Appendix B

Excess Surplus Review hearing of
Group Hospitalization and Medical Services, Inc.

District of Columbia Department of Insurance, Securities, and Banking

Rebuttal of CareFirst's Position on the Appropriateness of GHMSI's Surplus – An Independent Assessment of the Excess Surplus

Actuarial Analysis by
Actuarial Risk Management

Prepared for the DC Appleseed Center for Law and Justice, Inc.
November 2, 2009

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CHAPTER 1 - Overview

I. Brief

The Consultant Team from Actuarial Risk Management ("ARM") was instructed by DC Appleseed to undertake an independent review of the surplus level of Group Hospitalization and Medical Services, Inc. ("GHMSI"), which is a hospital and medical services corporation, controlled by CareFirst.

The review is in connection with the Medical Insurance Empowerment Amendment Act of 2008 ("MIEA Act"), effective March 25, 2009 (D.C. Law 17-369; D.C. Official Code § 31-3501 et seq.), which amended the Hospital and Medical Services Corporation Regulatory Act of 1996 ("HMSCR Act"), effective April 9, 1997 (D.C. Law 11-245; D.C. Official Code § 31- 3501 et seq.). As amended, the HMSCR Act requires the Commissioner of the Department of Insurance, Securities and Banking ("DISB") to review the portion of a hospital and medical services corporation's surplus attributable to the District of Columbia and issue a determination whether such surplus is excessive.

Our scope began by submitting to DISB a comprehensive request list, inclusive of public and company materials, to use in our review to thoroughly assess the adequacy of GHMSI's surplus (See Appendix C). DISB provided the CareFirst, Inc. report, dated July 31, 2009, and the Milliman USA report, dated December 4, 2008 (and based on year end 2007 NAIC filings). These two items were placed in the DISB website.

We did not receive any other requested materials so ARM conducted a review which was submitted to the DISB as part of the DC Appleseed August 31, 2009 submission. Milliman submitted an additional report on the attribution of GHMSI surplus as Exhibit A of GHMSI's pre-hearing report. A hearing was held on September 10-11, 2009 with CareFirst , Milliman, and the Lewin Group providing testimony along with members of the DC Appleseed team. A telephonic discussion between Milliman, GHMSI, ARM and DC Appleseed occurred on September 22, 2009 in order for Milliman to further explain the methodology in their attribution report.

This Report, *"Rebuttal of CareFirst's Position on the Appropriateness of GHMSI's Surplus"* (to be referenced as "Subsequent Assessment Report" herein) supplements ARM's previously produced documents on the same topic. Namely, ARM's August 31, 2009 Report *"Excessive Surplus Assessment Report of GHMSI, Inc. Surplus Position"* (to be referenced as "First Review Report" herein) and ARM's September 10, 2009 Report *"Attribution of Surplus GHMSI, Inc."* (to be referenced as "Attribution Report" herein).

After further independent work and review of all the submitted materials, we find that Milliman's estimated range of acceptable surplus is significantly greater than what is required to cover the risk of failure to a high degree of certainty. We estimate a level of surplus for GHMSI that will, in our opinion and in light of our analysis and the materials provided to us, ensure financial soundness and efficiency. At our recommended surplus level GHMSI will almost certainly remain financially healthy as long as the management of GHMSI conducts business in a non-reckless manner. Thus, our recommended surplus level is entirely consistent with GHMSI's obligation to expend the maximum amount possible for community benefit consistent with its financial soundness and efficiency.

This Subsequent Assessment Report further documents our rationale based on the evidence that GHMSI & DISB have presented to us, information about comparable and/or competing companies, and other information we deem relevant to this review.

II. Summary of Findings

We summarize our findings and observations, which focus on the major reasons why ARM continues to believe GHMSI's surplus position is unreasonable, unexplainable, and unquestionably conservative. This conclusion is based on our judgment, review of available public data, and our independent analysis establishing an appropriate surplus range. Where necessary we restate relevant comments and observations made in prior submissions.

Our analysis includes the following:

- We identified the following five primary inaccuracies with the Milliman and CareFirst positions on GHMSI's surplus. Our analysis covers an evaluation of Milliman's assumptions, methods, and conclusions used in their establishment of a reasonable surplus range. This list in our opinion significantly distorts the perceived estimate (and rationale) for GHMSI's appropriate surplus range and produces an unreasonably large range.

    (1) The narrow focus on line of business underwriting gains and losses instead of overall GHMSI after-tax adjusted net income;

    (2) The unrealistic multi-year loss cycles assumption which serves as the foundations of Milliman's report and conclusions;

    (3) The failure of Milliman's model to dynamically adjust current period results for corrective actions that would be implemented by management based on prior period results;

    (4) Milliman's inappropriate treatment of a BCBS Association reporting requirement as a cataclysmic event resulting in their recommending surplus levels that are beyond that which would ensure GHMSI's financial soundness; and

    (5) The failure of Milliman's model to account with proper sensitivity for company size in its establishment of an appropriate surplus range.

- We identify the following key flaws with Milliman's proposed approach on attribution of surplus:

    (1) Milliman use of a non standard approach for attributing membership, premium, and other financial measures such as surplus by jurisdiction;

    (2) Milliman's surplus attribution approach fails to recognize or account for the fact that GHMSI underwriting margins on non-FEP insured business in DC have been more than two and a half times that of such lines in other jurisdictions for GHMSI; and

    (3) Milliman's reliance on unaudited data and use of inappropriate assumptions for data they state is unavailable.

- In light of our key rebuttal points found as part of our analysis, there are other important differences which we are not able to fully substantiate due to the non transparent nature of Milliman's models and analysis.

- Over the most recent years, and as stated clearly in our *First Review Report*, Milliman continued to offer justification for high surplus levels of other health insurance companies using a comparable "black box" method absent of both transparency and validation coupled with boilerplate language.[1]

In light of these aforementioned issues, we conduct our own independent assessment using standard statistical methods and observable numbers, namely 14 years of GHMSI historical data, to conclude that a reasonable range to ensure GHMSI's financial soundness with near certainty is a RBC ratio of 450% to 525% (or equivalent to a range of $260 million to $320 million in redundant surplus from GHMSI's actual 12/31/2008 surplus position). This equates to approximately 38-47% lower surplus levels than GHMSI reported at 12/31/2008. This range essentially confirms the range we calculated in our first submission correcting for unreasonable assumptions in Milliman's model.

Lastly, we have identified in this assessment the range of surplus that is consistent with GHMSI's financial soundness and efficiency. We believe that the determination of where within that range the Commissioner should set the ceiling is a legal determination that takes into account the "maximum feasible" provision in the statute. Accordingly, we do not offer an opinion on a specific amount, except to note that any point within the range would be an efficient level of surplus.

We have reviewed the testimony of GHMSI with regard to how a distribution of excess surplus might be made to policyholders. We conclude this report with observations on the likely impact on premiums of a surplus refund and how such distribution could be completed to minimize market disruption and avoid "spring-back" issues that GHMSI management hypothesized in their September 10th testimony could occur.

[1] Milliman has used the same "canned" verbiage in presentations (e.g., India in 2008) and in reports for other Blue Cross plans (for example, a 2006 report for BCBS Rhode Island, a 2004 report for HighMark, and a 2005 report for GHMSI).

III. Qualifications, Limitations, and Disclaimers

The actuaries representing ARM and conducting this review are members in good standing with the American Academy of Actuaries and are qualified to perform the procedures that form the basis of our review and observations.

ARM has furnished this Assessment Report only to the Executive Director of DC Appleseed. ARM's representatives will be available to consult with any other reader or interested party.

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Statements contained in this Assessment Report that are prefaced with the words "may", "will", "expect", "anticipate", "continue", "estimate", "project", "forecast", "intend", "designed" and similar expressions, are intended as forward-looking statements regarding events, conditions and financial trends that may affect GHMSI's future plans of operations, business strategy, results of operations and financial position. Further, any forward-looking statement speaks only as of the date on which such statement is made, and ARM undertakes no obligation to update any forward-looking statement to reflect events or circumstances after the date on which such statement is made. As it is not possible to predict every new factor that may emerge, forward-looking statements should not be relied upon as a prediction of actual future financial condition or results. These forward-looking statements, like any forward-looking statements, involve risks and uncertainties that could cause actual results to differ materially from those projected or anticipated.

Nothing included in this Assessment Report is to be included in any filing with the Securities and Exchange Commission or other regulator without the written permission of ARM.

Any reader of this Assessment Report must possess a substantial level of expertise in areas relevant to this analysis to fully appreciate the significance of the assumptions used in the analysis, and the impact of the assumptions on the illustrated results.

Generally, any actuarial review includes such review of the actuarial assumptions, actuarial methods and the underlying basic records, and such tests of the actuarial calculations as considered necessary.

For the purposes of this assessment, we have relied without independent verification upon the accuracy of all the data and representations contained in the public documents submitted to ARM for the sole purpose of conducting this assessment. The validity of the comments made in this review depends in part on the accuracy of the data and representations given.

CHAPTER 2 – Group Hospitalization and Medical Services, Inc

Group Hospitalization and Medical Services, Inc. (GHMSI) is a hospital and medical services corporation controlled by CareFirst, the holding company. CareFirst has separately incorporated affiliates domiciled in the District of Columbia (GHMSI), and Maryland (CareFirst of Maryland, Inc. ("CFMI") and CareFirst Blue Choice.

Further information on CareFirst, Inc. and their affiliates can be found in ARM's previously produced Reports.

CHAPTER 3 – Rebuttal Commentary

We consolidate in this section all of our observations and concerns, including relevant issues found in our prior reports and our conclusions and findings made subsequent to the September 10th hearing.

Our analysis included, but was not limited to, a review of the 2008 and 2005 Milliman Reports, the GHMSI business and financial results, a peer analysis to assess GHMSI's position within the market for similar entities, and a review of similar surplus reviews conducted in other states and independent work to establish an appropriate surplus range in the post multi-year loss cycle environment. Please note that:

- Despite ARM's and DC Appleseed's repeated requests, inclusive of our previously prepared reports as well as those conveyed in the DISB hearing, ARM was denied the opportunity to review Milliman's methodology and assumptions in detail, and both Milliman and CareFirst denied access to their data, assumptions, and methods documentation. Nevertheless, ARM has been able to identify and quantify the impact of flaws, bias, and unduly conservatively stated assumptions in the Milliman analysis. While we identify significant flaws, we believe that that a more detailed review could reveal additional issues and would tend to support a surplus range that is than lower than Milliman's presented conclusions.

- Subsequent to the hearing, ARM performed and completed a more thorough analysis using a standard statistical approach. The basis of the analysis was publicly available financial data, both from the NAIC financial statements and public domain websites, like CareFirst. We would have preferred to have had additional access to non-public data and information just as Milliman did, but are gratified to find that our independent analysis results are generally consistent with our estimates of adjusted Milliman results after we correct for the issues described in this report.

We identify five primary inaccuracies, which serve as the basis for our differing opinion, from Milliman and which are important to their conclusions about an appropriate surplus range. These inaccuracies are expanded upon in this report and are as follows:

Inaccuracy 1 - The focus on GHMSI's underwriting gain/loss <u>instead</u> of after-tax adjusted net income[2]. Since the entire argument evolves around surplus, Milliman's unreasonably narrow focus on underwriting gains and losses is inappropriate because it does not fully recognize the effects of the Federal Employee Program and Other Product Lines, along with the impact of investment income across all lines of business. This skewed focus results in erroneous conclusions about loss probabilities that support unreasonably high surplus requirements;

Inaccuracy 2 - Even within Milliman's flawed approach of focusing exclusively on underwriting gain/loss, their supposition of a multi-year underwriting loss cycle is completely unrealistic; there has not been such

[2] In this report we define adjusted net income for a given year as the sum of net income and unrealized capital gains/losses for that year.

a phenomenon in at least 15 years, and Milliman's own model does not validate against such historic cycles. This error goes to the very foundation of Milliman's own analysis;

Inaccuracy 3 - The failure of Milliman's model to dynamically adjust current period results for corrective interventions that would likely be implemented based on prior period results;

Inaccuracy 4 - An inappropriate focus on exceeding, with near certainty, a BCBS Association reporting requirement rather than complying with District of Columbia law that mandates community health reinvestment be a higher priority than accumulating surplus to levels beyond that which would ensure GHMSI's financial soundness; and

Inaccuracy 5 - The failure of Milliman's model to account with proper sensitivity for company size in its establishment of an appropriate surplus range.

We also identify three key flaws with Milliman's approach to attributing surplus which greatly distort their conclusions. These key points are discussed in more detail in later sections:

Flaw 1 - Milliman acknowledges that they used a non-standard approach for attributing membership, premium, and other financial measures such as surplus by jurisdiction, not because the independently determined it to be the most appropriate approach; but rather because they concluded it would fit best with how the company told them they would distribute excess surplus;

Flaw 2 - Milliman's surplus attribution approach fails to recognize or account for the fact that underwriting margins on non-FEP insured business in DC has been more than two and a half times that of such lines in other jurisdictions; and

Flaw 3 - Milliman's method relies on unaudited data and makes inappropriate assumptions for data they state is unavailable.

We critique other points made in the Milliman and CareFirst reports as well; however, we believe that the aforementioned points constitute the principal errors that materially influence Milliman's conclusions.

I. The Purpose of Establishing a Reasonable Surplus Level

Insurance companies are required to hold emergency funds or "surplus" —that is, capital over and beyond "reserves" (which are established to pay anticipated claims, and which themselves build in an excess to account for uncertainty - in GHMSI's case usually around 8-10%)[3], to protect policyholders against unanticipated adverse events. Surplus is equal to the amount of assets (i.e., capital) a company has in excess of its liabilities. For insurers, surplus plays a role in the management of risk, but surplus is not the sole or the front line protection against errors in estimating the size and/or the probability of the principal risks that face an insurer (For example, premium rates have a built-in contingency factor against inadequacy, and claim reserves build in the aforementioned cushion). Surplus particularly protects against the effects of adverse circumstances in the near term, before management is able to adopt corrective measures.

The measure used to quantify the surplus or capital adequacy of a company, as adopted by the National Association of Insurance Commissioners (NAIC) in 1992, is known as Risk-Based Capital (RBC). We provided information on RBC in Appendix A of our *First Review Report.*

[3] CareFirst erroneously uses the terms "surplus" and "reserves" interchangeably in its July 31, 2009 letter.

Milliman stated[4] in October 2004, "A maximum level for surplus, by contrast, represents the point at which additional accumulation of funds does not contribute meaningfully to furthering the goal of ensuring the future viability of the company or protecting its members. By definition, exceeding such a level does not add to the well being of the company." It is our belief that GHMSI exceeds this maximum level.

We have suggested numerous areas where Milliman's calculation of GHMSI's recommended target surplus range seem unduly conservative or in error.

As discussed elsewhere in this document, there are many reasons to be critical of and disagree with the Milliman report's conclusions on page 56. Numerous points to be made outside of those already discussed simply add to the bias of producing a higher level of surplus than would be reasonably acceptable.

II. Methodological Issues with the Milliman Approach

Failure to Reflect GHMSI Adjusted net income vs. Underwriting Results

The Milliman report focuses exclusively on the potential underwriting gain/loss of a single product line and not the actual component that correlates most closely to change in surplus, namely adjusted net after-tax income for the entire company. A myopic focus on underwriting gain/loss for a single product line – even if it is the biggest - does not adequately predict expected change in surplus since change in surplus is affected by the profitability of all product lines and investment income (both realized and unrealized) on invested assets.

As in any health insurance carrier, the surplus generally consists of the contribution from the business (via the adjusted net income) plus a market value adjustment relating to the invested asset portfolio plus the impact of changes in surplus primarily driven by the change in non-admitted assets. We further describe in this report the effects of changes with GHMSI's non-admitted assets.

In the table that follows on the next page, we illustrate how GHMSI's underwriting gain/loss contrasts to adjusted net income and how GHMSI's surplus changes over time. For the purposes of comparing financial results we present "adjusted net income" as the traditionally presented net income plus the effects of unrealized gains and losses from the asset portfolio. This minor change in presentation (the unrealized capital gains/losses are typically presented in the change in surplus versus the income section) is done to assist understanding of the major drivers of surplus change.

Even though the underwriting results of non-FEP insured business affects change in surplus, it can be demonstrated mathematically through Pearson correlation coefficients[5] that it is not the best overall predictor of change in surplus.

The table following, which shows 2005 through year-to-date 2009 results, is illustrative of Milliman simply ignoring these big picture realities:

1) When looking at all GHMSI's product lines, the company has realized after-tax adjusted net income of at least $25 million in <u>each</u> of the 14 years from 1995 through 2008. This includes two calendar years

[4] See page 14 of the Supplement to Milliman Report on Highmark Surplus Target Range.

[5] Pearson's correlation coefficient is the best method of measuring the correlation between two sets of numbers (in this case adjusted net income vs. Changes in Surplus), because it takes into account covariance. Pearson's correlation coefficient gives information about the degree of correlation between sets of numbers as well as the direction of the correlation.

(1995, 1998) when small net underwriting losses for all product lines occurred along with three other calendar years (including 2008) when the net underwriting gain for all product lines was less than 1%.

2) GHMSI's change in surplus from 1995 through 2008 has an extremely high Pearson correlation coefficient relative to its adjusted net income. The high Pearson correlation coefficient indicates that change in surplus is highly correlated with adjusted net income – and this correlation is higher than that between underwriting gain/loss (of all product lines, much less just non-FEP insured business) and change in surplus.

3) Even in 2008, the one year in the last fourteen that GHMSI's reported surplus did not increase, GHMSI's after-tax adjusted net income for all lines of business was more than $15 million. Moreover, its surplus would have increased in 2008 also, except for an unprecedented increase in its non-admitted assets – an aspect of change in surplus that is largely under management discretion rather than being simply due to the occurrence of adverse events.

4) GHMSI's financial results for the first half of 2009 provides another example of why adjusted net income is more important than underwriting results. Through 6/30/09 GHMSI reports an underwriting loss of less than $6 million, but adjusted net income of almost $18 million. Again, despite a modest underwriting loss, surplus would increase year to date in 2009 if not for discretionary management expenditures on non-admitted assets.

5) The relevant comparison in the table is between net underwriting results and adjusted net income. It can be seen that adjusted net income is typically several times the net underwriting results.

Income for Period Ended (000s)	**2005 Y**	**2006 Y**	**2007 Y**	**2008 Y**	**06/09 YTD**
Underwriting Income					
Net Premiums Earned	$2,256,325	2,456,531	2,815,030	2,743,995	1,411,646
Other Health Care revenue	1,119	1,063	13,452	13,516	5,751
Underwriting Revenue	2,257,444	2,457,594	2,828,482	2,757,511	1,417,397
Underwriting Deductions					
Benefits Paid and Claim Adjustment Exp.	2,083,707	2,251,395	2,589,840	2,564,014	1,315,565
General Administrative Expense	138,372	157,162	197,711	183,981	107,681
Net Reinsurance Recoveries	(12)	(4,026)	(5,060)	257,634	138,096
Underwriting Deductions	2,222,080	2,408,557	2,787,551	2,747,995	1,423,246
Net Underwriting Gain (Loss)	**35,365**	**49,037**	**40,931**	**9,516**	**(5,849)**
Other Income or Expenses	2,026	202	551	(3)	49
Investment Income					
Net Investment Income Earned	26,496	35,369	40,947	42,339	17,874
Net Realized Capital Gains (Losses)	4,631	(1,204)	1,178	(18,020)	4,256
Net Income					
Pre-tax Net Income after capital gains (loss)	68,518	83,404	83,606	33,831	16,330
Federal Income Tax	14,121	18,781	15,183	7,571	834
Net Income	54,397	64,623	68,424	26,260	15,496
Net Unrealized Capital Gains (Losses)	7,357	36,453	26,204	(10,492)	2,441
Adjusted Net Income	61,754	101,076	94,628	15,768	17,937

Change In Capital and Surplus					
Capital & Surplus, Beginning of Period	501,014	560,967	663,006	753,559	686,780
Adjusted Net Income	61,754	101,076	94,628	15,768	17,937
All Other Changes in Surplus (i.e. impact of change in Non-Admitted Assets, etc.)	(1,802)	963	(4,075)	(82,547)	(20,452)
Policyholders Surplus, Current Period Ended	560,967	663,006	753,559	686,780	684,264

We analyzed in detail GHMSI's financial results from 1995 through 2008. During that period, GHMSI's average adjusted net income, as a percentage of total revenues, was 4.00% with a standard deviation[6] of 1.49% which indicates a relatively small degree of variability and uncertainty around the probability of achieving that average result. Indeed, this GHMSI-specific data should be more predictive of their future operating results than any other industry data.

Based on using GHMSI's actual historic surplus and adjusted net income results as a predictor of the future and assuming no management malfeasance we find that the **probability** of GHMSI incurring any after-tax adjusted net income **loss in a given year is less than 1.0%** and the **possibility** of GHMSI having after-tax adjusted net income **losses in consecutive years to be less than 0.01%.**

Although not mentioned by Milliman, we note that Mr. Burrell emphasized in the hearing that "we operate on extremely skinny margins."[7] Mr. Burrell subsequently acknowledged that he was referring to underwriting margins, and not to margins that include investment income.[8] As we have just demonstrated, it is adjusted net income that is the best predictor of surplus. Moreover, even the assertion that underwriting margins are "skinny" is not correct as underwriting gains in DC for individual and small group business have averaged almost 6% in the 2002 to 2008 time period[9].

As a further test and confirmation of our proposed reasonable level of surplus for GHMSI, we demonstrate in Section IV how these probabilities are affected by recalculating GHMSI's earnings assuming a constant 500% historic RBC level surplus. In this demonstration we remove the investment income on the assets supporting the excess surplus (i.e. net income derived from surplus over the target level of surplus (500% RBC)). As will be seen in that section, the recalculated probabilities are only slightly higher than those noted above and still well under the 2% uncertainty target that Milliman suggests is appropriate and with which we agree.

In summary, Milliman's focus on underwriting gains and losses only and not all of the real contributors to changes in surplus does not accurately portray the real effects on GHMSI's surplus position.

Multi-Year Underwriting Loss Cycles

The Milliman model rests fundamentally on the assumption of a multi-year underwriting cycle[10]. Under the historic (pre-1995) medical insurance cycle, three years of gains were typically followed by three years of losses. It is now extremely questionable as to whether medical insurance cycles continue or, instead, have

[6] Standard deviation is a statistical measure of the amount of observed variability around an expected value. The predictability of an expected value as measured by standard deviation increases with the number of measurements taken.
[7] See Sept. 10th transcript pages 111-12.
[8] See Sept 10th transcript pages 213-14.
[9] See Chart 1 in Chapter 4 of this report.
[10] See page 53 of Milliman.

become an historic artifact. Some of the reasons to believe that the medical insurance world has changed and that historic medical insurance cycles will not repeat include:

1) The early 1990's implementation of RBC requirements focused insurer management on avoiding losses and maintaining appropriate capital.

2) The acceleration of the reimbursement cycle from insurers to providers has made insurers more sensitive to changes in payment patterns. This is due in part to prompt pay legislation, HIPAA electronic transaction standardization and financial incentives for prompt payment in provider contracts.

3) More accurate and timely data feedback to insurer management on utilization and other cost trends enables management to react faster to projected losses or insufficient margins. Today, well-run companies conduct experience reviews and revise financial projections on at least a monthly basis.

4) There has been a significant increase in the percentage of health insurers that are for-profit health insurance companies, with pressure on management to make money in every single time period.

At the September 10, 2009 hearing Milliman's Mr. Robert Dobson testified[11] as follows:

> "For many years the health insurance industry had a three year up and a three year down cycle that was well documented by both commercial carriers and notably the Blues. That has definitely changed over recent history. There's no doubt about the change in the cycle."

Despite Mr. Dobson's admission and the 15 years of non-cycle results in the industry, Milliman's model and report is fundamentally based on the possibility of a multi-year cycle underwriting loss. Although their model quantifies the magnitude of such an occurrence, it appears Milliman relies on the trust factor as being "national experts" as they do not even attempt to calculate the probability of such an occurrence. This stands in stark contrast to the mathematical analysis we provide in the previous section that demonstrates based on GHMSI specific experience that the likelihood of their incurring a future multi-year adjusted net income loss to be extremely remote.

While the health insurance industry as a whole has not seen any evidence of the historic underwriting cycle in 15 years or even a new discernible loss pattern, GHMSI has had ten consecutive years of underwriting gains. Considering GHMSI specific experience over the last decade, the likelihood of a multi-year loss cycle being an expectation for them in light of the ten consecutive years of profit can be mathematically calculated as extremely remote. In fact, the ten consecutive years of underwriting gains serve to rebut the core assumption of Milliman of a multi-year underwriting loss cycle. For example:

a. Assume that in the long run under an underwriting cycle environment that losses occur in approximately one half of the years (this is representative of the historic time during which cycles were evident). If the historic cycle continues to be true, then the chances of having ten consecutive years as GHMSI has done with no underwriting loss computes as less than 0.1%. I.e., the fact of the 10 consecutive years of underwriting gains demonstrates that the likelihood that the historic cycle continues to exist is extremely remote.

b. Change the assumption such that in the long run under a new hypothesized underwriting cycle environment where losses will occur in approximately one third of the years, then the chances of

[11] See pages 226-227 of the hearing transcript.

having ten consecutive years with no underwriting loss computes as less than 2%. The fact of the 10 consecutive years of underwriting gains demonstrates that the likelihood that such a new cycle exists is extremely remote.

Even on Milliman's own terms, taking into account only underwriting gain/loss, Milliman's analysis is flawed because Milliman's own analysis of the potential magnitude of underwriting loss cycles is flawed. We analyzed GHMSI's 1995 through 2008 experience to understand their specific established risk of adverse underwriting results in a given year. GHMSI's net underwriting gain for all product lines from 1995 through 2008 has averaged 1.48% of net revenues with a standard deviation of 1.36%. Using this average margin and standard deviation we can calculate the probability of GHMSI having <u>any</u> net underwriting loss in a given year to be approximately 14%. However, using these same parameters the probability of GHMSI having a more significant underwriting loss (greater than 2%) in any given year is only about 0.5%.

Having calculated the likelihood of having a net underwriting loss in any year, we then consider the possibility of having net underwriting losses in consecutive years. We calculate the likelihood of having any losses in consecutive years is only about 2%, the likelihood of any losses in three consecutive years is only about 0.3% and finally the likelihood of having any underwriting loss in four consecutive years is approximately 0.04%. This does not speak to the magnitude of the underwriting losses (which based on our analysis are very likely to be small), just that there is any underwriting loss at all over consecutive years.

Finally, it is apparent that Milliman themselves do not believe that historic loss cycles will reoccur. Their model concludes that a severely adverse multi-year loss cycle would be 12-16% of annual non-FEP insured premium[12] and that provision to withstand such a loss cycle would have included 98% of their simulated loss periods. Yet they acknowledge that their model result does not validate against past experience.

As Milliman notes in their report:

- Two of the three historic loss cycles for GHMSI were far in excess of their severe adverse loss range[13].
- The 12-16% cumulative multi-year underwriting loss cycle would only have covered slightly more than 75% of the historical loss periods experienced by their Comparison Set of BCBS plans[14].

Milliman proffers their recommended surplus levels to be sufficient with 98% certainty. Given the failure of their model to validate against historical experience we are left with the conclusion that Milliman simply does not believe the historic cycles are good predictors of the future. Indeed they characterize GHMSI's largest past cycle loss as "anomalous" and conclude that looking at cycle losses on their Comparison set of BCBS plans nearly 25% of losses exceed the Milliman severely adverse range[15].

Dobson stated [16]at the September 10th hearing that "we do not directly use the prior loss cycle experience. . . . If we had used the prior loss cycles, our cumulative loss scenarios would have been higher, resulting in higher target surplus levels."

Milliman fails to provide any actuarial analysis as to why they were happy with a model that does not validate to experience or why having rejected the "three year up and three year down cycle" that nevertheless the

[12] See page 53 of Milliman.
[13] See page 51 of Milliman.
[14] See page 53 of Milliman.
[15] See page 51 of Milliman.
[16] See September 10th hearing transcript pages 70-71.

probability exists of some multi-year cycle underwriting loss so substantial that it should be the major driver of surplus requirements. In contrast, our qualitative and quantitative analysis clearly explains why the underwriting loss cycle is a historic relic.

Failure of Milliman Model to Validate GHMSI Experience

As we previously mentioned in this report, the operating environment for health insurance management has changed such that companies have become much more responsive to pricing trends due to much more timely access to emerging data and the demand for more aggressive responses to maintain target pricing margins.

In his September 10, 2009 testimony, Milliman's Dobson discussed[17] the weaknesses of their model. In response to questioning about whether the model is independent of management actions, Mr. Dobson replied:

> "...I can see you describing it that way because in the loss cycle we assume that that loss cycle is going to occur, and it may be in spite of management's intentions and various interventions that management might do."

It appears from Mr. Dobson's testimony that the Milliman model fails to anticipate dynamic responses from company management with regard to emerging losses. In essence their model appears to assume that once a loss period begins then management will not act with more expediency or with greater corrective action than they would in a year where such unusual losses were not occurring. Rather, it appears that the Milliman model assumes in such circumstances that once begun a loss period will continue for a three or four year period. This approach makes a loss cycle self-fulfilling.

This modeling approach is both antiquated and inconsistent with how insurance company management acts in today's environment to intervene quickly when emerging results are below expectations. Their modeling approach also does not validate with GHMSI's own recent history in regard to substandard underwriting results.[18] Before 2008 GHMSI's lowest underwriting gain in the last 10 years was in 2002 when the gain was a mere 0.9% of total revenues.[19] That result did not, however, signal the beginning of a multi-year loss cycle. In the year immediately following, 2003, GHMSI's underwriting gain was the second highest of the ten year period at 2.8% of total revenues. In 2008, GHMSI's underwriting gain dropped dramatically and was only 0.3% of total revenues. We don't know the final answer to GHMSI's 2009 underwriting margin yet, but rather than forecasting worsening margins, GHMSI management testified repeatedly at the September 10th hearing that they expected the 2009 underwriting gain to increase and be between 0.5% and 1.0% of total revenues.

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[17] See pages 238-240 of the hearing transcript.

[18] Indeed GHMSI management has repeatedly revealed their ability to manage surplus to targets. See for examples pp. 103-04, 106 of the September 10th hearing transcript; p. 48 of the September 11th transcript. CareFirst July 31, 2009 submission, at pp. 5 ("If reserves are below or are heading below the bottom of the range, premium rate margins are increased to bring reserves back into the range."); Care First Aug. 31, 2009 Pre-Hearing Report, at p. 7 (GHMSI margins "have been tailored to maintain GHMSI's position in the target RBC range"). To take a further example, as we have previously pointed out, the decline in GHMSI's surplus ratio between 2004 and 2005 occurred because GHMSI quoted premium rates that were 3% lower than the expected medical trend; the decline should, therefore, "be recognized as an intentional result as opposed to the result of any poor experience or other trend." First Review Report, at p. 22.

[19] In Chart D on page 7 of CareFirst's July 31, 2009 submission is presented a chart of GHMSI U/W gains and adjusted net income for the ten-year period 1999-2008. Inexplicably, this chart shows GHMSI with a 1.9% underwriting gain in 2002 despite the annual statement of GHMSI showing the 0.9% referenced above. This same chart also shows GHMSI's 2000's adjusted net income to be 3.8% while the 2000 annual statement of GHMSI shows a 4.8% adjusted net income.

It should be noted that GHMSI management is able to confidently forecast a rise in underwriting profit in 2009 despite testifying that they have intentionally targeted lower than average margins for 2009 in response to the low margins of 2008[20]. Given this recent history of GHMSI being able to effectively manage results, a serious question again arises as to the reasonableness of Milliman's use of a multi-year underwriting loss cycle that does not anticipate various interventions by management as a fundamental assumption in their optimal surplus model.

Milliman's response to this deficiency is to state that, "it's impossible for a model to exactly replicate what would happen in reality."[21] However, it would be a simple and normal approach for a model such as Milliman's to recognize when a prior period result did not achieve targeted results and to assume that management would increase target margins (the bigger the shortfall, the bigger the increase) in the next period as a result. Our own approach implicitly takes management action into account because we are analyzing the last 14 years of results and in each of those years management took various actions. Our statistical analysis implicitly assumes such actions will continue to happen.

Failure of Milliman Model to Appropriately Adjust for Size

Competitor Consolidation and Scale[22]

Milliman cites a couple of the supposed advantages that GHMSI's competitors enjoy, including the ability "to aggressively build and contract with provider networks" and "negotiating clout"[23]. It is our experience that what creates true negotiating clout is a high market share in a limited geographic area. It is our opinion that none of the "large and jumbo-sized companies" that Milliman references has anything close to the 56.6% market share that GHMSI enjoys in its primary geographic market[24]. Furthermore, the real advantages that GHMSI enjoys[25] in its primary geographic market due to its unique charter are likely to more than offset any of the supposed advantages that the "large and jumbo-sized companies" might enjoy.

Sensitivity of Surplus Range to Size

At the September 10th hearing Milliman's Dobson testified in response to a question about what the Milliman model does not do:

> "The biggest thing I can think of offhand that we might want to refine going forward is the reflection of size. We have introduced reflection of size now, but it's still not very sensitive to size."

The issue of how the model treats size can be illustrated by GHMSI's own experience in Chart 3.

[20] Indeed on page 7 of CareFirst's July 31, 2009 submission the company indicates that they have intentionally targeted lower margins for several years.
[21] See page 240 of the September 10th hearing transcript.
[22] See page 9 of Milliman.
[23] See page 9 of Milliman.
[24] See Deborah Chollet's August 31, 2008 submission, pages 6-7. GHMSI's share is more than 2.5 times the next biggest competitor.
[25] Such as favorable tax treatment, brand recognition, etc...

Chart 3
GHMSI Historical Surplus

Year	Total Revenue	RBC-ACL	EOY Surplus	RBC Ratio	Surplus in Excess of RBC-ACL
2000	1,243,945,001	29,311,712	248,002,255	846%	218,690,543
2001	1,509,283,240	36,845,312	273,984,510	744%	237,139,198
2002	1,719,875,820	45,255,447	290,773,025	643%	245,517,578
2003	1,891,194,684	49,799,523	392,008,160	787%	342,208,637
2004	2,032,740,253	52,666,787	501,014,465	951%	448,347,678
2005	2,257,444,351	62,787,823	580,967,145	925%	518,179,322
2006	2,457,593,879	69,443,956	663,006,406	955%	593,562,450
2007	2,828,482,064	82,303,273	753,558,921	916%	671,255,648
2008	2,757,511,007	81,253,875	686,779,718	845%	605,525,843
Period Growth	1,513,566,006	51,942,163	438,777,463		386,835,300

We ask the following question - **Is it reasonable to think that based on the RBC ratio alone, that GHMSI is equally well capitalized in 2008 as it was in 2000 simply both of those ratios were around 845%?**

Consider the following:

- The incremental surplus from 2000 to 2008 on the 2000 to 2008 incremental revenue is a full 29%. This compares to the surplus held in 2000 which was not quite 20% of the Company's 2000 revenue.

- The excess surplus held at 12/31/08 is 2.8 times the excess surplus held at 12/31/00. The Company's total revenue in 2008 on the other hand is only 2.2 time the total revenue from the year 2000.

- The 2008 revenue per member in-force at 12/31/08 was $2969, while the 2000 revenue per member in-force at 12/31/00 was $1871, an increase of 59%. The 2008 surplus per member in-force at 12/31/08 was $739, while the 2000 surplus per member in-force at 12/31/00 was $373, an increase of 98%.

By all objective measures, GHMSI is more financially secure at 12/31/08 even though the RBC ratio does not reflect this. The formula for the RBC ratio breaks down as an appropriate measuring stick as companies become larger and as you examine higher levels of surplus. Indeed as Scott Serota of the BCBSA notes[26] "the RBC ratio was neither designed nor intended to be used as a metric for determining an insurer's target or maximum capital level."

In a similar manner, the Milliman model for target surplus breaks down because it is "not very sensitive to size" as noted in the Dobson quote above.

According to Fitch Ratings in their December 2008 criteria report, titled *Cash Flow Measures for Analyzing Health Insurer Financial Leverage,* Fitch shifted its focus on analysis of health insurance company's financial leverage because "many aspects of the health insurance sector and a company's operating within it have

[26] See his September 8, 2009 letter submitted for consideration after the September 10th hearing.

changed over the past several years." Additionally, "Fitch has concluded that it is reasonable to evaluate a health insurers' capital quality with an increased focus on cash flow quality and stability." This transition by Fitch illustrates that the health care sector has evolved such that cash flow measures are better indicators of financial stability than the simple balance sheet capital metrics.

Demand for Surplus

It is common practice for companies the size of GHMSI to have capital investment budgets several years into the future. Despite CareFirst citing[27] a possible use of surplus being "infrastructure upgrade: the costs of technology and systems to handle the ever greater complexity", the company and Milliman both fail to quantify to any degree what those future spending needs might be or how they might relate to actual such spending over the last few years. In fact capital budgets are based on management discretion; they don't fit within the risks that surplus is designed to manage – i.e., the risks of error in estimating probability and size of risks. Capital budgets aren't a risk; and they are not something that comes up suddenly and without opportunity to protect.

Milliman asserts[28] in several parts of their report that surplus is needed to enable periodic investments in technology. However, their failure to quantify this argument is indicative of its weakness. Note the following counterpoints:

- Milliman notes[29] that capital investment in technology has become virtually continuous. If so, it should be part of the operating budget and not supported by surplus.
- James C. Robinson[30] of the Robinson Health Affairs report notes[31] in a 2004 analysis of the then proposed for-profit conversion of CareFirst that, "As detailed in the CareFirst debate and evident in other states, Blues plans have adequate cash flow to finance investments in IT without recourse to equity capital and in fact are investing at rates similar to their for-profit competitors."

In addition, Milliman identifies[32] the primary independent risk category for GHMSI as net underwriting loss due to rating parameter inadequacy. They also identify risks from unpaid claims liability fluctuation as related to fluctuations in rating parameter adequacy. They fail to note, however, that surplus is not the first line of defense against misestimates on either of these risks:

- With regard to their discussion on rating parameter adequacy[33], Milliman fails to note that there GHMSI routinely includes a specific risk and contingency factor in rate setting. The size of this factor is usually inversely proportionate in size to the number of people insured just as expected variation in results varies in inverse proportion to the number of people insured. The more people insured, the smaller the risk and contingency factor needed and the smaller the expected variation in result. This risk and contingency factor provides a margin that can absorb adverse deviation from the most likely or best estimate claims that are usually used in pricing.

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[27] See page 4 of CareFirst report and page 10 of Milliman.
[28] See for example pages 9, 10 and 16 of Milliman.
[29] See page 10 of Milliman.
[30] Robinson, a professor of health economics at the University of California, Berkeley, and a contributing editor to *Health Affairs,* works on managed care, medical groups, and capital markets in this and other journals is widely cited in the health services literature, among Wall Street analysts, and within the healthcare industry itself.
[31] See page 68 of the July/August 2004 Robinson Health Affairs report entitled, "For-profit, non-conversion and Regulatory Firestorm at CareFirst Blue Cross Blue Shield."
[32] See page 46 of Milliman.
[33] See pages 40-41 of their Report.

- With regard to the discussion on estimating claim liabilities Milliman indicates[34] that to the extent that actual claim runoff differs from the estimate for unpaid claims that surplus will be correspondingly overstated or understated. Milliman fails to note, however, that health insurers, including GHMSI, do not reserve for unpaid claims liabilities on a best estimate basis. Rather, their claim reserves include a provision for adverse deviation. Typically, this provision is 5-10% of estimated claims. This amounts to additional hidden surplus that can absorb some of the risk of adverse deviation and prevents an immediate impact on surplus when most likely estimates emerge as insufficient.

There are several layers of protection in which an insurer takes into account the possibility of estimation error. Contrary to Milliman's implication, surplus is a back-up line of defense against an insurer's misestimates of risk, not the first line.

III. Can CareFirst Manipulate Results to Produce a Specific Surplus Level?

Non-Admitted Assets

In a footnote to their pro forma modeling, Milliman states[35] that they have assumed the elimination of GHMSI's deferred tax asset with an adverse loss period. Since the Milliman report was produced on December 4, 2008 and GHMSI, as mentioned earlier in this analysis, increased its deferred tax asset from $4 million to $137 million at 12/31/2008, it is questionable as to whether results based on this assumption are now valid or appropriate.[36]

Given that GHMSI's financial history over the last 14 years shows significant adjusted net income each and every year, even despite two isolated[37] years of underwriting loss during that time, ignoring tax offsets which could enhance surplus recovery after loss years seems to be a significant flaw in the Milliman model.

In light of the Company's historical financial position, we also quote from CareFirst's 2008 Annual Financial report, regarding the organization's ability to support the deferred tax assets.

> "Management has determined, based on the Company's long-term history of operating earnings and its expectation for the future, that income of the Company will more likely than not be sufficient..."

As previously noted in Chapter 3, Section II, and in light of GHMSI's recent history, GHMSI has had significant after-tax adjusted net income in each of the 14 years since they began to be regulated under the current structure. Also, as previously noted in Chapter 3, Section II it can be demonstrated mathematically that changes in GHMSI surplus are more highly correlated with their after-tax adjusted net income than with their net underwriting gain/loss. This correlation would have been even higher if not for the company's treatment of non-admitted assets during this period.

Specifically:

- In 2002 GHMSI increased its non-admitted assets from $33 million to $79 million. This increase in non-admitted assets was principally from a $15 million increase in computer equipment, a $9 million

[34] See page 42 of Milliman.
[35] See page 54 of Milliman.
[36] These assets were developed during a period of unprecedented market downturn, negating Milliman's argument for ignoring them.
[37] GHMSI experienced small net underwriting losses in 1995 and 1998.

increase in Deposits and Prepaid expenses, a $9 million increase in Common Stocks and a $10 million increase in net deferred tax assets.

- In 2008 GHMSI increased its non-admitted assets from $91 million to $278 million. This increase in non-admitted assets was principally from a $133 million increase in net deferred tax assets, a $10 million increase in computer equipment, and a $42 million increase in aggregate write-ins for other than invested assets.

- It should also be noted that in the first six months of 2009 that GHMSI has had an additional $19 million increase in non-admitted computer equipment and a $2.4 million increase in non-admitted furniture.

Changes in non-admitted assets relative to computer equipment, furniture, Common Stocks, and Deposits and Prepaid Expenses flow through and directly reduce reported surplus even though, for example, a purchase of computer equipment will benefit GHMSI for a number of years. It should be noted that all these items occur entirely based on management discretion and can be delayed or not done at all in times when surplus adequacy is an issue.

It is noteworthy then of the extent to which the company has made such expenditures in 2008 and 2009. Indeed, given the Company's $24 million after-tax adjusted net income in 2008, GHMSI surplus would have increased for the 15th consecutive year in 2008 over 2007 if not for the sudden large increase in non-admitted assets in 2008, that reduced its admitted capital by 9 percent. Likewise, despite an after-tax adjusted net income in the first 6 months of 2009 of over $15 million, GHMSI is reporting a slight drop in surplus at June 30th due to the above referenced 2009 computer and furniture purchases which are classified as non-admitted assets.

RBC Levels of CareFirst Subsidiaries

The GHMSI executive management team consists of the same key personnel as at CareFirst of Maryland and CareFirst BlueChoice which are GHMSI affiliates. Each of these affiliates should carry a relatively larger surplus than GHMSI for the following reasons:

- Each is significantly smaller than GHMSI in Total Revenue and members; and

- Each has a smaller market share in its primary geographic market than GHMSI's market share in DC. The implication of this is that each is more of a market-taker than a market-maker and has less flexibility to adjust price without suffering competitive issues.

In reality, at 12/31/08 the surplus of each of these affiliates is below the level that Milliman suggests is the ideal target range for GHMSI:

- CareFirst of MD is at 503% RBC ratio at 12/31/08; and

- CareFirst BlueChoice at 736% RBC ratio at 12/31/08.

If GHMSI's executives believe that it is financially sound practice to manage these sister companies to a surplus range of 500-750%, why do they believe an appropriate level of surplus for GHMSI is 750-1050% as Milliman recommends?

Finally, Milliman notes that the surplus goal for GHMSI is based on the perspective of GHMSI as a combined operation including its subsidiaries.[38] However, they fail to note that GHMSI is part of a larger group (CareFirst) with substantial capital and a vested interest in GHMSI's continued viability, and that could be a source of funds if needed by GHMSI. Indeed the recent reinsurance contracts entered into by the various affiliates obligate them to assist each other if needed.

IV. GHMSI Surplus Targets Under a Proven Statistical Model

Establishing a Sound Surplus Range based on Statistical Analysis

Historically, there are 3 primary ways that the RBC ratio for GHMSI has changed from year to year. The likelihood of these same changes occurring in the future can be determined through our statistical analysis. These sources of change are:

1) Adjusted net income can increase or decrease the company's surplus position. As we have analyzed in Chapter 3, Section II, based on the last 14 years of significant adjusted net income every year, the likelihood of surplus decreasing due to adjusted net income is insignificant. From 1996 through 2008 the average annual adjusted net income as a percentage of prior year surpluses has been an increase of 24.1% with a relatively small standard deviation of 11.2%.
2) The company through management discretionary action can increase certain non-admitted assets in a given year and reduce reported surplus. Over the last 10 years the average change in non-admitted assets as a percentage of prior year surpluses has been a decrease of 3.7% with a relatively large standard deviation of 5.9%.
3) The RBC-ACL required surplus of the company can increase at a different rate than the change in reported surplus. If the RBC-ACL requirement increases at a faster rate than the reported change in surplus the RBC ratio can decrease. The RBC-ACL required surplus from 2000 to 2008 has increased an average of 13.9% per year with a standard deviation of 9.2%. Reported surplus for the same years has increased an average of 14.3% per year with a standard deviation of 13.3%.

Using the above parameters and a random number generator to produce 10,000 yearly results against each parameter we calculate that to be 95% certain that surplus does not drop below 375% in a given year that the beginning of the year surplus should be at least 450% (rounded up to the nearest 25%). Using the above parameters and a random number generator to produce 10,000 yearly results against each parameter we calculate that to be 99% certain that surplus does not drop below 375% in a given year that the beginning of the year surplus should be at least 525% (rounded up to the nearest 25%).

We tested this process against the 200% RBC threshold and found that not a single year in 10,000 yearly results would cause GHMSI surplus to drop from above 450% at the beginning of the year to below 200% at the end of the year. We then performed similar tests for 10,000 yearly results over a 2-year or 3-year period and found the same result. Thus, we conclude using statistical methods that a beginning of the year surplus range of 450 – 525% is all that is needed to assure GHMSI's financial soundness with near certainty.

Demonstration of GHMSI's Financial Position Assuming a Level 500% RBC for Last 10 Years

Earlier in this report we presented analysis as to the likelihood of GHMSI incurring either an underwriting loss or an adjusted net income loss in a given year. This analysis was based in part on the history of GHMSI results

[38] See page 24 of Milliman.

over the last 14 years, a period of time in which the company's surplus ranged from 643% to 1176% of RBC-ACL. Thus the adjusted net income was somewhat dependent and reflective of the investment income on the excess surplus levels that the Company held over those years. As we are advocating that a surplus level of 450 – 525% for GHMSI, we think it appropriate to recast past results as if the surplus held in past years was 500% which is our recommended appropriate level for GHMSI to manage surplus to. In the below analysis we are recasting our previously presented statistical analysis of historical adjusted net income by removing earnings (i.e. investment income) produced from the invested assets derived from the excess surplus held in past years.

It should be noted that the surplus level held does not affect the net underwriting loss analysis that we presented earlier, but it does impact the analysis based on adjusted net income that we presented in Chapter 3, Section II.

Re-cast Analysis of Chapter 3, Section II Based on 500% RBC levels

The Milliman report focuses on the potential underwriting gains and losses associated with GHMSI's non-FEP business. This approach ignores the following big picture realities (all numbers recast based on removing historic surplus above 500% RBC-ACL):

1) When looking at all of GHMSI's product lines, the company has realized a net after-tax income of at least $21 million in each of the 14 years from 1995 through 2008. This includes two calendar years (1995, 1998) when small net underwriting losses for all product lines occurred along with three other calendar years (including 2008) when the net underwriting gain for all product lines was less than 1%.

2) GHMSI's change in surplus from 1995 through 2008 has an extremely high Pearson correlation coefficient relative to its adjusted net income. The high Pearson correlation coefficient indicates that change in surplus is highly correlated with adjusted net income – and this correlation is higher than that between underwriting gain or loss (of all product lines, much less just non-FEP insured business) and change in surplus.

3) Even in 2008, the one year in the last fourteen that GHMSI's reported surplus did not increase, GHMSI's after-tax adjusted net income for all lines of business was more than $11 million. Moreover, its surplus would have increased in 2008 also, except for an unprecedented increase in its non-admitted assets – an aspect of change in surplus that is largely under management discretion rather than being simply due to the occurrence of adverse events.

We have analyzed in detail GHMSI's results from 1995 through 2008. During that period, GHMSI's average adjusted net income as a percentage of total revenues was 3.74% with a very small standard deviation of 1.44%. This GHMSI-specific data should be more predictive of their future operating results than any other industry data.

Using GHMSI's actual results as a predictor of the future, and assuming a 500% ceiling on surplus, and assuming no management malfeasance, we find that **the probability of GHMSI incurring any after-tax adjusted net income loss in a given year is less than 1.2% and the possibility of GHMSI having after-tax adjusted net income losses in consecutive years to be less than .015%.** It should be noted that these recalculated probabilities of adjusted net income loss are only slightly higher than those noted in Chapter 3, Section II based on full historic surplus and are still well under the 2% uncertainty target that Milliman suggests is appropriate and with which we agree.

We analyzed the severity of three consecutive years' underwriting losses that GHMSI would need to simply reduce their current surplus level down to the 500% RBC level (i.e. spend down the excess). Since GHMSI's net income drives the change in surplus, our analysis takes into account the investment income and federal tax implications to back into the required underwriting loss sufficiently large enough to reduce the surplus. Over the period of 2004 to 2008, the excess surplus over 500% RBC averaged approximately $300 million or approximately $100 million per annum over the three year period. This simply says that in order to reduce the surplus, GHMSI's net losses must approximate $100 million in losses per year for three consecutive years. If you tax effect those losses and adjust for the investment income (assumed to be at the same level that GHMSI experienced over that same time period), the result is an ANNUAL underwriting loss of approximately $187 million for each of the three consecutive years. Even at this unrealistic level of loss, GHMSI would still have surplus above 500% RBC. This level of loss translates into an annual loss of 7 to 7.5% of revenue. In looking back at the historical operating gains/losses of all the Blues programs, since 1990, there appear to be only 4 instances where any of the Blues had even a single year with losses at least as large of this computed level (on a percent of revenue basis). And none of them ever had three consecutive years of loss at that level. In short, this further illustrates the remoteness of a catastrophic scenario for GHMSI.

V. Additional Comments

Comments Regarding BCBSA

In late 1999, the Blue Cross Blue Shield Association (BCBSA), of which GHMSI is a member, adopted higher capital standards for their members than are indicated in the NAIC model regulations and which most or all states and the District have adopted. The stated reasons for higher standards were: 1) to uphold the strength of the Blue brand; 2) to avoid the potential for joint and several liability of Blue carriers; and 3) to assure an early warning if a carrier is in danger of becoming inadequately capitalized, so that it may intervene before regulators. We simply state BCBSA's justification here; we take no position on the validity of any of these.

The higher BCBSA standards are:

- Termination of the Blues license when capital drops below 200% RBC. Although dropping below this threshold does not signal financial ruin or anything similar, the value of the license to a member company is large and dropping below this threshold is an event that should be avoided with a high degree of certainty, extending to the 98th percentile.

- Association notice and intervention triggered when capital drops below 375% RBC. The Association requires additional reporting from a Blues plan when its capital drops below this level.

- According to publicly found materials, BCBSA has a guideline for strong plans, which is set at 500% RBC.[39] Additionally, we note that BCBSA's Mr. Serota's post hearing letter neglects to mention anything about this "strong plan" threshold.

In sticking with the well documented two triggers, the 200% and 375% RBC levels, we make additional comments. According to BCBSA actuaries' analysis, the 375% threshold gives the Association sufficient warning (they estimated up to 2 years) before a company's surplus is likely to decline to the 200% level.[40] As this

[39] See New Jersey Department of Banking and Insurance, *Horizon Blue Cross Blue Shield New Jersey Foundation Plan Revised Response to Question 12*, available at http://www.state.nj.us/dobi/horizon/fp_question12.pdf

[40] See page 16 of the Lewin Group's January 25, 2007 report "Policy Options Regarding Surplus Accumulation in the Washington Health Insurance Market."

requirement is not a regulatory event (by definition surplus is still almost four times the level defined as the regulatory authorized control level), no public notification occurs when such an event takes place and there is no consequence to the carrier other than the additional association reporting requirement and subsequent advice and assistance from the association. Thus, while Blues management may not like the added reporting requirements, avoiding a surplus drop below this threshold could reasonably utilize a much lower level of certainty – perhaps as low a standard as "more likely than not" (*i.e.,* 51%). However, to better facilitate analysis of the Milliman approach we analyze GHMSI's surplus needs with respect to the 375% threshold at a much higher level – the 95th percentile.

It is important to note that Milliman did not test[41] what impact, if any, on the ability of GHMSI to be a going concern that breaching the 375% threshold would cause. Rather, they treat such a breach as a non-recoverable cataclysmic event and go no further in their analysis.

Finally, GHMSI is subject to District of Columbia legislation that establishes that, "A corporation shall engage in community health reinvestment to the maximum feasible extent consistent with financial soundness and efficiency."[42] This mandate makes it clear that community health reinvestment is a higher priority than accumulating surplus to a level well beyond that which would ensure financial soundness. Avoiding dropping surplus below the 200% RBC threshold is certainly consistent with being financially sound. However, avoiding an increased reporting requirement to an association (the 375% threshold) does not itself enhance financial soundness and should not therefore be a corporate objective taking precedence over the District of Columbia mandate to engage in community health reinvestment to the maximum feasible extent.

In establishing adequate surplus, it is necessary to look at the specific situation of a company. The RBC formula is a mechanical formula to determine a minimum level of capital based on certain parameters. The 200% threshold is the highest ratio in the regulatory construct and the formulaic results do not necessarily continue to be rational as significantly higher ratios to the basic authorized control level of capital are determined. Furthermore, since the formula is generic to all companies with similar categories of products, it does not have the sensitivity or ability to recognize that companies with similar numbers under the RBC formula may have very dissimilar risks.[43]

Implications of Health Care Reform

GHMSI expressed concern at the September 10th hearing with the unknown of how health care reform and particularly the future inability to underwrite individual insurance could impact their need for surplus. We believe that there are a number of reasons to believe that this will not have a significant impact on GHMSI. These include:

- All the reform proposals have a significant phase-in period.
- The proportion of GHMSI business that is individual business and would be affected is small (4.2% of 2008 premiums) and much smaller than for most other health insurers.

[41] See pages 227-228 of the September 10, 2009 hearing transcript.

[42] Medical Insurance Empower Amendment Act of 2008, D.C. Law 17-369, Sec.2(c) now codified at; D.C. Code § 31-3505.01

[43] Milliman also recognizes that the significant limitations of the RBC methodology in their report. Page 18 of Milliman states, "The use of RBC as a methodology, and of the values calculated from it obviously have significant limitations. The RBC formula is a structured and mechanical approach to trying to capture and quantify the risk characteristics for a wide range of different type of companies operating in a variety of environments, with changing circumstances over time."

- When Small Group market reform was implemented in the early 1990's, insurers predicted dire consequences would occur as health insurer's ability to underwrite small group business was taken away. However, the reality is that there was a significant expansion of coverage (more groups insured) in the small group arena, a very small impact on average premiums and insurers reaped more profits in small group than they had prior to the market reform.

Chapter 4 – Excess Surplus Implications for DC

Attribution of Surplus

Upon finding that GHMSI's surplus is excessive, the next step in the DISB review process is to determine what part of GHMSI's surplus is attributable to DC vs. other jurisdictions. In our Attribution Report we outline two approaches based on publicly available data that both conclude that approximately 60% of GHMSI surplus is attributable to DC. Milliman provides their own analysis based upon a non-standard approach and questionable data that suggest that 11.6% of GHMSI surplus is attributable to DC. In this chapter we will take a detailed look at the flaws in the Milliman approach and present even more data from publicly available sources, again confirming that approximately 60% of GHMSI surplus is attributable to DC.

DC vs. Non-DC Underwriting Gains/Losses

Milliman's key assumption in their attribution of surplus is that it should be based upon the residence of the insured[44]. This is inconsistent with the way insurance is regulated (the District of Columbia regulates insurance contracts entered into in the District as opposed to policies issued to residents of the District) and GHMSI's own annual financial statements filed with insurance regulators, which allocates premium by jurisdiction based on where the insurance contract is issued.

Milliman states[45] that one of the biggest judgments made in their process was the selection of their process which they acknowledge as non-standard[46]. Milliman further stated [47]in the September 22nd conference call that they did not independently determine that attribution based on residency was the most appropriate approach. Rather they state[48] that because Company told them their plan to return excess surplus would be based on subscriber residence that they concluded that attribution by residence was most appropriate.

Moreover, when asked if their surplus attribution process is consistent with premium refund processes due to low loss ratios or excess profits that are commonly required by various jurisdictions, Milliman said they'd have to do some research[49]. ARM actuaries have been involved in a number of such premium refund processes and know from experience that the Milliman attribution by residence is inconsistent with premium refund processes that occur in jurisdictions across the country.

Other significant concerns we have with the Milliman attribution approach include the following:

1) Milliman used underwriting gains/losses by product line independent of jurisdiction from the annual statement and then allocated the underwriting losses by product line based on premium for each product line by residency. We demonstrate in Chart 1 why there is a significant problem with this approach: GHMSI's underwriting margin by product line on DC non-FEP business has consistently had a significantly higher underwriting margin than the by product line underwriting gain/loss on non-DC business. Indeed, the DC underwriting margin has averaged over two and a half times the average non-DC underwriting margin for similar product lines during the time period of 2002 through 2008.

[44] See page 40 of the August 31, 2009 GHMSI Pre-hearing report.
[45] See September 22, 2009 conference call transcript pages 15-16.
[46] See September 22, 2009 conference call transcript page 16.
[47] See September 22, 2009 conference call transcript pages 4-5 and 28-29.
[48] See September 22, 2009 conference call transcript pages 4-5, 28-29 and 33.
[49] See September 22, 2009 conference call transcript page 17.

2) Milliman used the 2001 Schedule T as representative of 1999 and 2000 because they state[50] that schedules for those years were not available (note they have been posted on DISB website for some time and ARM used them to prepare our 9/10 attribution report). However, since 33% of 2001 non-FEP premium came from DC, while 44% of 1999-2000 non-FEP premium came from DC it is readily apparent that 2001 was not a good proxy for 2000 and prior. As the surplus from 2000 and prior represents 36% of total surplus at 12/31/08, this is a significant error.

3) Milliman stated[51] that they had no data for distribution of members by residence prior to 2005, so they assumed 2005 residency distribution for 2005 and prior. The likely unreasonableness of this is easily established from the GHMSI annual statements in either, Exhibit of Premiums, Enrollment and Utilization or from Schedule T. Both show that DC membership was higher percentage of contracts the further back you go. As the surplus from 2004 and prior represents 73% of total surplus at 12/31/08, this also is a significant error.

See Chart 1 on next page.

[50] See September 22, 2009 conference call transcript page 15.
[51] See September 22, 2009 conference call transcript page 14.

CHART 1 (data from GHMSI NAIC filings - Exhibits of Premiums, Enrollment & Utilization)

	DC Total	DC Excl FEP	Non-DC Total
2002-2008 Total Revenue (Excludes Investment Income)	10,842,117,866	2,165,850,304	5,102,723,989
2002-2008 incurred for Health Care Services	9,971,804,764	1,707,206,268	4,194,738,128
2002-2008 Claims Adjustment expenses	284,312,863	88,692,398	216,994,600
2002-2008 General Administrative expenses	406,280,931	241,543,505	574,253,451
2002-2008 Net Underwriting gain or loss	179,719,308	128,408,133	116,737,810
2002-2008 Net Underwriting % gain or loss	1.7%	5.9%	2.3%
2008 Total Revenue (Excludes Investment Income)	1,908,896,430	415,103,408	848,614,575
2008 incurred for Health Care Services	1,762,885,669	343,897,879	715,642,960
2008 Claims Adjustment expenses	49,397,723	17,543,965	36,087,981
2008 General Administrative expenses	75,661,293	53,031,792	108,319,414
2008 Net Underwriting gain or loss	20,951,745	629,772	(11,435,780)
2008 Net Underwriting % gain or loss	1.1%	0.2%	-1.3%
2007 Total Revenue (Excludes Investment Income)	1,808,271,279	368,790,524	1,020,210,784
2007 incurred for Health Care Services	1,663,437,498	289,836,457	843,906,212
2007 Claims Adjustment expenses	44,108,598	12,254,840	36,082,701
2007 General Administrative expenses	70,052,174	47,422,673	128,529,516
2007 Net Underwriting gain or loss	30,673,009	19,276,554	11,692,355
2007 Net Underwriting % gain or loss	1.7%	5.2%	1.1%
2006 Total Revenue (Excludes Investment Income)	1,612,672,862	316,915,474	844,921,017
2006 incurred for Health Care Services	1,490,308,711	258,861,298	687,107,733
2006 Claims Adjustment expenses	43,112,211	11,258,453	30,363,128
2006 General Administrative expenses	59,813,842	37,184,341	99,188,408
2006 Net Underwriting gain or loss	19,438,098	9,611,382	28,261,748
2006 Net Underwriting % gain or loss	1.2%	3.0%	3.3%
2005 Total Revenue (Excludes Investment Income)	1,543,422,802	292,483,946	714,021,348
2005 incurred for Health Care Services	1,414,619,859	227,466,091	600,391,471
2005 Claims Adjustment expenses	42,396,819	10,543,061	28,101,402
2005 General Administrative expenses	56,322,151	33,692,650	84,264,569
2005 Net Underwriting gain or loss	30,083,973	20,782,144	1,263,906
2005 Net Underwriting % gain or loss	1.9%	7.1%	0.2%
2004 Total Revenue (Excludes Investment Income)	1,439,694,314	277,810,041	593,045,939
2004 incurred for Health Care Services	1,311,236,788	199,599,877	459,255,889
2004 Claims Adjustment expenses	41,628,321	9,774,563	22,904,846
2004 General Administrative expenses	52,423,537	29,794,036	65,016,725
2004 Net Underwriting gain or loss	34,405,668	38,641,565	45,868,479
2004 Net Underwriting % gain or loss	2.4%	13.9%	7.7%
2003 Total Revenue (Excludes Investment Income)	1,303,088,428	255,003,380	588,106,256
2003 incurred for Health Care Services	1,194,389,270	191,170,283	480,404,935
2003 Claims Adjustment expenses	31,276,496	13,821,849	34,804,370
2003 General Administrative expenses	47,387,771	21,662,247	50,005,495
2003 Net Underwriting gain or loss	30,034,892	28,349,002	22,891,455
2003 Net Underwriting % gain or loss	2.3%	11.1%	3.9%
2002 Total Revenue (Excludes Investment Income)	1,226,071,751	239,743,531	493,804,070
2002 incurred for Health Care Services	1,134,926,969	196,374,383	408,028,928
2002 Claims Adjustment expenses	32,392,695	13,495,667	28,650,172
2002 General Administrative expenses	44,620,163	18,755,766	38,929,324
2002 Net Underwriting gain or loss	14,131,924	11,117,715	18,195,646
2002 Net Underwriting % gain or loss	1.2%	4.6%	3.7%

4) Chart 2 shows the impact of the consistently higher underwriting gain on DC business has resulted in a disproportionate amount of contributions from underwriting gains to surplus originating from the DC business. If only the non-FEP business is considered, over 50% of underwriting gains have originated from DC contracts despite DC contracts only accounting for less than 30% of the non-FEP premium. If the FEP business is also considered (as we believe it should be), over 60% of underwriting gains have originated from DC contracts.

CHART 2

	Net Underwriting Gain/Loss				
Years	DC Total	DC Total Excluding	Non-DC Total	DC w/FEP % of Gain	DC w/o FEP % of Gain
2008	20,951,745	629,772	(11,435,780)	100.0%	100.0%
2007	30,673,009	19,276,554	11,692,355	72.4%	62.2%
2006	19,438,098	9,611,382	28,261,748	40.8%	25.4%
2005	30,083,973	20,782,144	1,263,906	96.0%	94.3%
2004	34,405,668	38,641,565	45,868,479	42.9%	45.7%
2003	30,034,892	28,349,002	22,891,455	56.7%	55.3%
2002	14,131,924	11,117,715	18,195,646	43.7%	37.9%
2002-2008	179,719,308	128,408,133	116,737,810	60.6%	52.4%
2005-2008	101,146,825	50,299,852	28,782,229	77.3%	62.8%

Moreover, in recent years (2005-2008), despite an increasing percentage of GHMSI's premium originating from non-DC contracts, the percentage of underwriting gain coming from DC contracts has increased.

5) Attribution of investment income by Milliman was based off of premiums, not based on profitability. Given that DC contracts have been far more profitable than those from other jurisdictions, this skews investment income away from its proper allocation by source.

6) Milliman's approach relies on unaudited and incomplete data from Company's systems. Milliman had nothing to verify residency data given to them by company. Data by residence before 2005 was not even available to them.

7) Milliman did not have access to true underwriting gain and loss data by residency. They state[52] that they looked at other approaches for allocating "components of change in surplus to different factions" but ultimately based everything on allocations based on premium/fee income. As shown in Charts 1 and 2, this assumption is not a fair reflection of gain/loss by jurisdiction.

Proposed CareFirst Remedy Responses

Remedy Impact on Individual and Small Group Markets

- In the September 10th hearing, GHMSI management stated that they would spend excess surplus funds in a manner to reduce premiums for individuals and small groups in DC for a few years.

[52] See September 22, 2009 conference call transcript pages 23-26.

- If the excess surplus attributable to DC is 50-60% of the total excess surplus then the amount to be returned to policyholders is approximately $130-190 million (mid-point = $160 million).
- DC individual and small group premium in 2009 is expected to be about $440 million and is growing at the rate of about $50 million per year, thus projections for 2010-2012 are about $490 million, $540 million and $590 million for a total of $1.62 billion.
- Thus, the mid-point of projected surplus release would suggest an approximate 10% reduction in individual and small group premiums over the 3-year period. A 10% reduction in premiums over a 3 year period is not of such a magnitude as to significantly disrupt markets....

"Spring-back Considerations"

In the September 10th hearing, GHMSI management stated[53[1]] that reductions in premiums due to the release of excess surplus would be disruptive to the market and create hardships on policyholders in the years following the reduced premiums as there would be a spring-back effect. After further examination we do not find these concerns to be credible. Consider these key points:

1) During the period that the excess surplus is used to reduce premium policyholders will certainly not be disadvantaged because they will be paying less in premiums than they otherwise would (approximately 10% less over a 3-year period).
2) After the period ends during which excess surplus is reducing premium, policyholder premiums will be at the same levels they would have been had there been no time period of reduced premiums. I.e., the rollback period will not cause post-rollback premiums to be higher than they otherwise would have been.
3) Given that refunding excess surplus will result in policyholders in each and every year paying less than or equal to the premiums they would have paid without such refunds, it is hard to see how policyholders would be damaged.
4) If there is concern about the increase from a reduced premium in year 3 to normal premium levels in year 4, the 10% reduction does not necessarily need to be spread equally over the three years. It could instead be spread over the 3-year period in a pattern more like -14%, -10%, -7% or -16%, -10%, -5% and this would result in the same overall reduction for the 3 years and less of a 4th year change in premiums.
5) By spreading the reduction over several years GHMSI would have the opportunity to adjust their approach in the second and third years if for some reason the reduction in premiums in the first year had unanticipated consequences.

Chapter 5 - Conclusions

An educated reader of all the documents submitted in this process will surely understand that a prudent amount of surplus is necessary for an insurer to remain financially healthy. However, an egregious surplus amount, such as GHMSI's at 12/31/2008 is simply unnecessary. We assessed GHMSI's history and experience along with the corporate structure and business operations, including the products sold and the risks therein, and we must conclude the amount of surplus held by GHMSI is not optimal but rather grossly in excess of a reasonable amount to ensure financial soundness and efficiency.

Milliman stated[54] in October 2004, "A maximum level for surplus, by contrast, represents the point at which additional accumulation of funds does not contribute meaningfully to furthering the goal of ensuring the future viability of the company or protecting its members. By definition, exceeding such a level does not add to the well being of the company." It is our belief that GHMSI exceeds this maximum level. Moreover, lower levels of surplus would be, as we have shown, consistent with GHMSI's financial soundness and efficiency.

We suggest numerous areas where the calculation of the recommended target surplus range for GHMSI as determined by Milliman seem unduly conservative or in error. Likewise, we have concerns that GHMSI management intentionally lowered the reported RBC ratio at 12/31/08 due to the sudden material increase in non-admitted assets as of that date. Without such discretionary acts on the part of management the 2008 surplus for GHMSI would have increased for the 15th consecutive year.

We reject Milliman's fundamental premise of a multi-year underwriting cycle for the reasons stated in this report. Moreover, we calculate based on the last 14 years of GHMSI results the likelihood that the company would ever be subject to a multi-year loss cycle and establish mathematically that such a possibility is extremely remote and much less that the 2% likelihood threshold that both Milliman and the company say is the appropriate risk threshold upon which to base optimal surplus.

As part of our analysis, we calculate a target surplus range for GHMSI of 450% - 525%. This suggests that GHMSI's 12/31/08 surplus should be managed to approximately $365 to $427 million (based on the reported $81.3 million of RBC-ACL). Actual surplus reported at 12/31/08 was $687 million. Thus, we conclude that GHMSI has excess surplus at 12/31/08 of somewhere in the range of $260 to $322 million, assuming all the 2008 increase in non-admitted assets is appropriate.

Finally, we have reviewed Milliman's non-standard approach to attributing surplus and found that it is replete with "simplifying" assumptions that grossly distort the amount of surplus attributable to DC. Instead, we establish from data in GHMSI's annual statements that even if gains/losses from FEP are ignored (an approach with which we most strongly disagree) that over 50% of gains since 2002 have arisen from DC contracts.

In closing, it is our belief, based on the limited information available to ARM and DC Appleseed by DISB and our independent statistical analysis, that an optimal level of surplus consistent with financial soundness and efficiency for GHMSI is not the unrealistically wide range of 750-1050% concluded by Milliman but rather a narrower range of 450 to 525% of RBC-ACL. Such a narrower surplus range is consistent with the 12/31/08 surplus level for CareFirst of MD and the 500% RBC target established by the BCBSA for a plan's surplus to be deemed on a sound basis. Using the 450 to 525% target surplus range means that GHMSI held $260 to $322 million in redundant and excessive surplus at 12/31/08.

[54] Page 14 of the Supplement to Milliman Report on Highmark Surplus Target Range.

APPENDIX A – About Actuarial Risk Management

Emerging global provider of actuarial, employee benefit, and risk management services, Actuarial Risk Management (ARM), leads the way in developing the next generation of actuarial services. Companies may face similar challenges and comparable risks while sharing similar goals, but ARM recognizes that no two companies are exactly alike. Thus, the standard "one size fits all" approach traditionally utilized by many actuarial firms is both antiquated and ineffective. ARM will deliver more quality value at a more respectable cost than typical competitor's deliverables and costs.

ARM's actuarial and risk management experts provide our clients with a flexible hands-on partnership, which covers all risk sectors including: Insurance (P&C, Life, Annuity and Health), Health Care, Employee Benefits, Retirement and Banking. Increased accessibility to top industry experts across all disciplines is the cornerstone of this revolutionary business model. In addition to our highly skilled actuaries, compliance experts and risk managers found within ARM, clients benefit from the knowledge and expertise of the extensive network of industry experts located globally. The ARM Network, which consists of more than a dozen core member firms, has over 50 highly skilled consulting actuaries and risk experts averaging over 20 years experience across all disciplines. ARM seamlessly oversees the delivery of all risk management and actuarial services by coordinating the appropriate resources for each project based on complexity and client needs.

ARM's successful business model and hands-on approach continues to earn the trust and respect of a growing number of public and private organizations. ARM is an independent member of the BDO Seidman Alliance and since 2006 has been the sole provider of actuarial services within BDO Seidman, which is the U.S. member of BDO - the fifth largest global accounting and consulting firm.

ARM's capabilities also include granting customers access to a broad range of non-actuarial services, ranging from captive services, insurance operations, retirement administrators, asset valuation experts, pharmacy benefit manager (PBM) specialists, health care cost specialists, life settlement underwriters to employee benefit strategists.

ARM brings the experts to the clients using an innovative business model that stresses no cookie-cutter deliverables at a price point that is more reasonable for access to the industry's subject matter experts.

APPENDIX B – ARM's Consulting Team

Corwin K. Zass ASA, MAAA, FCA
Principal & Consulting Actuary

In his 15 plus years as an actuary, Mr. Zass evolved from working in a multi-line insurance organization as Chief Actuary to a Consulting Actuary of a regional firm to principal of Actuarial Risk Management. Mr. Zass directs all engagements and conducts peer reviews for actuarial and risk management assignments.

As a qualified actuary, Mr. Zass has extensive knowledge of Probability & Statistics, Financial Mathematics, Micro and Macro Economics, Construction of Actuarial Forecasting Models, Advanced Finance, and Financial Reporting. Over the years, Mr. Zass consulted on a variety of assignments across the insurance and health sector, including projects for fraternal, mutual, and stock insurance companies, ranging from those acting in the capacity as direct carriers and reinsurers. Regardless of the client, he strives to translate complex actuarial commentary into easy to understand language for his clients. His uncanny abilities to dissect financial results and offer unique strategic solutions to mitigate risk only enhances his extensive financial oversight skills, including audit experience, of insurance sector's technical provisions (reserves) and capital on the balance sheet. Mr. Zass has aided various sized insurers on financial risk management; specifically, ALM, capital management, interest rate risk, asset adequacy testing. He consults insurance companies on both product and financial matters relating to their individual and group portfolios.

Mr. Zass graduated with a BSc degree from the University of Manitoba and attained his Associateship from the Society of Actuaries shortly after completing his post secondary level education. He is a Member of the American Academy of Actuaries and a Fellow of the Conference of Consulting Actuaries along with volunteering his time to various American Academy of Actuaries Working Groups. He speaks regularly at BDO Seidman partner meetings on actuarial matters.

Mark E. Shaw FSA, CERA, MAAA, FLMI
Consulting Actuary

Mr. Shaw provides consulting services to ARM, through his consulting position with the ARM Network firm, United Health Actuarial Services. He is a leader in the firm's medical and supplemental insurance practice and also provides expert witness and risk management services.

Mr. Shaw, in his 30th year of working in the life and health insurance industry, has held top actuarial and risk management positions at three Fortune 200 insurers. Immediately prior to his current consulting position, he was Senior Vice President of Strategic Development at Assurant, where he advised on the supplemental health business, evaluated and developed business plans for international opportunities for Assurant's health products and explored M&A opportunities. Prior to that, he was SVP and Chief Actuary of Assurant's group medical business. Mr. Shaw also worked as the global head of risk management at an international insurer.

Mr. Shaw is a Fellow of the Society of Actuaries, a Chartered Enterprise Risk Analyst, a Fellow of the Life Management Institute and a Member of the American Academy of Actuaries. He received a B.B.A. in Actuarial Science from Georgia State University in Atlanta, Georgia. For 3 years he led the Society of Actuaries' Enterprise Risk Management sub-group of the Risk Management Task Force.