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# insight

## Life After Work

**THE FUTURE OF RETIREMENT SECURITY**

P. 4



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## Letter from Milliman CEO Pat Grannan

“Risk management” is a term that is used so often in business circles to mean such different things, you frequently need to ask what the speaker has in mind. I’ll offer some of the subjects discussed in this issue of *Insight* as examples of specific and widely different ways in which Milliman consultants are helping consumers and businesses manage some of their most pressing risks.

Market Risk The retirement funding crisis has become a staple of the evening news, and this summer Congress passed the Pension Protection Act. While the full implications of this legislation may not be known for years, it seems likely that defined benefit pensions will continue to become fewer and farther between, replaced by 401(k)s and other defined contribution plans. This trend predates the recent legislation, which is why many of our consultants have been looking for ways to improve defined contribution plans. By taking guarantee principles that have been used in the life insurance industry and applying them to 401(k)s in the form of guaranteed withdrawal balances, our consultants have found a way for tomorrow’s retiree to rest easier, even in the event of sustained market downturn.

Health Risk Then there’s the ever-growing cost of healthcare. In this issue we target a major source of medical and financial risks—chronic conditions like diabetes, Alzheimer’s, and heart and lung disease. Professionals at Milliman Care Guidelines have applied evidence-based care to the treatment of these conditions, resulting in increased wellness and reduced expense.

Credit Risk Finally, there’s a risk that touches the lives of millions of homeowners. Lenders have tried to keep the mortgage market booming, even as interest rates and other macroeconomic factors have remained volatile. In the process, they and mortgage insurers have become exposed to unusually high credit risk. We’re hoping that better awareness of the real (and sobering) risks involved can help prevent a crash.

We live in a risky time, but that doesn’t mean we have to resign ourselves to uncertainty. Most risks can be managed if we approach them with creativity and analytic aptitude. If you’d like to contribute to this discussion, or suggest topics for an upcoming issue, please don’t hesitate to contact us at [insightmagazine@milliman.com](mailto:insightmagazine@milliman.com).

*Pat Grannan*

**PATRICK GRANNAN**

Milliman Chief Executive Officer



## BY THE NUMBERS...

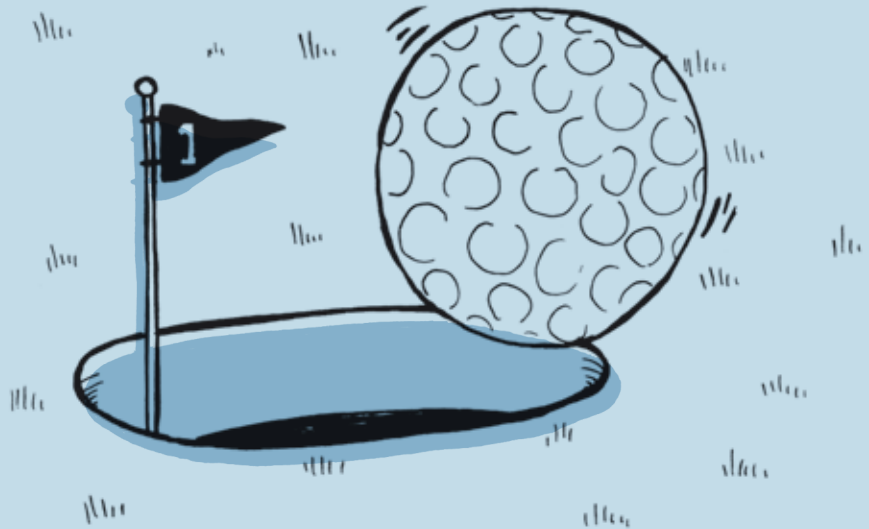


**Only \$226,400 for a Kidney?** Medical science can do wonders these days, but wonders don't come cheap, as Milliman's 2006 US Organ and Tissue Transplant Cost Estimates paper shows. Based on first-year billed charges (including procurement, hospital stay, physician fees, evaluation, follow-up, and ongoing immune-suppressing drugs), a heart transplant costs \$507,400. The priciest single organ to transplant is the intestine, at an estimated \$904,600; the majority of that cost, \$615,300, is due to a longer hospital stay. The most expensive procedure is the liver-intestine multi-organ transplant at \$943,700. Most commonly transplanted tissues or organs include the cornea (a relative bargain at \$21,500), the kidney (\$226,400), and bone marrow (\$230,100 to \$533,800, depending on the type of procedure).<sup>2</sup>



**King of the Road Rage** On average, a US commuter in an urban area loses about four minutes and \$1.17 a day to traffic. That may not seem like much, but it adds up. As of 2003, Los Angeles remained far and away the US city with the most congested freeways, causing 623,796,000 person-hours of delay (that is 71,210 person-years, by the way) and costing more than \$10.7 billion in fuel and delay costs annually. The nearest contender is New York-Newark with a mere 404,480,000 person-hours of delay and \$6.8 billion wasted.<sup>4</sup>

**You're Only as Old as the Survey Says You Are** A survey fielded by MetLife and Zogby International asks Americans, "How old is old?" The most common answer is that 71 to 80 years is "old." The study found that certain groups have a lower "oldness" threshold than others: men, unmarried people, and those under 30 tend to select a younger age as "old." The survey also asked people what age they wish they were. A third of respondents wish they were between 21 and 30. Those 18 to 29 years of age are most likely to be satisfied with their current age.<sup>1</sup>



**Aces Wild** Scoring a hole in one is certainly not common, but not quite so rare as it might seem, either. According to *Golf Digest*,<sup>3</sup> the odds of an amateur getting an ace are 12,700 to one; for a tour pro, 3,700 to one. (For some context, when we went to press, the last time an amateur had collected such a hole-in-one prize was Aug. 2, 2006.) Taking into account the number of days and players in a typical amateur tournament, the odds of someone making a hole in one are roughly one in 30; on a four-day PGA event, about one in three. The real rarity is the double eagle—three under par. From 1983 to 2003, pros made an average of 30.05 aces per year on the PGA tour, but only 2.67 double eagles.

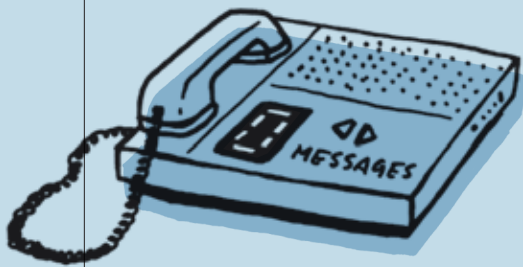
- 1 MetLife Mature Market Institute & Zogby International, "How Old Is Old?: MetLife Mature Market Poll on Attitudes About Age," July 2005, [www.metlife.com](http://www.metlife.com).
- 2 Richard H. Hauboldt, FSA, "Milliman 2006 US Organ and Tissue Transplant Cost Estimates," [www.milliman.com](http://www.milliman.com).
- 3 Bill Fields, "The Rarest Bird," *Golf Digest*, April 2, 2004.
- 4 US Census Bureau, "Statistical Abstract of the United States: 2006 (125th Edition)," Washington, DC, 2005, [www.census.gov](http://www.census.gov).
- 5 US Census Bureau, *International Data Base*, 4/26/05 update, [www.census.gov](http://www.census.gov).
- 6 Jonathan Shreve and Jill Van Den Bos, "Giving a Push to LTC as a Benefit," *National Underwriter*, August 2005, [www.milliman.com](http://www.milliman.com).
- 7 Genworth Financial, "Genworth Financial 2006 Cost of Care Survey," March 2006.
- 8 US Census Bureau, Population Division, Fertility & Family Statistics Branch, "America's Families and Living Arrangements: 2005," [www.census.gov](http://www.census.gov).
- 9 AMA/ePolicy Institute, "2005 Electronic Monitoring & Surveillance Survey," [www.amanet.org](http://www.amanet.org).



**All Countries Great and Small** Since 1950, the world's three most populous countries have been China, India, and the United States, in that order. The US Census Bureau's *International Data Base* predicts that India will grow more rapidly than China and in 2050 will have a population of 1,601,004,572, followed by China (1,424,161,948) and the United States (420,080,587). The bottom spot varies a bit more, although it tends to be occupied by island nations. In 1950, it was Nauru (in the Micronesian South Pacific, pop. 3,432); in 2000, Montserrat (in the Lesser Antilles, pop. 6,409); and in 2050, if the Bureau gets it right, it will be Saint Pierre and Miquelon (the last remnant of New France, off the eastern coast of Canada; projected pop. 6,355).<sup>5</sup>

**In It for the Long Term** Everyone talks about the potential for a retirement savings crisis, but less-discussed are the challenges of paying for long-term care. Forty-three percent of people will need some long-term care, while 9% will spend five or more years in a long-term care facility of some kind.<sup>6</sup> Such care is expensive. The US average is \$62,532 annually for a semiprivate room in a nursing home, with a private room coming in at \$70,912.<sup>7</sup> The average annual cost for assisted living facilities grew 6.7% from 2005 to 2006. Medicare does not help pay for long-term care, while Medicaid requires users to spend down their assets to nearly nothing before it will foot the bill.

Got some facts or figures you'd like to share with us? Write us at [insightmagazine@milliman.com](mailto:insightmagazine@milliman.com).



**2.57 Is the Loneliest Number** Americans appear to be getting lonelier, according to the 2005 Families and Living Arrangements survey conducted by the US Census Bureau. From 1970 to 2005, average household size decreased from 3.14 persons to 2.57. During that same time period, the number of households consisting of one person living alone increased from 17% to 26%. Americans are also embarking on first marriages significantly later than they used to. The average age of marriage for men in 1980 was 23.2 years; for women, 20.8 years. In 2005, those averages were 27.1 years for men and 25.8 years for women.<sup>8</sup>



**Wired and Fired** Spending a little idle time on the Internet at work? Watch where you surf. A 2005 survey of 526 US companies undertaken by the American Management Association and the ePolicy Institute shows that 76% of companies monitor which Web sites their employees visit. More than half save and review e-mail messages. Your boss might mean business: 26% have fired employees for misusing the Internet. But don't say they didn't warn you—89% of companies that monitor Web usage notify their employees of the surveillance.<sup>9</sup>





# LIFE AFTER WORK:

## THE FUTURE OF RETIREMENT SECURITY

BY DAN CAMPBELL AND KEN MUNGAN, FSA, MAAA

James Nestegg faces a quandary. At 50 years of age, he has accumulated a little more than \$200,000 as a semi-regular contributor to ABC Corp's 401(k) plan—a total he feels is respectable, though not sufficient to meet his long-term needs. He knows he's probably 15 years from retirement, and he'd like to use that time to grow his account. Yet he doesn't want to imperil the money he's already put away by being overly aggressive. How does he build on what he's got without risking it all? Equally frightening is the possibility that he won't have enough. What is he supposed to do to ensure that he won't outlive his savings?

Nestegg's concerns mirror those of pre-retirees all over the country. Since just 21% of American workers have access to a corporate pension plan, most people must address these issues on their own.<sup>1</sup> People saving for retirement build up a substantial sum of money with the

long-term goal of maintaining a certain standard of living through the end of their lives. A significant, sustained decline in the stock market can quickly alter those expectations.

Currently, 401(k) plan participants can invest in funds that range from low risk (such as guaranteed interest contracts and bonds) to balanced funds to a broad range of higher-risk equity funds. These investments can be combined to create portfolios with different levels of risk. Many participants struggle over tough questions: Do I invest more in equities for their upside potential—and take on the risk of a market downturn? Or do I invest conservatively to avoid losses—and miss out on market gains?

*But what if you could do both?* Nestegg and others like him will soon be able to combine the security of a long-term guarantee with the higher upside potential of an equity vehicle. This

hybrid is known as a 401(k) guarantee—a guaranteed withdrawal balance that allows investors to take withdrawals over a period of time from a guaranteed balance. This unique plan feature provides for an ongoing stream of stable benefit payments upon retirement, regardless of market performance. Account holders retain the growth potential of a diversified portfolio, and the ability to make regular withdrawals is protected against market downturns.

Financial institutions offering such guarantees are basically providing insurance against sustained market declines. An

<sup>1</sup> "National Compensation Survey: Employee Benefits in Private Industry in the United States, March 2005," Summary 05-01, US Department of Labor, US Bureau of Labor Statistics, August 2005.

### COMPARISON OF 401(k) ACCOUNT VALUE AND GUARANTEED BALANCE

Age	Deposits	Investment Income	Account Value	Guaranteed Balance	Investment Return
50			\$ 200,000	\$ 200,000	
51	\$ 6,000	\$ 10,000	\$ 216,000	\$ 216,000	5.00%
52	\$ 6,000	\$ -5,000	\$ 217,000	\$ 222,000	-2.25%
53	\$ 6,000	\$ -22,300	\$ 200,700	\$ 228,000	-10.00%
54	\$ 6,000	\$ -20,670	\$ 186,030	\$ 234,000	-10.00%
55	\$ 6,000	\$ 13,442	\$ 205,472	\$ 240,000	7.00%
56	\$ 6,000	\$ 14,803	\$ 226,275	\$ 246,000	7.00%
57	\$ 6,000	\$ 16,259	\$ 248,534	\$ 252,000	7.00%
58	\$ 6,000	\$ 50,907	\$ 305,441	\$ 305,441	20.00%
59	\$ 6,000	\$ 21,801	\$ 333,242	\$ 333,242	7.00%
60	\$ 6,000	\$ 23,747	\$ 362,989	\$ 362,989	7.00%
61	\$ 6,000	\$ -73,798	\$ 295,191	\$ 368,989	-20.00%
62	\$ 6,000	\$ -60,238	\$ 240,953	\$ 374,989	-20.00%
63	\$ 6,000	\$ 0	\$ 246,953	\$ 380,989	0.00%
64	\$ 6,000	\$ 17,707	\$ 270,660	\$ 386,989	7.00%
65	\$ 6,000	\$ 19,366	\$ 296,026	\$ 392,989	7.00%

insurance company provides the guarantee, purchasing hedges in the capital markets to provide this protection.

Guaranteed retirement products are already prevalent in the \$1.4 trillion<sup>2</sup> variable annuity market. The same principles that underlie these products can be applied to 401(k) plans, not to mention 403(b)s, 457s, and IRAs—the vehicles that make up most of the \$14.5 trillion national retirement savings pool.<sup>3</sup>

The implications of a 401(k) guarantee are significant for the various stakeholders associated with 401(k)s, a roll call that

includes plan sponsors, corporate executives, and, most importantly, plan participants.

#### On Guarantees

A 401(k) guarantee provides a “floor” under the total amount that a participant can withdraw from the 401(k) account. This protects against severe market declines while still allowing the participant to receive upside gains. The guaranteed withdrawal balance increases each time a deposit is made.

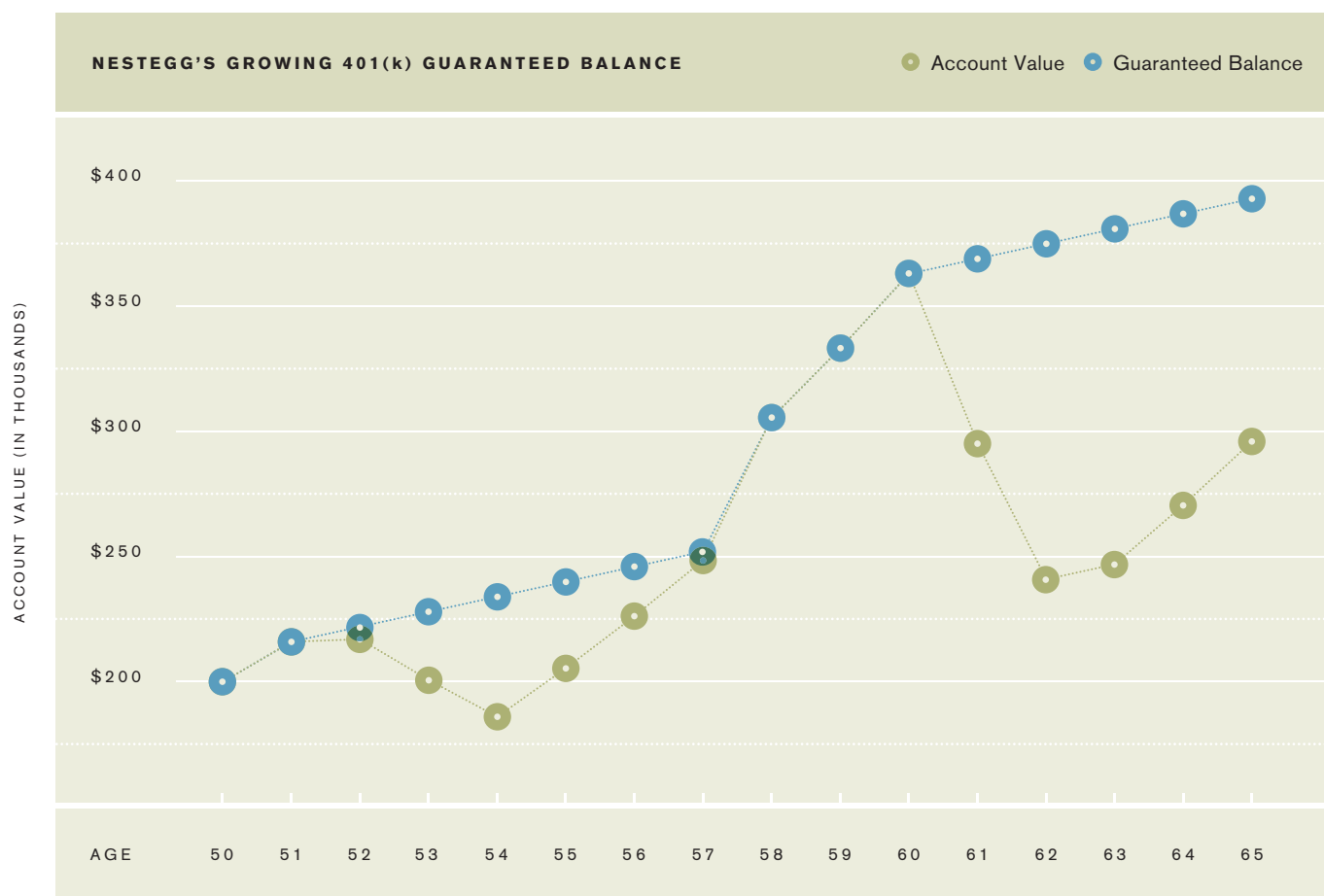
The “ratchet” is a key aspect of the 401(k) guarantee. With an annual ratchet, the guaranteed withdrawal balance will increase to the current account value once per year—thereby capturing any increase in account value due to market gains. On the other hand, if the account value drops below the guaranteed withdrawal balance due to market losses, the guaranteed withdrawal balance remains unchanged.

To provide these benefits, guarantee providers must hedge their exposure to declines in the stock market. A hedge, which is a financial instrument whose value goes up as the stock market

**Do I invest more in equities for their upside potential—and take on the risk of a market downturn? Or do I invest conservatively to avoid losses—and miss out on market gains?**

2 “Research Fundamentals: The US Retirement Market, 2005,”  
Investment Company Institute, July 2006, Vol. 15, No. 5, [www.ici.org](http://www.ici.org).  
3 Ibid.





goes down, provides protection similar to a fire insurance policy on a home. Major market declines, like fires, are relatively unlikely events, but if they happen to someone who is unprepared they can be financially devastating. Hedging a retirement account provides protection against catastrophe.

Guarantees such as these are already sold on a retail basis to millions of people saving for retirement. Taken collectively, they represent a large pool of market risk. That risk is aggregated by an insurance company and hedged on a wholesale basis. Insurance companies benefit from an economy of scale by conducting this activity in the aggregate. Insurers manage a large portfolio of futures, options, and swaps for the benefit of millions of individual accounts. The individual investors don't have to think about all this—they simply rest assured that their investments are protected.

#### The Plan Sponsor Perspective

Just down the hall from James Nestegg, Sally Sponsor has a problem of her own. As ABC's Director of Human Resources (HR), she is responsible for administering her company's benefit package. Recently, her job has not been much fun. Last year the company decided to freeze its pension plan, the latest in a series of cutbacks that have tried employees' patience.

There is no help on the immediate horizon, with healthcare costs continuing to climb.

These dynamics are beyond Sally's control. Senior management has tried to help, but costs must be cut and benefits retained. Sally needs to find a way to make this work. Her bosses seem to expect her to pull something new out of her hat—while simultaneously cutting costs.

Then one day, Sally Sponsor has lunch with a peer from another company that has faced similar challenges. She learns that they are taking a new approach to their retirement benefits—with a 401(k) guarantee. "The best thing about it is that there is no additional cost to the company," says the friend.

Sally recognizes this is true—and sees an added benefit. She knows that the people in senior management are serious investors with very large 401(k) accounts. Several of them are within 10 years of retirement and would love to see their own retirement savings protected from a significant market downturn. It would be a huge win for Sally to introduce a 401(k) guarantee to ABC, since it would benefit both the rank and file and the people who sign her paycheck.

So Sally brings the idea to her boss, ABC's chief financial officer, Fiona Fiducia. Fiona recognizes how a 401(k) guarantee might improve her own retirement package, but that consideration

is secondary to the value that such a plan enhancement could add for the company at large. As a member of ABC's board, Fiona knows that fiduciary scrutiny is at an all-time high. She has been worried about how the benefit decisions that are made today will impact ABC Corp tomorrow. A 401(k) guarantee is a good way to protect employees' retirement savings, thereby exercising her role as a corporate fiduciary. And the 401(k) guarantee not only makes investment sense, but also has the potential of boosting plan participation. Finally, the guarantee is paid for not by the company as a whole but by those employees who elect to participate. With Sally's help, Fiona takes the idea to the Board for consideration.

### Electing the Guarantee

Assuming ABC decides to install a 401(k) guarantee, what does this mean for James Nestegg?

As it turns out, the process is pretty straightforward. By electing a benefit guarantee on his 401(k), all of the money in his account is included in the guarantee except for any assets he has in the ABC Company Stock Fund (since this is a single security, it cannot be included in the guarantee). The only requirement for the remaining assets is that Nestegg cannot have more than a maximum percentage of his account invested in equity funds, typically in the 60% to 70% range. Guarantees require a reasonable level of portfolio diversification, similar to the approach used for decades by defined benefit plans. Finally, Nestegg must indicate whether he would like to begin taking guaranteed withdrawals within the next 10 years. Since Nestegg is 15 years from retirement, he selects a guarantee with withdrawals beginning anytime after a 10-year waiting period. That's it. The online interactive modeling tool tells him the price of his guarantee.

Nestegg pays an annual fee for his guarantee, typically between 50 and 90 basis points (0.50% - 0.90%) of his account balance. Annual fees from account holders are used by the guarantee provider to cover the cost of hedging the market risk, and to pay required administrative expenses. Once Nestegg elects a 401(k) guarantee, his guaranteed withdrawal balance helps him maintain peace of mind during market downturns. In addition,

**The payout is similar to an annuity, but it is markedly different in two important ways. First, Nestegg retains control over how he invests his assets; second, he benefits from any positive market performance.**

he will see his guaranteed withdrawal balance side-by-side with his current account value on his 401(k) statements.

Nestegg has \$200,000 in his 401(k), which means he starts with a guaranteed withdrawal balance of \$200,000. As he makes contributions, the guaranteed withdrawal balance grows alongside his account balance. Each year, if his account experiences positive earnings, that increase ratchets the guaranteed balance upward. In Nestegg's first year, he deposits \$6,000 and he earns \$10,000 in investment returns. With his annual ratchet, his guaranteed withdrawal balance increases to \$216,000. In his second year, he deposits \$6,000 and he loses \$5,000 due to a market downturn. His account value is now \$217,000. However, his guaranteed withdrawal balance is \$222,000. The guaranteed withdrawal balance increases with his deposits, and is unaffected by the market downturn (see table on page 6 and graph on page 7 for an example of how this works).

It is important to note that the guaranteed withdrawal balance can only be used for a stream of withdrawals—typically upon retirement. It cannot be taken as a lump sum. In Nestegg's case, at age 65 he can take annual guaranteed withdrawals up to 8% of the guaranteed withdrawal balance. He can take these withdrawals regardless of the actual performance of the account. The guaranteed withdrawal balance is reduced, dollar-for-dollar, upon each withdrawal. Withdrawals continue until the guaranteed withdrawal balance is exhausted. Once the guaranteed withdrawal balance is exhausted, any remaining account value (due to positive earnings) is Nestegg's to use as he pleases.

As an alternative, Nestegg can elect to receive lifetime withdrawals. The lifetime withdrawal amount is calculated based on his personal circumstances upon retirement. The lifetime withdrawal amount can be based on a single life or a joint-and-survivor calculation.

The annual withdrawal that is available will be defined as one of the key components of the 401(k) guarantee. (If the participant needed to take a lump distribution, he could do so with his current account balance—not his guaranteed withdrawal balance.)

At the end of 15 years, Nestegg has accumulated almost \$400,000 in his guaranteed withdrawal balance, but a downturn in the market has driven his account balance down to \$296,000. While he can continue to work if he wants to, he has security in knowing that, at a minimum, he will be able to withdraw \$400,000 from his 401(k) over time.

With a guaranteed withdrawal balance, Nestegg can retire on schedule. His plans are not disrupted by the market decline. He decides to do just that, effectively ending the accumulation period and entering the payout period.

The payout is similar to an annuity, but it is markedly different in two important ways. First, Nestegg retains control over how he invests his assets; second, he benefits from any positive market performance.

## Established Territory: Variable Annuities With Guarantees

Retirement guarantees are already prevalent in the \$1.4 trillion variable annuity (VA) market. VAs offer guarantees that protect account holders from severe, sustained market declines. Most popular is the Guaranteed Minimum Withdrawal Benefit (GMWB), which provides a guaranteed amount that can be withdrawn each year, regardless of market performance.

GMWBs and other types of VA guarantee use put options, which provide a payout when the stock market declines, to create a floor of protection for the account holder. In the same way that Wall Street investment banks manage their options portfolios, life insurance companies have implemented programs to value and hedge their VA guarantees.

## How Does This Guarantee Compare to Other 401(k) Guarantee Products?

Several other firms (mostly insurance companies) have introduced products intended to provide guarantees within 401(k) plans. Most of these offerings are variations on the concept of investing in group variable (or fixed) annuities within the 401(k) plan. This approach tends to be limiting with regard to investment offerings and inflexible in how a participant can manage his or her account.

The 401(k) guarantee described in this article allows participants to insure their entire 401(k) account and does not require embedding annuities in the company's 401(k) plan. This approach is more flexible than existing insurance products, which offer only a single guaranteed investment choice.

Given these choices, Nestegg elects to receive a 6% lifetime guarantee. With this structure, Nestegg can withdraw at least \$24,000 per year for the rest of his life. Also, he can still benefit from strong market performance, where positive earnings can increase his withdrawable amount. The annual ratchet continues to lock in new gains throughout the payout period. Meanwhile, the guarantee protects his ability to take withdrawals even during market downturns, and it protects him from running out of money due to longevity risk.

\* \* \*

The guarantee changes the way James Nestegg thinks about his retirement. In an environment marked by deep uncertainty, there is comfort to be found in significantly reduced market risk. In time, this type of guarantee may become the standard for how people protect their retirement investments.

The benefits of 401(k) guarantees extend throughout an organization. Plan administrators like Sally Sponsor will see increased employee interest in their company's 401(k) plan. With a 401(k)

guarantee in place, confused investors can find the confidence to get more involved in their retirement savings. Human Resources earns a feather in its cap for installing an affordable solution that can benefit employees from the mailroom to the boardroom.

And it's not just private enterprise that stands to gain. Just as Fiona Fiducia recognizes the value of guarantees for her organization, so too will government and other finance officers who oversee 457s, 403(b)s, and other defined contribution plans, a savings pool that totals over \$3.7 trillion.<sup>4</sup> The benefit guarantee concept could also apply to the additional \$3.7 trillion IRA market.<sup>5</sup>

Guaranteeing a withdrawal balance within a retirement savings plan is a way to learn from yesterday's market volatility. As an aging workforce contemplates a changing retirement paradigm—one that pundits seem to agree provides less of a safety net—guarantees offer a new, economically feasible way to deliver the retirement security that employers and employees all hope for. **M**

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**KEN MUNGAN** heads Milliman's Financial Risk Management Practice (FRM), which includes offices in Chicago, London, Amsterdam, Sydney, and Tokyo. FRM offers strategic consulting and a risk management tool, MG-Hedge, which hedges more than \$500 billion in assets.

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4 "Research Fundamentals: The US Retirement Market, 2005," Investment Company Institute, July 2006, Vol. 15, No. 5, [www.ici.org](http://www.ici.org).

5 Ibid.





WHAT HAPPENS WHEN CREDIT RISKS

# COME HOME TO ROOST?

BY MICHAEL SCHMITZ, FCAS, MAAA,  
AND KYLE MROTEK, FCAS, MAAA

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The housing market boom of recent years has given rise to a couple of strange economic bedfellows: fiscal pragmatism on the part of buyers looking for affordable financing options, and marketing ingenuity on the part of lenders looking to extend the run on a good thing. For a while, low interest rates alone drove an affordability factor that put home ownership, or upgrades to a bigger or better home, within the reach of many more consumers than otherwise would have been able to make purchases. As home price appreciation escalated in many areas—putting up a potential obstacle to purchases—lenders, capitalizing on demand and market opportunities, developed new and sometimes exotic types of mortgage products that enabled buyers to keep their dreams alive and the market afire. Leading the way were offerings such as ARM (adjustable-rate mortgages) and IOs (interest-only loans). Their monikers sum up their appeal.

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The concern now is that as interest rates trend upward, the industry's "risk discipline" has been muted by a seemingly myopic focus on short-term gains, given the recent surges in home prices. Many people still don't believe there is high risk in the housing market, while many others believe they have to track with the market regardless of the risk involved. Nevertheless, a growing amount of statistical evidence and analysis by industry observers and advisors indicates that there is a significant level of risk associated with many of the newer loans—risk for homeowners and for those who underwrite or insure mortgages. And for numerous banks and insurance companies, that risk is compounded by the fact that individual mortgages are highly correlated in a manner unlike traditional insurance risks. Thus,

the volatility of defaults can be significant, resulting in large swings as economic tides raise—and lower—all boats.

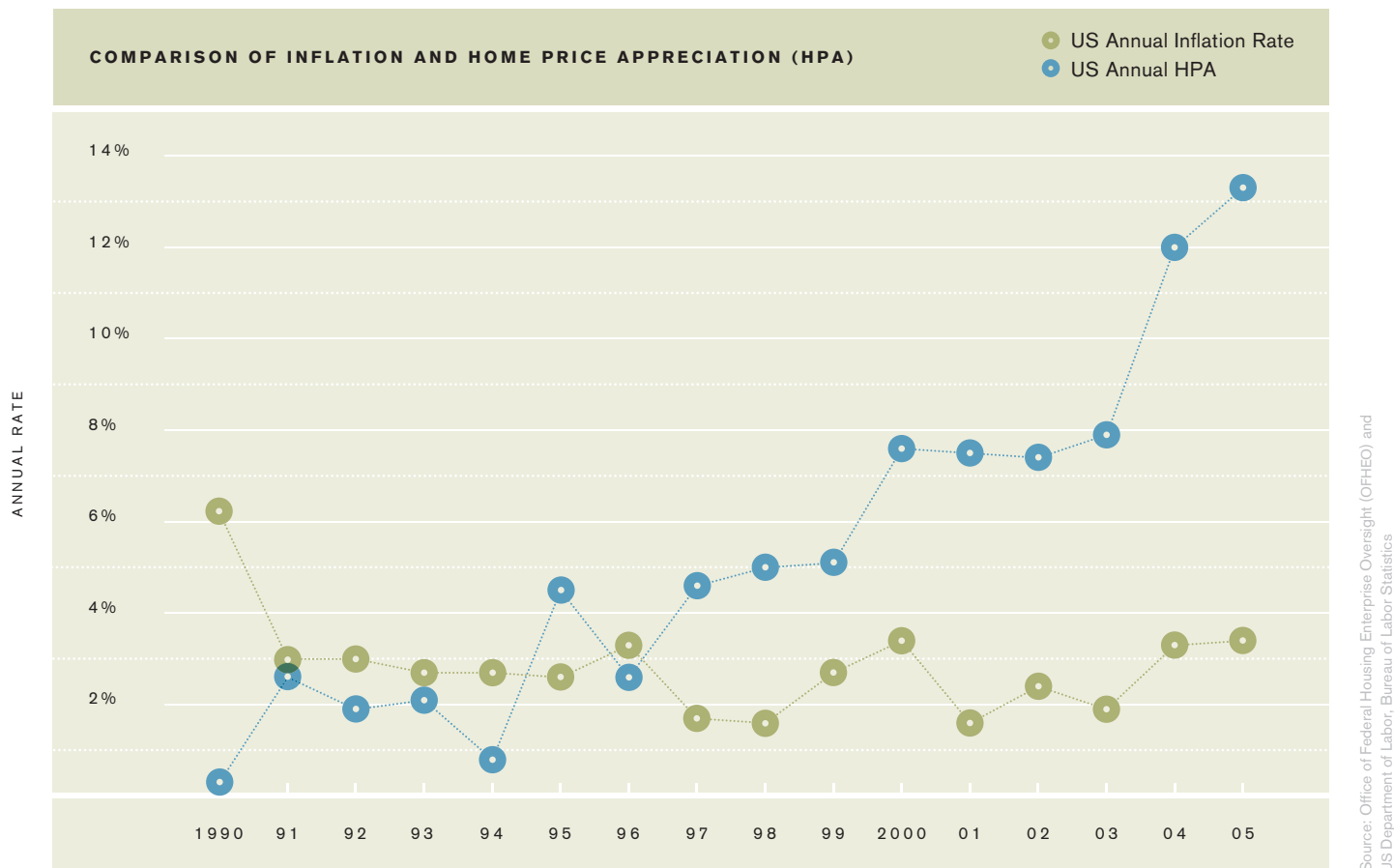
Consider this closer look at several key drivers of the current risk levels:

## Home Price Appreciation

House prices have been rising at unprecedented rates in recent years, well in excess of inflation rates (see graph on page 12).

The upshot is that housing is generally less affordable—across virtually all US regions. The strong home price increases have fueled a significant upsurge in second home and investor purchases. Such leveraged investment in housing where multiple properties are owned by individuals with large debt burdens has





led to still higher prices, resulting in a kind of feedback loop. Forty percent of home purchases in 2005 were second homes, 28% of which were investment properties and 12% of which were vacation properties.<sup>1</sup> Softness in the housing market could become contagious if such leveraged investments in housing were to unwind through forced sales or foreclosures.

Further exacerbating the affordability issue is the fact that the ratio of house price to buyer income is alarmingly higher in recent years, most notably since 2000 (see graph on page 13).

In addition, the total financial-obligation “package” of home ownership, including mortgage payment, property taxes, and homeowner’s insurance premium, has increased dramatically over the past six years.

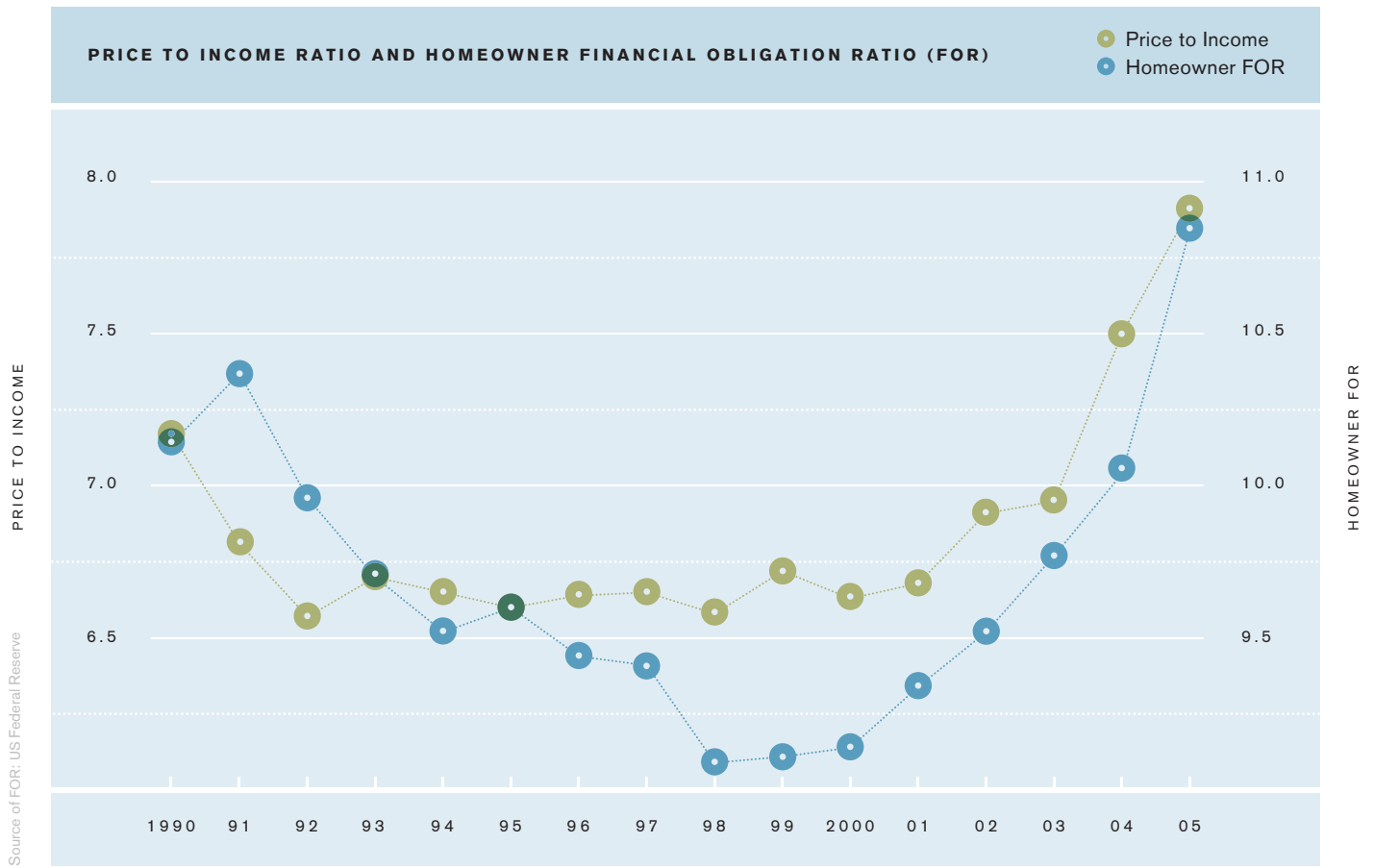
The tremendous growth of second lien mortgages such as home equity loans and lines of credit has also contributed to homeowners’ debt burden. These loans sit atop the borrower’s first mortgage and further erode the borrowers’ equity cushion and substantially increase the risk of borrower default. More than 40% of first mortgages originated in fourth quarter 2005 were accompanied by a second mortgage, according to SMR Research, compared to less than 15% in 2001.

This is a particular concern in the private mortgage insurance industry, which consists of seven companies that insure home mortgages, mostly on what is known as high loan-to-value

(LTV) ratios, or loans with little to no equity. But it’s also a growing concern among lenders, who increasingly are holding some of these loans on their own balance sheets or have a stake in the reinsurance of the loan. What insurers and lenders have in common in this dynamic market is the need to constantly evaluate and manage their credit risks.

Still others warn of the day when home prices start to drop. PMI, a leading mortgage insurance company, publishes a quarterly risk index based on its proprietary statistical model, which gives its perception of the likelihood that home prices will decline within two years at the Metropolitan Statistical Area (MSA—a designation used by the US government to indicate a city and its suburbs) level. Based on the spring 2006 report, PMI is forecasting a greater than 50% chance of pricing drops over the next two years in MSAs comprising 35% of the population of the top 50 MSAs. The graph on page 14 demonstrates this prediction. Further, the proportion of MSAs falling into this category has grown from virtually nil only a few years ago. As of spring 2005, PMI forecasted a greater than 50% chance of pricing drops over the next two years in MSAs comprising less than 5% of the top

1 Noelle Knox, “Second Homes 40% of Market—Highest Level Ever Helps Drive Up Prices,” *USA Today*, April 5, 2006, Page 1A, [www.usatoday.com/printedition/news/20060405/1a\\_lede05.art.htm](http://www.usatoday.com/printedition/news/20060405/1a_lede05.art.htm).



50 MSAs, weighted by population. As a note, a value of 100 indicates a 10% probability of a price decline over the next two years and, similarly, a value of 500 indicates a 50% probability.

Market consensus also points to home price declines over the next year. The Chicago Mercantile Exchange recently began trading futures on housing index values for 10 large MSAs. At press time, the futures prices imply expected price decreases over the next year in the indexes for all 10 MSAs that are traded.

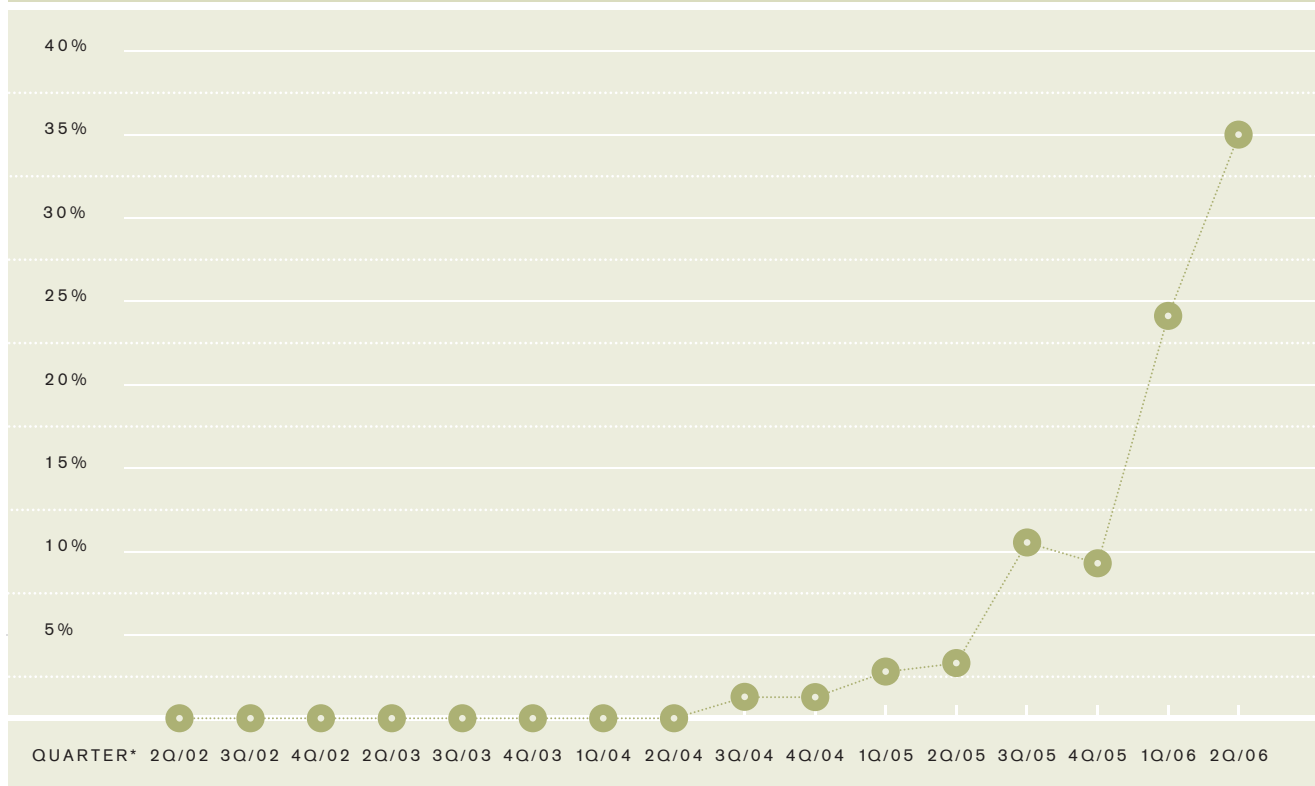
#### Exotic New Products

Further escalating concerns about the riskiness of the home lending market is the vulnerability created by some of the loan products that consumers have found so appealing in recent years:

**LOW-DOC LOANS** This product was originally developed for use by the self-employed and those willing to pay extra for the speed and convenience of not having to produce a lot of paperwork; thus the name, which signifies low, or minimal, documentation. Lenders look to documentation of a borrower's income and assets when underwriting the loan. Scarcity of documentation sometimes also means low quality, or less reliable or less stable income or assets. Use of these products has been on a steady increase since 1998, and their use *quadrupled* between 2002 and 2004.

**ADJUSTABLE-RATE MORTGAGES (ARMs)** The largest mortgage originator in the US has reported tremendous growth in adjustable rate loan products over the last two years, specifically 70% year-on-year growth between 2003 and 2005. During this same period, year-on-year growth for fixed-rate mortgage was *minus* 17%. ARM's come in a variety of types, including:

- *Option ARM's*, which is perhaps the most risky of this type and offers the borrower three payment choices: amortizing over various periods of time, paying interest only for a period of time, or paying an amount less than interest that is known as the minimum payment. It doesn't take a mathematician to figure out that making payments less than the interest portion will result in a loan balance that increases, rather than decreases, with time. One major banking lender has said that its portfolio of option ARM loans increased from under \$50 billion to more than \$70 billion between 2003 and 2005.
- *Hybrid ARM's* generally have a lower fixed interest rate for a set number of years (i.e., usually three to seven), after which the loan resets and then varies annually. That variation is often tied to a well-known market rate, such as the Treasury bill short-term rate.

PERCENTAGE OF 50 LARGEST MSAs WITH PMI RISK INDEX VALUE  $\geq 500$ 

Source: PMI Group and Milliman  
 \*PMI did not publish a Risk Index for 1Q/02 and 1Q/03.

- **Interest-Only Loans**—These instruments (IOs) were originally intended for higher-net-worth clientele or people who were expecting a large increase in personal income over a relatively short period of time. But in recent years, their prevalence has extended far beyond those rarefied populations. IOs allow the borrower to make only interest payments on the loan for a fixed period, after which the loan amortizes over the remaining term. Risks associated with IOs for most borrowers would include the potential impact of interest rate increases and the shock of the payment amount once the loan amortizes.

#### Interest Rate Movements

As interest rates go up, many lenders naturally are concerned about their loan volume going down. Higher rates have already effectively shut down the recent deluge of home refinancings, so the search for other consumer buttons to push goes on. In order to cover fixed costs and grow market share, lenders will continue to look for other ways to keep volume coming in the door.

In addition, the increase in interest rates is bound to result in a high level of “payment shock” among consumers who opted for one of the ARM products. These factors in combination are likely to produce more mortgage default losses. According to

DB Global Markets Research, for example, hybrid ARM loans subject to interest rate resets in 2006 will total \$400 billion; for 2007 that total skyrockets to \$1 trillion. And there are even gloomier predictions from others who make these projections: LoanPerformance, for instance, puts the hybrid ARM volume reset between 2006 and 2007 at an estimated \$2 trillion.

In the past year alone, the delinquency rate for ARM loans more than 90 days past due has increased 141%, compared to only a 27% increase for fixed-rate mortgages.<sup>2</sup> Looking ahead to when the large volume of 2004 and 2005 hybrid ARM mortgages reset in 2007 and 2008, it is likely that borrowers who experience subsequent resets in monthly mortgage payments will fall even farther behind.

Consider this example of a borrower who opted for a typical 3/1 ARM interest rate on a home in 2004 with an initial rate of 4.2% (a 3/1 is a loan with a fixed interest rate for the first three years that becomes an ARM in the fourth year). Based on 3/1 ARM to one-year ARM spreads and the July 2006 one-year Treasury bill index rate, payments on that loan will soon reset to

<sup>2</sup> Ruth Simon, “Homeowners Start to Feel the Pain of Rising Rates,” *The Wall Street Journal*, Eastern Edition, August 10, 2006, Page D1.

<sup>3</sup> Christopher L. Cagan, “Mortgage Payment Reset: The Rumor and the Reality,” *First American Real Estate Solutions*, February 8, 2006.

an increase of nearly 40%. On a \$200,000 loan, that means a payment of \$965 will jump to \$1,315. For 2005 originations, based on similar assumptions, the payment will increase about 30%, from \$1,030 to \$1,330.

Altogether, one industry analyst predicts that the reset of ARM loans valued at \$1.888 trillion from origination years 2004 and 2005 will result in first loan defaults of \$300 billion and produce losses of \$110 billion. If there's a silver lining to this ominously dark cloud, it is the small consolation that these losses would be spread out over a period of about five years.<sup>3</sup>

### Measuring Risk

Risk assessment is considerably more complicated today because it is so widely spread around. Pieces of the home loan market risk are owned by insurers, investors, banks, hedge funds, and Fannie Mae and Freddie Mac, just to name the biggest players. Because the industry risk is so highly correlated, a sudden increase in foreclosures would have a significant impact on many different parties.

As the old saying goes, "You can't manage what you can't measure." The first step, then, is to identify the risks you face and measure them as accurately as possible. Mortgage risk, for example, can be measured by analyzing distribution of a portfolio with respect to such key characteristics as loan-to-value ratio, FICO score, interest rate, geographic region, product types held, loans in delinquency, and more. It's also helpful to benchmark your portfolio against competitors and to perform periodic loan persistency and mortgage default loss analyses.

Accurate risk measurement can be accomplished using a risk metric tool that segments a portfolio's risk factors (e.g., FICO scores, LTV, interest rate distribution) and benchmarks those against an aggregate peer group. The resulting data can then be used for forecasting and managing the credit risks.

### Mitigating Risk

The thousands of individual loans discussed in this article are correlated because they are driven by the same set of economic and market phenomena, and we believe the risk of loan delinquencies and foreclosures is therefore also correlated. What, then, can be done to mitigate these risks? As mentioned, the first step is to understand and measure your risk. Once you have a handle on its nature and scope, you can begin to develop a mitigation strategy. Depending on circumstances, there are a number of ways to off-set or mitigate your particular risks, so let's look at a few.

For loans already originated:

- High LTV is a statistically strong indicator of potential loss, so credit-enhance high-LTV loans with mortgage insurance.
- Securitize the loans by offloading risk to a secondary market, such as mortgage-backed securities.

- Offload risk through a synthetic product, such as a credit default swap (CDS). Using this tool, a lender pays an investor a fixed fee to reimburse the lender an amount that is a function of mortgage default losses. House price index futures can also be used to hedge the risk of home price decreases.

For new loans, in addition to the items above:

- Understand how and where the risk stands and revise underwriting guidelines to prevent exacerbation of existing problem areas.
- Develop strong underwriting guidelines; don't fall prey to unbridled competition for market share. The CEO of the largest US mortgage lender recently told analysts his company is being more cautious as the housing market cools and competition among lenders intensifies. Further, his firm has been careful to give option ARM loans only to borrowers with relatively strong finances.
- Ensure that your portfolio is diversified on several levels. Loans originated in different years, for example, spread the risk associated with prepayment and default. Similarly, spread the loans around geographically. Loan defaults tend to be driven by regional economic recessions, so a well-spread geographic portfolio can help weather regional economic downturns and corresponding mortgage losses.

As the housing boom subsides, there undoubtedly will be risk for those who took advantage of its earlier opportunities. The key to surviving and prevailing in the home lending market is to identify areas of risk exposure and to manage them effectively, both now and in the future. To quote Louis Pasteur, "Chance favors only the prepared mind." **M**

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the choroid coat, which in turn releases the

# PRINCIPAL VIEWS



Fig. 1.—Human figure in anatomic position.

## TYPICAL TEMPERATURE CHART IN RELAPSING FEVER

In relapsing fever is sudden, the temperature reaching a high point.

## DISEASES OF THE HEART



PULSE IRREGULARITY FROM TWO TYPES OF EXTRA SYSTOLE



## A PRESCRIPTION FOR BETTER

# CARE OF CHRONIC DISEASES

BY JAMES M. SCHIBANOFF, MD, AND DAVID ZIEVE, MD

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Diabetes, heart and lung diseases, and Alzheimer's are among a steadily lengthening list of conditions that account for a significant portion of all healthcare costs in the US. In fact, chronic illnesses are the largest, fastest-growing, and most expensive aspect of health services, yet care for these conditions remains fragmented and relatively poor in quality. This sets up a vicious cycle in which uncoordinated care contributes to further patient suffering—both for lack of an integrated approach at the provider level and from patients' own lack of knowledge and skills to help themselves. But there is hope in the form of a guideline-driven approach that enables care managers to help families, caregivers, and especially the patients themselves play a bigger role in treating chronic illnesses.

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### Hardly a Blip on the Radar

To best understand how this approach works, we start by recognizing the fundamental differences between inpatient, or acute-care, “episodes” and chronic illness. In an acute-care situation, the patient often is in an operating room or intensive care unit, where the focus is on the quality of the medical team and perhaps the technology employed to save or improve a life. For a patient with chronic illness, the relationship with the healthcare system is often defined by what the World Health Organization calls the “radar syndrome,” in which the patient appears at an emergency room or doctor's office exhibiting specific symptoms, is treated and discharged, and then simply disappears from the radar screen—that is, until the next crisis. In chronic disease, the patient is out of view

of providers more than 95% of the time, so patient behavior determines nearly all outcomes, including adherence to the treatment plan, checking blood pressure, controlling diet, doing exercise, and avoiding smoking.

We're convinced that evidence-based care guidelines can serve as a small but critical piece in resolving the radar syndrome characteristics of chronic treatment. Such guidelines are rooted in an empowerment theory, analogous to the parable, “Give a man a fish and he eats for a day; teach him to fish and he eats for a lifetime.” Guidelines can help facilitate the entire care process, arming caregivers with the questions they need to ask and the steps they need to follow to do a better job caring for their patients, while at the same time giving patients the materials they need to take better care of themselves. By bringing together

information and materials for *everyone* involved in the patient's care, a guideline-driven approach can help ensure that care is optimized between emergency room or doctor visits and that the need for acute, reactive interventions is minimized. And because guidelines can be outpatient-based, there's an important bottom-line impact.

### **Defragmenting Treatment**

Traditionally, there have been two approaches by health plans in the treatment of chronic disease patients:

1. Outsourcing the management of patients with chronic conditions to companies that specialize in a particular condition, or
2. Management of care by insurance companies directly.

The risk with the first approach is that it can result in a fragmented system of care. Someone with diabetes, for example, might have one company looking out for her blood sugar levels and another treating the kidney or eye disease that has evolved from the diabetes. Add to that the possibility that the same patient has a history of high blood pressure and you start to get the picture of the complexity—and potential for gaps or omissions—inherent to this treatment approach. The second approach is superior to the first because the care can be better coordinated. Traditionally, this approach has also fallen short because insurance companies have lacked all the information they need to keep the patient on track through regular assessments and treatment monitoring.

### **Evidenced-based Research Process**

An evidence-based research process starts with the review and analysis of all documentation that is potentially applicable to chronic conditions, resulting in a unique set of content. This

Guidelines can help facilitate the entire care process, arming caregivers with the questions they need to ask and the steps they need to follow to do a better job caring for their patients, while at the same time giving patients the materials they need to take better care of themselves.

fact gathering and analysis is conducted using a clinically-sound process that includes the following steps:

- Study of all relevant medical literature
- Review of findings and recommendations by experts from a wide range of related fields of medical practice—physicians, dietitians, physical therapists, nurses, etc.
- Field testing
- Identification of best practices
- Follow-up conversations with customers regarding satisfaction with use

After guidelines have been developed based on the best current medical evidence, they are integrated into a practical care plan using a set of proprietary workflow tools that make up a comprehensive and user-friendly treatment combination. Together, the clinical guidelines and the workflow tools are then used by the patient and members of his or her care management team to drive the right questions and actions in every patient encounter, thereby reducing inconsistencies in the care plan and in variability of treatment steps.

### **Patients Become More Active Participants**

Patient education and care team collaboration is essential to successful use of the tools. Education efforts should be directed at key intervention steps that the patient can perform, such as testing blood sugar in diabetes or peak flow rate in asthma, and that he or she can follow up on, such as adjusting medication doses. In addition to advancing knowledge of the disease, other patient education objectives include enhancing the patient's general problem-solving skills and making the materials accessible in a variety of formats, e.g., print and e-mail. Unlike the traditional medical care model, in which the professional is the all-powerful expert, guidelines foster collaboration between patient and healthcare professional. It is essential that they work together as a team, using the guidelines and tools to share information, solve problems, and discuss experiences and outcomes.

Chronic care guidelines facilitate questions and discussions that give patient and caregiver an overall view of care status, while highlighting any gaps that may exist or interventions that need to take place. There also are links to other sources of related information. In the not-too-distant future, chronic care guidelines will allow drill-down access to additional sources of information, including treatment options and a record of treatment progress.

Integrated care programs such as those supported by guidelines and tools can help achieve favorable cost and care outcomes in treating chronic disease, but they are not stand-alone solutions. It is important that patients be motivated and eager to help themselves, and that treatment managers make appropriate use of guidelines and best practices.

## Putting Chronic Illness in Perspective: A Costly and Largely Preventable Problem

According to profiles developed by the US Centers for Disease Control and Prevention (CDC), the statistics on chronic diseases contain a sad irony. Chronic illness is the most prevalent and costly health problem in this country, as well as the most preventable. Tobacco use, the combination of poor diet and lack of exercise, and alcohol consumption typically lead the list of causes of death—far and away more significant factors than automobile wrecks, drug use, firearms, pollutants, and infectious agents combined and multiplied by three. The fact is that seven out of 10 deaths each year—or more than 1.7 million people—are due to a chronic disease, with heart disease, stroke, cancer, pulmonary diseases, and diabetes among the most common causes.

In addition to being killers, chronic diseases also make for a lot of long-term discomfort in the form of extended pain and suffering from arthritis, respiratory ailments, back problems, and complications from diabetes. More than 90 million Americans, or one out of three people, live with a chronic illness, and about one-quarter of them have major life-activity limitations.

The CDC puts the cost of medical care for all this misery at \$1.4 trillion, or a whopping 75% of the nation's total medical care costs. In 2001, about \$300 billion was spent on cardiovascular diseases alone. This category is also responsible for \$129 billion in lost productivity that same year.

### SOME OTHER KEY FACTS ABOUT CHRONIC DISEASES:

- The estimated direct and indirect costs associated with smoking exceed \$75 billion a year.
- Chronic diseases account for one-third of the years of potential life lost before the age of 65.
- The direct medical costs associated with physical inactivity jumped from \$29 billion in 1987 to more than \$76 billion in 2000.

### DO ANY OF THE PREVENTION INITIATIVES PAY OFF?

According to the CDC, many certainly do:

- Nearly \$68 billion is spent on dental services each year. For every \$1 spent on water fluoridation, \$38 in dental restorative treatment costs is saved.
- For a cost of between about \$1,100 and \$4,500 for smoking cessation programs, one quality-adjusted year of life is saved, leading some to call these programs the "gold standard" of cost-effective interventions.
- For every \$1 spent on the Safer Choice Program (a school-based HIV, STD, and pregnancy prevention program), about \$2.65 is saved on medical and social costs.

Even with the proper degree of commitment and sharing, there will still be a need to employ some of the most extensive and costly aspects of our healthcare system—such as hospital care and diagnostic procedures—in order to ensure the best overall solution for the patient. However, a model based on evidence-based guidelines in chronic disease care has great merit and deserves further investment. There's no question that in the long run these efforts will save money. For example, if you decrease a person's likelihood of heart failure, the patient not only feels better, but may be more productive on a job or in life generally. Healthcare dollars can be saved by reducing the need for doctor and hospital visits, tests, medications, therapies, etc.

### Research Findings Encourage Further Investment

Recent research into the benefits of using a guideline-driven approach is quite encouraging, as it demonstrates that the prudent use of guidelines can lead to improvements in hospitalization rates, healthcare costs to insurers and employers, and patient satisfaction and quality of life. There's a lot to be said for a process that promotes self-empowered decision making and treatment, use of best practices, and technology-facilitated communication—all in the pursuit of helping patients take

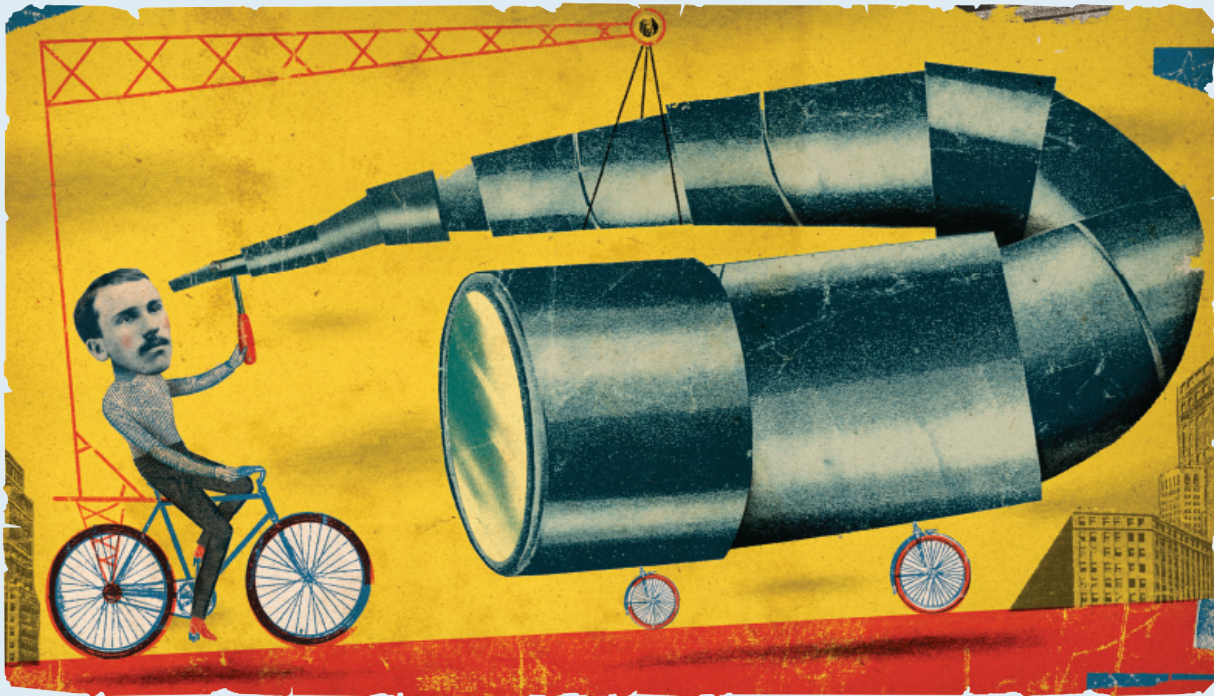
more responsibility for their own care, improving the use of care management resources, and helping to ease the enormous burden of today's healthcare costs. **M**

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CONSUMER-DRIVEN HEALTHCARE:  
**TAKING THE LONG VIEW**

BY MICHAEL STURM, FSA, MAAA



Part of life's excitement lies in its unpredictability. Yet the future's uncertainty can also leave us with a trepid, "in the dark" sensation—and that's how some stakeholders are looking at consumer-driven healthcare (CDHC). They ask, "How can CDHC work, if at all, in twenty-first century health systems, given the structure of our current healthcare system and the chaotic shifts of the past decade?"

There's a clearer road map to understanding than you might imagine. In response to disconcerting spikes in medical costs, ill-considered spending, uninsured consumers, and the general kaleidoscopic changes roiling our healthcare system, the health insurance industry is realigning toward a consumerist-based model. Among its potential attributes, CDHC's long-term vision seeks to calm the storm. In the next decade, insureds, employers, and insurers will engage with the healthcare system in novel, unprecedented ways, and a new culture of health-cost consciousness may well arise.

\* \* \*

The new healthcare consumerism puts more of the burden of decision-making on the insured with the hope that this responsibility will get consumers more in touch with the healthcare system

and help them become more fully aware of costs. More employers are beginning to make health savings accounts (HSAs) available, both because of their cost-control potential and their built-in tax benefits. HSA funds are portable, giving insurance consumers a sense of ownership, and they can be used to pay higher deductibles, coinsurance, and the cost of non-covered services. Insureds will have a natural wish to keep their individual HSAs as robust as possible, resulting in thriftier and better-informed spending that is tied to the realities of medical costs. This will save money for employers, but will also result in employees parsing their medical choices and making more educated, cost-conscious decisions, turning out savvy new generations of insurance recipients.

For all these reasons, HSAs are a powerful piece of the new healthcare consumerism, a tool to stabilize some of the price-unconscious spending we've seen in the traditional model. Yes, HSAs have limitations (e.g., requiring cost sharing that some consider to be too front-loaded), but they have come a long way and can be modified along with current benefit structures to keep consumers in "shopping mode" as long as possible.

While patients can use their HSAs for emergency room bills and other traditional costs, the accounts can also be used for less



**CDHC can be an empowering, long-term response to chaotic runaway costs and other factors that make the traditional healthcare model wasteful and difficult to manage. The new model encourages and rewards both prevention and wise, cost-effective healthcare purchasing decisions, which should lead to reduced spending.**

conventional health screenings, such as those not covered by standard wellness programs (e.g., genetic marker testing for reproductive cancers or detailed heart imaging scans to rule out cardiac disease).

In addition, increased intervention on an individual insured basis in the form of personal health coaches will help us manage our health. In this manner, people can phone nurses or wellness experts to discuss a chronic or acute condition. These coaches can help us get the information we need in a timely and economical fashion, regardless of our place on the healthcare continuum, by providing an alternative to a more expensive consultation with a physician.

\* \* \*

Even more evidence of the CDHC sea change is apparent in the employee health and wellness incentive programs that are continuing to grow in popularity. Research demonstrates that lifestyle factors contribute to illness even more than genetic predisposition. For example, 90% of risk for heart disease in the US is now thought to be based on lifestyle factors.<sup>1</sup> Whether you are a vegetarian tri-athlete or a saturated fat-loving couch potato, by now you likely have heard that poor lifestyle choices can lead to higher lifetime healthcare costs.

What does this mean for you? Insurers and employers are increasingly engaging subscribers in ways that tie lifestyle to compensation. Some employers are offering HSA contributions and/or reduced healthcare premiums to employees who take their medications appropriately, maintain online wellness records, or sign no-smoking statements. Others are launching wellness incentive programs to limit future catastrophic healthcare events. Still others are offering credits, to be cashed in later, for significant lifestyle changes. You may have heard tales of employers handing out pink slips to cigarette smokers; however, the more common strategy is to offer rewards for healthful choices, which may result in that Holy Grail known as “return on investment.” We must also continue to encourage, reinforce, and reward the savings and added quality-adjusted life-years that result from

weight management; smoking-cessation programs; participation in disease-management programs; and early diagnostic testing for diabetes, cancer, and similar illnesses. Most employers strive to offer fair, palatable combinations of both the “carrot” and the “stick” to encourage healthy behavior. Such programs are the beginning of the paradigm shift that will make consumers more active and well informed, helping control costs at every level.

One lesser-known component of CDHC that continues to gain momentum is lifestyle-based analytics (LBA). Groups of high-risk and low-risk individuals can be identified by analyzing purchases (e.g., gym memberships, organic grocery shopping, alcohol/tobacco, etc.). Information about individuals and groups captured by LBA may be helpful in different ways. First, it gives insureds more information about themselves and how to make necessary lifestyle changes. Second, it allows underwriters to refine risk prediction for a given group of insureds based on their digital fingerprints. Third, it can be used as a disease management and wellness tool for identifying those most at risk before they develop a lifestyle-based condition.

\* \* \*

CDHC can be, if nothing else, an empowering, long-term response to chaotic runaway costs and other factors that make the traditional healthcare model difficult to manage and wasteful. The new model encourages and rewards both prevention and wise, cost-effective healthcare purchasing decisions, which should lead to reduced spending. However, we must measure our returns not only in dollars, but also in terms of the real health and quality of life that can result from the new consumer-driven system. Who can place a dollar value on lives extended and illnesses avoided? These less quantifiable benefits are among our most sought-after goals.

Healthy living brings concrete returns. Employees who are less stressed are more productive, have better morale, and create a positive ripple effect through community and society. If we can expand our healthy majority, we will be better able to designate resources to achieve our goal to help the sickest and poorest among us, and eventually will lessen disparities in coverage. CDHC changes are truly exciting, offering the promise of a fairer and less wasteful system from which everyone can benefit. **M**

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1 Salim Yusuf, et al. "Effect of Potentially Modifiable Risk Factors Associated With Myocardial Infarction in 52 Countries (the Interheart Study): Case-Control Study." <http://image.thelancet.com>.



## TOUGH QUESTIONS FOR YOUR BUSINESS CONTINUITY PLAN

BY JERRY COLETTA AND WILLIAM B. CAROLAN, JD, CSP, CBCP

Listen to the news for just an hour and you'll hear all the justification you need for business continuity planning: labor strikes, civil unrest, hacker attacks, natural disasters, manmade disasters, and a host of other events with the potential to abruptly halt critical business operations. Yet much like the TV news, many business continuity plans just skim the surface, leaving out crucial elements necessary to respond to such events.

Conventional wisdom holds that business continuity planning (BCP) is mainly about information technology (IT) and the nuts and bolts of IT disaster recovery. Not so. BCP produces significantly more value when it goes beyond just keeping IT systems running or restoring a damaged facility. What's at stake? Protecting reputation, maintaining market share, reducing exposure to stakeholder lawsuits, enhancing insurability, and minimizing risk. For all these reasons, BCP should be a core business practice.

In the past, technology has clearly played a key role in the business continuity process. In today's climate, for a recovery plan to be successful, technology must be treated as an enabler rather than a solution. IT cannot, by itself, address organizational resiliency. This shift in outlook demands that BCP be more closely tied to overall business planning. A true continuity plan must go beyond traditional emergency response and become an important part of a company's strategic focus.

The following six questions will stretch the limits of how business leaders view BCP. For companies with continuity plans in place, these questions may stimulate concern over whether or not they would be fully prepared should the unthinkable actually take place.

### IS BUSINESS CONTINUITY A STRATEGIC OR TACTICAL ISSUE FOR YOUR ORGANIZATION?

Task-driven continuity plans create documents the size of large telephone books, but tactics quickly become obsolete and irrelevant when not tied to an enterprise-focused strategy. By making BCP part of strategic planning, senior managers gain a more robust perspective on the recovery process. For instance, an event's impact on key staff and critical assets is often overlooked. An effective business continuity plan must consider protection of these assets to ensure an organization's ability to restore its revenue flow. Business leaders who have engaged in aggressive cost-cutting actions in pursuit of a better profit margin should be aware that they have likely exposed themselves to significant new risks as a result of these actions.

### DOES YOUR BCP EMPHASIZE KEEPING CUSTOMERS WHOLE IN ADDITION TO RESTORING DAMAGED ASSETS?

An effective business continuity plan does more than identify the steps required to restore halted operations. Many traditional disaster recovery plans limit their scope to emergency response, such as evacuations, first aid, and facility protection. These, however, are just early components of a business continuity plan. Making emergency response the primary objective at the expense of larger strategic considerations can leave a business unprepared in the event of a crisis. In contrast, an effective business continuity strategy considers risks beyond facility restoration; such a strategy establishes contingencies to these risks, such as prearranged alternate sourcing, and includes intentional operational redundancies.

### DOES BUSINESS CONTINUITY SUPPORT YOUR COMPANY'S OPERATIONAL EFFECTIVENESS AND LEAN INITIATIVES?

Inventory reduction has been a rallying cry for US businesses trying to become leaner, more efficient organizations. But when an incident threatens to stop the flow of goods and services to customers, managers must already know (as a result of their business continuity due diligence) how long current inventory levels and safety reserves can continue to meet demand. BCP helps businesses decide if a short-term gain in the bottom line is worth exposing the organization as a whole to increased long-term vulnerability.

Companies don't always need an in-depth business impact analysis as a foundation for developing a business continuity plan. But underwriters, shareholders, and government regulators have demonstrated growing interest in knowing which resources a lean business can deploy to launch and maintain a recovery plan. A holistic look at the organization through the lens of the business continuity process provides reassurance for all stakeholders and demonstrates the prudence and foresight of senior management.

### HAVE YOU FACTORED BCP INTO YOUR FIDUCIARY RESPONSIBILITIES?

There are not many examples of leaders in fiduciary roles being taken to task for lack of BCP planning, at least for now. It is only a matter of time before stakeholder suits against an unprepared business become more commonplace.

Sarbanes-Oxley considerations have placed a new emphasis on ensuring that companies keep their businesses whole. Insurance

<p>underwriters are now asking for a more thorough review of an organization's BCP. Many organizations claim an effective plan is in place without actually satisfying the underwriter's need for detailed BCP documentation, thereby compromising their fiduciary responsibility.</p>	
<p><b>WHEN WAS THE LAST TIME SENIOR MANAGEMENT TESTED BUSINESS CONTINUITY?</b></p> <p>Companies must constantly evolve to meet competitive challenges in the global marketplace. From costly investment in new products or services to satellite offices in new markets, each change introduces increasingly critical assets to protect or restore, and key liabilities and exposures to mitigate. Making business continuity part of overall business planning and practices is key to ensuring that a recovery strategy evolves with the business and is capable of supporting an effective response. One way to ensure BCP remains a part of your everyday business practices is by conducting regular tabletop exercises. This allows senior managers to invest in the development of their plan, which will identify weaknesses and enhance existing response actions before the plan is actually deployed.</p>	<p>taken, once the extent of the problem is known. Communications that manage public and customer perceptions must be integrated with a business recovery strategy to eliminate stakeholder uncertainty and provide clear information about what happened to the organization and what management is doing to repair it. Even government agencies, with unlimited expertise and funding, are not ensured of effective communications in the aftermath of a crisis without effective planning—just look at New Orleans during and after hurricane Katrina.</p> <p style="text-align: center;">* * *</p> <p>The bottom line is that BCP is no longer a luxury. If a pharmaceutical provider of life-saving drugs loses a key supplier and can no longer supply customers with the medicine they need to stay healthy, that provider will be answerable for the lack of planning. If the product has a short shelf life and no plan exists to easily migrate to a competitive drug until after the crisis ends, there's an immediate impact on millions of people and perhaps an irreversible blow to an organization's reputation and, ultimately, market share. Likewise, an unexpected event is no longer an adequate excuse for a loss in shareholder value. Management and stakeholders are beginning to recognize the potential for business interruption. The bar is being set higher, and will only be cleared by those organizations whose leaders make continuity of their business operations a prime objective. <b>M</b></p>
<p><b>ARE YOU PREPARED TO RESPOND TO THE PUBLIC AND YOUR CUSTOMERS WITHIN 15 MINUTES OF AN EVENT?</b></p> <p>In today's climate of instant media, a business has a maximum 24-hour window to set the tone of its response to a crisis, though in many cases, senior management will need to react much faster. Stakeholders demand to know what has happened and what the organization is doing about it. A relatively minor event can escalate quickly into a serious crisis when customers respond impulsively, looking to mitigate the impact on their own operations and consequently overloading the organization's communication systems. This vulnerability is especially acute with operations such as call centers and Web sites, where failure is instantly visible.</p> <p>Management may only have moments to respond in order to prevent a small event from escalating into a serious crisis. Prior planning and preparation are key to this rapid response. The days of issuing a "no comment" statement are long gone; in fact, such a response may lead some to jump to the conclusion that there is a serious problem or wonder what it is that the organization is not willing to disclose.</p> <p>Who delivers the reassurances is just as important as what is communicated. Internal communications professionals should always be made part of the crisis management team and used as the initial spokespersons, especially while the parameters of the crisis are still in flux. However, effectively maintaining or reclaiming a company's reputation will require that senior management be prepared to explain the situation and remedial steps that are being</p>	<p><i>For more information on business continuity planning, visit us online at <a href="http://www.milliman.com/BCP">www.milliman.com/BCP</a>.</i></p> <p><b>JERRY COLETTA</b> heads Milliman's business continuity consulting practice and is based in the company's Boston office. He has been involved in risk management and consulting for much of his career, and developed Milliman's state-of-the-art, graphics-based business continuity methodology. Jerry is a chemical engineer by training. He is a nationally recognized expert in manufacturing, distribution, and supply-chain-related business continuity processes. He has published numerous articles, has contributed to several academic volumes, and has accepted many lecturing and teaching assignments.</p> <p><b>BILL CAROLAN</b> is a consultant based in Southern California who is part of Milliman's business continuity consulting practice in Boston. He has worked in risk management for more than 20 years, and specializes in the design, implementation, management, auditing, and testing of business continuity plans. Bill previously practiced law, and later directed risk management services at a large property and casualty insurance brokerage firm. He is a member of the California Bar Association and the American Society of Safety Engineers.</p>

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