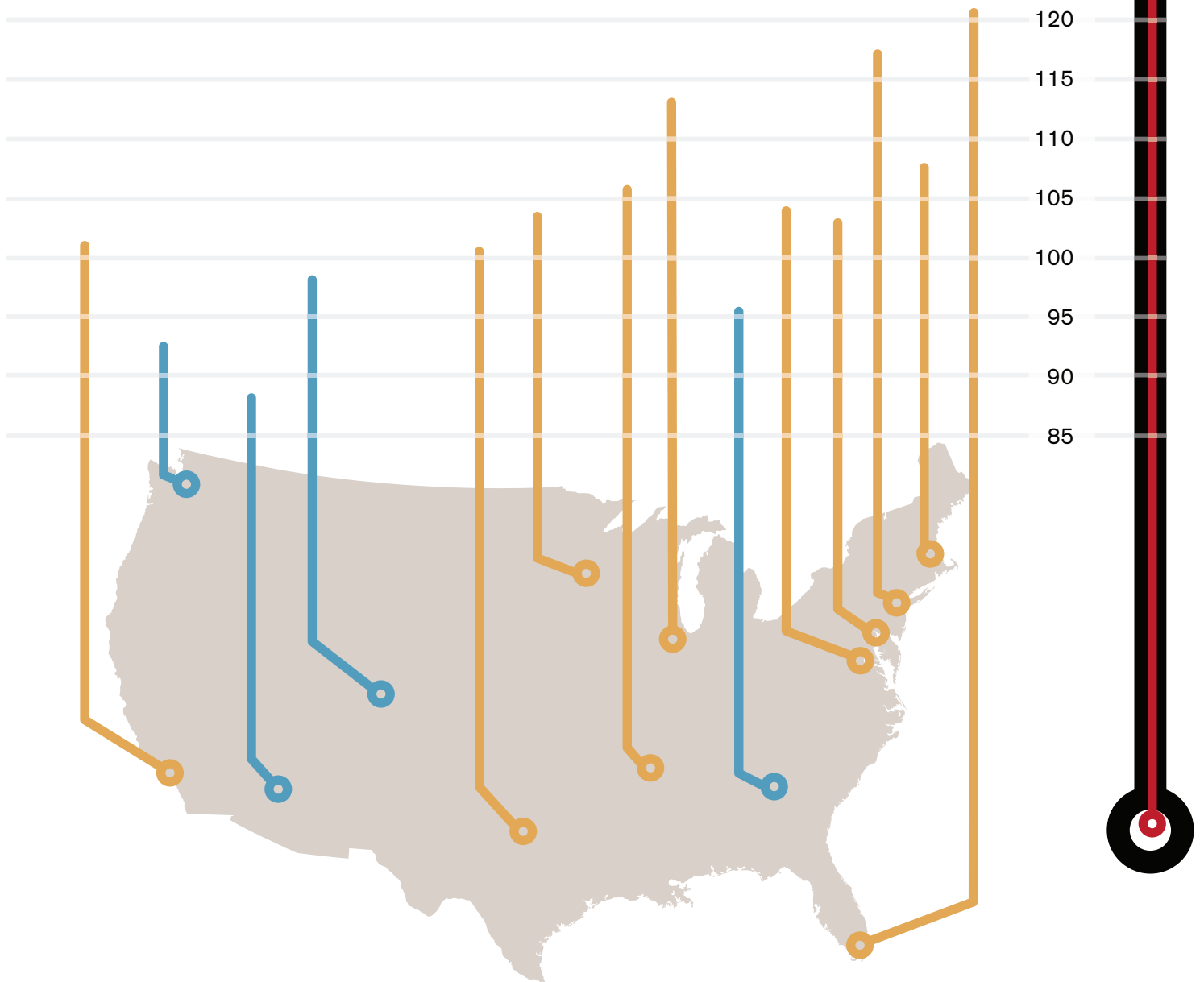




May 2009

2009 Milliman Medical Index





EXECUTIVE SUMMARY

The fifth annual Milliman Medical Index (MMI) measures average annual medical spending for a typical American family of four covered by an employer-sponsored preferred provider organization (PPO) program. The MMI provides a consistent benchmark of healthcare benefit costs by annually assessing the changes in those costs over the most recent five-year period.

The MMI looks at key components of actual medical spending and charts the changes in these components over time, including cost changes for employers and employees. In addition to national cost trends, the MMI includes results for 14 major American metropolitan areas to illustrate how widely medical costs can vary by region.

While the MMI has always had broad implications for the healthcare sector, it takes on new importance this year as the country embarks on a discussion of how best to reform the U.S. healthcare system. The MMI offers useful context that can inform this discussion by offering a cost benchmark for employer-provided coverage, which remains a primary source of healthcare insurance.

Key MMI findings include:

- The total 2009 medical cost for a typical American family of four is \$16,771, compared with the 2008 figure of \$15,609. This is a 7.4% increase from 2008 to 2009.
- This is the third straight year of decreasing cost trends. Even so, the \$1,162 increase is the highest since the 2006 increase of \$1,168, when cost trends were at 9.6%.
- Every category of costs except inpatient and outpatient facility care experienced lower cost trends than last year.
- This is the third consecutive double-digit percentage increase in the amount that employees spend for healthcare services. This is primarily due to increased employee contributions, as out-of-pocket cost-sharing trends were more modest.
- The current economic environment has significant implications for healthcare costs. The consequences of employers' lost business, consumer insecurity, and provider revenue pressures affect healthcare utilization, charges for healthcare services, and who pays for the healthcare. The unprecedented uncertainty has accelerated cost increases in some ways and at the same time has reduced certain categories of utilization (e.g., elective procedures).

FIGURE 1

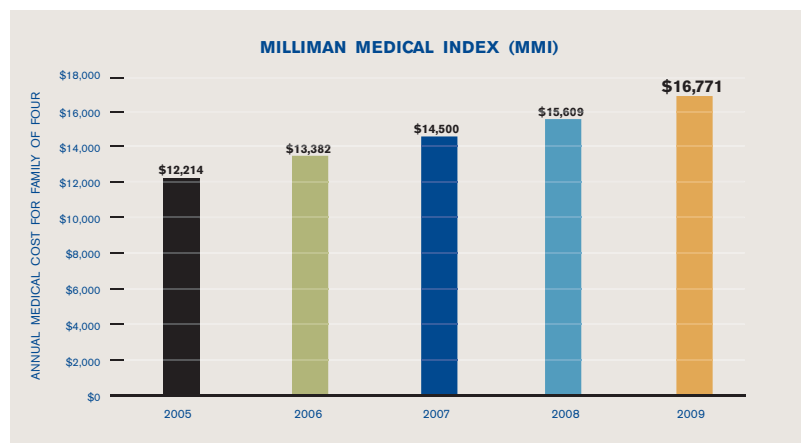


FIGURE 2

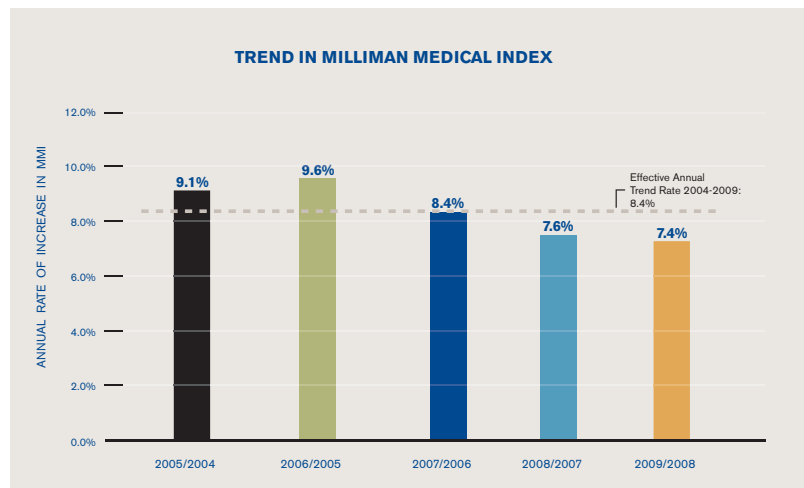


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MACROECONOMIC EFFECTS ON HEALTHCARE COSTS

The recent economic downturn is affecting total healthcare expenditures in the United States. Credible data that quantifies the effects is just now emerging, but preliminary data and anecdotal evidence suggest the emergence of several key cause-and-effect relationships.

- *Private business revenues are down.* Businesses are responding with layoffs and increases in employee payroll deduction contributions to health insurance. Looking forward, we believe employers may respond as they have in previous years and implement further increases in employees' out-of-pocket cost sharing. A less common response is to eliminate health insurance altogether.
- *The national unemployment rate is at its highest level since the Great Depression.* As workers become unemployed, or feel uncertainty about their employment security, they adjust their utilization of healthcare services, sometimes accelerating utilization if they expect to lose insurance coverage, and sometimes postponing care to avoid incurring out-of-pocket expenses. Loss of employer-sponsored insurance is also increasing the ranks of the uninsured, causing people who lose insurance to reduce their consumption of healthcare services.
- *Government tax revenue is down.* This has obvious implications for Medicare and Medicaid. It is also easy to forget that governments not only govern but also employ many people. Some government entities may respond in the same way as private businesses: by cutting employees or reducing benefits.
- *For some healthcare providers, gross revenues are down.* Price pressure from purchasers and decreases in utilization mean that revenue may not keep pace with expenses. While this might result in lower overall healthcare costs in the short term, it might also increase pressure on providers to increase their average charge per service delivered, accelerating unit cost trends.

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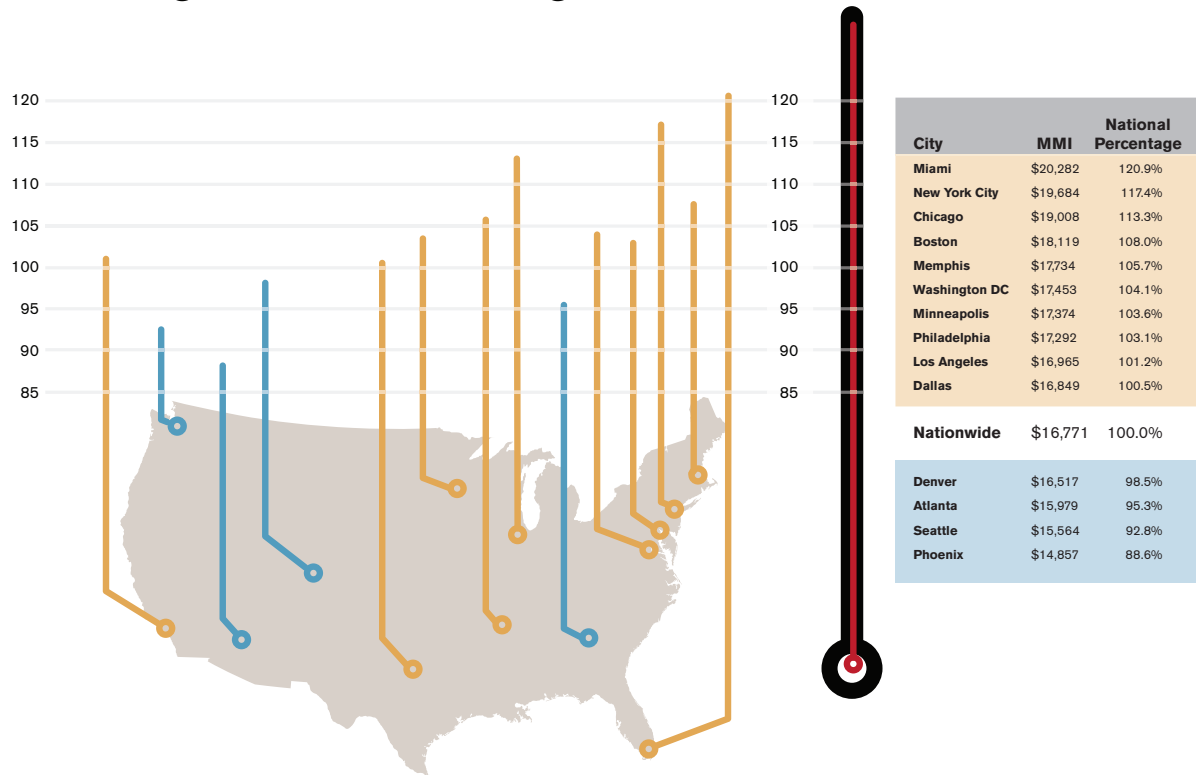
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GEOGRAPHIC VARIATIONS IN HEALTH COSTS

Figure 3 shows 2009 Milliman Medical Indices for 14 major metropolitan areas; the costs vary from low to high by more than 30%, with the lower-cost areas generally being in the West and across some parts of the South. The variations from city to city result from a complex array of regional factors, including medical-service treatment patterns, utilization of healthcare services, and costs per service. The geographic indices were developed on a consistent basis using standard actuarial principles. The 14 cities were selected from across the country to illustrate the geographic variation in costs. While the range across the 14 cities is substantial, costs in other cities could fall outside the illustrated range.

FIGURE 3

Percentage of National Average



Perhaps the most interesting dynamic illustrated here is the cost of healthcare in Miami exceeding the \$20,000 mark, the first city in our study to climb so high. Miami is 21% more costly than the national average and especially high compared with Phoenix, which comes in below \$15,000 and is 11% lower than the national average.

In our study, three cities are 10% more costly than the national average. Perhaps the most interesting dynamic illustrated here is the cost of healthcare in Miami exceeding the \$20,000 mark, the first city in our study to climb so high. Miami is 21% more costly than the national average and especially high compared with Phoenix, which comes in below \$15,000 and is 11% lower than the national average.

Across all 14 cities, cost relationships are similar to last year. Why is this? These cost factors evolve slowly, depending on factors such as local business expenses (e.g., rent or physician salaries) and long-ingrained practice patterns. Specific fee schedules and individual choices to use healthcare can evolve more quickly.

DISSECTING HEALTHCARE COSTS

Figure 4 shows the distribution of the \$16,771 total medical costs paid by and on behalf of the typical American family of four. It includes both the portion of costs paid by an employer's benefit plan and the portion paid by the family in the form of out-of-pocket cost sharing. Inpatient and outpatient facility services combined represent 47% of the total annual medical costs, physician services represent 34%, prescription drugs represent 15%, and other miscellaneous services represent 4%. Over the past five years, outpatient facility and pharmacy care have increased at a larger average annual rate than physician services. In fact, during most of those five years, physician cost trends were one of the lowest components. As a result, physician services now represent a smaller portion of total healthcare costs than they did five years ago.

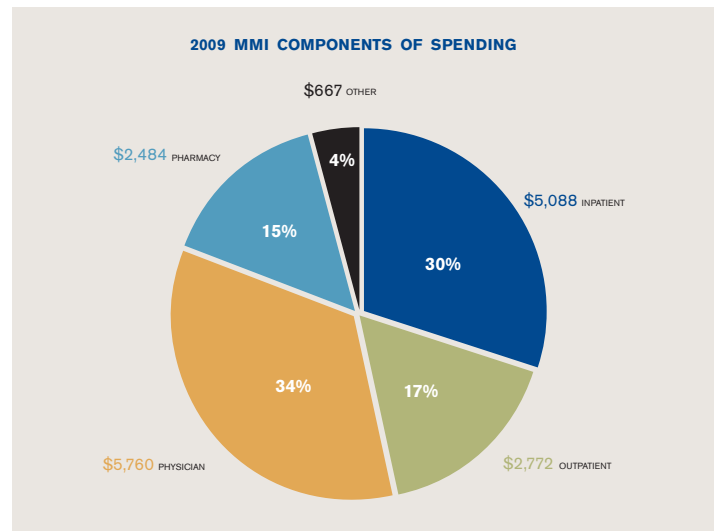
The 2008 to 2009 hospital inpatient cost trend increased from 7.1% to 7.7%. Most of the inpatient cost trend is driven by unit cost trend; we are seeing very little change in utilization. The hospital outpatient cost trend increased from 9.4% to 10.2%, mostly because of increased charges. Hospital outpatient care is the area of highest growth this year.

The physician cost trend declined from 6.2% to 6.0%. Although physician costs are the biggest piece of the healthcare cost pie (Figure 4), their cost trend is lower than that of most other healthcare services.

At 7.9%, pharmacy cost trends were 0.5% higher than the overall cost trend of 7.4%. Just under 40% of this year's increase in pharmacy spending is due to increased utilization. Pharmacy spending is also affected by the mix of drugs that are dispensed, including the increased utilization of generics over the last several years.

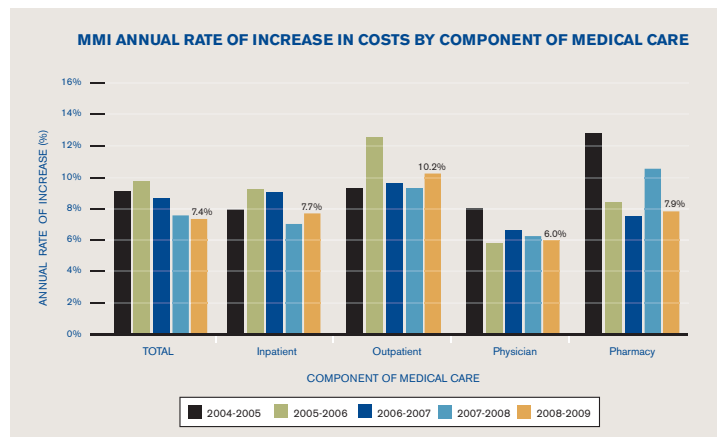
On a dollar basis, hospital services and physician services contributed \$620 and \$326, respectively, to the increase in total annual medical costs between 2008 and 2009, while pharmacy's contribution totaled \$182.

FIGURE 4



The MMI categorizes medical costs into five major categories: inpatient hospital services, outpatient hospital services, physician services, prescription drugs, and all other services.

FIGURE 5



OTHER FACTORS AFFECTING HEALTHCARE COSTS

Unit cost (as opposed to utilization) is the dominant driver of health cost trend for 2009. Utilization trend is relatively flat for inpatient and outpatient hospital services. The dampened utilization trend is driven by both private- and public-sector practices, with a continued reduction expected if key healthcare reform initiatives take hold. We suspect that a convergence of initiatives will increase transparency in the quality and cost of healthcare services and will improve the quality and efficiency of healthcare delivery.

Heightened federal, state, commercial payer, and business community initiatives are focusing on inpatient efficiency and quality.

Heightened federal, state, commercial payer, and business community initiatives are focusing on inpatient efficiency and quality. More pervasive adoption of prevention, wellness, and disease management programs intended to improve the health of individuals and reduce the demand for services is apparent. This has been coupled with more aggressive utilization management of outpatient services and use of patient decision-support programs aimed at reducing the supply of medically unnecessary services. Enhanced pharmacy-management techniques are becoming the norm. Last, there is a resurgence of provider organization risk contracting and a movement to establish non-risk-bearing accountable care organizations (ACOs). These organizations are groups of providers (physicians, hospitals, nursing homes, etc.) who contract to manage the full continuum of patient care with an arrangement to share in cost savings.

As these initiatives focus national attention on best-practice utilization benchmarks, utilization outliers will experience more scrutiny, highlighting the potential to further reduce medically unnecessary utilization.

INPATIENT COST-CONTROL INITIATIVES

Renewed focus on inpatient utilization review by commercial payers to identify medically unnecessary hospital stays and days

2009 nationwide rollout of Medicare Recovery Audit Contractor (RAC) programs with a focus on recovering payments for admissions not meeting medical necessity

Focus on reducing admissions equated with poor quality, including readmissions, ambulatory-care-sensitive admissions, and preference-sensitive admissions

Mandatory reporting of hospital-acquired infections in some states

Adoption of Medicare payment policy by commercial payers to not pay for “never events” (hospital-preventable errors)

Growing use of hospitalists to improve inpatient throughput

Value-based hospital payment programs, including pay-for-quality outcomes reporting and hospital tiering based on quality outcomes

OUTPATIENT COST-CONTROL INITIATIVES

Medical home model primary-care delivery intended to coordinate care, reduce unnecessary specialist care, and reduce duplication of diagnostics and treatments

Wellness programs that provide financial incentive for behavior change (not just participation)

Disease management vendors putting fees at risk to meet utilization and clinical outcomes

Increased adoption of radiology benefit management

Increased focus on conducting and utilizing comparative effectiveness research to evaluate treatment options

Patient decision-support education programs to foster shared patient/physician treatment decision making

PHARMACEUTICAL COST-CONTROL INITIATIVES

More aggressive pharmacy benefit management, including programs that employ step edits, therapeutic substitution, dose optimization, prior authorization, day supply limits, refill-too-soon supply limits, and promotion of generics

Medicare Part D requirement to provide medication management therapy program

Targeted value-based insurance designs (VBID) that reduce copays for compliant patients, not across-the-board copay reductions

EMPLOYEE SHARE OF MILLIMAN MEDICAL INDEX

Similar to the last two years and in contrast to prior patterns, health-care costs continue to shift from employers to employees. Much of this is due to the recent economic downturn that is causing employers to reduce their portion of benefit costs as a cost-saving measure. While we see recent reductions for the employer portion, employers still pay the majority of the costs for healthcare benefits, and they still support benefits as a means to attract and retain employees.

In order to understand the drivers behind the employer and employee portions, it is necessary to clearly define each source of payment. For the MMI, we use three main categories:

1. *Employer subsidy.* Employers subsidize a portion of the monthly premium costs for their employees' coverage.
2. *Employee contributions.* Employees who choose to participate in the plan pay the remainder of the monthly premium costs, usually through payroll deductions.
3. *Employee out-of-pocket cost at time of service.* Employees who receive care may have copays, deductibles, and other design elements that are paid out of pocket at the time of service.

Figure 6 shows the relative proportions of each of these three categories for 2009. Of the \$16,771 total medical cost for a family of four, the employer pays about \$9,947 in employer subsidy (59%) while the employee pays \$4,004 (24%) in employee contributions and \$2,820 (17%) in employee out-of-pocket costs.

Figures 7 and 8 show the historical growth in these three categories. Over the past year, the total cost increase in the MMI was borne more by employees than employers. Employer subsidies have increased about \$500 while employees have seen increases of about \$650, including \$500 for employee contributions and \$150 for employee out-of-pocket costs. The increase in the employee costs (employee contributions plus out-of-pocket costs) exceeded the employer cost increase by 30%. In the history of the MMI, the increase in employee costs has never exceeded the increase in employer costs by more than 10%.

FIGURE 6

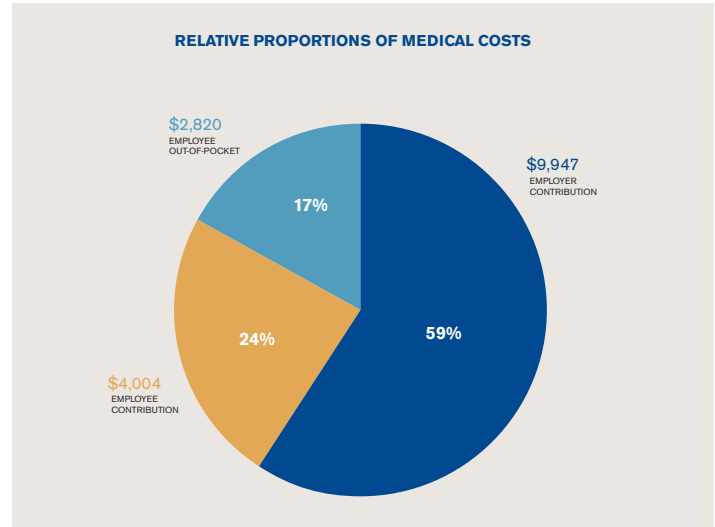
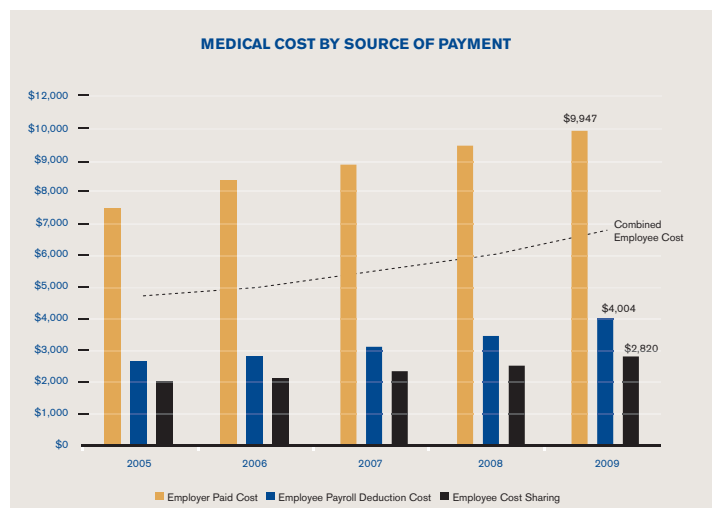


FIGURE 7

ANNUAL INCREASE IN SPENDING SPLIT BY EMPLOYER AND EMPLOYEE PORTIONS

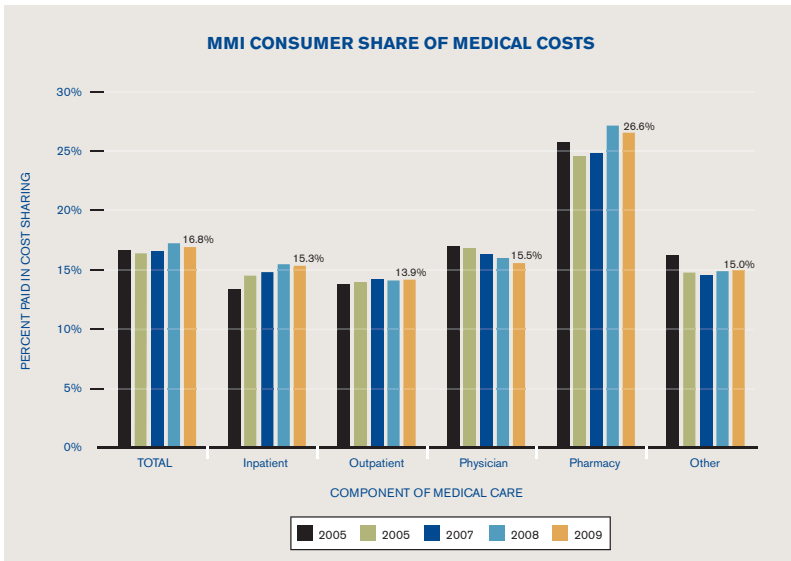
	2005/2004	2006/2005	2007/2006	2008/2007	2009/2008
TOTAL MEDICAL COST (EMPLOYER & EMPLOYEE)	9.1%	9.6%	8.4%	7.6%	7.4%
EMPLOYEE OUT-OF-POCKET COST SHARING	6.0%	8.6%	9.5%	10.5%	5.4%
EMPLOYEE PAYROLL DEDUCTION	5.6%	5.4%	12.8%	10.1%	14.7%
EMPLOYER PORTION	11.3%	11.3%	6.5%	6.0%	5.4%

FIGURE 8



Over the last five years, the differences between the three categories have been less pronounced; in other words, employers and employees have taken turns bearing the burdens of cost increases. In terms of absolute dollars, the total MMI has increased about \$5,600 since 2004. Employers have seen their portion go up approximately \$3,200 and employees about \$2,400. On a percentage basis, the total average cost increase was 8.4% annually, with employer subsidies increasing 8.1%, employee contributions increasing 9.7%, and employee out-of-pocket costs increasing 8.0%.

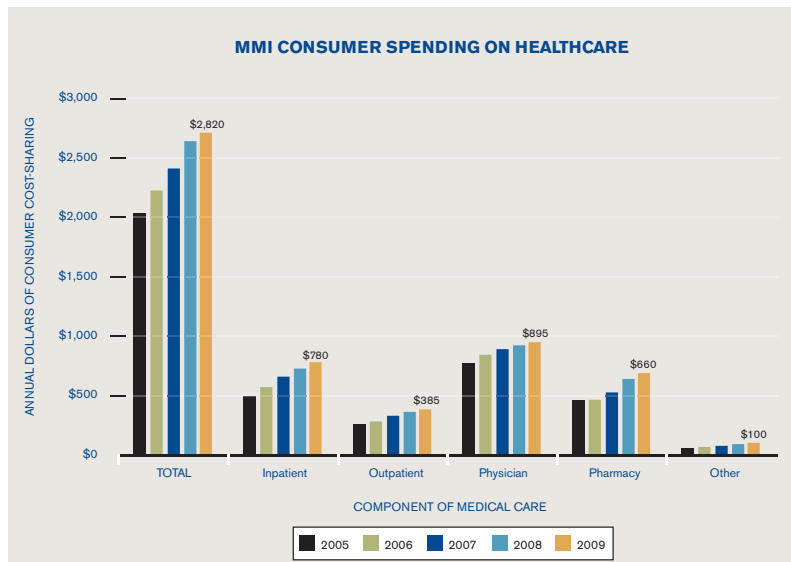
FIGURE 9



Employee contributions continue to garner more attention because they affect all participants, not just those who visit a healthcare provider. Based on Milliman's national survey of more than 4,000 employers as well as data from the Kaiser Family Foundation, we estimate that the employee's portion of the premium was 28.7%, a significant increase over last year's 27.0%. Employee contributions for our typical family of four have grown to \$4,004, a significant portion of wages. For example, using an average household income of \$50,000,¹ the total cost to participate in the plan (even with no claims) can exceed 8% of income.

Clearly, employers are making broad changes to their benefit plans, but the changes in this area are not reflected as dramatically as certain other cost-saving strategies, such as salary reductions and layoffs. In response to a difficult economic environment, employers look for quick and definite cost-saving strategies. Because benefit plans are typically changed only annually, and because employees can choose to change plans only once each year, cost sharing is slower and more variable in its impact than other cost-saving strategies. In light of this, we find many employers are choosing to implement salary reductions or layoffs now in order to ensure their viability and will consider additional, perhaps more dramatic, changes to their benefit plans in future annual benefit cycles. In other words, we expect benefit plan changes to continue even after the recession subsides.

FIGURE 10



1 U.S. Census Bureau. (August 2008). Income, Poverty, and Health Insurance Coverage in the United States: 2007. Available at: <http://www.census.gov/prod/2008pubs/p60-235.pdf>

VARIATION IN PLAN DESIGN

Employment-based medical coverage is just one part of the total compensation package. For many reasons, benefits can vary substantially from one job to another, with significant variation observed in the typical benefits provided by large and small employers, different industry sectors, and other job distinctions.

Even though PPO plans remain the most common plan design, significant growth in other types of coverage has been observed. For example, over the last few years, we have seen increased prevalence of high-deductible plans, such as consumer-driven health plans (CDHPs), with employers often continuing to offer an average plan and perhaps a richer buy-up plan. According to Kaiser, 13% of employers now offer a CDHP, compared to only 4% in 2005.

Because the MMI is based on the current average PPO plan design, it provides a useful measurement and comparison point for discussing other plans. For example, the Federal Employees Health Benefits Program (FEHBP) has received attention during healthcare reform conversations. We compared average cost sharing for our typical family of four under the plan design of the most popular FEHBP plan with the MMI average PPO plan design. On average, the family would pay \$435 less per year in cost sharing (or more than 15% less out of pocket at time of service) under that particular FEHBP plan. The premium needed to support benefit costs would be correspondingly higher under this FEHBP plan. The total cost to deliver care (i.e., total premium plus out-of-pocket costs) is similar for the two benefit plans.

WHERE TO NEXT?

The MMI reflects a number of cost dynamics that put the U.S. healthcare reform challenge in perspective. Consider:

- A five-year view of the cost trend confirms why there is now agreement on the need for some form of healthcare reform—in that time, the cost of healthcare for a family of four has risen from \$12,214 to \$16,771. The MMI is 37% higher than when we started publishing these results in 2004.
- The total cost of healthcare is especially difficult for families when you look at the cost-share numbers (49% increase in employee share of premiums/ 39% increase in out of pocket).
- The macroeconomic situation is making this cost trend more untenable, affecting employees' share of costs even as it hits families' bottom lines and causes employers to reduce or eliminate coverage, jobs, or both.

But the news is not all negative:

- Rarely have we seen so much industry will coalesced around reducing healthcare costs. When we began publishing the MMI results in 2005, few could have predicted a consensus on cost reduction among providers, government, consumers, employers, and insurers.
- While costs are increasing, we've seen a few examples of how players in the current system are reversing this cost trend through a convergence of various initiatives. For example, the pharmaceutical cost trend is down this year, and medical management is more accepted.
- The geographic disparity in utilization highlights the opportunity for cost saving. Opportunities exist to implement best practices that ensure access to the right care at the right time in the right treatment setting by the right provider.

In the history of this study—and more broadly, in the history of Milliman's 50+ years consulting to healthcare payers—we have rarely faced so much uncertainty.

Which raises the question: Where do we go from here?

In the history of this study—and more broadly, in the history of Milliman's 50+ years consulting to healthcare payers—we have rarely faced so much uncertainty. Analysis is only as accurate as its underlying assumptions, and the current environment is one in which assumptions can change quickly. While we stand behind our results as the most accurate proactive study of healthcare costs available, we would be remiss if we failed to mention that, in this rapidly changing environment, much is prone to change.

TECHNICAL APPENDIX—MILLIMAN MEDICAL INDEX

The Milliman Medical Index is a byproduct of Milliman's ongoing research in healthcare costs. The MMI is derived from Milliman's flagship health cost research tool, the *Health Cost Guidelines*[™], as well as a variety of other Milliman and industry data sources, including Milliman's *Group Health Insurance Survey*[™].

The MMI represents the projected total cost of medical care for a hypothetical American family of four (two adults and two children) covered under an employer-sponsored PPO health benefit program, and reflects the following:

- Nationwide average provider fee levels negotiated by insurance companies and preferred provider networks.
- Average PPO benefit levels offered under employer-sponsored health benefit programs.²
- Utilization levels representative of the average for the commercially insured (non-Medicare, non-Medicaid) U.S. population.

Variation in costs

While the MMI measures cost for a typical family of four, any particular family or individual could have significantly different costs. Variables that have a significant impact on costs include:

- *Age and gender.* There is wide variation in costs by age, with older people generally having higher costs per person than younger people. Variation also exists by gender.
- *Individual health status.* Tremendous variation also results from health status differences. People with chronic conditions are likely to have much higher average healthcare costs than people without these conditions.
- *Geographic area.* Significant variation exists among healthcare costs by geographic areas because of differences in healthcare provider practice patterns and average costs for the same services.
- *Provider variation.* The cost of healthcare depends on the providers used. Costs also vary widely because of differences in both billed charge levels and discounts that payers negotiate.
- *Insurance coverage.* The presence of insurance coverage and the *richness* of that coverage also affect healthcare spending.

² For example, for 2009, average benefits are assumed to have an in-network deductible of \$473, various copays (e.g., \$75 for emergency room visits, \$19 for physician office visits, \$10/25%/30% for generic/formulary brand/non-formulary brand drugs), coinsurance of 14% for non-copay services, etc.

ABOUT THE MILLIMAN MEDICAL INDEX

The MMI includes the cost of services paid under an employer health benefit program, as well as costs borne by employees in the form of deductibles, coinsurance, and copayments. The MMI represents the total cost of payments to healthcare providers, the most significant component of health insurance program costs, and excludes the nonmedical administrative component of health plan premiums. The MMI includes detail by provider type (e.g., hospitals, physicians, and pharmacies), for utilization, negotiated charges, and per capita costs, as well as how much of these costs are absorbed by employees in the form of cost sharing.

The 2009 report marks the fifth year of the MMI. The MMI incorporates proprietary Milliman studies to determine representative provider reimbursement levels by years, as well as other reliable sources, including the *Kaiser Family Foundation/Health Research and Educational Trust 2008 Annual Employer Health Benefit Survey* (Kaiser/HRET) to assess changes in health plan benefit level by year.

Launched more than 50 years ago, the Milliman *Health Cost Guidelines* is an industry standard, now used by more than 90 leading insurers to estimate expected health insurance claim costs. The seven-volume publication includes utilization rates for specific services and variations in costs in different parts of the country—critical data used by traditional health carriers and managed care organizations for product pricing. In addition, the *Guidelines* provides utilization benchmarks for managed care arrangements. The *Guidelines* is updated annually from core data sources, which contain the complete annual health services of more than 15 million lives, as well as various specialized proprietary databases. Milliman invests more than \$2 million annually in updating the *Guidelines*.

Milliman's *Group Health Insurance Survey* (formerly *HMO Intercompany Rate Survey*), launched in 1992, provides the industry's only annual survey measuring rate levels and experience for a uniform population and benefit design for HMOs, PPOs, and consumer-driven health plans from across the nation. Survey results are provided by metropolitan statistical area, state, region, and nationwide. The survey is used by managed care organizations nationwide to compare their rate levels and experience with those of their competitors, and includes utilization rates, costs of care for physician and hospital services, and various rate levels.



Milliman, whose corporate offices are in Seattle, serves the full spectrum of business, financial, government, and union organizations. Founded in 1947 as Milliman & Robertson, the company has 48 offices in principal cities in the United States and worldwide. Milliman employs more than 2,100 people, including a professional staff of more than 1,000 qualified consultants and actuaries. The firm has consulting practices in employee benefits, healthcare, life insurance/financial services, and property and casualty insurance. For further information visit www.milliman.com.