	312%	232%	121%	187%	199%
Cognitively Intact	98%	101%	97%	87%	97%	112%	95%	100%	108%

	Grand Total DWR	Male Total DWR	Female Total DWR	Female <65 DWR	Female 65-69 DWR	Female 70+ DWR	Male <65 DWR	Male 65-69 DWR	Male 70+ DWR
Cognitively Impaired	178%	163%	190%	107%	150%	231%	108%	136%	191%
Cognitively Intact	91%	93%	89%	59%	93%	102%	70%	93%	103%

## CONCLUSIONS

Cognitive changes are a component of the aging process and understanding how they influence both morbidity and mortality are important, especially toward the end of life. Cognitive changes can have an effect on cost planning for individuals and their families, for public plans that fund care, and for cost planning in the insurance industry. The results presented here have implications for forecasting health services use among the older adult populations, budgeting and funding of programs designed to serve their needs, underwriting methods for older age life insurance policies, and policy pricing for long-term care as well as life insurance policies.

*Marc A. Cohen, Ph.D., was a presenter at the 2011 Living to 100 fourth triennial symposium that drew attendees from 17 countries, nearly 50 participating organizations/sponsors and speakers from all over the world. About 35 papers were presented at the symposium and will be included in an online monograph expected to be completed later in 2011. More information on this research effort can be found at <http://livingto100.soa.org/default.aspx>.*

Co-authors on the original paper are Xiaomei Shi and Jessica S. Miller. ■

## ENDNOTES

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- 10 Mortality Risk Assessment in the Elderly: The Utility of Delayed Word Recall. *Journal of Insurance Medicine*, 2006; 38:111-115.
- 11 Methods to Improve the Detection of Mild Cognitive Impairment. William R. Shankle, A. Kimball Romney, Junko Hara, Dennis Fortier, Malcom B. Dick, James M. Chen, Timothy Chan, Xijiang Sun, PNAS, March 29, 2005. Volume 102, Number 13, p. 4949-4214. Note that the test is called the EMST in the insurance market, but in non-insurance settings it is referred to as the MCI screen.
- 12 This method was described in Hauser, P. The Minnesota Cognitive Acuity Screen—Valuable Predictor of Mortality. On the Risk. Volume 26, Number 1, 2010.

# A Serious Question

by Bruce A. Stahl



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**This proposal, if implemented, could also prevent LTC insurers from using family histories or genetic test results to help keep healthy policyholders functionally independent for as long as possible.**

I am an actuary, so when it comes to laws and regulations, I may not be best qualified to interpret the language. Yet I believe I am well-qualified to question the proposals from Health and Human Services (HHS) beginning in 2009, that have been quietly seeking to restrict the use of family histories and the results of genetic tests in underwriting Long-Term Care Insurance (LTCI) by making LTCI subject to the Genetic Information Nondiscrimination Act of 2008 (GINA).

What ultimate good could such a move serve, for current and future insureds and for the industry?

Underwriters use family histories and, at times, results from genetic tests to underwrite LTCI policies. This is appropriate, for both are effective ways to best determine longer-term future potential risk factors and to price coverage appropriately.

Incorporating LTCI under GINA, however, would take these underwriting tools away, thereby jeopardizing the ability of long-term care carriers to fully, fairly and prudently underwrite coverage.

I am not the only person questioning this move. In its talking points on the issue, The American Council of Life Insurers (ACLI) has stated that lack of access to genetic testing and family history by LTC insurers could generate adverse selection issues for these insurers. Following are two examples from its talking points:

- “A long-term care policy cannot be cancelled, nor can premiums for the policy be increased based on any deterioration in an insured’s health. Premiums may only be increased for a whole class; thus medical underwriting at the inception is critically important.”
- “The majority of long-term care insurance is individually underwritten; as a result, medical underwriting is critically important to long term care insurers’ ability to decisions regarding issuance of coverage and premiums that are fair and financially prudent.”

As the general populace ages and the issue of paying for long-term care looms larger, individuals will most likely use their own family histories, supplemented with the genetic tests they themselves can obtain (as the tests continue to drop in price), to help decide whether to apply for LTCI coverage. This could increase adverse selection risk and make LTCI too difficult to price at a reasonable level for its market if insurers lack these tools.

This proposal, if implemented, could also prevent LTC insurers from using family histories or genetic test results to help keep healthy policyholders functionally independent for as long as possible. In addition, as the issuing insurers would have the information on file, they could be accused of using that information to underwrite existing policyholders applying for enhanced benefits.

The proposal would not, however, prevent policyholders from using their own family histories and genetic tests to exercise their policies’ guaranteed purchase options or to apply for enhanced benefits. The HHS even provides a portal on its website ([www.hhs.gov](http://www.hhs.gov)), “My Family Health Portrait,” so that users can create and save their family health histories.

Perhaps HHS should consider whether this proposal concurs with GINA’s history. Because GINA focused specifically on medical coverage, the ACLI compared LTCI to medical coverage. A fundamental point of comparison is that medical insurance addresses nearly immediate medical expenses, while LTCI addresses the distant (20 to 30 years after purchase) expenses related to care to assist with performing activities of daily living.

GINA initially arose in the 1990s due to concerns over workplace discrimination with regard to medical coverage. The major concern was that genetic tests, which were becoming more common, might be used to deny coverage or substantially raise premiums for those with genetic predispositions for certain diseases or conditions.



The Genetic Information Nondiscrimination in Health Insurance Act of 1995, from which GINA evolved, was introduced in and failed to pass the 104th Congress. The failed bill defined health insurance coverage as follows:

“The term ‘health insurance coverage’ means a contractual arrangement for the provision of a payment for health care, including:

- (A) a group health plan; and
- (B) any other health insurance arrangement, including any arrangement consisting of a hospital or medical expense incurred policy or certificate, hospital or medical service plan contract, or health maintenance organization subscriber contract.”

Clearly the 1995 bill had medical expenses in view when it referred to health insurance.

GINA’s own purpose—to address discrimination with regard to medical coverage and employment—is apparent from the “Findings” section in the actual bill. The Findings cited a judicial case (*Norman-Bloodsaw v. Lawrence Berkeley Laboratory*) where employees complained about genetic tests being conducted in pre-employment medical exams without their knowledge or consent. Not only did the medical examinations in this case not address the ability of the employee to perform his or her job, but they were also discriminatory, as only black appli-

cants were being tested for sickle cell anemia and syphilis, and female applicants were being tested for pregnancy. In addition, the results of the tests were in employee files, available to anyone. This suggests that Berkeley Labs was performing these screenings to mitigate projected expenses of covering medical care for particular race and gender-based conditions.

Subsequent to GINA’s adoption, the Federal Register/Volume 74, Number 193/Wednesday, October 7, 2009/Rules and Regulations provided a set of proposed rules for implementation. Examples in that entry do not suggest anything other than individual medical coverage for reimbursement of medical expenses.

Finally, with a stated vision “to help policymakers, the press, and the public understand and respond to the challenges and opportunities of genetic medicine and its potential to transform global public health,” even the Genetics & Public Policy Center acknowledges in its website’s FAQ section that long-term care insurance is not included under “health insurance coverage” for GINA’s purposes.

When GINA passed in the U.S. House of Representatives in 2008, only one member voted against it. I believe that if insurance policies other than medical care had been in view, many more members might have registered a negative vote.

If HHS succeeds in altering GINA’s original intent by including LTCI under GINA, HHS could very well be generating discrimination that would compromise not just LTCI’s future, but the future of long-term care protection in the United States as well. This would not be good news for a product where such a strong need currently exists, and where the need for it, as the population ages, is only bound to become greater.

We might not have individual votes in Congress, but perhaps we can express our opinion about this plan to HHS. ■

# Building Bridges ... Highlights from AcademyHealth's LTC Special Interest Group Policy Seminar

by Sara Teppema



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**Exciting news!  
The SOA's LTCI  
Section Council has  
agreed to partner  
with the ILTCI  
Conference Board  
and fund the 2011  
"Building Bridges"  
colloquium  
scheduled for this  
June.**

**A**cademyHealth (not to be confused with the American Academy of Actuaries) is a major health services research organization. According to their website:

*AcademyHealth represents a broad community of people with an interest in and commitment to using health services research to improve health care. We promote interaction across the health research and policy arenas by bringing together a broad spectrum of players to share their perspectives, learn from each other, and strengthen their working relationships.*

AcademyHealth has an LTC special interest group, which sponsors a research paper each year. The paper is presented and discussed at two AcademyHealth meetings—with adjunct seminars called “Building Bridges”—over the course of the year. The first presentation is typically in June at AcademyHealth’s annual Research Conference; the audience is comprised primarily of other health services researchers. The second presentation of the same paper is held in February, at AcademyHealth’s annual Policy Conference in Washington, D.C., for an audience of policymakers and researchers.

Exciting news! The SOA’s LTCI Section Council has agreed to partner with the ILTCI Conference Board and fund the 2011 “Building Bridges” colloquium scheduled for this June. The focus of the paper will be on rebalancing, with a commissioned paper by researcher Chuck Milligan from The Hilltop Institute.

I attended the “Building Bridges” seminar this past February. This year’s presentation was called “Post-Acute Care and Long-Term Care: A Complex Relationship” by Allen Dobson et al.

Dobson’s presentation delved into the many considerations that must be made if Medicare is to incorporate Post-Acute Care (PAC) into Medicare bundled payments. At the highest level, bundling PAC will be very complicated, and will not only impact payment but the delivery of PAC services as well. This is further complicated by the fact that many policymakers may not fully understand the differences between PAC and Long-Term Care (LTC) services.

Bundling PAC payments in with Medicare bundles could be viewed as very good. It could improve care by forcing it to be more coordinated, and can reduce transitions from setting to setting, which can be highly disruptive to an individual patient. On the other hand, bundling PAC may not be optimal, because bundling may shift costs to Medicaid, exacerbating already-strained State Medicaid budget shortfalls. It is difficult to predict the net effect of these various outcomes.

The Patient Protection and Affordable Care Act (ACA) includes a national pilot to bundle payments for acute hospital, PAC and ambulatory care on a Diagnosis-related Group (DRG) basis. Dobson’s presentation includes data tables that outline the distribution of claims by a patient’s “First PAC” setting (where the patient goes right

after discharge from acute hospital). These “First PAC” settings include home health, Skilled Nursing Facility (SNF), Inpatient Rehabilitation Facility (IRF) and LTC hospital (LTCH). The data show that 36 percent of patients are discharged to a PAC setting. Of these, 50 percent is SNF, 38 percent is home health, 9 percent IRF and 2 percent LTCH.

Dobson also noted that 81 percent of First PAC episodes come from the top 20 percent of DRGs. This 81 percent doesn’t vary too much between each First PAC setting. The presentation discusses the number of “stops,” or the number of PAC settings a patient goes through in first 30 days post-inpatient discharge. The average is 2.7.

After Dobson’s presentation, a panel discussed some of the implications of the research. Bob Berenson, fellow at the Urban Institute and vice chair of the Medicare Payment Advisory Commission (MedPAC) commented on the paper. The main points follow.

- Because Medicare reimburses SNFs at a higher rate than Medicaid, bundled payment would inherently reward states that underfund Medicaid.
  - Bundling has some additional concerns, such as the incentive to create additional episodes to make up for losses on the per-episode payment. This is evidenced by an estimate that 20- to 30-percent of joint



replacement surgeries (e.g., hip, knee) are unnecessary.

- Most patients have several co-morbidities, and not just the condition with the bundled episode. How can bundling handle these?

The panel also included Diane Justice of National Academy for State Health Policy, and Penny Feldman from Visiting Nurse Service of NY.

Dobson’s presentation is available on his company’s website at <http://www.dobsondavanzo.com/>. ■

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