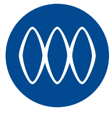
A MILLIMAN GLOBAL FIRM



Milliman
Consultants and Actuaries

Benefits Perspectives

Current Issues in Employee Benefits

SPRING 2005

- An Executive Survival Guide for Tax-Exempt Employers Sentenced to Section 457
- Managing Healthcare Costs: The Need for Better Cholesterol Control

Fiduciary Responsibilities for Stock-Based Retirement Plans

by Tara Silver-Malyska

The Enron case should alert executives and persons acting for or on behalf of a retirement plan that they may be held liable for investing a pension plan's assets in company stock or allowing employees to invest their retirement accounts in company stock when the executives know that the company faces serious problems that could severely erode the stock's value. This article examines the Enron decision and the Department of Labor's (DOL) guidance, and suggests measures that fiduciaries can take to protect the plans they are responsible for while also limiting exposure to loss and litigation.

The Court's Decision on Enron's Motion to Dismiss

Enron employees who lost most of their retirement savings when the company collapsed filed suit against Enron, its officers, directors and committees, trustees, and individuals who administered Enron's plans. The affected employees alleged that the defendants breached fiduciary and co-fiduciary duties under the Employee Retirement Income Security Act (ERISA) by: (1) failing to use prudence, care, and loyalty; (2) failing to appoint and monitor plan fiduciaries and failing to disclose material information about Enron's true financial condition; (3) continuing the lockdown, without adequate notice, during which the price of Enron stock fell; (4) failing to diversify plan assets; and (5) basing offsets of accrued pension benefits on the artificially inflated price of Enron stock and by so doing produced losses for affected employees in the company's cash-balance pension plan. The DOL's friend-of-the-court brief in support of the employees also attempts to expand certain fiduciary responsibilities under ERISA.

In its decision allowing most of the claims to proceed against the company's officers, directors, and plan administrators, the US District Court for the Southern District of Texas provided a detailed analysis of ERISA's fiduciary requirements and set forth steps to minimize fiduciary risk for both plan participants and plan sponsors.

In May 2005, the court approved a partial settlement on behalf of Enron participants in three Enron retirement plans.

ERISA Fiduciary Duties

The court emphasized four primary ERISA fiduciary duties:

- *Duty of Loyalty.* This most fundamental duty requires fiduciaries to ensure that they act solely in the interests of the participants and beneficiaries (i.e., for the exclusive purpose of providing benefits and defraying reasonable expenses of administering the plan).

- *Prudent Expert Standard.* The fiduciary must act with the care, skill, prudence, and diligence that a prudent expert, acting in a like capacity and familiar with such matters, would use and with single-minded devotion to plan participants and beneficiaries. The DOL requires the fiduciary to give "appropriate consideration" to the facts and circumstances and act accordingly. This test is one of conduct, and not investment performance results.

- *Duty to Diversify.* A fiduciary must diversify the plan's investments to minimize risk of loss unless, under the circumstances, it is clearly prudent not to diversify. To prevail on a claim that a fiduciary violated this duty, a plaintiff must show that the portfolio, on its face, is not diversified. The burden then shifts to the defendant to demonstrate that it was "clearly prudent" not to diversify.

- *Duty to Follow Plan Documents.* The plan fiduciary must follow the documents and instruments governing the plan to the extent they are consistent with ERISA. In determining whether a fiduciary breach has occurred, the court examines both the merits of the challenged transactions and the thoroughness of the fiduciary's investigation into such transactions, and in extreme situations, the fiduciary may be forced to appoint an independent fiduciary.

Fiduciary Lessons Learned

The court also discussed several other important fiduciary duties and principles:

The Fiduciary Can Only Wear One Hat At a Time. A person who is a plan fiduciary may have financial interests that are adverse to the interests of the beneficiaries, but in the best interests of the company.

However, when acting on matters concerning the plan, the fiduciary may wear only a fiduciary hat. The waters muddy when the fiduciary learns of information in a nonfiduciary role that also affects his or her role as a fiduciary, e.g., an earnings restatement. Some within the DOL believe that in such cases, the individual cannot wear blinders and may owe the participants and beneficiaries a duty to reveal such information. Therefore, best practices suggest avoiding the appointment of executives in such dual roles to fiduciary committees.

Disclosure of Material Information. A fiduciary has an affirmative duty to disclose material information in response to participants' queries. Some courts have concluded that there is an additional affirmative duty to disclose material information to plan participants and beneficiaries without a triggering inquiry. The US Court of Appeals for the Fifth Circuit recognizes that special circumstances in which participants could be materially and negatively affected might support the imposition of such an affirmative duty. The US Supreme Court has also held that a fiduciary may not affirmatively miscommunicate or mislead plan participants about material matters regarding their ERISA plan. Misrepresentations are material if they would induce a reasonable person to rely on them.

Federal Securities Laws Are No Defense. The court rejected Enron's argument that the company would have to violate federal "insider trading" laws to satisfy its fiduciary duties. The court instead supported the DOL's position that the conflict between ERISA and the federal securities statutes could be resolved if the fiduciaries: disclosed the information to other shareholders and the public at large; eliminated Enron stock as an investment option and as an employer match under the plan; or alerted appropriate regulatory agencies, such as the Securities and Exchange Commission and the DOL, to the misstatements.

The Duty to Monitor Appointees. The exercise of the power to appoint, retain, and remove persons from fiduciary positions is a fiduciary action that triggers fiduciary duties to monitor the appointees. The duty to monitor requires that fiduciaries take action upon a discovery that the appointed fiduciaries are not performing properly. The DOL believes that fiduciaries' performance should be reviewed at reasonable intervals by the appointing fiduciary to ensure compliance with the plan's terms and statutory standards, as well as satisfying the needs of the plan.

The fiduciary duties enunciated in the Enron and other cases set a high bar for fiduciaries, including having their decisions reviewed under the "prudent expert" versus the "prudent person" standard. The DOL suggests that fiduciaries who are not comfortable with this standard should seek outside assistance. Furthermore, the DOL states that fiduciaries may limit their liability by hiring service providers to handle fiduciary functions, setting up the agreement so that the person or entity then assumes liability for those functions. By doing so, however, the fiduciary still must periodically monitor such service providers.

What Should Fiduciaries Do?

Because of the inclination by the courts and the DOL to scrutinize the conduct of plan fiduciaries whenever a plan or its participants suffer a significant loss, plan sponsors and executives should act carefully to ensure that fiduciary duties are properly performed and that liability for loss does not inadvertently fall on the company. The following steps can help to ensure proper allocation and performance of fiduciary duties:

- *Name a Fiduciary and Define the Scope of Fiduciary Duties.* The court in Enron used a functional, fact-specific inquiry to determine if a corporate employee—and thus the corporation—had exercised sufficient discretionary authority and control to be deemed an ERISA fiduciary and consequently personally liable for a fiduciary breach. An option for a plan sponsor is to specify in the plan document an administrative committee as the named fiduciary. In doing so, the positions or persons serving on the administrative committee should be clearly stated, as should the fiduciary and administrative responsibilities of the administrative committee, including their independence from management in making decisions regarding administration of the plan.

- *Establish and Maintain Written Policies, Procedures, and Processes.* Perhaps the best defense to any potential breach of fiduciary duty lawsuit is for the plan sponsor to establish and maintain a plan governance structure and processes that address appropriate accountability, written plan policies, effective committees, rigorous oversight, and monitoring of investment advisors and other contractors providing services to the plan.

- *Select and Maintain Appropriate Stock Investment Options in Participant-Directed Plans.* ERISA generally imposes liability for resulting losses on fiduciaries who breach their duties. However, under ERISA section 404(c), plan participants who exercise control over their accounts will not be treated as fiduciaries, and neither they nor the other plan fiduciaries will be liable for any loss or breach that results from the plan participants' exercise of control over the plan administration. Therefore, if a participant instructs the plan trustee to invest the full balance of his account in a single stock, for example, the trustee is not liable for any loss because of a failure to diversify or because the investment does not meet the prudent person standards. This protection from loss, however, comes with many additional statutory and regulatory requirements. A fiduciary seeking ERISA section 404(c) protection has the burden of demonstrating it applies, and even if the plan meets the requirements, defendants could be liable for imprudently selecting or maintaining employer stock as a plan investment alternative.

- *Adhere to the DOL's Guidance When Problems Arise.* When an ERISA fiduciary becomes aware of a problem, the DOL's guidance, "Duties of Fiduciaries In Light of Recent Mutual Fund Investigations," may prove helpful. Fiduciaries should discharge their ERISA duties by conducting a prudent review through a deliberative process that is solely in the interests of participants and

beneficiaries. The DOL has also issued guidance on the fiduciary responsibilities of directed trustees regarding publicly traded securities. In addition, if a plan fiduciary becomes involved in litigation, *Prohibited Transaction Exemption 2003-39* provides relief for releasing a plan or plan fiduciary's claim against a party in interest in settlement of the plan's or the fiduciary's claim, such as a settlement agreement for an employer's failure to timely remit participant contributions to a plan.

Conclusion

Retirement plan fiduciaries can limit their liability by understanding the ERISA fiduciary requirements and performing their duties as spelled out in the statute, in regulatory guidance, and in judicial decisions. The DOL also has launched an educational campaign aimed at fiduciaries, focusing on understanding the terms of the plan, selecting and monitoring service providers, making timely contributions, avoiding prohibited transactions, making disclosures to plan participants, and government reporting.

Tara Silver-Malyska is employee benefits counsel in the Washington, D.C. office. This article was peer reviewed by Gerald E. Cole, special counsel, also in the Washington, D.C. office.

An Executive Survival Guide for Tax-Exempt Employers Sentenced to Section 457

by Dominick Pizzano

When not-for-profit organizations hire key decision-makers from the "for-profit" world, they frequently find individuals desiring deferred compensation benefits similar to those offered by the individuals' former employer. Unfortunately, too often the tax-exempt organization meets the demand by implementing a plan that, while in compliance with the tax laws governing similar plans sponsored in the for-profit sector, does not satisfy the more restrictive limitations applicable to most not-for-profit entities. If the IRS discovers such a plan during an audit of the individual or the organization, the employer's good intentions could result in extremely adverse tax consequences for the executive.

This article focuses on nongovernmental tax-exempt entities' nonqualified deferred compensation plans (NDCPs) under tax code section 457 and examines how such not-for-profit employers may structure the arrangements to provide executive compensation that complies with the sometimes confusing requirements.

The Deliberations that Led to the Section 457 Sentence

Why are tax-exempt employers subject to stricter limits than their for-profit counterparts? Because the IRS gives these organizations a pass come tax time, it cannot afford to offer the same charity to their employees. The IRS does not mind if executives of taxable entities defer as much as 100% of their compensation because, while the opportunity to tax this pay is generally postponed until the funds are distributed, the plan sponsor's ability to take a deduction on such amounts is similarly delayed, thereby creating a vital trade-off that enables the Treasury to view these arrangements as revenue neutral. In contrast, tax-exempt employers have no tax deductions that can be deferred and thus no trade-off to offset the Treasury's loss of current tax revenue incurred by their employees' deferral of compensation. Since tax-exempt entities as non-taxpayers are not concerned with deductibility of compensation unless it is related to unrelated trade or business income, there would be no incentive for them to limit their employees' deferrals if section 457 did not exist.

Not all Tax-exempts are Treated Equally

Adding to the confusion for tax-exempt NDCP sponsors is the fact that whether or not they are sentenced to section 457 (and if so, to what degree) varies depending on the nature of their organization.

- *Free from Section 457: No Separation of Church and the Feds*—Originally sentenced to section 457 in 1986 with the other tax-exempts, NDCPs maintained by churches and qualified church-controlled organizations (QCCOs) were paroled by a 1988 tax law. (However, a nursing home or hospital associated with a church but which is not itself a church or a QCCO is covered by section 457 if it is a tax-exempt entity.) The only other NDCPs granted section 457 immunity are those established by the federal government (or its agencies or instrumentalities).

- *Those Sentenced to Section 457: The States, Cities, Towns, and the Rest of the Tax-Exempts*—Any NDCP established by a state or local government or a tax-exempt entity must comply with section 457. Plans of states and local governments have been subject to section 457 from its creation. However, since the rules governing these arrangements are similar to those covering qualified plans (e.g., all employees—not just executives—must be covered and plan assets must be held in a separate trust for the exclusive benefit of participants), the remainder of this article focuses on the rules applicable to the nongovernmental tax-exempt entities sentenced to section 457.

What are the Terms of a Section 457 Sentence?

While a section 457 sentence is mandatory in the sense that it is levied based on the employer's status, tax-exempt employers do have consider-

able discretion over the manner in which they choose to serve this sentence: a 457(b) plan (a.k.a. an "eligible" 457 plan) or a 457(f) plan (a.k.a. an "ineligible" plan). Table 1 reveals their major differences.

Restricted Contributions/ Maximum Flexibility under 457(b)

Before 2002, NDCP benefits for executives of tax-exempt employers usually could not survive a 457(b) sentence. Starting in 2002, the rules were softened considerably: the annual 457(b) dollar limitation increased; and the amount that executives can save under the 457(b) plan was decoupled from the amount they save under a 401(k) or 403(b) plan. For example, an executive in 2005 may defer $14,000 under a 401(k) or 403(b) plan and another $14,000 under a 457(b) plan. The limit will rise to $15,000 in 2006 and be adjusted for inflation thereafter in $500 increments. The rising limit is not as open-ended as the unlimited deferrals available to section 457(b)-free NDCPs but is practically spacious in contrast to the cramped confines of the pre-2002 conditions.

457(b) arrangements can permit participants to withdraw the vested portion of their funds while still employed. However, access to such funds must be restricted to a severe, unforeseeable financial hardship. (Unlike the requirement for a 401(k) plan, college tuition and home purchase would not be deemed acceptable reasons for meeting this requirement.) Participants are not taxed on their benefits until they actually receive them. 457(b) plans also may: (1) allow executives to defer accumulated sick, vacation, and back pay in addition to salary and bonuses; (2) retain their eligible plan status even if the contribution for a given year exceeds the annual contribution limit in effect as long as any excess deferrals are distributed by April 15 of the next year; and (3) allow plan sponsors to retain the right to terminate the plan and distribute assets at any time.

Unrestricted Contributions/ Minimum Flexibility under 457(f)

The mirror image of the 457(b) plan, the 457(f) ineligible plan, permits unlimited contributions, but in exchange takes away the flexibility 457(b) participants enjoy. The section 457(f) designation is quite apropos because, while huge amounts may be deferred under these plans, the catch is that they remain tax deferred only so long as they are subject to a "substantial risk of *forfeiture*." Plan sponsors must take extreme care that 457(f) plan provisions are drafted so as to clearly maintain this level of risk until such time as the benefits are intended to be included in the participant's taxable income. How is this accomplished? According to the tax code, the participants' right to receive the benefits must be conditioned upon the future performance of substantial services and there must be a substantial possibility that such benefits will be forfeited if the participants fail to complete such service. As with most IRS determinations, this comes down to a facts-and-circumstances test, and the IRS has rejected a broad range of provisions for an apparent lack of "substance."

TABLE 1

THE TWO CELLS FOR SERVING A SECTION 457 SENTENCE

Question	Tax-exempt 457(b)	457(f)
Who can sponsor?	Any 501(c) tax-exempt organization	Usually tax-exempts; rarely used by governments
How safe are assets?	Assets are as safe as employer's solvency (i.e., available to general creditors in the event of insolvency)	Assets are as safe as employer's solvency (i.e., available to general creditors in the event of insolvency)
Who participates?	Select group of management or highly compensated employees	Select group of management or highly compensated employees
How much can be contributed?	$14,000 for 2005, increasing to $15,000 by 2006	Generally no limit on amount of contributions
Are age-50-and-older catch-up contributions allowed?	Not available	Not applicable because no funding limit applies
Are there catch-ups within three years of retirement for previously missed contributions?	Yes	Not applicable
Do vesting provisions apply?	Can apply to employer contributions	Contributions must remain unvested to maintain tax-deferred status
Are rollovers permitted?	No	No
Are transfers permitted?	Yes, only to another 457(b) plan	No
Are in-service withdrawals permitted?	Only unforeseeable emergencies; small inactive accounts	No
How flexible are the distribution provisions?	Very flexible for a nonqualified plan, although not as flexible as qualified plans	Very inflexible–usually limited to lump sum only
Do age-70-1/2 required minimum distribution rules apply?	Yes	No
Are loans permitted?	No	No
Are they subject to the American Jobs Creation Act and section 409A?	No	Yes

A 457(f) plan that provides 100% vesting if the participant remains employed until a specified age or upon completion of a number of years of service will result in the benefits being taxable to the participant once such a target is met, regardless of whether or not the participant continues employment with the plan sponsor beyond such date. Thus, the participant receives what could be a substantial distribution during a tax year in which he or she also earns a salary from the employer. Some plan sponsors have sought to evade this undesirable outcome by adopting a "rolling risk of forfeiture" provision. Under such a provision, the participant may voluntarily extend the period of forfeiture by making a written election in advance of the date the benefits become vested. Advocates of this design contend that by extending the risk period, the employee further delays the receipt of the compensation and thus avoids taxation on the amounts until that future date. The IRS, however, has never bought into this concept, refusing to rule favorably on plans with this language and advising agents to scrutinize whether a risk really exists. NDCP sponsors would be prudent to conduct a risk analysis of their plans' forfeiture provisions in light of the fact that: a) 457(f) plans—unlike 457(b) plans—are covered by the American Jobs Creation Act's (AJCA) draconian penalties for noncompliance; and b) the IRS guidance under AJCA expected sometime this year is likely to prohibit "rolling"as an acceptable "risk."

Two Escapes Routes from Section 457

Although the section 457 monopoly over tax-exempts' NDCPs might seem escape-proof, there are at least two "Get out of Section 457 Free" cards:

- *The Grandfather Clause*—Nongovernmental organizations' NDCPs escape the reach of section 457 for amounts that: were deferred from taxable years beginning before 1987; or are deferred from taxable years beginning after 1986 pursuant to a written agreement in effect on August 16, 1986, and that provided for a deferral for each taxable year covered by the agreement of a fixed amount or of an amount determined pursuant to a fixed formula.

  Consequently, sponsors of such grandfathered plans must be careful not to permit any new participants to join the plan, or adopt any amendments to the plan that affect the fixed amount or formula requirement (e.g., any election that permits the participant to change the salary reduction deferral would violate this requirement).

  If a plan loses its grandfathered status, amounts deferred under the plan that are not subject to the requirements of tax code sections 457(b)-(d) are included in the gross income of the participants in the year the plan is no longer grandfathered.

- *The "Bona Fide Severance Pay Plan"*—For plans that are too young to be grandfathered, severance pay plan status enables them to provide benefits in excess of the dollar limit under section 457(b) without having to meet the 457(f) substantial risk of forfeiture requirement. In fact, the benefits provided under such a plan often amount to 10-20 times the annual 457(b) limit. However, if the IRS finds the severance pay plan to be a mere device to provide deferred compensation, the arrangement will be deemed a deferred compensation plan subject to section 457(f) and all amounts not subject to a substantial risk of forfeiture will be currently taxable to the employees, for both income and employment taxes. Generally, the term "severance pay" connotes payment to an employee because of his or her termination of employment under an unanticipated set of circumstances, rather than compensation that has been unconditionally deferred until termination of employment. Because there are several other factors that may enter into this analysis, tax-exempt employers should seek counsel when establishing these plans.

Prior to July of 2003, a third escape path had been receiving much traffic from many tax-exempts seeking to break free from the constraints of section 457. This creative design was an attempt to simulate typical employee nonqualified stock option plans that are frequently found in the for-profit sector by granting executives of the tax-exempt organization an option to buy shares in a mutual fund or a basket of public securities. However, the final section 457 regulations nixed the tax code interpretation on which this design was based and thus officially cemented shut this get-away route.

Are Section 457s Dead Plans Walking?

With the IRS crackdown on excessive executive compensation, there has been an increase in audits of tax-exempts' NDCPs. Accordingly, it is now vital for not-for-profit NDCP sponsors to know and follow the terms of their section 457 sentence to avoid the consequences of the IRS uncovering contraband provisions. Tax-exempt entities that are not saved from section 457 by divine or federal intervention and are too young to be "grandfathered" can still plot a severance plan of escape but must make sure that it is a legitimate one and not just a severance shell designed to smuggle their NDCP out of section 457 compliance. Plan sponsors and their executives can survive and even thrive under the terms of their section 457 sentence, if their plans conform to the IRS's standards for "good behavior." However, because of the complexities of this incarceration, they may have a hard time if they fail to use their phone call to consult an attorney or other benefits expert for assistance.

Dominick Pizzano is a compliance consultant in Milliman's New York office. This article was peer reviewed by Gerald Kranson, a benefits consultant in the New York office.

Managing Healthcare Costs: The Need for Better Cholesterol Control

by Kate Fitch and Kosuke Iwasaki

Hypercholesterolemia, commonly known as high cholesterol, is a significant, alterable risk factor for heart attacks and strokes. Active treatment with cholesterol-lowering drug therapy can significantly reduce the number of heart attacks, strokes, and cardiac deaths, as well as the associated costs.

This article presents the prevalence of high cholesterol, and the impact of reducing elevated cholesterol with cholesterol-lowering drug therapy. Milliman created an actuarial model to demonstrate the cost offsets that can be achieved by reducing strokes, heart attacks, and deaths for employer-sponsored health plans that take steps to reduce high cholesterol among participants.

Definition

Cholesterol is a type of fat, produced by the liver, and necessary for the body to make hormones, Vitamin D, and substances that help digest food. It is also present in many animal-based foods, such as meat, fish, poultry, eggs, and whole milk dairy products. Blood cholesterol levels are influenced by many factors, including heredity, diet, exercise, and certain medical conditions. If cholesterol levels are too high, cholesterol can be deposited in tissues and arteries in the form of plaque, which in turn causes narrowing of the arteries and reduced flow of oxygen-carrying blood. If a coronary artery becomes completely blocked, a heart attack can result.

Hypercholesterolemia is a term for high blood cholesterol. Total cholesterol levels of 200-239 milligrams per deciliter (mg/dL) are considered "borderline high risk" and levels of 240 mg/dL or higher are considered "high risk." The National Cholesterol and Education Program (NCEP) III clinical guidelines for the management of high cholesterol use low density lipoprotein (LDL) cholesterol as the treatment target. LDL is the major cholesterol carrier in the blood and is known as the "bad cholesterol." Recommendations for LDL level appear in Table 1 and vary with an individual's risk factors, including a history of coronary artery disease, diabetes, and stroke, as well as smoking status, blood pressure levels, age/sex, family history, and high density lipoprotein (HDL) level. HDL is a cholesterol carrier in the blood known as the "good cholesterol." The goal for HDL levels is greater than or equal to 40mg/dL.

Prevalence and Risks

According to data from the 1999-2000 National Health and Nutrition Examination Survey (NHANES), 50% of survey participants aged 20 and older had a total cholesterol level above 200 mg/dL, which is considered hypercholesterolemic. But among those surveyed, only 35% of those with hypercholesterolemia were aware of their condition and only 12% were being treated.

Despite solid evidence that high cholesterol is a health risk, the average total cholesterol concentration in the adult US population has changed little since the 1988-1994 NHANES, although the age-adjusted percentage of participants reported to be using cholesterol-

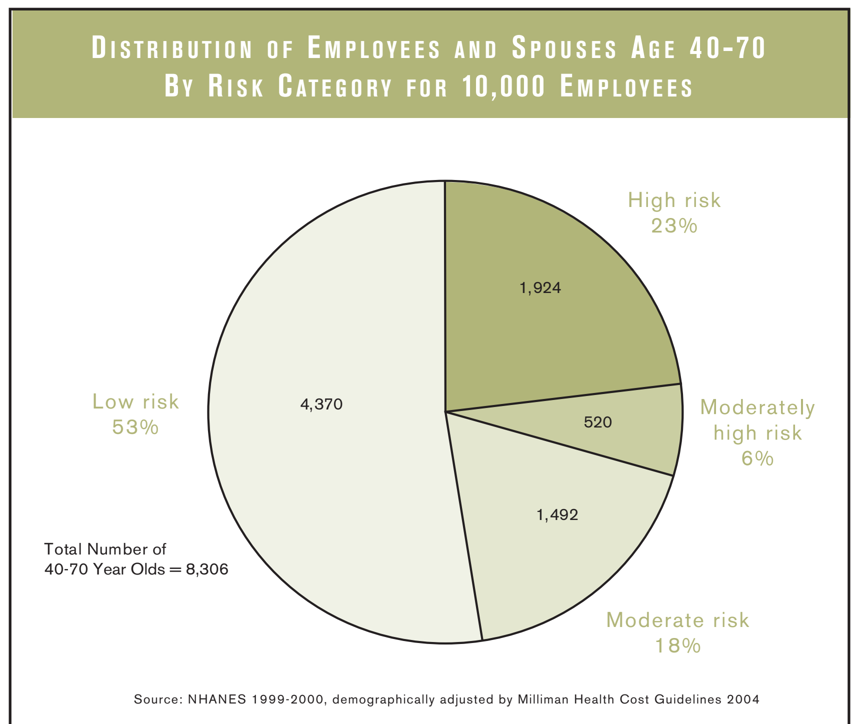
TABLE 1

LDL Goals and Thresholds for Initiating Drug Therapy

Risk Level	LDL Goal (<mg/dl)	LDL level for Drug Therapy
High Risk	100	100
Moderately High Risk	130	130
Moderate Risk	130	160
Low Risk	160	190

FIGURE 1

Distribution of Employees and Spouses Age 40-70 By Risk Category for 10,000 Employees



Source: NHANES 1999-2000, demographically adjusted by Milliman Health Cost Guidelines 2004

lowering drug therapy increased from 3%-8%. Explanations for the lack of a decline in cholesterol levels include inadequate screening, treatment and drug compliance, poor nutrition, and inadequate physical activity, as well as the increase in obesity.

Elevated cholesterol is strongly associated with an increased risk of coronary artery disease (CAD) events (heart attack, angina, and coronary revascularization), stroke, and death. CAD is the single largest killer of Americans. For those who experience a first heart attack, 25% of men and 38% of women will die within a year. Almost half of men and women under the age of 65 who have a heart attack die within eight years. When considered separately from other cardiovascular diseases, stroke ranks number three among all causes of death behind diseases of the heart and cancer. For those suffering a first stroke, approximately 22% of men and 25% of women die within a year. Just over half of men and women under age 65 who have a stroke die within eight years.

Treatment Options

Lifestyle modifications are always part of hypercholesterolemia management and include diet, exercise, weight loss, and smoking cessation. For individuals in the moderate-, and low-risk groups with an LDL 1-30 mg/dL above LDL goal, lifestyle changes represent the first-line treatment. Evidence-based treatment guidelines recommend drug therapy treatment if the LDL goal is not achieved after 12 weeks.

To lower LDL sufficiently, many people require cholesterol-lowering drug therapy. The most commonly prescribed drug therapy is the class of drugs commonly known as statins, which reduce cholesterol by interfering with its production in the body. A new cholesterol-lowering drug, ezetimibe, acts by diminishing the absorption of dietary cholesterol through the intestines and can be used in combination with statins or alone. Less frequently prescribed treatments include bile acid sequestrants, nicotinic acid, and fibric acids.

Prevalence of Hypercholesterolemia in a Working-Age Population

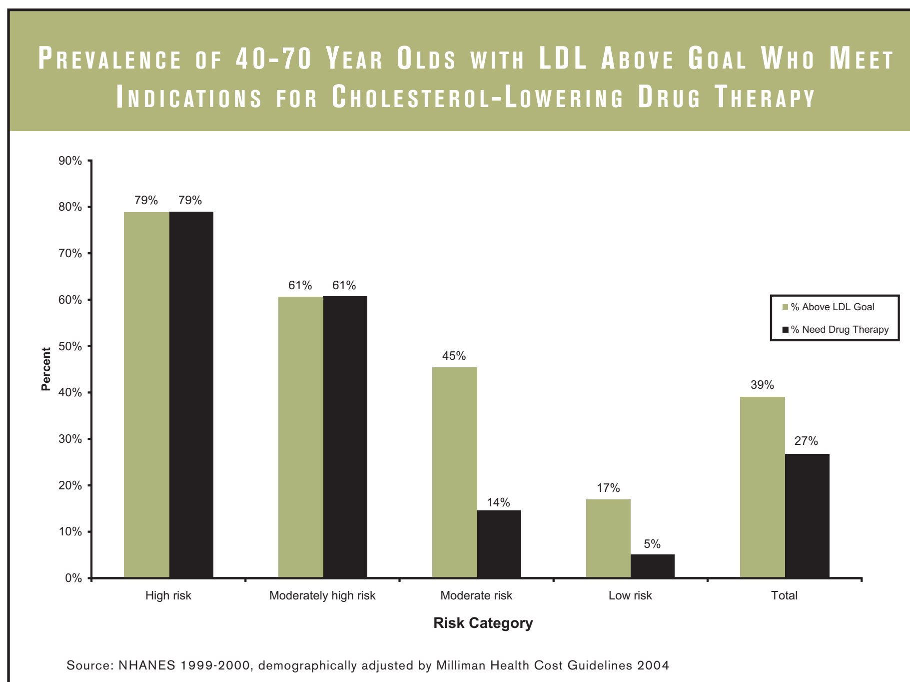
An individual's risk level, which is dependent on cardiac risk factors, will determine an individual's target LDL. Milliman's analysis of NHANES 1999-2000 data finds that most individuals in a working age population fall into the low-risk level. Figure 1 displays the number of 40-70 year olds in each risk category for a typical employer with 10,000 employees. For such an employer, the number of employees and spouses age 40-70 is 8,306 (5,373 employees, 2,933 spouses).

Applying the NCEP III updated cholesterol treatment recommendations to the NHANES 1999-2000 participants, Milliman found that 39% of 40-70 year olds in a working-age population have an LDL above the recommended goal and 27% would meet the indications for cholesterol-lowering drug therapy (see Figure 2).

Actuarial Analysis of Cholesterol-Lowering Drug Therapy

The authors modeled the impact of cholesterol-lowering statin therapy on the incidence of CAD and stroke events for workers and spouses age 40-70 with LDL levels above the NCEP goal and who met indications for cholesterol-lowering drug therapy. Based on our medical cost data analysis and the reduction of CAD and stroke events reported in landmark statin studies, we found that active treatment of hypercholesterolemia with statins would produce the event and cost benefits shown in Table 2 on page 8. The modeling was for a three-year period.

FIGURE 2



The estimates shown in Table 2 reflect the difference between the "natural history" scenario, where those with LDL above goal and meeting indications for cholesterol-lowering drug therapy remain untreated, and the "therapy" scenario, where those with LDL above goal and meeting indications for cholesterol-lowering drug therapy are treated with a statin. The "therapy" scenario estimates assume that all people meeting indications for cholesterol-lowering drug therapy will comply with therapy recommendations.

More dramatic per capita improvements would come from concentrating therapeutic interventions on the high-risk individuals. High-risk individuals make up two-thirds of those meeting indications for cholesterol-lowering drug therapy and generate a disproportionate number of strokes and heart attacks. If high-risk individuals with LDL above goal were modeled as a stand-alone group, the difference in "per member per month" (PMPM) costs between the natural his-

tory and therapy scenario would increase to $29 PMPM.

Conclusion

Milliman's study demonstrates that savings can be significant for employers with health plans that lower cholesterol levels among their workforce. The study did not take into consideration disability, lost work time, or replacement costs for individuals suffering these events—all of which can amount to significant additional costs. Although the current cost of statin treatment exceeds the savings from reduced cardiovascular events and deaths, a significant portion of the increased drug spending will be offset. In future years, as the patents on statins expire and the drugs become available in generic form, the economics will become more favorable. Promotion of hypercholesterolemia screening—for individuals age 20+ every five years and more frequently for people with multiple risk factors—will likely identify many high-risk individuals. In addition, encouraging lifestyle changes such as nutrition, physical activity, and smoking cessation can help reduce the need for drug treatment for a significant numbers of individuals.

The high cost impact of hypercholesterolemia suggests that employers should consider whether their plan benefits designs and health promotion efforts address this condition.

TABLE 2

Significant Event and Cost Reductions with Statin Therapy

	Natural History: Without Statin Therapy	Therapy: With Statin Therapy	Reduction over 3 Years
Probability of an event over 3 years for individuals in the Target Population*			
Strokes**	3.2%	2.7%	16%
Coronary Artery Disease (CAD) events	5.5%	3.7%	33%
Deaths related to CAD and stroke events	0.9%	0.6%	30%
Cost Impact for Target Population			
Per Member Per Month (PMPM) Medical Cost (not including drug therapy)	$1,227	$1,205	($22)
PMPM Life Insurance Costs***	$12	$9	($3)

* The "target population" consists of individuals age 40-70 years with an LDL level meeting indications for cholesterol-lowering drug therapy.

** Stroke reduction reported with statin therapy was only applied to "high-risk" individuals as indicated in the Heart Protection Study. Stroke reduction rate was only applied to 50-70 year olds as Framingham stroke risking is for 50+ year olds.

*** Life insurance $50,000 per death, which is based the maximum income-tax free employer-provided benefit. A $50,00 life insurance benefit is lower than the benefits provided by many employers.

Kate Fitch is a healthcare management consultant and Kosuke Iwasaki is a consulting actuary in Milliman's New York office. This article was peer reviewed by Bruce Pyenson, a consulting actuary in the New York office.

Milliman Offices

ALBANY, ATLANTA, BERMUDA, BOISE, BOSTON, CHICAGO, COLUMBUS, DALLAS, DENVER, GREENSBORO, NC, HARTFORD, HONG KONG, HOUSTON, INDIANAPOLIS, IRVINE, KANSAS CITY, LONDON, LOS ANGELES, MADRID, MEXICO CITY, MILAN, MILWAUKEE, MINNEAPOLIS, MUNICH, NEW YORK, NORWALK, CT, OMAHA, PHILADELPHIA, PHOENIX, PORTLAND, ME, PORTLAND, OR, PRINCETON, NJ, ST. LOUIS, SALT LAKE CITY, SAN DIEGO, SAN FRANCISCO, SÃO PAULO, SEATTLE, SEOUL, TAMPA, TOKYO, WARSAW, WASH., D.C.

Internationally MILLIMAN GLOBAL

ARGENTINA, AUSTRIA, BARBADOS, BELGIUM, BERMUDA, BRAZIL, CANADA, CHANNEL IS., CHINA, COLOMBIA, DENMARK, FRANCE, GERMANY, INDIA, IRELAND, ISLE OF MAN, ITALY, JAMAICA, JAPAN, KOREA, MEXICO, NETHERLANDS, NIGERIA, NORWAY, PHILIPPINES, POLAND, SPAIN, SWEDEN, SWITZERLAND, TRINIDAD & TOBAGO, UNITED KINGDOM, UNITED STATES

Benefits Perspectives is published by Milliman's Employee Benefits Editorial Committee as a service to our clients. Additional copies are available through any of our offices. Articles or excerpts from this publication may be reproduced with permission when proper credit is attributed to the firm and the author.

Editorial Committee
Marjorie N. Taylor, *Editor-in-Chief*
Eddy Akwenuke, Gerald Cole, Carl Hansen, Jeffrey R. Kamenir, Adrien R. LaBombarde, Troy Pritchett, Katherine A. Warren, Michael Zwiener

Because the articles and commentary prepared by the professionals of our firm are often general in nature, we recommend that our readers seek the counsel of their attorney and actuary before taking action.

Inquiries may be directed to: Perspectives Editor
1301 Fifth Avenue, Suite 3800
Seattle, WA 98101-2605
(206) 624-7940
perspectives.editor@milliman.com

©2005 Milliman, Inc.
All Rights Reserved