BLUE CROSS BLUE SHIELD ASSOCIATION

HEALTH PLAN ADMINISTRATIVE COST TRENDS

Prepared by:
Kent J. Sacia
Robert H. Dobson

Milliman USA
February 20, 2003
Table of Contents

Executive Summary .................................................................................................................. 1
A. Introduction ....................................................................................................................... 3
   Purpose ............................................................................................................................. 3
   Methodology ...................................................................................................................... 3
   Data Sources ..................................................................................................................... 5
   Disclaimers ....................................................................................................................... 6
   Report Setup ..................................................................................................................... 6
B. Overall Administrative Cost Trends .................................................................................. 7
C. Components of Administrative Cost Trends .................................................................... 8
   Payroll and Staffing Components .................................................................................... 8
   Regional Differences ....................................................................................................... 9
D. Functional Administrative Cost Trends ............................................................................ 10
   Claims .............................................................................................................................. 10
   Provider Services and Contracting .................................................................................. 11
   Enrollment and Billing .................................................................................................... 11
   Customer Service ........................................................................................................... 12
   Medical Management ..................................................................................................... 12
   Other Healthcare Services ............................................................................................. 13
   Finance and Underwriting .............................................................................................. 13
   Information Technology ................................................................................................. 14
   Sales and Marketing ....................................................................................................... 14
   General Administration ................................................................................................. 15
   Functional Administrative Cost Summary ...................................................................... 15
E. Other Administrative Cost Data ....................................................................................... 16
   By Size ............................................................................................................................ 16
   By Blue vs. Non-Blue ...................................................................................................... 16
F. Profit and Loss Levels ....................................................................................................... 17
Executive Summary

Milliman USA, Inc. (Milliman) was engaged by the Blue Cross Blue Shield Association (BCBSA) to study and examine health plan administrative cost trends from 1998 through 2002.

Since 1996, Milliman has been collecting and compiling benchmark data on the administrative costs and efficiency of health plans, insurance companies, and third party administrators (TPAs). This benchmark data is stored in the Milliman Health Plan Operations Benchmark database. Today, the database contains data from 84 organizations representing a wide range of lines of business, membership sizes, and geographic regions. Although most of the information contained in the database is collected through first-hand observation, we reconcile and supplement the database with other sources such as:

- Published salary reports;
- Staffing surveys and staffing benchmark trends;
- Public, statutory and self-reported administrative costs; and
- Premium trends.

This report includes Insured, Administrative Service Only (ASO) and Administrative Service Contract (ASC) lines of business. We applied and calculated premium equivalents for the ASO and ASC business. Premium equivalents serve as proxies for the health benefit cost incurred by employers and employees. The purpose of including premium equivalents is to provide a consistent basis of measurement across lines of business.

In this study of health plan administrative cost trends, Milliman found that, during the period of 1998 through 2002, premiums for insured business increased at an annualized rate of 7.4% while administrative costs increased at a slower rate of 4.6%. During that same period the average administrative cost as a percentage of premium fell from 12.9% to 11.6%. As such, administrative cost increases accounted for 7.8% of the total increase in healthcare premiums during the past four years.

Based on further analysis, we determined that 60% of the 4.6% increase in administrative costs is related to payroll, staffing and associated variable cost increases. It is generally accepted that during the late 1990s and early 2000s, wage inflation occurred across most industries. Wages in health plans rose at an annualized rate of 2.4%. Staffing increases, however, require a closer examination. To that end, Milliman studied staffing trends among ten major administrative functions commonly found in health plans and insurance companies. The table below shows the annualized percentage change in staffing for each function over the period of analysis.
In total, staffing ratios in health plans rose at an annualized rate of 0.7% when including sales and marketing staff and 1.3% when excluding sales and marketing staff.

As shown above, the staffing growth during the period was primarily driven by increases in Customer Service and Information Technology staff. When these two areas are excluded, the remaining staffing declined by 2.7% annually. For this reason, we conclude that an increased focus in delivering customer service and an increased investment in information technology to meet the requirements of Y2K and the Health Insurance Portability and Accountability Act of 1996 (HIPAA), has driven cost increases during the past five years.

Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Other parties may wish to consult with experts trained in actuarial and financial analysis when reviewing this report. Thus, the report should only be reviewed in its entirety.

This report represents the work and opinions of its authors and may not represent the opinions of other Milliman consultants.
A. Introduction

Purpose
BCBSA engaged Milliman to study and examine health plan administrative cost trends from 1998 through 2002. The results of this study will be used by BCBSA to communicate the relative effect of health plan administration on overall healthcare costs and to identify those factors that caused changes in administrative costs during the period studied.

Methodology
Milliman assembled the Milliman Health Plan Operations Benchmarks from approximately 84 organizations. The sample used to formulate the benchmarks is representative of a wide range of organization types, membership sizes, and geographic regions.

Milliman tracks administrative data at a very detailed level. In particular, we categorize employees by specific healthcare administrative functions. The functions included in the Milliman benchmarks are:

- Claims Processing;
- Provider Services and Contracting;
- Customer Service;
- Enrollment and Billing;
- Utilization Management and Quality Review;
- Case Management;
- Medical Directors;
- Other Healthcare Services;
- Sales and Marketing;
- Finance and Underwriting;
- Information Systems; and
- General Administration.

Each year, benchmark data is gathered from a subset of the entire 84 organizations. The number of organizations surveyed by year is shown in Table A.1. By utilizing a subset each year, we are able to directly observe the organization; identify process, structural and system changes; and validate existing data. We are then able to mine trends and key factors from the data and extrapolate results by organizational size, product type, function, and other variables. Of the pool of organizations included in this study, the financial and staffing data from 19 organizations are included for all years. These 19 organizations administered health benefits for more than 80,000,000 members in 2002.
### Table A.1

<table>
<thead>
<tr>
<th>Collection Year</th>
<th>Number of Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>30</td>
</tr>
<tr>
<td>1999</td>
<td>40</td>
</tr>
<tr>
<td>2000</td>
<td>36</td>
</tr>
<tr>
<td>2001</td>
<td>28</td>
</tr>
<tr>
<td>2002</td>
<td>23</td>
</tr>
</tbody>
</table>

Data gathered for 2002 results is estimated for the complete year with the source data current through the second and third quarter of the year.

It is not feasible to directly observe as many organizations as one would like to survey. Instead, we validate the veracity of our data against other public sources and surveys. These include:

- Overall Premium Per Member Per Month (PMPM), Administrative Cost PMPM, and Administrative Cost as a Percentage of Premium trends from public data sources such as Statutory Filings;
- Salary trends from published sources of compensation information; and
- Premium PMPM changes from the Milliman HMO Intercompany Rate Survey.

The Milliman methodology produces results that often vary from those results reported by our clients in public statements and filings. In order to gather data that is truly comparable from one organization to another, we attempt to standardize the categorization of costs and thus perform the following steps:

1. Allocate staff and costs among standardized administrative categories and among lines of business, such as Insured, Administrative Services Only (ASO) and Administrative Services Contract (ASC).
2. Include results from subsidiary organizations in related businesses.
3. Include the costs of sales commissions to external brokers.
4. Include the cost of administrative services that are classified by some organizations as medical costs or premium reductions but by others as administrative costs. For example, some organizations may count nurse triage or healthcare information lines as medical costs and broker commissions as a reduction of premiums.

Since public statements and filings do not always follow these steps, such data may not be easily comparable to our analysis. For example, 10-K statements filed by public companies will not include premium equivalent calculations in the Income Statement. They may show premium equivalents as an alternative note or calculation. For this reason, a 10-K statement may show a smaller premium or revenue amount and a higher percent of premium figure.
Data Sources

Milliman gathers data through on-site data collection and observation of organizations. This eliminates self-reporting bias, and ensures that data is collected in a uniform format. The data that we collect tends to vary somewhat from organization to organization, but generally includes:

1. The number of full-time, part-time and temporary staff by job title and function;
2. The salary of each staff member;
3. Benefit costs;
4. Variable costs such as supplies and telephone;
5. Fixed or allocated costs; and
6. Business workload factors such as number of claims, members, authorizations, and calls processed during a given time period.

The organizations in the Milliman database also differ by size. Size can have a substantial impact on an organization’s ability to be cost effective. Table A.2 provides statistical information on the size characteristics of organizations in the database.

<table>
<thead>
<tr>
<th>Data Element</th>
<th>Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Membership</td>
<td>1,247,700</td>
</tr>
<tr>
<td>Median Membership</td>
<td>400,000</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>2,411,918</td>
</tr>
<tr>
<td>25th Percentile</td>
<td>106,250</td>
</tr>
<tr>
<td>75th Percentile</td>
<td>1,203,750</td>
</tr>
</tbody>
</table>

Finally, the Milliman database contains for-profit and not-for-profit sources as well as third-party administrators (TPAs) and Blue Cross Blue Shield (BCBS) organizations. Information on these categories is shown in Table A.3 and Table A.4.

<table>
<thead>
<tr>
<th>Profit Status</th>
<th>Organizations by Profit Status</th>
<th>Number of Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not-for-Profit</td>
<td></td>
<td>38</td>
</tr>
<tr>
<td>For-Profit</td>
<td></td>
<td>46</td>
</tr>
</tbody>
</table>
Table A.4

<table>
<thead>
<tr>
<th>Organization Type</th>
<th>Number of Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCBS</td>
<td>18</td>
</tr>
<tr>
<td>TPA Only</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>60</td>
</tr>
</tbody>
</table>

Disclaimers

The results of this study rely upon data gathered from health plans, insurance companies and third party administrators that collectively administer healthcare for more than 100,000,000 lives. The quality and accuracy of the data collected from each entity varies. These variations in quality can affect the accuracy of our analysis and, therefore, the results contained in this report. We have taken care to validate and cross check our results with other industry data sources. Due to the fine level of detail provided in the report, however, some results may not accurately represent the actual administrative costs incurred on behalf of the entire covered population in the United States.

Report Setup

The remainder of this report contains overall administrative cost trends, the components of those administrative costs trends, a breakout of departmental or functional activities, a select number of additional cost breakouts by plan size and organization type, an analysis of costs using premium equivalents and an analysis of profit and loss levels.
B. Overall Administrative Cost Trends

Overall administrative costs are measured in two ways:

1. On a Per Member Per Month (PMPM) basis; and
2. As a percentage of premium (% of premium).

An important distinction exists between these two measures. The actual administrative dollars incurred on behalf of each member each month is represented by the PMPM. Actual administrative dollars incurred as a percentage of the premium charged is represented by % of Premium or Revenue. The % of Premium measure, therefore, is a measure of administrative costs relative to total premium, which includes medical benefit costs, administrative costs and profit or loss.

We studied premiums and administrative costs including Insured, ASO and ASC business and calculated premium equivalents for comparison purposes on ASO and ASC lines of business. The premium equivalents for ASO business were estimated and calculated by Milliman based upon historical benchmark calculations of ASO medical and administrative costs. The results are shown in Table B.1.

<table>
<thead>
<tr>
<th>Measure</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>Annual Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Revenue PMPM</td>
<td>$142.97</td>
<td>$150.83</td>
<td>$161.49</td>
<td>$175.39</td>
<td>$189.88</td>
<td></td>
</tr>
<tr>
<td>% Change</td>
<td>5.5%</td>
<td>7.1%</td>
<td>8.6%</td>
<td>8.3%</td>
<td>7.4%</td>
<td></td>
</tr>
<tr>
<td>% Change</td>
<td>2.8%</td>
<td>2.5%</td>
<td>5.0%</td>
<td>8.3%</td>
<td>4.6%</td>
<td></td>
</tr>
<tr>
<td>Avg. Admin. %</td>
<td>12.9%</td>
<td>12.6%</td>
<td>12.1%</td>
<td>11.6%</td>
<td>11.6%</td>
<td></td>
</tr>
<tr>
<td>% Change</td>
<td>-2.6%</td>
<td>-4.3%</td>
<td>-3.3%</td>
<td>0.0%</td>
<td>-2.6%</td>
<td></td>
</tr>
</tbody>
</table>

As shown in the table, during the period from 1998 through 2002, *Average Premium PMPM* across insured lines of business rose at an annualized rate of 7.4% while *Average Administrative Cost PMPM* rose at a slower rate of 4.6%. In other words, administrative costs rose at a rate of 62% of the rate of increase in premiums. As such, administrative cost increases accounted for only 7.8% of the total increase in healthcare premiums during the past four years.
C. Components of Administrative Cost Trends

Total administrative cost is comprised of three distinct cost components:

- Number of full time equivalents including overtime and temporary workers (FTEs) in an organization allocated to administrative operations;
- Salary and benefits (including overtime) incurred for each FTE; and
- Total amount of direct (e.g. telephone, supplies, rent, consultants, incentives etc.) and indirect costs (depreciation and amortization of fixed costs) incurred by the administrative operation.

We studied staffing ratios and salaries over time for a variety of positions within health plans, insurance companies and third party administrators. The results are described below.

Payroll and Staffing Components

Our administrative cost database shows that, on average, 89% of administrative costs are comprised of variable costs, that can be directly related to an organization’s staff levels, such as payroll, temporary employment services, professional services, supplies, utilities, office space, etc. The Annual Milliman Compensation Study shows that from 1998 to 2002, salaries for health plans and insurance companies rose at an annualized rate of 2.4%. Furthermore, Milliman’s study of staffing ratios (the number of full-time equivalent employees per 1,000 members) shows an annualized increase of 0.7% during the same period. Sales and Marketing is excluded from this table in order to nullify the affects of any shifts between internal sales staff and external brokers. Table C.1 shows salary and staffing ratio changes from 1998 through 2002.

<table>
<thead>
<tr>
<th>Cost Components</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>Annual Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary Change %</td>
<td>5.2%</td>
<td>1.1%</td>
<td>1.8%</td>
<td>1.7%</td>
<td>2.4%</td>
<td></td>
</tr>
<tr>
<td>FTEs Per 1,000 Members %</td>
<td>2.68</td>
<td>2.57</td>
<td>2.74</td>
<td>2.74</td>
<td>2.75</td>
<td>0.7%</td>
</tr>
<tr>
<td>% Change</td>
<td>-4.1%</td>
<td>6.6%</td>
<td>0.0%</td>
<td>0.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Salary and Staffing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.1%</td>
</tr>
<tr>
<td>Change</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the period of 1998 through 2002, total payroll costs (salary and benefits with staffing ratios) increased at an annualized rate of 3.1%. Thus, approximately 60% (the ratio of variable costs to total costs or 0.89 * the percent annualized increase for the combined salary and staffing changes from Table C.1 or 3.1% / the total annualized administrative PMPM increase from Table B.1 or 4.6%) of the total administrative cost increase is directly attributable to changes to salary and staffing changes, with the majority of the increase attributable to salary...
increases. For the purposes of our analysis, we include consulting and professional services charges, supplies, telephone, utilities and other direct costs as variable costs.

**Regional Differences**
We found no correlation between staffing ratios and geographic region. There are significant salary level differences between regions, states and even cities within states. For this reason, Milliman has identified certain organizations that enjoy administrative cost advantages solely based upon low salary levels in their office locations.
D. Functional Administrative Cost Trends

In order to understand why total administrative staffing ratios, excluding sales and marketing, have grown at an annualized rate of 1.3%, we studied historical and current staffing ratios in ten administrative functions. Our allocation method ensures that all staff members in an organization’s administrative operation are allocated among these categories.

Claims
The *Claims* function includes:
- Mailroom and claim preparation;
- Data entry;
- Claims adjudication;
- Coordination of benefits, third-party liability, and subrogation;
- Claim adjustments and rework;
- Claims audit; and
- Management and supervision.

<table>
<thead>
<tr>
<th>Functions</th>
<th>Median FTEs per 1,000 Members</th>
<th>Annual. Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claims</td>
<td>0.61 0.57 0.52 0.56 0.56 0.67</td>
<td>-6.6% -8.8% 7.7% 0.0% -2.1%</td>
</tr>
</tbody>
</table>

As shown in Table D.1, staffing ratios for this function decreased steadily from 1998 through 2000 and then stabilized, and actually grew somewhat, during 2001. The result is a modest 2.1% compound annual decrease for the study period as a whole. We believe that the higher staffing levels in 2001 and 2002 may be due to several factors including:

- Increased emphasis on prompt payment requirements;
- Temporary reductions in claims processing productivity due to the wide-scale implementation of new claims processing systems to meet HIPAA requirements; and
- Increased capture of claim data elements in order to meet HIPAA requirements.
Provider Services and Contracting

Provider Services and Contracting includes:

- Provider inquiries;
- Provider education;
- Network management;
- Provider appeals and grievances;
- Provider contracting;
- Provider credentialing; and
- Management and supervision.

<table>
<thead>
<tr>
<th>Functions</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>Annual Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider Services and Contracting</td>
<td>0.20</td>
<td>0.19</td>
<td>0.16</td>
<td>0.15</td>
<td>0.14</td>
<td>-8.5%</td>
</tr>
<tr>
<td>% Change</td>
<td>-5.0%</td>
<td>-15.8%</td>
<td>-6.3%</td>
<td>-6.7%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table D.2, staffing ratios for this function decreased steadily from 1998 through 2002, resulting in a compound annual decrease of 8.5%. We believe that the decreased staffing in this function is likely the result of simplification in provider relationship due to the movement away from the gatekeeper model and associated capitated provider agreements.

Enrollment and Billing

The Enrollment and Billing function includes:

- Processing of member enrollment, termination, and change transactions;
- Premium billing and receivable management; and
- Management and supervision.

<table>
<thead>
<tr>
<th>Functions</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>Annual Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment and Billing</td>
<td>0.15</td>
<td>0.14</td>
<td>0.16</td>
<td>0.16</td>
<td>0.16</td>
<td>1.6%</td>
</tr>
<tr>
<td>% Change</td>
<td>-6.7%</td>
<td>14.3%</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table D.3, staffing ratios in the Enrollment and Billing function were stable during the period of 1998 through 2002. Overall, Enrollment and Billing staffing increased at an annualized rate of 1.6%. Although we observe little change in the staffing of this function, we expect long-term improvement due to continued use of the Internet and other electronic or computerized tools.
Customer Service

The *Customer Service* function includes:

- Handling member inquiries (written, telephonic, electronic);
- Member education and relationship management;
- Member complaints, and grievances; and
- Management and supervision.

<table>
<thead>
<tr>
<th>Functions</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Service</td>
<td>0.24</td>
<td>0.25</td>
<td>0.34</td>
<td>0.37</td>
<td>0.42</td>
<td>15.0%</td>
</tr>
<tr>
<td>% Change</td>
<td>4.2%</td>
<td>36.0%</td>
<td>8.8%</td>
<td>13.5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table D.4, staffing ratios for this function increased consistently from 1998 through 2002 and show an annualized increase of 15.0%. This trend demonstrates an increased emphasis on customer satisfaction among payors.

Medical Management

The *Medical Management* function includes:

- Utilization review;
- Referral and authorization management;
- Quality review and quality assurance;
- Case management;
- Disease management;
- Concurrent review;
- Medical Directors;
- Employed physician reviewers;
- Dental directors; and
- Management and supervision.

<table>
<thead>
<tr>
<th>Functions</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Management</td>
<td>0.19</td>
<td>0.18</td>
<td>0.24</td>
<td>0.26</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>% Change</td>
<td>-5.3%</td>
<td>33.3%</td>
<td>8.3%</td>
<td>-7.7%</td>
<td></td>
<td>6.0%</td>
</tr>
</tbody>
</table>

As shown in Table D.5, staffing ratios for this function increased from 1998 to 2000. During 2002, however, staffing in the *Medical Management* area appears to have decreased. This is likely the result of health organizations choosing to play a reduced role in the gate keeping function. Overall, during the entire period, *Medical Management* staffing increased at an annualized rate of 6.0%.
Other Healthcare Services
The Other Healthcare Services function includes:
• Health services management and support;
• Demand management;
• Community outreach programs;
• Pharmacy benefits management;
• Managed behavioral health services; and
• Management and supervision.

Table D.6

<table>
<thead>
<tr>
<th>Functions</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Healthcare Services</td>
<td>0.16</td>
<td>0.15</td>
<td>0.14</td>
<td>0.15</td>
<td>0.14</td>
</tr>
<tr>
<td>% Change</td>
<td>-6.3%</td>
<td>-6.7%</td>
<td>7.1%</td>
<td>-6.7%</td>
<td></td>
</tr>
</tbody>
</table>

Other Healthcare Services includes a variety of medical and benefit management functions. The functions performed in this area do vary from organization to organization. Throughout the study period, with the exception of 2001, staffing in this area has decreased. Overall, the staffing in this function has decreased at annualized rate of 3.2%. The decrease in staffing of Other Healthcare Services is likely due to an increased use of outsourcing for some benefit management functions like pharmacy and mental health management.

Finance and Underwriting
The Finance and Underwriting function includes:
• Accounting and finance;
• Actuarial services;
• Underwriting; and
• Management and supervision.

Table D.7

<table>
<thead>
<tr>
<th>Functions</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance and Underwriting</td>
<td>0.22</td>
<td>0.24</td>
<td>0.24</td>
<td>0.24</td>
<td>0.23</td>
</tr>
<tr>
<td>% Change</td>
<td>9.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>-4.2%</td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table D.7, staffing in the Finance and Underwriting area experienced increased staffing in 1999 but remained quite stable from 2000 through 2002. On an annualized basis, the staffing ratio for these functions increased 1.1%. In recent years, there has been an increased level of work required due to statutory reporting changes such as the National Association of Insurance Commissioners (NAIC) Codification of Statutory Accounting Principles. We attribute the stability of staffing levels to this department’s ability to absorb these increased requirements with only modest changes in staffing and an increased overall level of efficiency in underwriting processes.
Information Technology

The *Information Technology* function includes:

- Network and desktop maintenance;
- Software setup and maintenance;
- Application development and programming;
- Computer operations;
- Telecommunications management;
- Information management, reporting, and analysis; and
- Management and supervision.

<table>
<thead>
<tr>
<th>Functions</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Technology</td>
<td>0.16</td>
<td>0.22</td>
<td>0.24</td>
<td>0.22</td>
<td>0.28</td>
<td>15.0%</td>
</tr>
<tr>
<td>% Change</td>
<td></td>
<td>37.5%</td>
<td>9.1%</td>
<td>-8.3%</td>
<td>27.3%</td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table D.8, Information Technology staffing increased dramatically, at a rate of 15.0%, from 1998 through 2002. Most striking are increases of 37.5% in 1999 and 27.3% in 2002. It is likely that these two significant increases are a result of technology enhancement requirements stemming from e-commerce initiatives, Y2K, and HIPAA compliance.

Sales and Marketing

The *Sales and Marketing* function includes:

- Development and implementation of marketing strategies;
- Sales and promotional activities; and
- Management and supervision.

<table>
<thead>
<tr>
<th>Functions</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales and Marketing</td>
<td>0.47</td>
<td>0.37</td>
<td>0.46</td>
<td>0.40</td>
<td>0.38</td>
<td>-5.2%</td>
</tr>
<tr>
<td>% Change</td>
<td></td>
<td>-21.3%</td>
<td>24.3%</td>
<td>-13.0%</td>
<td>-5.0%</td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table D.9, internal staffing for sales and marketing generally decreased during the past five years resulting in an overall annualized decrease of 5.2%. During that same period, however, external commissions have increased according to benchmarks. We believe that these trends may represent a shift in marketing and sales efforts from internal to external resources.
General Administration

The General Administration function includes:

- Executive staffing;
- Employed legal support;
- Security and non-contract janitorial services; and
- Management and supervision.

Table D.10

<table>
<thead>
<tr>
<th>Functions</th>
<th>Median FTEs per 1,000 Members</th>
<th>Annual Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1998</td>
<td>1999</td>
</tr>
<tr>
<td>General Administration</td>
<td>0.28</td>
<td>0.26</td>
</tr>
<tr>
<td>% Change</td>
<td>-7.1%</td>
<td>-7.7%</td>
</tr>
</tbody>
</table>

As shown in Table D.10, staffing for General Administration decreased significantly during the period of 1998 through 2002. On an annualized basis, staffing for this function dropped at a compound rate of 8.1% per year with a noticeable drop of 13.0% in 2002. We believe that this decreased staffing trend is a result of plans and insurers attempting to reduce costs. It may also result from industry consolidation.

Functional Administrative Cost Summary

Table D.11 shows staffing changes excluding Customer Service and Information Technology, which appear to have caused most of the staffing increase from 1998 to 2002.

Table D.11

<table>
<thead>
<tr>
<th>Measurement</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>Annualized Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Staffing (FTEs/1,000)</td>
<td>2.68</td>
<td>2.57</td>
<td>2.74</td>
<td>2.74</td>
<td>2.75</td>
<td></td>
</tr>
<tr>
<td>Change %</td>
<td>-4.1%</td>
<td>6.6%</td>
<td>0.0%</td>
<td>0.4%</td>
<td>0.7%</td>
<td></td>
</tr>
<tr>
<td>Staffing without Customer Service and IT</td>
<td>2.28</td>
<td>2.10</td>
<td>2.16</td>
<td>2.15</td>
<td>2.05</td>
<td></td>
</tr>
<tr>
<td>Change %</td>
<td>-7.9%</td>
<td>2.9%</td>
<td>-0.5%</td>
<td>-4.7%</td>
<td>-2.7%</td>
<td></td>
</tr>
</tbody>
</table>

As the table shows, when Customer Service and Information Technology are excluded, the remaining staffing FTEs per 1,000 declined 2.7% annually from 1998 to 2002. Given this information, we conclude that two key trends have driven staffing ratio increases over the last five years:

- An increased focus on retaining customers by providing higher levels of customer service; and
- Increased investment in information technology to meet the requirements of Y2K, HIPAA, and e-commerce initiatives.
E. Other Administrative Cost Data

By Size
We reviewed administrative cost levels by membership size. We grouped organizations into membership size ranges of 0 to 499,999, 500,000 to 2,000,000 and, 2,000,001 and above. We then calculated a straight average of the Administrative % of Premium results for these size categories over the past six years. As shown in Table E.1, organizations with more than 500,000 members tend to incur a smaller administrative % of premium cost than organizations with 500,000 members or less.

<table>
<thead>
<tr>
<th>Membership (Millions)</th>
<th>&lt; 0.5</th>
<th>0.5 – 2.0</th>
<th>&gt;= 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin. % of Premium</td>
<td>13.0%</td>
<td>12.2%</td>
<td>12.1%</td>
</tr>
</tbody>
</table>

By Blue vs. Non-Blue
Milliman received and reviewed administrative cost data, compiled by the BCBSA, that includes summary data from BCBS organizations. This comprehensive set of data excludes administrative cost results of non-BCBS branded subsidiaries.

This data set shows that for the year 2001, BCBS plans experienced an average Administrative % of Premium level of 11.0% as compared to 11.6% from our database, which is intended to represent the industry as a whole.

The difference between the BCBS data set average and the Milliman database may be attributed to three key factors. First, Milliman’s database contains health plans of all sizes (small, medium and large) with a median plan size of 400,000 members. The median size of health plans in the Milliman database is much smaller than the BCBS median of over 1,300,000 members. Second, the Milliman database includes results from public and private and BCBS and non-BCBS organizations. Finally, BCBS organizations perform a larger percentage of ASO business than non-BCBS organizations. ASO lines of business generally incur lower administrative cost levels, typically due to fewer services provided.
F. Profit and Loss Levels

To calculate industry profit levels, Milliman used gross profit before tax inclusive of interest and investment gains. We calculated profit margin as the percent of revenue for each organization and then calculated a straight average profit margin for all organizations. It is important to note that the term “profit”, used in this section, is a combination of profit for the for-profit organizations and surplus, for the not-for-profit organization. In that regard, the health insurance organizations and health plans, in this study, actually utilized the “profit” in the following four different ways:

1. To pay income taxes;
2. To increase retained earnings;
3. To distribute returns to shareholders or stakeholders; and/or
4. To increase reserves for the future payment of provider claims.

Table F.1 shows profit before income tax for insured plus ASO and ASC business. Results for 2002 are estimated using data collected from the second and third quarters of the year. This is consistent with the methodology described in the rest of the report.

<table>
<thead>
<tr>
<th>Measure</th>
<th>1998</th>
<th>1999</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Profit Before Income Tax</td>
<td>1.7%</td>
<td>1.9%</td>
<td>2.3%</td>
<td>2.7%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Change %</td>
<td>11.8%</td>
<td>21.1%</td>
<td>17.4%</td>
<td>37.0%</td>
<td></td>
</tr>
</tbody>
</table>

In 2001, actual realized profit before income tax averaged 2.7% of premiums. Profit levels were relatively consistent between BCBS and non-BCBS organizations with BCBS organizations averaging a profit of 2.5% and non-BCBS organizations averaging 2.8% in 2001. We utilized both the Milliman database and the BCBSA database to develop these profit levels.