Analysis of Medicare Supplement Rate Refund Formula and Recommended Changes

Kenneth Clark, MAAA, FSA
Chairperson, Medicare Supplement Work Group

November 15, 2014

Agenda

- NAIC charge

- Executive summary and recommendations

- Caveats and limitations

- Questions

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

NAIC Charge to the Work Group

- **1st Priority**
  - Evaluate current formula against alternative formulas specific to issue age and non-issue age ("attained age") rate structures
  - Provide a recommendation for a revised formula

- **2nd Priority**
  - Evaluate the impact of pooling across all plans within type within a state
  - Provide a recommendation regarding pooling

- **3rd Priority**
  - Evaluate the impact of alternative tolerance formula and levels
  - Provide a recommendation regarding a revised tolerance formula

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™
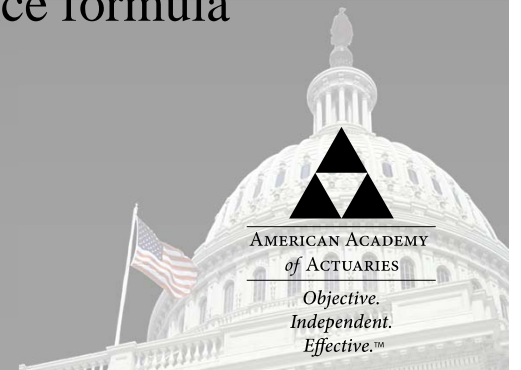
Executive Summary and Recommendations

- The work group analyzed Medicare supplement refund filing data provided by the NAIC for four states (FL, OR, VA, WA)

- This data was supplemented, to the extent possible, with rate structure indicators (issue age vs. attained age) in order to allow an analysis at the rate structure level

- The work group analyzed how the data fit against alternative input assumptions

  - Assumptions consisted of premium trend, termination rates, and durational loss ratios

  - Each assumption scenario corresponds to a resulting refund formula

- Through discussion and analysis, the work group derived an initial range and subsequent set of assumption scenarios for consideration as alternatives to the current refund formula

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Executive Summary and Recommendations (cont.)

- Benchmarks should vary by rating structure:

  - The work group recommends two revised refund formulas: One formula applicable to issue age rate structures and another applicable to attained age rate structures

  - These refund formula factors are identified in Appendix 1a (individual forms) and 1b (group forms)

  - It should be noted that, with respect to issue age business, this would reflect durational loss ratios below 65 percent for the first four policy durations

  - The revised formulas are presented all the way to duration 30 if the NAIC prefers to implement factors beyond year 15. The work group recommends 30-year benchmark factors.

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Executive Summary and Recommendations (cont.)

- Pooling across plans:

  - The analysis indicates that pooling results in an insignificant change in refunds for issue age business and the elimination of refunds for attained age business.

  - The elimination of refund results from loss ratio subsidization across plans

  - While pooling across plans would result in an increase in data credibility (and corresponding lower levels of tolerance) for most companies (noting that a few companies and states may already be fully credible for all plans), that does not appear to produce greater refunds

  - There are merits to either choice and the report provides background of analysis for the NAIC to consider. Ultimately, the work group cannot make any recommendation with respect to pooling across plans.

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Executive Summary and Recommendations (cont.)

- **Revise the tolerance formula**

  - Actual credibility would vary widely based on the plan, assuming the base remains the number of life-years

  - Without changing the initial tolerance level or the full credibility level, the work group recommends a geometric progression tolerance formula

  - Refer to Appendix 2 for the geometric progression tolerance formula

  - While the geometric progression formula is more complex than the current formula and while the impact is not dramatic based on the analysis, it provides a smoother progression of tolerance in consecutive reporting years as a company's business matures

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Executive Summary and Recommendations (cont.)

- Avoids the large steps in the current formula that cause periods of no refunds followed by a significant refund in the year when the tolerance adjustment drops to the next level

- Also provides more relative consistency and equity between various companies with different exposure levels

- In addition, a smoother progression is more appropriate from a theoretical perspective

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Caveats and Limitations

- Refunds cannot be analyzed prior to 2005; therefore, the work group excluded past refunds in its analysis

- Records were excluded that showed first year premium inconsistencies across reporting years or that were not contained for all reporting years

- Results reflect the underlying data set created by the NAIC and assumptions used

- With the exception of Florida records, rate structure information to the extent available was produced by MIB through polling of the applicable companies. Florida records were all assigned an issue age rate structure.

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™
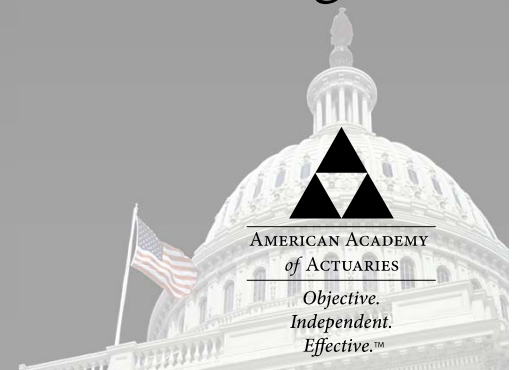
Caveats and Limitations (cont.)

- Individual company results will not necessarily follow aggregate patterns of the underlying data

- Note that the data represents a much higher representation of issue age rated business (due to the presence of Florida records and only three other states) than would be the case of a dataset representative of the nation as a whole

- The underlying data set includes only 43 records with reported refunds out of a total of 6,436. It is likely that any analysis results of refund levels need to be viewed with an understanding of the inherent variability of this limited data set.

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Questions

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Staff Contact Information

Tim Mahony

Health Policy Analyst (State)

American Academy of Actuaries

1850 M St., NW (Suite 300)

Washington, DC 20036

202-223-8196

mahony@actuary.org

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Appendices

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Appendix 1a

Appendix 1a
American Academy of Actuaries Medicare Supplement Work Group
Recommended Revised Refund Factors - Individual Forms

	Attained Age					Issue Age			
EP Factor c	Cumulative Loss Ratio (e)	EP Factor (g)	Cumulative Loss Ratio (i)	Year	EP Factor c	Cumulative Loss Ratio (e)	EP Factor (g)	Cumulative Loss Ratio (i)
2.840	0.609	0.000	0.000	1	2.840	0.495	0.000	
4.421	0.620	0.000	0.000	2	4.430	0.516	0.000	
4.421	0.620	1.418	0.655	3	4.430	0.516	1.443	
4.421	0.620	2.713	0.657	4	4.430	0.516	2.776	
4.421	0.620	3.896	0.658	5	4.430	0.516	4.008	
4.421	0.620	4.977	0.659	6	4.430	0.516	5.145	
4.421	0.620	5.964	0.659	7	4.430	0.516	6.197	
4.421	0.620	6.866	0.659	8	4.430	0.516	7.168	
4.421	0.620	7.690	0.659	9	4.430	0.516	8.066	
4.421	0.620	8.442	0.659	10	4.430	0.516	8.896	
4.421	0.620	9.130	0.659	11	4.430	0.516	9.662	
4.421	0.620	9.758	0.659	12	4.430	0.516	10.370	
4.421	0.620	10.331	0.659	13	4.430	0.516	11.024	
4.421	0.620	10.855	0.659	14	4.430	0.516	11.629	
4.421	0.620	11.105	0.659	15	4.430	0.516	11.919	
4.421	0.620	11.334	0.659	16	4.430	0.516	12.188	
4.421	0.620	11.771	0.659	17	4.430	0.516	12.704	
4.421	0.620	12.171	0.659	18	4.430	0.516	13.181	
4.421	0.620	12.536	0.659	19	4.430	0.516	13.622	
4.421	0.620	12.869	0.659	20	4.430	0.516	14.029	
4.421	0.620	13.174	0.659	21	4.430	0.516	14.405	
4.421	0.620	13.452	0.659	22	4.430	0.516	14.753	
4.421	0.620	13.706	0.659	23	4.430	0.516	15.074	
4.421	0.620	13.938	0.659	24	4.430	0.516	15.371	
4.421	0.620	14.150	0.659	25	4.430	0.516	15.645	
4.421	0.620	14.344	0.659	26	4.430	0.516	15.899	
4.421	0.620	14.521	0.659	27	4.430	0.516	16.133	
4.421	0.620	14.682	0.659	28	4.430	0.516	16.349	
4.421	0.620	14.830	0.660	29	4.430	0.516	16.549	
4.421	0.620	14.965	0.660	30	4.430	0.516	16.734	

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™

Appendix 1b

		Attained Age					Issue Age		
Year	**EP Factor c**	**Cumulative Loss Ratio (e)**	**EP Factor (g)**	**Cumulative Loss Ratio (i)**	**Year**	**EP Factor c**	**Cumulative Loss Ratio (e)**	**EP Factor (g)**	**Cumulative Loss Ratio (i)**
1	2.840	0.703	0.000	0.000	1	2.840	0.571	0.000	0.000
2	4.421	0.715	0.000	0.000	2	4.430	0.595	0.000	0.000
3	4.421	0.715	1.418	0.756	3	4.430	0.595	1.443	0.691
4	4.421	0.715	2.713	0.758	4	4.430	0.595	2.776	0.711
5	4.421	0.715	3.896	0.759	5	4.430	0.595	4.008	0.726
6	4.421	0.715	4.977	0.760	6	4.430	0.595	5.145	0.738
7	4.421	0.715	5.964	0.760	7	4.430	0.595	6.197	0.747
8	4.421	0.715	6.866	0.760	8	4.430	0.595	7.168	0.754
9	4.421	0.715	7.690	0.760	9	4.430	0.595	8.066	0.761
10	4.421	0.715	8.442	0.761	10	4.430	0.595	8.896	0.766
11	4.421	0.715	9.130	0.761	11	4.430	0.595	9.662	0.770
12	4.421	0.715	9.758	0.761	12	4.430	0.595	10.370	0.774
13	4.421	0.715	10.331	0.761	13	4.430	0.595	11.024	0.776
14	4.421	0.715	10.855	0.761	14	4.430	0.595	11.629	0.779
15	4.421	0.715	11.105	0.761	15	4.430	0.595	11.919	0.780
16	4.421	0.715	11.334	0.761	16	4.430	0.595	12.188	0.781
17	4.421	0.715	11.771	0.761	17	4.430	0.595	12.704	0.782
18	4.421	0.715	12.171	0.761	18	4.430	0.595	13.181	0.783
19	4.421	0.715	12.536	0.761	19	4.430	0.595	13.622	0.785
20	4.421	0.715	12.869	0.761	20	4.430	0.595	14.029	0.786
21	4.421	0.715	13.174	0.761	21	4.430	0.595	14.405	0.786
22	4.421	0.715	13.452	0.761	22	4.430	0.595	14.753	0.787
23	4.421	0.715	13.706	0.761	23	4.430	0.595	15.074	0.788
24	4.421	0.715	13.938	0.761	24	4.430	0.595	15.371	0.789
25	4.421	0.715	14.150	0.761	25	4.430	0.595	15.645	0.789
26	4.421	0.715	14.344	0.761	26	4.430	0.595	15.899	0.790
27	4.421	0.715	14.521	0.761	27	4.430	0.595	16.133	0.790
28	4.421	0.715	14.682	0.761	28	4.430	0.595	16.349	0.790
29	4.421	0.715	14.830	0.761	29	4.430	0.595	16.549	0.791
30	4.421	0.715	14.965	0.761	30	4.430	0.595	16.734	0.791

Appendix 1b
American Academy of Actuaries Medicare Supplement Work Group
Recommended Revised Refund Factors - Group Forms

AMERICAN ACADEMY
of ACTUARIES
Objective.
Independent.
Effective.™

Appendix 2

Alternative Tolerance Adjustment

Life Years Exposed Since Inception (LYE)	Tolerance
Fewer than 500	Unlimited (no credibility)
500-9,999	$((15{,}000 - LYE)/14500)^{2.3}*0.155$
10,000+	0%

Here is a representation of how this alternative compares to the current values:

Benchmark Tolerance Values

AMERICAN ACADEMY
of ACTUARIES

Objective.
Independent.
Effective.™