November 24, 2014

The Honorable Chester A. McPherson, Acting Commissioner
District of Columbia Department of Insurance, Securities and Banking
810 First Street NE
Suite 701
Washington, D.C. 20002

Re: Surplus Review and Determination for Group Hospitalization and
Medical Services, Inc.

Dear Acting Commissioner McPherson:

Pursuant to your Order No. 14-MIE-005, the rebuttal period in
the matter of Surplus Review and Determination for Group Hospitalization and Medical Services, Inc. (GHMSI) closed on
November 7. However, we now ask leave to submit this brief response
to new information that Milliman presented for the first time in its
November 7 rebuttal filing addressing one of the most critical issues in
this proceeding.

The new information relates to Milliman’s assumptions underlying the equity portfolio asset values (EPAV) factor in the stochastic model. Because Rector relied on Milliman’s assumptions and probability distribution for that factor, and because that factor contributed more to Rector’s surplus recommendation than all the other model factors combined (except for rating adequacy and fluctuation (RAAF)), both we and the Commissioner submitted requests asking for an explanation of how the probability distribution for that factor was developed. But until Milliman submitted its
rebuttal on November 7, that information was not provided.

Because GHMSI’s permissible surplus will vary by many millions of dollars depending on how the Commissioner uses the EPAV factor in the Modified Milliman Model, and because we did not have an earlier opportunity to address Milliman’s November 7 explanation of the use of that factor in the model, we ask for leave to briefly address that explanation now.
1. **Earlier Failures to Explain the EPAV Factor**

Even though in several of our earlier data requests we sought information from Milliman and Rector explaining the use of the EPAV factor in the Modified Milliman Model,\(^1\) by the time of the Commissioner’s hearing on June 25, that information had not been provided. As Mr. Shaw said in his pre-hearing report, “Milliman and Rector have not disclosed how the EPAV was derived, whether or how it was validated, how the probability distributions were calculated, or the reasoning for the increase from previous reports.” Mark E. Shaw, *Report to the D.C. Department of Insurance, Securities and Banking Group Hospitalization and Medical Services Inc. MIEAA Surplus Review* 28 (June 10, 2014).

After the hearing, the Commissioner asked Rector to “describe in detail the data underlying the equity portfolio factor distribution, as used in the Milliman Model.” Third Scheduling Order, *In the Matter of Surplus Review & Determination for Grp. Hospitalization & Med. Servs., Inc.*, Order No. 14-MIE-005 exh. A, at 3 (D.C. Dep’t of Ins., Secs. & Banking Aug. 7, 2014). The Commissioner also asked Rector to provide for each of the factors in the model—including the EPAV—“a brief description of how you arrived at the conclusion that the probability distribution and associated surplus impacts were reasonable and ‘middle of the fairway assumptions.’” *Id.* at 2.

But in its response, Rector offered no data to explain the Milliman probability distribution it adopted for the EPAV factor. Nor did Rector explain why its use of that distribution was consistent with a “middle of the fairway assumption.” Instead, Rector said only that in the pro forma model it assumed an overall annual return to GHMSI’s total investment portfolio of 3.75%, and that the EPAV factor was “used in the stochastic modeling process to capture potential deviation from the baseline investment earnings assumption.” Rector & Assoes., *Questions for/Information Requested from Rector* 18–19 (Aug. 27, 2014). Yet Rector nowhere explained how it derived its 3.75% baseline assumption, noting only that “GHMSI’s investment portfolio is weighted more toward bonds and other such investments than towards equities.” *Id.* at 18. More importantly, it never attempted to justify the significant upward impact Milliman’s EPAV probability distribution had on the ultimate surplus requirement and whether that impact was reasonable.

2. **Milliman’s New Argument for its EPAV Factor**

In the face of this failure to provide information sought by DC Appleseed and specifically requested by the Commissioner, in its November 7 rebuttal Milliman for the first time offered data to explain the EPAV probability distribution relied on by Rector in the Modified Milliman Model. In that rebuttal, Milliman made three new disclosures.

First, Milliman said that its probability distribution for EPAV—which was adopted by Rector without change—“reflects an underlying assumption that the distribution of variations in asset values over a three-year period will be consistent with the distribution of three-year price changes in the Standard & Poor’s (S&P) index for the period from 1/1/1950 through 4/1/2011 of

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\(^1\) See, e.g., Letter from Walter Smith et al. to Chester A. McPherson 2 (Mar. 14, 2014) (requesting the data on which Rector relied to support the 70-percentage point increase in surplus need due to the RAAF factor in its 2013 report versus its 2009 report); Letter from Walter Smith et al. to Chester A. McPherson att. A at 3 (Feb. 19, 2014) (noting that the “discrepancy between modeling results and historical experience underscores how important it is to examine the assumptions that yielded such a result”); Letter from Walter Smith et al. to Chester A. McPherson att. A at 1 (Jan. 29, 2014) (requesting all documents used by Rector to determine the probability distribution for each of the 12 factors).
return.” Milliman, Milliman Response to June 10, 2014 Reports by D.C. Appleseed and Mark E. Shaw, FSA, MAAA, CERA, FLMI 16 (Nov. 6, 2014) [hereinafter Milliman Rebuttal].

Second, Milliman stated for the first time that “[i]n our modeling we have reflected underlying average rates of return of 7.0% for equities.” Id. at 15. And third, it also stated for the first time that the pro forma assumed return of 3.75% for GHMSI’s total investment portfolio assumed a return of “3.5% for the bond portfolio.” Id. In addition, Milliman reproduced in its rebuttal the probability distribution that Rector used in the model. That distribution shows the most likely outcome for the equity portfolio factor to be a negative 3%. Id. at ch. B-1, at 16. With this new information, it is now possible to understand and respond to the claimed basis for the EPAV factor relied on by Rector in the model.


A. Milliman’s EPAV Distribution is Not Middle of the Fairway

As shown by Mr. Shaw in his attached statement (Shaw Statement), there is a complete disconnect between Milliman’s probability distribution for EPAV and the actual returns to equities during the period Milliman says it relied on to justify that distribution. During the 1950–2011 period Milliman now cites, the average annual return to equities based on the S&P 500 historical record was 7.35%, for an average three-year return of 22%, and grouping the historical results in a probability distribution similar to Milliman’s, the most likely three-year return during that period was 18%. Shaw Statement at 4.

Notwithstanding these data from the specific period Milliman now cites, Milliman’s probability distribution for the EPAV factor lists the most likely outcome as a negative 3%, which Mr. Shaw shows is equivalent to projecting that the total most likely return to GHMSI’s equity portfolio for the period 2012–2014 was 0%. This projected outcome is such a dramatic departure from the “middle of the fairway” approach Rector said the distribution should meet that it predictably and inevitably led to a significant overstatement of GHMSI’s needed surplus. It did so because it vastly overstated the risk to GHMSI’s equities based on the very S&P 500 historical record (1950–2011) Milliman now states it relied on to assess that risk. We next show the impact of that overstatement.

B. How the EPAV Distribution is Used in the Model

As Milliman said in its November 7 rebuttal, the purpose of assessing risk to equities though the EPAV factor “is to reflect the risk that the actual rate of return [on GHMSI’s equity holdings] deviates” from the rate Milliman projected for those equities in the pro forma. Milliman Rebuttal at 17. We learned for the first time in Milliman’s Rebuttal that the annual rate of return it projected for GHMSI’s equity portfolio for 2012–2014 is 7%. Id. at 15. As a consequence, as Milliman said in its rebuttal, the question before the Commissioner is whether the EPAV factor as used by Rector in the model fairly “represents the potential impact on surplus from the assumed 7.0% underlying rate of return on equities, due to fluctuations in market values during the projection period [2012–2014].” Id.

In order to show why the Milliman/Rector probability distribution does not meet that requirement, Mr. Shaw explains in his attached statement how the EPAV factor was actually used by
Rector. Even though Milliman is correct that that factor is designed to assess risk to the expected 7% annual equity return, in practice the factor is not applied to increase surplus to make up for downside risk to the projected 7% equity return.

Instead, as the title to Milliman’s own EPAV probability distribution chart indicates, id. at ch. B-1, at 16, the EPAV factor calculates a “3-year surplus change as a percentage of non-FEP insured premium” revenue. In other words, as Mr. Shaw explains, because GHMSI’s annual non-FEP premium revenue is more than six times as large as its equity portfolio ($2.4 billion versus $400 million), any overstatement in equity risk becomes multiplied more than six times over when it is applied to non-FEP premium revenue. Shaw Statement at ch. A, at 1, 2.

This means that when Milliman used a negative 3% as the most likely outcome under the EPAV factor, because the negative 3% is applied to non-FEP premium revenue rather than the equity portfolio revenue, it was the equivalent of projecting a reduction in equity returns of a figure in excess of 18% over the 2012–2014 period. And since the pro forma projection was for 7% per year, according to Milliman’s rebuttal, this means that Milliman (and Rector) believed that the most likely equity returns to GHMSI for the period was close to 0%. Id. at 4–5 (explaining this calculation).

This plainly cannot be reconciled with the actual most likely return (grouping the historical results in a probability distribution similar to Milliman’s) during the 1950–2011 period being 18% in a three-year period and the average three-year return being 22%. Moreover, the unreasonableness of the Milliman probability distribution is confirmed by the fact that the actual return to GHMSI’s equity portfolio in 2012 was 19.4% and in 2013 was 16.9%. The unreasonableness of the distribution is further compounded by the fact that the actual S&P 500 return over the period January 1, 2012 through November 20, 2014 was a total of 62.9%.

C. Mr. Shaw’s Recalculation of the EPAV Distribution and the Impact on Surplus

Accordingly, Mr. Shaw constructed a new probability distribution based on actual returns for the S&P 500 for the period Milliman cites in its rebuttal (1950–2011). As Mr. Shaw shows, using a probability distribution based on that period should have resulted in the most likely equity return being 18%, not the 0% projected by Milliman. Mr. Shaw shows how that probability distribution should have been constructed, rather than the one in Milliman’s Rebuttal. Id. at ch. C, 3.

Mr. Shaw also shows that had his revised EPAV probability distribution been used in the Modified Milliman Model, Rector would have produced a very different surplus result. Specifically, had Rector used a probability distribution built around a most likely outcome of 18% equity return for the 2012–2014 period, and had Rector changed nothing else in the model, at the 98% confidence level for avoiding 200% RBC, Rector would have recommended not a 958% RBC, but an 880% RBC. Moreover, had Rector used a confidence level of 95%, 93%, or 90%, it would have recommended a surplus of 714%, 647%, and 578%, respectively. Id. at ch. E, at 5. And if Rector had used an EPAV factor based on the most likely equity returns along with the premium growth factor

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2 Rector made this explicitly clear earlier, explaining that each risk factor “consists of a series of probabilities that the risk or contingency event will result in a specified percentage change in GHMSI’s surplus, expressed as a percentage of GHMSI’s non-FEP insured premium.” Memorandum from Sarah Schroeder to Phillip Barlow 1 (May 12, 2014) (emphasis added).
as suggested by the Commissioner in his October 3 request to Rector, Rector would have estimated RBCs of 774%, 615%, 553%, and 482% at the 98%, 95%, 93%, and 90% confidence levels, respectively. Mr. Shaw finally shows the RBCs Rector would have computed if, in addition to correcting the EPAV distribution, Rector had also used the lower premium growth factor (5.4%) suggested by Mr. Shaw: 747% RBC at 98% confidence, 590% RBC at 95% confidence, 529% RBC at 93% confidence, and 459% RBC at 90% confidence.

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For all these reasons, we believe Milliman's belated disclosure has revealed significant errors in Rector's calculation of GHMSI's required surplus.

Sincerely,

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cc: Mr. Philip Barlow, Associate Commissioner for Insurance
    Mr. Adam Levi, Assistant Attorney General