# Beyond the Myths: Finding Benefit Design Solutions That Address the True Costs of High Healthcare Use

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**Abstract**

Chronic and severe health problems place an enormous financial burden on individuals, employers, and health plan providers, requiring all to make tough decisions about healthcare. Specialty pharmaceuticals are increasingly attractive treatment options, but employers need tangible ways to incorporate these medications into benefit plans. Benefit managers can take a proactive role in addressing cost and compliance issues, using evidence-based data about true patient costs to develop policies that encourage employees to seek appropriate care. Achieving savings in direct and indirect costs will require more than shifting coverage, which can lead to nonadherence and increase costs elsewhere.

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For author information and disclosures, see end of text.

Chronic and severe health problems are important concerns for younger and older insured individuals. The financial burden on health plan providers and healthcare users may force them to make difficult decisions. Decisions about premium amounts and out-of-pocket (OOP) limits can have serious effects on the bottom line for employers and their employees. More importantly, benefit plan structure can influence when and whether employees seek treatment and their adherence to therapeutic recommendations. Not far down the line, these choices can affect employment status, productivity, and the quality of life during a person's most fruitful years.

Specialty medications exist for diseases such as cancer, rheumatoid arthritis (RA), and multiple sclerosis (MS) that have the potential to modify or stop the course of disease, but these drugs are expensive and have no generic alternatives. They have become the focus of many discussions about cost sharing. The dearth of studies on cost sharing for patients who need specialty pharmacy medications means that these discussions often occur in a vacuum.

In today's healthcare environment, costs continue to rise faster than the average person's income. Some employers mistakenly believe that simply increasing the level of cost sharing between the company and its employees can help control costs because it promotes personal responsibility through exposing employees fairly to the true costs of healthcare.

Is this really the case? At what point does cost sharing become a barrier to appropriate care? What about so-called "high utilizers"—those individuals in the system who have severe, multiple, or chronic illnesses, are still working, and consume ≥$10,000 per year in healthcare resources? Finding solutions to the challenges health plan designers must tackle requires careful analyses of multiple factors affecting employers and employees. These include clinical outcomes, quality-of-life issues, and economic costs and benefits. Temporary solutions that focus only on shifting costs to patients may backfire.

We looked at complementary use, copayment, design, and OOP data from employers and managed care providers. The first half of this article considers costs associated with the treatment of severely ill employees; the second half examines how healthcare benefit changes can affect these individuals. The article also explores recent research to

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**Table 1.** Patient Characteristics by Study Group[a]

| | Group A: Severely Ill Patients | | Group B: Chronic Disease Patients | | Group C: Plan Population | | Group D: Plan Population Excluding Groups A & B | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| **No. of Patients** | 45,707 | | 40,509 | | 39,825 | | 36,754 | |
| **Sex** | | | | | | | | |
| Male | 16,266 | 35.6 | 20,188 | 49.8 | 16,905 | 42.5 | 15,401 | 41.9 |
| Female | 29,441 | 64.4 | 20,321 | 50.2 | 22,920 | 57.5 | 21,353 | 58.1 |
| **Age at Enrollment, y** | | | | | | | | |
| 18-30 | 3059 | 6.7 | 5591 | 13.8 | 13,082 | 32.9 | 12,656 | 34.4 |
| 31-50 | 21,083 | 46.1 | 18,547 | 45.8 | 19,775 | 49.7 | 18,376 | 50.0 |
| 51-64 | 21,565 | 47.2 | 16,371 | 40.4 | 6968 | 17.5 | 5722 | 15.6 |
| **Member** | | | | | | | | |
| Primary beneficiary | 31,272 | 68.4 | 28,232 | 69.7 | 28,217 | 70.9 | 26,028 | 70.8 |
| Dependent/spouse | 14,435 | 31.6 | 12,277 | 30.3 | 11,608 | 29.2 | 10,726 | 29.2 |
| **Geographic Region** | | | | | | | | |
| West | 32,637 | 71.4 | 28,838 | 71.2 | 28,746 | 72.2 | 26,561 | 72.3 |
| Midwest | 2855 | 6.3 | 3310 | 8.2 | 2776 | 7.0 | 2579 | 7.0 |
| South | 10,215 | 22.4 | 8361 | 20.6 | 8303 | 20.9 | 7614 | 20.7 |
| **Severely Ill Diseases** | | | | | | | | |
| Breast cancer | 11,184 | 24.5 | NA | NA | 56 | 0.1 | NA | NA |
| Lung cancer | 3581 | 7.8 | NA | NA | 18 | 0.1 | NA | NA |
| Gastrointestinal cancer | 5622 | 12.3 | NA | NA | 27 | 0.1 | NA | NA |
| Non-Hodgkin's lymphoma | 2354 | 5.2 | NA | NA | 21 | 0.1 | NA | NA |
| Rheumatoid arthritis | 8096 | 17.7 | NA | NA | 30 | 0.1 | NA | NA |
| Multiple sclerosis | 3085 | 6.8 | NA | NA | 13 | 0.03 | NA | NA |
| Hepatitis C | 6243 | 13.7 | NA | NA | 30 | 0.1 | NA | NA |
| Kidney disease | 9136 | 20.0 | NA | NA | 11 | 0.03 | NA | NA |
| **Chronic Diseases** | | | | | | | | |
| Diabetes mellitus | 6194 | 13.6 | 21,612 | 53.4 | 1177 | 3.0 | NA | NA |
| Coronary artery disease | 3848 | 8.4 | 6689 | 16.5 | 598 | 1.5 | NA | NA |
| Cerebrovascular accident | 1253 | 2.7 | 1584 | 3.9 | 172 | 0.4 | NA | NA |
| Chronic obstructive pulmonary disease | 3740 | 8.2 | 4128 | 10.2 | 359 | 0.9 | NA | NA |
| Asthma | 3155 | 6.9 | 12,059 | 29.8 | 1084 | 2.7 | NA | NA |

[a]WellPoint HealthCore data on file.
Adapted with permission from reference 7.

provide employers with concrete data on the realities of today's healthcare expenditures and offers new insights into benefit design solutions that can protect employers and employees, now and in the future.

## Costs of Treatment for Severely Ill Employees

In 2006, the Kaiser Family Foundation found that a small percentage of the population accumulates the majority of healthcare costs.[1] Overall healthcare costs for patients who have chronic illnesses such as diabetes, asthma, and heart disease are higher than costs for those in the general population without chronic conditions.[2-5] When severely ill individuals experience financial problems related to their medical bills, they are 4 to 5 times more likely to delay—or altogether avoid—medical care, compared with individuals who can afford their healthcare.[6]

## Research Conducted to Help Employers

To date, there has been little practical research regarding the expense of high healthcare utilizers or, more importantly, the effects of benefit design on overall health status. To help employers understand costs more completely, Willey et al carried out an intensive research project that involved examining the overall profile of commercially insured individuals with chronic and severe illnesses and the costs associated with their healthcare.[7]

Using administrative claims data, the study analyzed the total economic burden—including medical spending by the plan and by the patient—across 3 study groups, beginning with the date of an individual's first enrollment in the health plan to the date of initial disenrollment. The objective of the analysis was to consider the effects of policy changes related to OOP healthcare spending—par-

ticularly specialty pharmacy costs—on employees with severe and chronic conditions and on their employers.

Researchers defined severely ill employees as those with 2 or more of the following diagnoses: cancers of the breast, lung, or gastrointestinal tract; non-Hodgkin's lymphoma; chronic kidney disease (CKD); RA; MS; or hepatitis C. They defined chronically ill employees as those having reported 2 or more diagnoses of at least 1 of the following conditions: diabetes mellitus, coronary heart disease, chronic obstructive pulmonary disease, cerebrovascular accident, or asthma.

***Healthcare Spending for the Severely Ill.*** While the severely ill constituted a small percentage of the study population (0.8%), their cumulative health plan spending was almost 10-fold higher than that of general plan participants. Payments for medical services accounted for most of the healthcare costs (75%) of the severely ill, and their hospitalization costs were about double their pharmacy costs. The severely ill constituted a unique cohort in this study because more than half of their pharmacy expenses were covered under the medical benefit. This was a net positive for the patient; OOP spending for medications would have been 5 times greater if they had been expensed under the pharmacy benefit.

Close to 70% of the study's severely ill patients were primary beneficiaries of the policy and remained active employees some or all of the time. Severely ill employees tended to be older than those employees who were chronically ill or in the general population, and the aforementioned oncology diagnoses (cancers of the breast, lung, and gastrointestinal tract; and non-Hodgkin's lymphoma) accounted for about half of the conditions identified in this cohort. The researchers found that diabetes mellitus was the most common chronic disease diagnosis (Table 1).

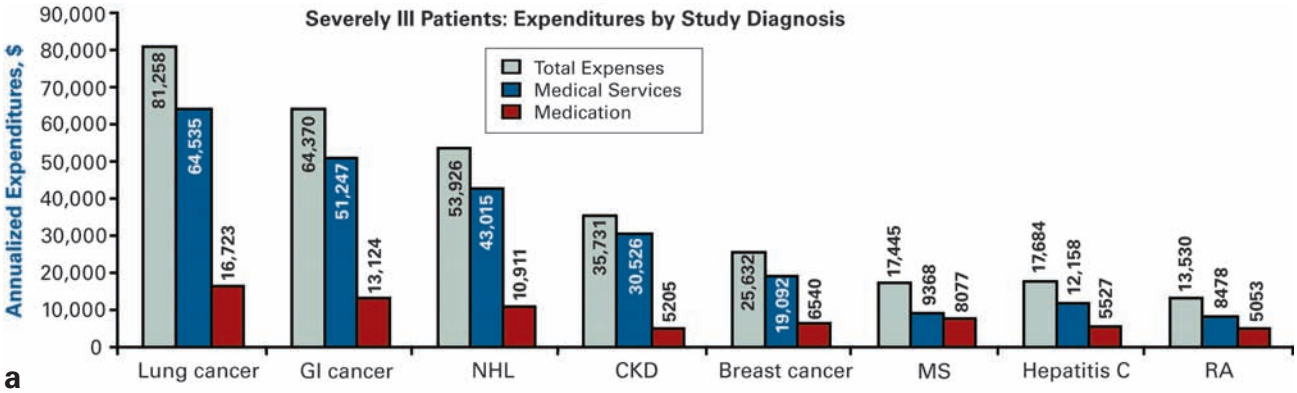
Table 2 details health plan and patient costs by study group for medical services rendered, and it allocates costs for hospitalization, ambulatory, and pharmacy expenditures. Pharmacy expenses are categorized according to whether they were paid under the medical benefit or the pharmacy benefit. Table 2 shows that medical costs become progressively higher than pharmacy costs in absolute and relative dollars when moving from Group D of the plan population to Group A (the severely ill cohort). The mean value for total annualized costs in the severely ill cohort ($29,273) is more than 3 times higher than that observed in the chronic disease group (Group B; $8225) and 9 times higher than that in the overall plan population (Group C; $3075). Current trends demonstrate that severely ill patients

**Table 2.** Health Plan and Patient Costs by Study Group[a]

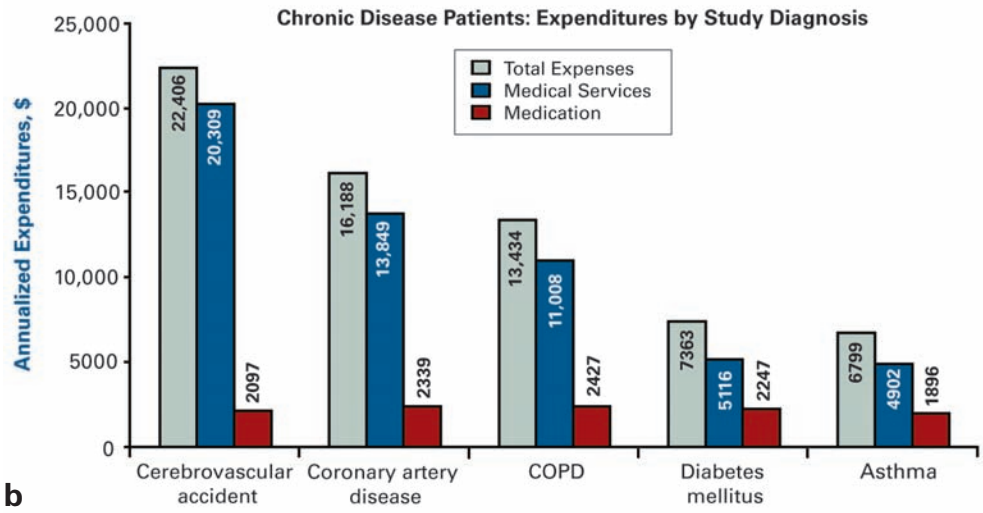
| | Group A: Severely Ill Patients | | Group B: Chronic Disease Patients | | Group C: Plan Population | | Group D: Plan Population Excluding Groups A & B | |
|---|---|---|---|---|---|---|---|---|
| | **Mean** | **Median** | **Mean** | **Median** | **Mean** | **Median** | **Mean** | **Median** |
| **Total Annualized Costs, $** | 29,273 | 9300 | 8225 | 3321 | 3075 | 989 | 2564 | 882 |
| **Total Plan Paid Costs, $** | 27,196 | 7604 | 7031 | 2407 | 2505 | 668 | 2055 | 591 |
| Medical services, $ | 21,136 | 4303 | 5581 | 1142 | 2010 | 388 | 1681 | 347 |
| Hospitalization, $ | 11,627 | 251 | 3683 | 0 | 1025 | 0 | 816 | 0 |
| Ambulatory, $ | 9509 | 2195 | 1898 | 666 | 985 | 255 | 864 | 228 |
| Medication, $ | 6060 | 1452 | 1450 | 713 | 495 | 87 | 374 | 73 |
| Pharmacy benefit, $ | 2639 | 863 | 1338 | 692 | 430 | 80 | 351 | 67 |
| Medical benefit, $ | 3421 | 2 | 112 | 0 | 65 | 0 | 23 | 0 |
| **Total Patient Paid Costs, $** | 2077 | 1155 | 1195 | 742 | 570 | 233 | 510 | 210 |
| Medical services, $ | 1298 | 477 | 616 | 188 | 370 | 89 | 338 | 82 |
| Hospitalization, $ | 450 | 0 | 242 | 0 | 120 | 0 | 106 | 0 |
| Ambulatory, $ | 848 | 283 | 373 | 130 | 250 | 64 | 232 | 60 |
| Medication, $ | 778 | 422 | 579 | 374 | 201 | 61 | 171 | 53 |
| Pharmacy benefit, $ | 655 | 367 | 573 | 371 | 197 | 59 | 169 | 51 |
| Medical benefit, $ | 123 | 0 | 6 | 0 | 3 | 0 | 3 | 0 |

[a]WellPoint HealthCore data on file.
Adapted with permission from reference 7.

**Figures 1a and 1b.** Total Annualized Costs, Medical Services Costs, and Medication Costs for Severely Ill and Chronic Disease Cohorts by Disease State[a]




CKD indicates chronic kidney disease; GI, gastrointestinal; MS, multiple sclerosis; NHL, non-Hodgkin's lymphoma; RA, rheumatoid arthritis.




COPD indicates chronic obstructive pulmonary disease.
[a]WellPoint HealthCore data on file.
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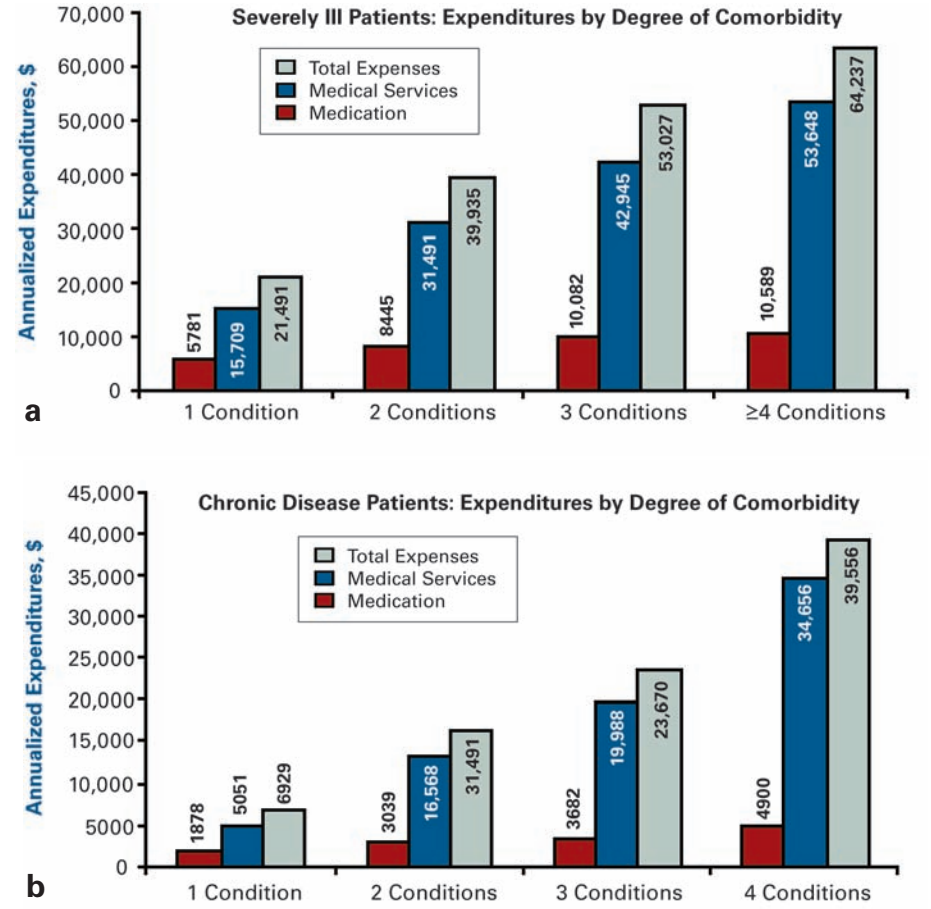
incur greater annualized costs, reflected in their accelerating OOP obligations. The growing burden on patients to meet OOP requirements could quickly become overwhelming, leading to catastrophe when they cannot meet OOP obligations. Increasing OOP expenses for the small number of very sick individuals would not necessarily curb their use of healthcare resources or treatment behavior; most have few or no discretionary healthcare choices (eg, they do or do not need chemotherapy).

The threshold for annualized health plan medical and pharmacy costs in the top 10% of the severely ill population is $5968. For those responsible for the top 2.5% of plan spending, the threshold is $16,031. Medical costs are 3 to 5 times greater than pharmacy costs for all groups, and hospitalization costs represent 50% of expenditures categorized under medical services. **Figure 1** shows that medical costs are much higher than pharmacy costs across the board, including inpatient, office, and retail pharmacy costs.

*Comorbid Conditions*. **Figure 2** illustrates that as patients' medical conditions overlap, medical costs exceed pharmacy costs and the gap between the two widens in correlation to the number of concomitant

**Figures 2a and 2b.** Total Annualized Costs, Medical Services Costs, and Medication Costs for Seriously Ill and Chronic Disease Cohorts by Number of Comorbidities[a]




[a]WellPoint HealthCore data on file.

medical conditions. Cumulative healthcare costs go from an average of $21,491 per patient with 1 severe condition to $64,237 per patient with ≥4 severe conditions; corresponding pharmacy costs are $5781 per patient with 1 condition to $10,589 per patient with ≥4, reflecting greater acceleration in medical costs versus pharmacy costs. The absolute cost for medical services for patients who have multiple severe conditions can be 4 to 7 times greater than for patients with 1 condition. Severely ill employees may incur additional expenses, such as disability or salary, while absent.

*Biologic Medications*. Although costs for biologic medications and pharmacy medications overall are significant, they are not the primary cost drivers for severely ill individuals. Biologics represent 6.6% of costs paid by the health plan for all patients—less than one third of overall pharmacy costs. Less than half of patients in the top 2.5% spending bracket used biologic medications. Severely ill individuals spend an average of $2000 OOP annually on medications, which is ~4 times as much as general health plan participants spend; the top 2.5% of severely ill healthcare users spend about double that amount (Table 3).

*Not Just the Elderly*. Many diseases afflict a younger patient population than might be expected. A large percentage of severely ill employees who are commercially insured are relatively young. Typically, severe and chronic diagnoses are associated with elderly populations, but a similar percentage of individuals in the 31- to 50-year and 51- to 64-year age categories had severe and chronic afflictions (Table 1). Looking only at the overall plan population can be misleading, however, because it may not accurately reflect various nuances among the severely ill or chronically ill populations.

In this study, for example, all of the severely ill patients were <65 years; more than half were <50 years. Additionally, more than two thirds were the primary beneficiary. The goal for employees is to maintain quality of life and sustain productivity for years. The objective for employers is to retain valued employees.

***Pharmacy Benefit Cost Sharing.*** To examine the effects of capping pharmacy benefits on healthcare spending, Hsu et al compared 2 groups: 1 with capped pharmacy benefits and the other without.[8] Hsu and colleagues found no difference in medical spending between the 2 groups, though the capped group had lower pharmacy spending. The capped

**Table 3.** Health Plan and Patient Costs by Quartile for Severely Ill in Top 10% of Health Plan Expenditures[a]

| | Bottom Quartile (10.0%-7.5%) | | Lower Quartile (7.5%-5.0%) | | Upper Quartile (5.0%-2.5%) | | Highest Quartile (Top 2.5%) | |
|---|---|---|---|---|---|---|---|---|
| | Mean | Median | Mean | Median | Mean | Median | Mean | Median |
| **Total Annualized Costs, $** | 6698 | 6685 | 8686 | 8633 | 12,793 | 12,683 | 71,634 | 39,308 |
| **Total Plan Paid Costs, $** | 5353 | 5402 | 7112 | 7156 | 10,874 | 10,783 | 67,714 | 36,052 |
| Medical services, $ | 3519 | 3738 | 4730 | 4997 | 6877 | 7385 | 53,688 | 27,393 |
| Hospitalization, $ | 1090 | 134 | 1590 | 304 | 2601 | 708 | 30,718 | 8900 |
| Ambulatory, $ | 2429 | 2288 | 3140 | 3011 | 4276 | 3672 | 22,970 | 13,097 |
| Medication, $ | 1834 | 1465 | 2382 | 1796 | 3997 | 2834 | 14026 | 8028 |
| Pharmacy benefit, $ | 1687 | 1236 | 2127 | 1375 | 3497 | 1925 | 4771 | 1852 |
| Medical benefit, $ | 147 | 0 | 255 | 1 | 500 | 4 | 9255 | 1342 |
| **Total Patient Paid Costs, $** | 1344 | 1275 | 1573 | 1449 | 1919 | 1671 | 3920 | 2759 |
| Medical services, $ | 701 | 522 | 845 | 640 | 1038 | 726 | 2648 | 1676 |
| Hospitalization costs, $ | 171 | 0 | 219 | 0 | 303 | 24 | 1022 | 207 |
| Ambulatory costs, $ | 530 | 335 | 626 | 368 | 735 | 393 | 1626 | 838 |
| Medication, $ | 644 | 451 | 728 | 502 | 881 | 584 | 1272 | 797 |
| Pharmacy benefit, $ | 630 | 438 | 711 | 476 | 842 | 550 | 952 | 586 |
| Medical benefit, $ | 13 | 0 | 18 | 0 | 39 | 0 | 320 | 0 |
| **Patient Spending on Medications, %** | | | | | | | | |
| Medical benefit | 8.4 | 6.5 | 7.2 | 3.4 | — | — | — | — |
| Pharmacy benefit | 27.2 | 25.1 | 19.4 | 16.6 | — | — | — | — |
| **Use of Biologics, %** | 10.0 | 13.6 | 21.1 | 45.2 | — | — | — | — |
| **Cost of Biologics, $** | | | | | | | | |
| Plan paid, $ | 200 | 0 | 360 | 0 | 884 | 0 | 4449 | 0 |
| Patient paid, $ | 23 | 0 | 42 | 0 | 85 | 0 | 196 | 0 |
| **Total Plan Spending on Biologics, %** | 3.7 | 5.1 | 8.1 | 6.6 | — | — | — | — |
| **Total Plan Medication Spending on Biologics, %** | 10.9 | 15.1 | 22.1 | 31.7 | — | — | — | — |

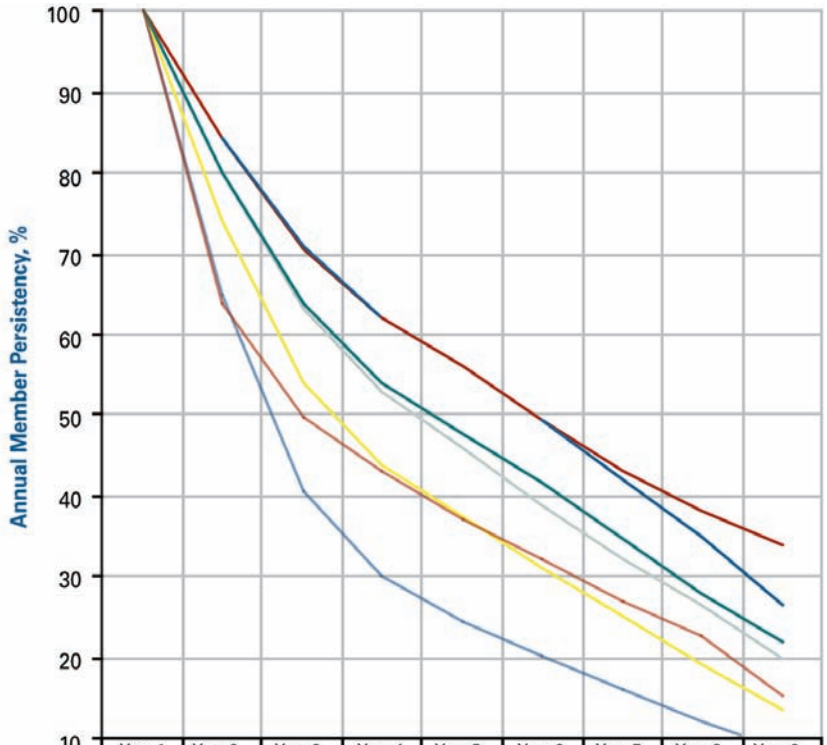
[a]WellPoint HealthCore data on file.
Adapted with permission from reference 7.

group had increased emergency department and hospital costs, offset by reductions in pharmacy costs and physician office visits. More importantly, beneficiaries with pharmacy caps demonstrated lower medication adherence and subsequently poorer clinical outcomes, more emergency department visits and hospitalizations, and a higher mortality rate.

Goldman et al looked at copayment structures for patients taking medication to lower cholesterol levels and found that reducing copayments for the highest-risk patients realized remarkable cost savings.[9] In a subsequent study, Goldman et al found that, compared with traditional pharmaceutical use, specialty drug use by the severely ill is relatively insensitive to cost sharing at current OOP levels. This is because severely ill patients have limited alternatives for treatment and must pay the higher OOP costs or forgo treatment.[10] Goldman says benefit plans should focus on ensuring that members receive the appropriate medications because creating barriers to access (eg, high copayments) and limiting coverage may cause patients to make poor economic and healthcare choices.

In a general sense, high OOP costs can trigger a vicious cycle, although studies addressing the relationship between severe conditions and household income have produced mixed results.[10-12] Previous studies document that increasing copayments leads to decreased adherence with medication regimens.[9,13,14] This disparity is more marked in lower socioeconomic groups. Chronic conditions are more prevalent among individuals with lower to middle incomes, and lower socioeconomic status corresponds strongly with poorer health outcomes.[15,16] For patients with lower socioeconomic status, cost shifting imposes a financial bur-

**Figure 3.** Annual Persistency Rates for Various Healthcare Conditions[a]




| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 |
|---|---|---|---|---|---|---|---|---|---|
| Breast Cancer, % | 100 | 84.33 | 70.71 | 61.99 | 56.07 | 49.57 | 43.00 | 38.09 | 33.89 |
| Lung Cancer, % | 100 | 64.82 | 40.54 | 30.17 | 24.67 | 20.28 | 15.96 | 12.03 | 8.27 |
| GI Cancer, % | 100 | 74.02 | 54.20 | 44.01 | 37.36 | 31.05 | 25.09 | 19.36 | 13.61 |
| Lymphoma Cancer, % | 100 | 80.02 | 63.30 | 52.87 | 46.00 | 38.94 | 32.30 | 26.49 | 20.04 |
| RA, % | 100 | 84.36 | 70.95 | 62.13 | 56.30 | 49.49 | 42.16 | 35.03 | 26.65 |
| CKD, % | 100 | 80.15 | 63.89 | 54.07 | 47.81 | 41.65 | 34.54 | 28.12 | 22.07 |
| Total - no claims , % | 100 | 63.92 | 49.92 | 42.97 | 37.14 | 32.19 | 27.12 | 22.67 | 15.37 |

Year 1 = Base Year

CKD indicates chronic kidney disease; GI, gastrointestinal; RA, rheumatoid arthritis.
[a]Milliman, Inc data on file.

den and is likely to decrease adherence to medication regimens. This contributes to a vicious cycle because a higher rate of medication adherence relates directly to lower disease-related medical costs.[17]

### Increasing OOP for Employees May Cost Employers More

The Medicare Part D prescription drug program ceases paying for medications once a patient reaches a predetermined spending limit and resumes payments only after the senior has spent $3600 OOP. This so-called doughnut hole in the Medicare Part D prescription drug coverage temporarily caused many seniors to stop taking medications. Many employer and managed care benefit designs have likewise moved toward increased cost sharing for pharmacy benefits, a potentially problematic approach. Few studies clearly state the effects of limiting access to medications via a movement toward tiered formulas, higher copayments, and coinsurance. Such trends, however, raise coordination-of-care concerns and can negatively affect patient adherence and quality of care.

A challenge for employers is to balance cost sharing with establishing affordable premiums. Many employers continue to focus on average members of the health plan, even though healthcare consumers who suffer more severe illnesses incur greater expenses. This is a growing problem as cost-of-living adjustments lag increases in healthcare costs, particularly OOP expenses.

**Table 4.** Commercial Population Trends Comparing Healthcare Expenditures by Population Utilization

| Highest Utilizers, % | Responsible for x% of Healthcare Costs |
|---|---|
| 0.9 | 22.3 |
| 8.4 | 58.6 |
| 18.3 | 75.9 |
| 36.8 | 91.0 |
| 51.2 | 96.2 |

*Source:* Milliman, Inc 2004 proprietary data for commercial static population.

**Table 5.** Medicare Population Trends Comparing Healthcare Expenditures by Population Utilization

| Highest Utilizers, % | Responsible for x% of Healthcare Costs |
|---|---|
| 1.1 | 15.3 |
| 11.5 | 53.0 |
| 24.9 | 72.6 |
| 45.9 | 88.1 |
| 62.6 | 95.0 |

*Source:* Milliman, Inc 2004 proprietary data for aged ≥65 years static population.

## Do High-cost Members Have High-cost Conditions?

It is important to note that not all high-cost users of health plan benefits have high-cost conditions like RA, cancer, or CKD. People with chronic healthcare conditions may have more consistently high treatment costs, whereas treatment expenses for the severely ill may vary significantly from year to year (eg, declining when cancer goes into remission). Generally, patients who are not adherent to medication regimens might increase use of more costly medical services (eg, hospitalizations) and consequently spend more.

To assess how benefit changes can affect high-cost users of healthcare, Milliman, Inc performed a research-and-cost analysis of commercial and retiree healthcare plans over a 3-year period (2002-2004).[18] Milliman, Inc found that healthcare costs had increased 101% at the 2-year mark—more than double—for plan members with healthcare costs <$10,000 in 2002. Members with healthcare costs >$10,000 in 2002 demonstrated a 2-year downward trend of ≥39%, a decline that became more dramatic in correspondence with higher starting levels of expenditures. In other words, except for employees with permanent, chronic illnesses, healthcare costs fluctuate dramatically over time and, for most individuals, costs tend to migrate toward an average.

Persistently high-cost users of health plan benefits have low turnover rates, which might surprise health plan benefit designers. People who contract serious healthcare conditions generally try to stay enrolled for as long as possible because advancing age and preexisting conditions can make finding another job or securing healthcare coverage challenging (Figure 3).

## Severely Ill Have Disproportionate OOP Costs

In addition to the emotional toll a severe illness takes on a family, the economic burden with even one severely ill family member is significant. According to the *Statistical Abstract of the United States: 2004*, the average household income in 2004 was $48,000 for working individuals <65 years. Having a family member with a serious health condition can reduce household wealth by 7% to 10%[19,20] because of the negative health effects of the condition and associated healthcare expenses. The burden is greatest on low-income workers and their employers, particularly in chronically diseased and severely ill populations. Although there may be some benefit to shifting coverage of biologics from the medical plan to the pharmacy plan (eg, better data transparency with National Drug Codes vs Healthcare Common Procedure Coding System [HCPCS], improved clinical management, and effective utilization controls), it would result in additional OOP costs for patients, exacerbating their financial burden.

The Agency for Healthcare Research and Quality (AHRQ) conducted a national review of patients, examining data from the Medical Expenditure Panel Survey on total OOP burdens, including premium costs, for patients <65 years. AHRQ found that increasing OOP expenditures has the greatest affect on subscribers aged 35 to 64

**Table 6.** Out of Pocket As a Percentage of Assumed Average Household Income of $48,000 Annually for the Commercially Insured in 2004

| Healthcare Cost Percentile | Member Out of Pocket, $ | Percentage of Annual Income |
|---|---|---|
| Top 1% | 3559 | 7.5 |
| 5th | 3001 | 6.3 |
| 20th | 2268 | 4.7 |
| 50th | 1751 | 3.6 |
| 75th | 1529 | 3.2 |
| 100th | 1364 | 2.8 |

*Source:* Milliman, Inc 2004 proprietary data for commercial static population (on file) and *Statistical Abstract of the United States: 2004.*

**Table 7.** Out of Pocket As a Percentage of Assumed Average Household Income of $24,000 Annually for Seniors Aged ≥65 Years in 2004

| Healthcare Cost Percentile | Member Out of Pocket, $ | Percentage of Annual Income |
|---|---|---|
| Top 1% | 4907 | 20.4 |
| 5th | 4456 | 18.6 |
| 20th | 3982 | 16.6 |
| 50th | 3585 | 14.9 |
| 75th | 3345 | 13.9 |
| 100th | 3108 | 13.0 |

*Source:* Milliman, Inc 2004 proprietary data for aged ≥65 years static population (on file) and *Statistical Abstract of the United States: 2004.*

**Table 8.** Cost-of-living Adjustment vs Medical/Pharmacy Out-of-pocket Contributions by Commercial and Medicare Populations 2002-2004

| | Change per Person Over 2 Years, % |
|---|---|
| **Cost-of-living Adjustment** | 4.9 |
| **Commercial Members** | |
| Total commercial healthcare costs | 27.1 |
| Out-of-pocket costs | 29.1 |
| **Aged ≥65 Years** | |
| Total healthcare costs | 43.5 |
| Out-of-pocket costs | 42.5 |

*Source:* Milliman, Inc 2002-2004 proprietary data for commercial and aged ≥65 years static population (on file) and AIER COLA index.

years. Patients with severe conditions, such as stroke, arthritis, cancer, and kidney disease, also bear disproportionately high OOP burdens. AHRQ stated that increasing OOP expenditures might lead to higher overall healthcare costs. The authors concluded that "High OOP burdens are associated with delaying or forgoing medical care for financial reasons—behavior that can have severe consequences for those in poor health."[21]

A small number of people account for the majority of healthcare dollars spent. Milliman, Inc looked at commercially insured (Table 4) and Medicare-eligible patients (Table 5) and found that affording healthcare becomes difficult for patients when a greater burden of costs are shifted to them in the form of OOP expenses. For commercially insured individuals, ~20% consume ~80% of healthcare resources and ~50% consume ~95% of healthcare resources. It is slightly less of a problem for Medicare patients: 60% consume ~95% of healthcare resources.

A high OOP burden mostly affects the highest consumers of healthcare resources, who tend to be severely ill. Commercially insured individuals have an average OOP of $1364, but those with high-cost healthcare use (>$50,000 annual healthcare expen-

ditures) have average OOP costs >$3000, which translates to 6.3% to 7.5% of an average household income (Table 6). For Medicare patients with an average annual household income of $24,000, high-cost healthcare users may spend as much as 18.6% to 20.4% of their income on OOP expenses (Table 7).

In 2002 to 2004, increases in health plan members' OOP spending aligned with national increases in healthcare costs, but OOP spending increases were >5 times the cost-of-living adjustment (Table 8). This shows that the rate of growth in real wages was not even close to the rate of growth in healthcare costs. Healthcare expenditures are consuming increasingly larger chunks of income, and individuals who use the greatest percentage of healthcare services might have to make serious decisions regarding essential versus nonessential healthcare services.

## Premium Increases Versus Benefit Reductions

Healthcare premium increases affect all employees, but increasing OOP expenses such as deductibles, copayments, and coinsurance affect only those who use healthcare services. The Gini coefficient represents the degree of equality and inequality in healthcare spending; a Gini coefficient of 0.0 represents perfect equality, and 1.0 represents perfect inequality. In other words, 1 person consuming 100% of healthcare services equals a Gini coefficient of 1.0, or perfect inequality.

Table 9 illustrates the disparity between total healthcare spending and OOP costs in 2004 for commercially insured individuals and those with Medicare. Implementing a premium increase of 1% affects all employees, and the employer will see a 1% decrease in expenditures. If employers instead reduce benefits by 1% to decrease expenditures, it might reduce premiums but care management efficiency might decrease significantly. Although perfect equality (Gini coefficient, 0.0) exists when there is no cost sharing and premiums are uniform or community-based, the failure to include incentives for healthcare consumers to hold costs down could result in overuse of healthcare services.[10] As cost sharing increases and the Gini coefficient approaches 1.0, the financial burden on ill individuals may decrease their use of needed healthcare services and, ultimately, result in a more sickly plan population (Figure 4).

**Table 9.** Gini Coefficients for 2004 Members

| Healthcare Costs | Commercial | Medicare |
|---|---|---|
| Total | 0.75 | 0.63 |
| Out of pocket | 0.55 | 0.34 |

*Source:* Milliman, Inc 2004 proprietary data for commercial and aged ≥65 years static population (on file).

## Four-tier Benefit Design

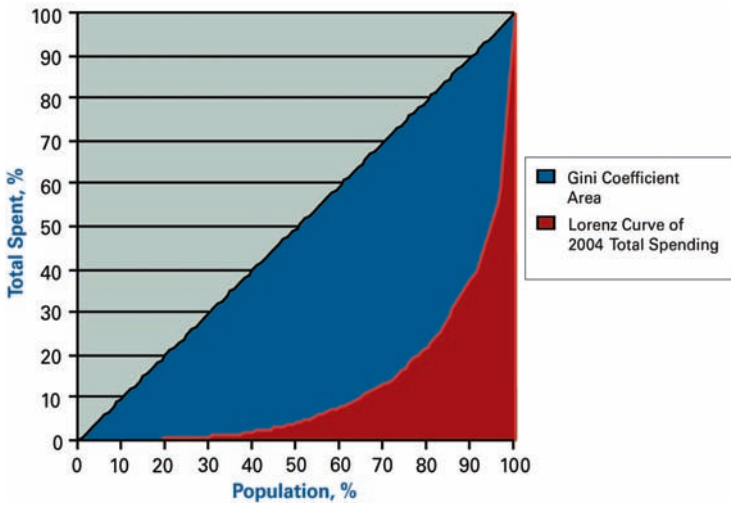
The past 2 decades have seen a shift to tiered structures for pharmacy benefits. This initially meant 2 and 3 tiers of copayments, deductibles, and coinsurance. Newer 4-tiered structures—although not universally adopted—seem to be a reaction to more costly biologic medications (often injectables).

It is difficult to assess the overall effect of this new 4-tier structuring fully. The fourth tier shifts medication costs from the medical benefit to the pharmacy benefit, which typically has 25% coinsurance (this can go higher or to predetermined maximum OOP limits). The Milliman, Inc research shows that specialty pharmacy accounts for ~8% to 12% of gross pharmacy expenditures. Biologics have few therapeutic equivalents that have lower costs but produce similar outcomes. Patients may have greater OOP costs, which could limit their access to medications that, when used appropriately, may contribute to better clinical outcomes and prevent the use of higher-cost healthcare services, such as hospitalizations and visits to physicians.

## Are Higher OOP Costs a Good Idea?

According to a Medicare Advantage study performed by Northern California Kaiser, elderly patients with a chronic disease who reached their $1000 annual spending allowance often turned to hospital and emergency services for care, generating much higher costs. According to Northern California Kaiser's John Hsu, "Although their drug costs were lower, the higher costs of hospitalizations and emergency department visits offset those savings, resulting in consistent unfavorable health effects, and failed to save money."[6]

**Figure 4.** Milliman 2004 Proprietary Commercial Static Population: All Benefit Types[a]




[a]Milliman, Inc data on file.

A RAND Corporation study published in 2006 noted that increasing copayments for cholesterol-lowering drugs from $10 to $20 resulted in a 10% decrease in adherence, which was associated with more hospitalizations and emergency department visits. RAND then performed a simulation that involved eliminating copayments for medium- and high-risk members and increasing copayments for low-risk members. Simulated savings exceeded $1 billion annually. The authors concluded that "strategically reducing copayments for patients most at risk can improve overall compliance and reduce use of other expensive services."[9]

Another RAND study examined privately insured patients who had employer-based benefits and high OOP costs to determine the effects of cost shifting on severely ill working individuals. The study found that the most severely ill patients—who had fewer medications to choose from—were the most tolerant of higher copayments. The authors stated that "increased cost sharing for specialty products would serve to primarily transfer a much larger financial burden from the health plan to the patient," but "care management should focus on making sure that patients who will most benefit (from specialty drugs) receive them. Once such patients are identified, it makes little economic sense to limit coverage." This means that, for a majority of employers, it is a good idea to set reasonable OOP copayment caps for pharmacy and medical plans.[10]

The goals of benefit design managers are to control pricing and delivery while improving patient management, but they must address some obstacles. First, physicians can pay at least 15% to 30% more for specialty pharmaceuticals than nonspecialty pharmaceuticals, and because cost sharing is lower under the medical benefit than the pharmacy benefit, plan members are more likely to try to get these medications at their physicians' offices. Second, some patients with cancer, RA, CKD, MS, and hepatitis C can use only specialty pharmaceuticals and have no lower-cost alternatives. Cost-sharing measures are unlikely to alter their spending behavior. Third, disease management programs that focus on higher-cost health conditions might do better to reduce costs by increasing intervention, compliance, education, and patient care management to improve clinical outcomes, rather than increasing patients' OOP burdens.

Some argue that cost sharing increases employees' sensitivity to the rising costs of medical care. Even if that is true and a desirable goal, employers must find a balance with cost sharing that does not deter employees from seeking appropriate and preventive care. There are behaviors and needs unique to the severely ill patient population and greater variability in the risks associated with their healthcare-spending choices. Building flexibility into plans that is based on clinical evidence is paramount.

## Conclusion

Policies aimed at controlling one aspect of costs—such as expenditures for severely ill populations, high-cost conditions, or certain classes of drugs—can result in unforeseen cost increases elsewhere. Alternatives that might not be immediately apparent—such as providing efficient healthcare service management, prudent disease management, and well-coordinated care, or addressing employee quality-of-life issues—are also important cost drivers.

Some have proposed that cost-sharing and cost-shifting initiatives provide some benefit, but health plans need flexibility to meet the diverse needs of various populations. Benefit plan designers must find solutions that are cost-effective for both employers and employees, with the goals of ensuring that

employees avail themselves of necessary healthcare services and remain productive members of the workforce. An additional goal is to provide insurance generally, ie, spreading costs over a large population to prevent economic devastation for the minority of individuals who experience an untoward event.

Administrative decisions, such as moving coverage for specialty drugs from the medical benefit to the pharmacy benefit, can contribute to nonadherence and shift costs to employees. To achieve long-term cost-containment, organizations might consider modifying approaches to targeted disease management, individual case management, health risk assessment, and early disease identification and intervention, in lieu of increasing employee OOP expenses. Such actions would improve overall efficiency and reduce clinical risks, which translate to direct and indirect cost savings for the employer. Benefit managers should construct policies that encourage employees to seek appropriate care.

Benefit plan designs for the commercially insured require deep analysis, because the effects of seemingly small changes can produce effects degrees higher in magnitude than expected. Before implementing changes, it is important to carefully examine clinical outcomes, quality-of-life issues, and economic costs and benefits for employers and covered employees.

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