How Consumer Choice Affects Health Coverage Plan Design

This paper outlines some of the challenges of designing a sustainable health coverage program to serve people with differing health needs. Coverage choices can help attract broad enrollment but can have costs. Policymakers should include program design elements in their reform programs to moderate the costs of choice.

Introduction

Health care reform was a top issue in the presidential campaign and is a high priority for the Obama administration. One of the many aspects of reform is the challenge of developing and shaping new health coverage programs for people who do not currently have coverage. While there are many paths to expanding access to coverage, all of them present the challenge of designing a program to meet the differing needs within the targeted population.

Policymakers in state reform efforts have had to grapple with these issues. For instance, Vermont policymakers had to decide whether to standardize benefits, what benefits to offer under Vermont's Catamount Health program, and how to design the coverage so it would be attractive to potential enrollees and affordable to both enrollees and the state, which subsidizes the cost of the program. Massachusetts policymakers had to decide what minimum benefits health coverage must have to satisfy the mandate that all state residents have coverage. They also decided on the design of four different levels of coverage to be available through the Connector. In the context of national

health reform, policymakers will also have to grapple with the issue of what health coverage should look like, how much choice to offer, and how to balance that choice with the accompanying costs.

To help think through some of the many factors involved in addressing this problem, the AARP Public Policy Institute convened a small group of policy researchers, health care industry participants, state policymakers, and consumer advocates to discuss a number of topics related to designing health care benefit packages. Drawing on its actuarial analysis and experience advising large employer health plans, Mercer provided the information presented here to illustrate some key issues related to choice in health care programs.

- the uneven distribution of health costs across the population
- how individuals' choices about their coverage options play out over time
- The costs stemming from individuals' choices

These issues present challenges to employers, and in the context of a health reform debate, to policymakers designing reforms. Choice of coverage

can help attract participation of a cross section of the healthy and sick. But it also potentially reduces the pooling and spreading of risk. Unless policymakers recognize the impact of adverse selection and include program design approaches to mitigate its impact, there can be unanticipated negative effects on costs for individuals and program sponsors.

Understanding the Distribution of Health Claims Costs

Employers consider many factors as they try to control the ever-increasing costs of health care. The primary areas of focus for employer health plans are as follows:

- Managing the care of those who are ill or injured through programs such as catastrophic care management, centers of excellence, and disease management programs
- Maintaining the health of those who are not yet ill through health promotion, disease prevention, and wellness programs
- Engaging consumers to increase cooperative efforts in managing and maintaining health
- Aggressively managing their vendors and programs to keep costs within budgets

As employers and their advisors project the cost of health programs for the purpose of budgeting and setting premium levels, they consider utilization of services (the amount of health care consumed), the price of these services, and other factors. When employers offer a choice of options—either multiple plan options or the choice of participating in a single plan vs. opting out of coverage entirely—one of the other factors they must consider is adverse selection. Adverse selection occurs when a disproportionately high number of people in poorer than average health enroll in a health plan. This occurs

because participants often (and naturally) choose their health coverage in their own best financial interest. For instance, if offered a choice of plans, individuals in good health may select the less expensive option or may decide not to get coverage.

To provide insight into how adverse selection can affect the plans being considered in the health care reform debate, this analysis presents a distribution of claims in a large population of beneficiaries with employer-provided coverage. The analysis is based on data obtained from the MarketScan® databases from Thomson Reuters (see appendix). The MarketScan databases contain fully integrated inpatient and outpatient medical claims and encounters, prescription drug experience, and enrollment and eligibility data. The analysis focuses only on active members who had medical and pharmacy coverage for the full 12 months of 2006. This subset of the database represents about 7.4 million members. While there are likely differences between behaviors observed in a population of beneficiaries with employer-provided coverage and a population covered under a public program, these data should be useful in illustrating the distribution of costs across a covered population and the impact of adverse selection costs driven by various plan design decisions.

Figure 1 shows the portion of total cost attributable to various components of the total population. The column on the left shows a percentage of members and the column on the right shows the percentage of total claims, or costs, associated with that percentage of members. The chart shows that the most costly 5 percent of plan members are responsible for almost 50 percent of total claims cost. Adding the next 15 percent of members shows that the most costly 20 percent of members drive about 80

Figure 1
Distribution of Program Members and Their Associated Health Claims Costs
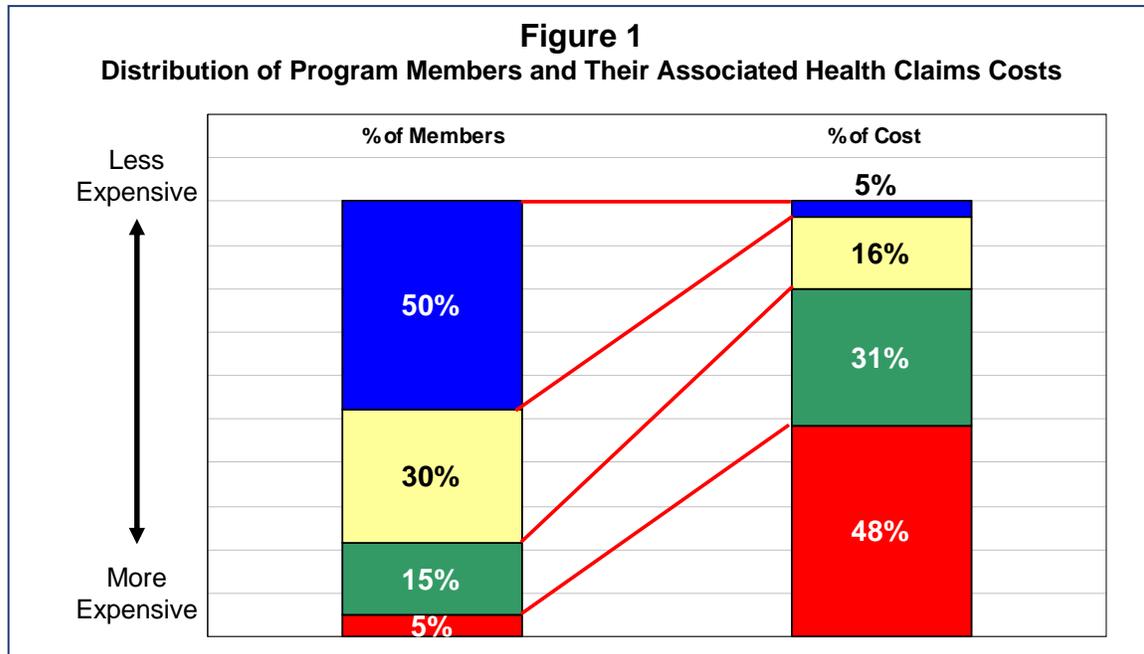
percent of total claims cost. Note also that the least costly 50 percent of members drive only 5 percent of total cost.

In addition to the "80/20 group," it is useful to focus on two "50/5" groups—the most expensive 5 percent of participants, who account for approximately 50 percent of cost, and the least expensive 50 percent of participants, who account for approximately 5 percent of cost. To control current-year costs, employers must focus on the 5 percent of participants who are responsible for 50 percent of total cost as well as the remainder of the most expensive 20 percent. To control future-year costs, employers must also help the least expensive 50 percent to 80 percent maintain their health.

To make coverage attractive to a wider range of employees and to encourage them to purchase coverage, employers often offer a choice of plans. In doing so, however, employers must consider the financial impact of their employees' choices. Adverse selection occurs when individuals use knowledge of their own

health needs to decide which option to choose. If healthier people choose lower levels of coverage, and less healthy people choose plans they perceive to have more generous coverage, risks and costs are not distributed evenly across available health plan options. Employers and policymakers designing health programs need to weigh this fact when determining how much choice to offer and when budgeting for their benefits program and setting premiums.

The Challenge of Adverse Selection

What follows is an analysis of claims data to show the importance of the distribution of claims. The enrollment decisions of a few people with large claims costs will affect the average spending across everyone in the plan. A plan sponsor's understanding of the claims distribution is also important for informing decisions about what plan(s) it offers and how it sets premiums.

To allow a deeper understanding of the impact of adverse selection, the analysis looks at additional detail from the claims distribution. Figure 2 illustrates a portion

Figure 2
Cumulative Claims Distribution for Large Employer Health Plans
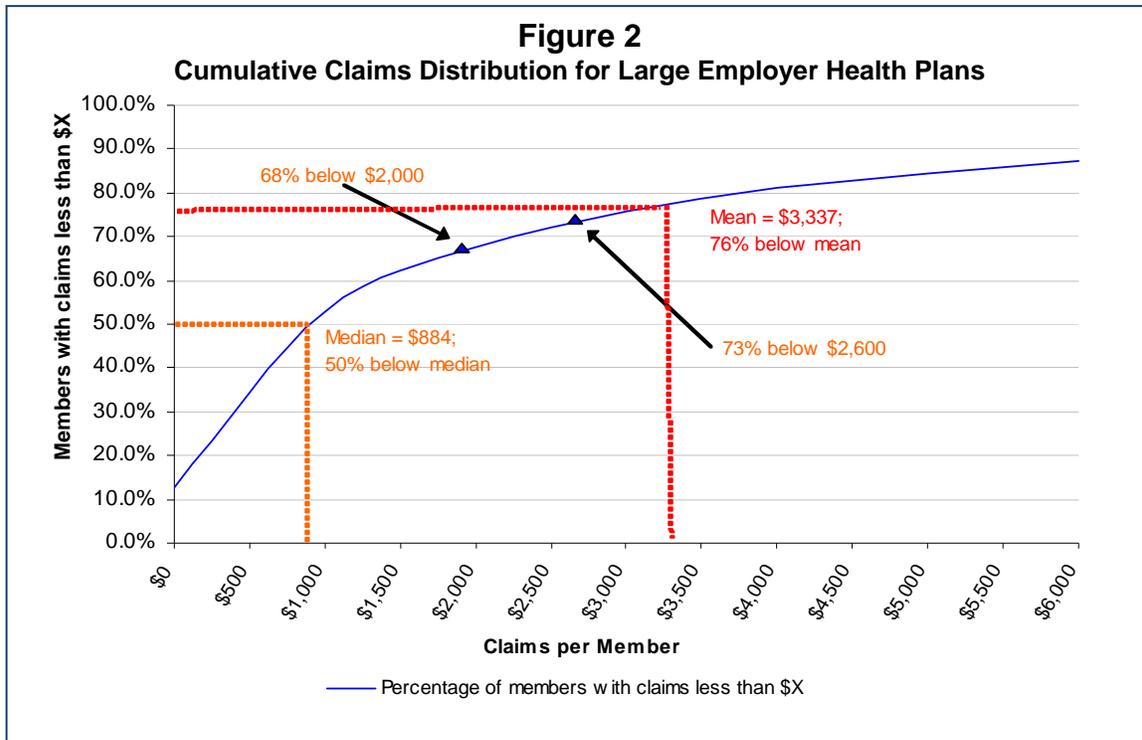
of the cumulative distribution of claims in a typical large employer plan. It shows the percentage of enrollees with annual claims of $6,000 or less.

Based on the claims distribution, the median annual claim for a member is $884; half the members would have annual medical claims below that amount. However, the mean, or average, annual claims cost for this group is $3,337; 76 percent of the members of this group have costs below the mean. The fact that more than three-quarters of members have claims lower than the average surprises many people, who are more used to working with a normal (bell-shaped) distribution where the mean and median are the same.

Figure 3 expands the illustration to show the cumulative distribution of annual claims for amounts up to $50,000 to help explain why this occurs. The relatively small number of extremely high annual claims, commonly associated with events such as catastrophic accidents, premature births, and serious disease,

raises the average claim significantly above the median.

The two charts in Figure 4 show the difference between the distribution of medical claims in an employer group and a normal curve distribution (note that these charts show the percentage of people at a specific value, not the cumulative percentage below a value).

The difference between the median and mean has significant implications for the design of a program offering choice—particularly when one of the choices is to opt out of coverage entirely. In light of the underlying claims distribution and the varying generosity of plans, employers or other program sponsors face a number of challenges in determining both what plan(s) to offer and how to set the participants' premium.

- If a program charged every member the full average cost for coverage (i.e., no employer premium contribution) and required all

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Figure 3
Cumulative Claims Distribution for Large Employer Health Plans
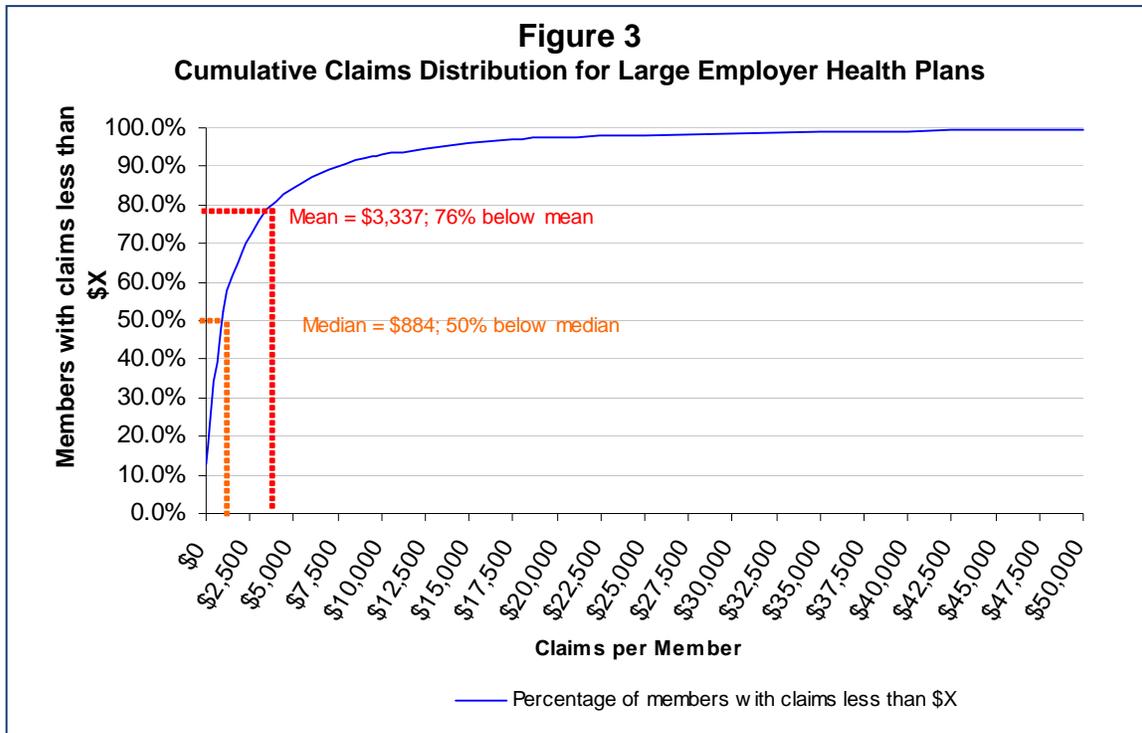
members to participate, about one-quarter of the members would benefit financially (i.e., would have claims higher than their premium) and the remaining three-quarters would contribute more than they received in benefits in any single year. This could lead to discontent among a large portion of the population, although the insurance would spread risk over the total population.

- If the entire population enrolled in a high-deductible plan with a $2,600 deductible, premiums would be lower, but 73 percent would have to pay all their claims out of pocket.
- If the entire population enrolled in a limited benefit "mini-med" plan with a $100 deductible and a maximum annual benefit of $2,000, approximately 70 percent would have all their claims paid by the plan. However, about 30 percent would

Figure 4
Claims Distribution Examples

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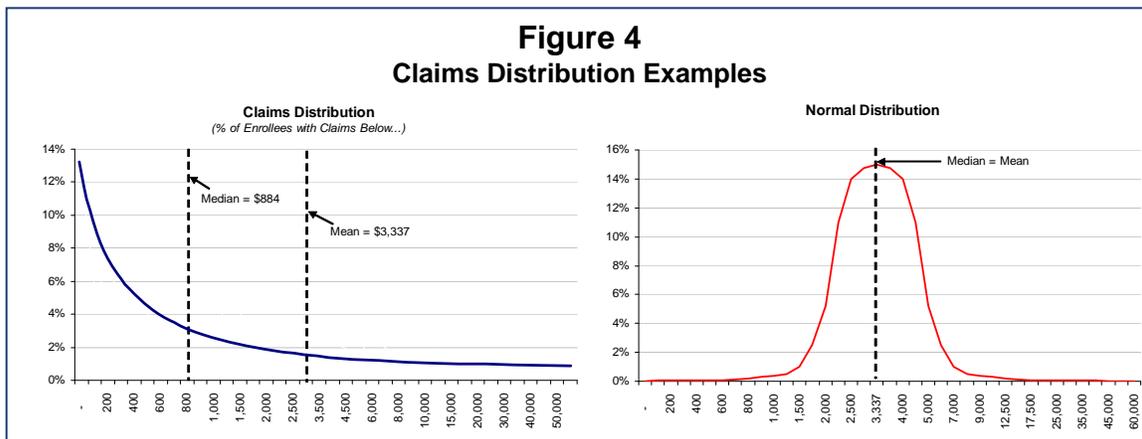
have to pay out of pocket for claims in excess of the annual maximum. The expensive 80/20 and 5/50 groups could suffer catastrophic losses.

Participants clearly do not know precisely what claims they will have in the following year, so they cannot "perfectly" select a plan to their best financial advantage, and factors unrelated to anticipated claims experience, such as the following, clearly affect coverage choices:

- Risk aversion vs. risk acceptance— some will buy a "rich" plan just to reduce the possibility of significant unanticipated cost, while others are willing to accept the risk of higher out-of-pocket claims cost in return for a lower premium.
- Lack of financial resources to purchase coverage.
- Inertia—reluctance to change from the current plan or unwillingness to spend the time to research options.

However, when offered a choice of health plans, many consumers will use their knowledge of likely medical costs to get the best deal. When consumers with above-average health care needs prefer "richer" plans, risks and costs are not distributed across plans in direct proportion to enrollment, and adverse selection occurs. Mercer actuaries have observed the impact of adverse selection in multi-option employer health programs since the mid-1980s. Based on an analysis of empirical data, observed experience has been categorized into levels of intensity of selection impact. Table 1 compares light, moderate, and intense selection to neutral selection (no impact of selection; all plan choices have the same proportion of high- and low-cost participants as the total population). Mercer also shows "perfect" selection, in which the highest cost participants choose the most generous plan and the lowest cost choose the leanest plan. Although perfect selection is not observed in actual experience, it provides an additional point of comparison.

Generally, there is an inverse relationship between the impact of adverse selection and the proportion of the population in the high option plan— the greater the percentage selecting the high option, the less the impact of adverse selection. Table 1 compares the impact of adverse selection if 20 percent of the total population selects the high

Table 1				
Effect of Selection and Enrollment Levels on Plan Cost				
	20% Enrolled in High Option		**80% Enrolled in High Option**	
Level of Selection	% of claims in High	Ratio to Neutral	% of claims in High	Ratio to Neutral
Perfect	77.3%	3.87	99.9%	1.25
Intense	50.1%	2.51	91.4%	1.14
Moderate	38.6%	1.93	88.2%	1.10
Light	27.0%	1.35	83.9%	1.05
Neutral	20.0%	1.00	80.0%	1.00

No selection when 20 percent of the population selects the high option: 20 percent of the population generates 20 percent of the claims.

No selection when 80 percent of the population selects the high option: 80 percent of the population generates 80 percent of the claims.

option vs. 80 percent of the population selecting the high option.

- With no selection at all ("neutral" selection), 20 percent of the population would generate 20 percent of claims, and 80 percent would drive 80 percent of claims. Under a "light" selection scenario, 20 percent in the high option accounts for 27 percent of claims; a "moderate" selection scenario has 38 percent, and an "intense" scenario results in 50 percent of claims driven by the 20 percent enrolled in the high option. None of these scenarios is nearly as bad as the 79 percent of claims cost attributable to the sickest 20 percent of enrollees, but a significant selection issue is present when a fairly small percentage of people are in the high option plan. Under these theoretical scenarios, the ratio to neutral is anywhere from 35 percent to 150 percent above neutral.
- Looking at the high option data in the table, with 80 percent of enrollees in the high option plan, the total cost experience would vary from about 84 percent to 91 percent instead of 80 percent with neutral selection. This is between a 5 percent and 14 percent excess above neutral experience. As the percentage of enrollees participating in the high option plan increases, the potential for adverse selection decreases.

Limiting the Impact of Selection

Mercer's observations of actual selection experience over the past 20 years indicate a number of factors that affect the level of adverse selection. At a conceptual level, the severity of adverse selection is affected by the following:

- The participation percentage: The percentage of those who are eligible who actually buy coverage (participate) and do not opt out (greater participation = less severe adverse selection)
- The financial effectiveness of the choice of plan options: How well people match their coverage to claims they incur (greater effectiveness = more severe adverse selection)

At a more concrete level, the following factors affect the severity of adverse selection:

- Level of subsidy from plan sponsor: The higher the subsidy, the greater the participation and the less severe the adverse selection
- The length of time until a choice can be changed: The shorter the time a participant must wait to make a change, the lower the participation and the more severe the adverse selection (e.g., if participants could sign up at the beginning of any month, many would not pay for coverage until after they become ill or injured)
- The difference in perceived value of plan choices: The greater the difference in perceived value, the more effective the financial choice and the more severe the adverse selection (e.g., as the difference in the plans' deductibles increases, the severity of adverse selection typically increases as well)
- The ability to project future-year costs: The greater an enrollee's ability to predict future cost, the greater the adverse selection (e.g., chronically ill people with significant maintenance drug costs can do a much better job of projecting future cost and picking financially optimal plans than people who are currently healthy)

Relative to design implications, wider choice is beneficial because it satisfies a broader range of desires and attracts more enrollees, but problematic because it increases the intensity of adverse

selection. For example, programs would need to cover catastrophic claims to protect the sickest 20 percent of the population (who account for 80 percent of the costs). They might also need to offer some benefits to the healthiest participants—the 50 percent with 5 percent of claims—to encourage their participation. If the difference between plans that protect the high-cost participants and those that appeal to the healthy is too great, they could fail financially due to unmanageable adverse selection cost. Program managers should weigh this fact when deciding on the range of choices to offer.

Relative to design implications, as participants' level of knowledge increases through health risk assessments, screening programs, and communication programs, participants will likely become more engaged with programs that help to control cost, such as health promotion, disease prevention, and disease management. At the same time, an increase in participants' knowledge of their health risk and likely future expenditures, as well as greater knowledge of health benefits, may increase the financial cost associated with adverse selection. Program managers must recognize both these factors when determining design and prices.

Some design choices can lead to increases in the intensity of adverse selection so severe that they could render an otherwise quality program financially unmanageable. As an example, allowing participants to opt out when they do not think they need coverage and opt in without penalty when circumstances change would render a program financially unsound, as it violates the fundamental principles of insurance. If the program ends up with a small percentage of eligible members participating, it becomes extremely difficult for the plan to survive

financially because the cost is so high that only those who are reasonably certain of high future claims costs will take the plan, creating a "death spiral" for the program. To reduce the chance of this, program managers should carefully choose design elements such as eligibility rules, waiting periods, and premium levels.

Among the design components that could help reduce this concern are the following:

- For someone who had opted out and wants to opt in later, adding an extra fee to the premium a participant must pay as time elapses
- Putting limits on coverage related to conditions that emerged in the time between opting out and opting in
- Increasing the time that someone must wait between a change in health and the purchase of "richer" coverage
- Structuring the participants' premium contributions so people are more indifferent between plan options, so the premium for a "richer" plan may be set at a smaller share of average cost to make it attractive to healthy people
- Offering wellness benefits or other benefits to attract healthy participants to the higher cost plans

Conclusion

Much more than adverse selection needs to be considered when policymakers develop reform proposals and plan sponsors look at health care plans. Health care plans have to manage the sick, maintain the health of those who are healthy, and engage consumers. There are opportunities for policymakers and plan sponsors to proactively incorporate program provisions that mitigate the impact of adverse selection. After critical decisions have been made

about the elements to be included in a program, it is important to consider the implications of adverse selection in program design and pricing. Without understanding the impact of adverse selection and incorporating design components to mitigate its effect, an otherwise well-designed program runs a greater risk of failure.

INSIGHT on the Issues

Appendix

The MarketScan® databases from Thomson Reuters represent several data sets containing fully integrated inpatient and outpatient medical claims and encounters, prescription drug experience, enrollment and eligibility information, and productivity data. MarketScan databases contain information on 73 million unique people (44.5 million commercial lives alone),

from which Thomson Reuters creates population-specific extracts to meet a wide range of analytic needs for researchers, academicians, business professionals, and government agencies.

Information from the large employer claims distribution (from the subset of the MarketScan data set) used in this Insight on the Issues follows.

Large Employer Group Claims Distribution:			
Annual Claims Amount	Percent Below	Annual Claims Amount	Percent Below
$100	18.0%*	$4,500	82.9%
$200	24.5%	$5,000	84.5%
$300	30.0%	$6,000	87.1%
$400	34.6%	$7,000	89.1%
$500	38.5%	$8,000	90.7%
$600	42.0%	$9,000	91.9%
$700	45.1%	$10,000	93.0%
$800	47.9%	$12,500	94.8%
$900	50.4%	$15,000	96.0%
$1,000	52.7%	$17,500	96.8%
$1,250	57.6%	$20,000	97.4%
$1,500	61.6%	$25,000	98.2%
$1,750	64.9%	$30,000	98.6%
$2,000	67.7%	$35,000	98.9%
$2,250	70.2%	$40,000	99.1%
$2,500	72.3%	$45,000	99.3%
$3,000	75.8%	$50,000	99.4%
$3,500	78.6%	Over $50,000	100.0%
$4,000	81.0%		

* 12.5% have $0 claims