ACTUARIAL STANDARDS BOARD

**Actuarial Standard**
**of Practice**
**No. 40**

# Compliance with the NAIC Valuation of Life Insurance Policies Model Regulation with Respect to Deficiency Reserve Mortality

**Developed by the**
**Task Force on XXX Regulation of the**
**Life Committee of the**
**Actuarial Standards Board**

**Adopted by the**
**Actuarial Standards Board**
**December 2000**
**Updated for Deviation Language Effective May 1, 2011**

**(Doc. No. 157)**

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## APPENDIXES

December 2000

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Valuation of Life Insurance Policies

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 40

This booklet contains the final version of ASOP No. 40, *Compliance with the NAIC Valuation of Life Insurance Policies Model Regulation with Respect to Deficiency Reserve Mortality*.

## Background

In March 1999, the National Association of Insurance Commissioners (NAIC) adopted a revised version of the Valuation of Life Insurance Policies Model Regulation (hereinafter the *Model*), often referred to as "Regulation XXX." The *Model* specifies an effective date of January 1, 2000, and does not apply to policies issued prior to the effective date. Certain types of plans are not subject to the *Model.*

The *Model* specifies that the 1980 Commissioners' Standard Ordinary mortality tables (hereinafter the 1980 CSO valuation tables) are to be used as the minimum mortality standard for basic reserves. The *Model* also includes several tables of select factors that may be applied to the 1980 CSO valuation tables during the first segment, as defined in the *Model*, for both basic reserves and deficiency reserves. In addition, the *Model* allows the appointed actuary to apply certain percentages (hereinafter X factors) to these select factors to modify the mortality basis for deficiency reserves for the first segment. The choice of the X factors is subject to certain limiting parameters and tests that are specified in the *Model*.

The *Model* specifies that if any X factor for any policy in a company is less than 100%, then the standard actuarial opinion and memorandum for the company must be based on asset adequacy analysis, and, in addition, the appointed actuary must annually opine, for all policies subject to the *Model*, as to whether the mortality rates resulting from application of the X factors meet the requirements of the *Model*. The *Model* provides that this additional opinion shall be supported by an actuarial report, subject to appropriate actuarial standards of practice promulgated by the Actuarial Standards Board.

## Critical Issues

A key issue for the appointed actuary is ensuring that the X factors comply with the limiting parameters and tests specified in the regulation, based on anticipated mortality during the first

segment. This task is complicated by the number of different underwriting classes and plans for which X factors may be determined. There is an additional danger that current X factors would need to be increased at some future date, with the possibility of resultant large reserve increases and shocks to surplus.

Sources of experience mortality data used as the basis for anticipated mortality are very important, especially for smaller companies and for newer products or mortality classes with no significant mortality experience upon which to draw. The appointed actuary will need to consider how to treat data from different sources. Section 3.5.2 includes guidance as to the hierarchy of preference for experience on which to base anticipated mortality. Data from reinsurers are included as an acceptable source of data, among others, if the data are relevant and needed to develop a credible basis for anticipated mortality.

The goal of demonstrating confidence in the anticipated mortality underlying the X factors is very important. There are no specific rules to follow in the preparation of this demonstration. However, approval of X factors by some state regulators will likely depend on their satisfaction with these demonstrations and the implied amount of professionalism used in making the X factor determinations. The form and content of the supporting actuarial report can be significant to the regulator in considering approval of the X factors.

The use of mortality experience net of reinsurance was considered. The task force reached the conclusion that a company's own mortality experience on direct plus assumed business should be used before any reduction of exposure or claims on reinsurance ceded. This conclusion is stated in section 3.4.

Exposure Drafts

The first exposure draft of this standard was issued in September 1999 with a comment deadline of March 31, 2000. The Task Force on XXX Regulation carefully considered the fifteen comment letters received. A summary of the substantive issues contained in these comment letters and the task force's responses are in appendix 2 of the second exposure draft of this standard.

The second exposure draft was issued in June 2000 with a comment deadline of October 15, 2000. Four comment letters were received. The Task Force on XXX Regulation carefully considered these comment letters and made the following changes to the final ASOP:

1. In section 3.4, Creation of X Factor Classes, the task force split the paragraph dealing with reinsurance into two paragraphs to clarify the guidance with respect to reinsurance assumed and reinsurance ceded. On reinsurance assumed, the task force clarified that separate X factor classes should be considered if anticipated mortality on assumed business is materially different from that on direct business.

2. In section 3.5.2, Deriving Anticipated Mortality, the task force clarified that reinsurance should be considered in deriving anticipated mortality and that the anticipated mortality on reinsured business should exclude the effect of experience refunds or other adjustments contained in the reinsurance agreements.

3. In appendix 1, under the section on assessment of anticipated mortality, the cautionary language associated with the discussion on hypothesis testing was rewritten and moved to the end of the section as general guidance to the appointed actuary in applying any approach.

For a summary of the substantive issues contained in these comment letters, please see appendix 2. The task force and Life Committee thank all those who commented on the first and second exposure drafts.

The ASB voted in December 2000 to adopt this standard.

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# ACTUARIAL STANDARD OF PRACTICE NO. 40

## COMPLIANCE WITH THE NAIC VALUATION OF LIFE INSURANCE POLICIES MODEL REGULATION WITH RESPECT TO DEFICIENCY RESERVE MORTALITY

## STANDARD OF PRACTICE

### Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—The purpose of this actuarial standard of practice (ASOP) is to provide guidance to appointed actuaries with respect to annual opinions and supporting actuarial reports as to whether certain mortality rates for minimum reserves used to determine deficiency reserves meet the requirements of the National Association of Insurance Commissioners (NAIC) *Valuation of Life Insurance Policies Model Regulation*, as amended by the NAIC in March 1999 (hereinafter the *Model*). On plans of life insurance elected by the company, the *Model* allows the appointed actuary to adjust certain mortality rates to reflect anticipated mortality, without recognition of mortality improvement beyond the valuation date, for use in calculating deficiency reserves. This standard provides guidance to the appointed actuary in selecting the adjustments to these mortality rates and in assessing whether the rates meet the requirements of the *Model*.

1.2 Scope—This standard applies to appointed actuaries complying with the regulatory requirements governing the mortality rates used for purposes of calculating deficiency reserves on certain plans of insurance prepared in accordance with the *Model*.

The scope of this standard does not include compliance with state regulations that differ materially from the *Model* with regard to the issues addressed in this standard. Appointed actuaries complying with requirements of a regulation that differs materially from the *Model* should consider the guidance in this standard to the extent that it is appropriate.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the appointed actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard will be effective for all statements of actuarial opinion provided for reserves with a valuation date on or after May 1, 2001.

## Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Anticipated Mortality—The appointed actuary's assumption about the mortality to be experienced in the future on a group of policies.

2.2 Antiselection—The actions of individuals, acting for themselves or for others, who are motivated directly or indirectly to take financial advantage of the risk classification system.

2.3 Appointed Actuary—Any individual who is appointed or retained in accordance with the requirements set forth in the model NAIC *Actuarial Opinion and Memorandum Regulation*.

2.4 Basic Reserves—Reserves calculated in accordance with section 5 of the model NAIC *Standard Valuation Law*.

2.5 Contract Segmentation Method—The method of dividing the period from issue to mandatory expiration of a policy into successive segments, with the length of each segment being defined as set forth in section 4 of the *Model* and using the assumptions as set forth in section 4 of the *Model*.

2.6 Credibility—A measure of the predictive value in a given application that the actuary attaches to a particular body of data (predictive is used here in the statistical sense and not in the sense of predicting the future).

2.7 Deficiency Reserves—The excess, if greater than zero, of minimum reserves calculated in accordance with section 8 of the model NAIC *Standard Valuation Law* over basic reserves.

2.8 Full Credibility—The level at which a particular body of data is assigned full predictive value based on a selected confidence interval.

2.9 *Model* Select Mortality Factors—The select mortality factors in the appendix of the *Model*.

2.10 Policy—Any life insurance policy subject to the *Model*.

2.11 Ten-Year Select Factors—The select factors adopted with the 1980 amendments to the model NAIC *Standard Valuation Law*.

2.12 X Factor Class—A group of policies under one or more plans of insurance to which a single set of X factors applies. An example of an X factor class could be a male preferred nonsmoker underwriting class, having one set of X factors covering all issue ages and durations for several plans of insurance.

2.13 X Factors—For durations in the first segment (only), as determined under the contract segmentation method, the percentages that may be applied to the *Model* select mortality factors for the purpose of calculating deficiency reserves. Subject to the requirements set forth in section 5 of the *Model*, the X factors may vary by policy year, policy form, underwriting classification, issue age, or any other policy factor expected to affect mortality experience.

2.14 1980 CSO Valuation Tables—The Commissioners' 1980 Standard Ordinary Mortality Table without ten-year select factors, incorporated in the 1980 amendments to the model NAIC *Standard Valuation Law*, and variations of the 1980 CSO valuation tables approved by the NAIC, such as the smoker and nonsmoker versions approved in December 1983.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Regulatory Requirements—Section 5 of the *Model* contains the requirements governing the mortality rates to be used for the purpose of calculating deficiency reserves. The appointed actuary should be familiar with the *Model* and any significant state variations, and should be satisfied that applicable actuarial requirements have been met.

3.2 Actuarial Opinion—The *Model* contains requirements regarding the selection and continued use of X factors to adjust certain mortality rates for purposes of calculating deficiency reserves. If any X factor is less than 100% at any duration for any policy, the appointed actuary should annually prepare an opinion and supporting actuarial report, as required by the *Model* and in accordance with section 4 of this standard.

3.3 X Factor Requirements—The X factors may be used only for durations in the first segment, as determined by the contract segmentation method. In determining compliance with each requirement, the appointed actuary should take into account only the applicable durations in the first segment. Certain requirements are relatively straightforward; for example, no X factor can be less than 20%. Others call for professional judgment, particularly requirements that involve an assessment of anticipated mortality.

Two requirements contain tests that directly or indirectly compare valuation mortality rates, as adjusted by X factors, to a variant of anticipated mortality. The appointed actuary should demonstrate that the X factors adopted satisfy these tests.

a. Section 5.B(3)(d) of the *Model* requires that, for the first segment, the actuarial present value of future death benefits calculated using the mortality rates resulting from the application of the X factors be greater than or equal to the actuarial

present value of future death benefits calculated using anticipated mortality without recognition of mortality improvement beyond the valuation date. The actuarial present values should be calculated using the valuation interest rate used for basic reserves and the appropriate mortality for each situation.

b. Section 5.B(3)(e) of the *Model* requires that, for the first segment, the mortality rates resulting from the application of the X factors be at least as great as anticipated mortality, without recognition of mortality improvement beyond the valuation date, in each of the first five years after the valuation date.

3.4 Creation of X Factor Classes—The appointed actuary should consider the composition and characteristics of the policies issued under a plan of insurance in determining the appropriate X factor classes that will be applicable within that plan. The policies that comprise an X factor class generally should have similar underwriting or experience characteristics. When X factor classes are similar across various plans of insurance, these X factor classes may be combined into a common single X factor class.

The appointed actuary should consider the presence of reinsurance in creating X factor classes. Anticipated mortality should be assessed and X factor classes should be created on a gross basis (i.e., direct business plus reinsurance assumed, before deducting reinsurance ceded). To the extent that anticipated mortality on reinsurance assumed is materially different from that on direct business, the appointed actuary should consider creating separate X factor classes.

With respect to reinsurance ceded, the anticipated mortality on ceded business should not be materially different from the anticipated mortality of the X factor class from which the business is ceded. If the difference is material, the appointed actuary should consider creating separate X factor classes.

When creating X factor classes, the appointed actuary should be satisfied that mortality studies of company experience for each X factor class and for all classes combined are available, to the extent experience exists, or will be available as experience emerges in the future.

3.5 Selection of X Factors—The *Model* allows the company to adjust the *Model* select mortality factors by X factors for the purpose of calculating deficiency reserves for specified plans of insurance elected by the company. The appointed actuary should select the X factors for each X factor class, based on anticipated mortality for each class, without recognition of mortality improvement beyond the valuation date. As uncertainty concerning the level of anticipated mortality increases, the appointed actuary should consider providing a margin for conservatism, such as by selecting higher X factors.

Anticipated mortality may, for some X factor classes, exceed the 1980 CSO valuation tables with *Model* select mortality factors applied, resulting in X factors greater than 100%.

In determining anticipated mortality and in selecting X factors, the appointed actuary

should be guided by the following considerations:

3.5.1 Relevant Company Experience—The appointed actuary should take into account the level and trend of actual company mortality experience in assessing anticipated mortality for each X factor class. However, in accordance with the *Model*, no recognition should be made of mortality improvement beyond the valuation date.

The appointed actuary should use the most recent relevant company experience that is practicably available. Consideration should be given to the length of the observation period, recognizing the tradeoff between having insufficient data if the period is too short and having data no longer relevant if the period is too long. The results of the mortality studies should be reviewed for reasonableness.

3.5.2 Deriving Anticipated Mortality—If relevant company experience for a particular X factor class is available and has full credibility, the appointed actuary should use that experience as the basis for deriving anticipated mortality.

In situations where relevant company experience for a particular X factor class is not available or does not have full credibility, the appointed actuary should derive anticipated mortality in a reasonable and appropriate manner from actual experience and past trends in experience of other similar types of business, either in the same company, in other companies (including reinsurance companies), or from other sources, generally in that order of preference.

If the relevant company experience for a particular X factor class and other relevant experience are insufficient to form an assumption, the appointed actuary should use professional judgment in assessing anticipated mortality, taking into account where, in the spectrum of mortality experience, such business would be expected to fall relative to the mortality experience for other X factor classes.

The appointed actuary should take into account the effect that lapsation or nonrenewal activity has had or would be expected to have on mortality. The appointed actuary should specifically take into account the adverse effect of any anticipated or actual increase in gross premiums on lapsation, and the resultant effect on mortality due to antiselection. The appointed actuary should also take into account any known positive and negative changes in mortality due to the environment in which the company operates and the possible net adverse impact on mortality associated with those changes.

The appointed actuary should consider the presence of reinsurance in deriving anticipated mortality, as noted in section 3.4. The anticipated mortality on reinsured business, both assumed and ceded, should pertain to that on the reinsured lives and exclude the effect of experience refunds or other adjustments, however characterized in the reinsurance agreements.

3.6 Periodic Assessment of Anticipated Mortality—The appointed actuary should annually review relevant emerging experience for the purpose of assessing the appropriateness of anticipated mortality for each X factor class and, in aggregate, for all X factor classes combined. If the appointed actuary chooses to continue to use the prior anticipated mortality assumptions, then the appointed actuary should determine whether the prior anticipated mortality assumptions are appropriate in light of any relevant emerging experience. Statistical analyses may be useful in making this determination. Other quantitative analyses may be used provided the appointed actuary can satisfactorily support such analyses as being sufficient to assess the appropriateness of anticipated mortality.

If the results of statistical or other testing indicate that previously anticipated mortality for a given X factor class is inappropriate, then the appointed actuary should set a new anticipated mortality assumption for the X factor class.

After analyzing the appropriateness of the anticipated mortality for each X factor class in isolation and adjusting anticipated mortality as necessary, the appointed actuary should analyze the appropriateness of the anticipated mortality assumptions at the aggregate level. If analysis at the aggregate level indicates that aggregate anticipated mortality is inadequate, then the appointed actuary should adjust the anticipated mortality assumption for one or more X factor classes until the appointed actuary is satisfied that the anticipated mortality assumptions are adequate at the aggregate level.

3.7 Adjustments to X Factors—The appointed actuary should use the anticipated mortality (without recognition of mortality improvement beyond the valuation date) for each X factor class, as adjusted for relevant emerging experience, for the purpose of determining whether the X factors for the class meet the requirements of the *Model*. If any requirement of the *Model* is not satisfied, the appointed actuary should adjust the X factors for the class to the extent necessary to meet such requirement.

The appointed actuary should consider the trend in mortality when deciding whether to adjust X factors, as permitted by the *Model*. The level and trend of mortality experience on similar types of business in other companies, or from other sources, if available, would be an important consideration in making this decision.

3.8 Basis of Exposure—The appointed actuary should analyze the level and trend of actual mortality experience primarily by using exposures based on amounts or units of insurance. These measures are most meaningful from the standpoint of financial impact on the company. Other measures of exposure, such as number of lives, can also be useful in analyzing experience.

## Section 4. Communications and Disclosures

4.1 Required Communications—The opinion required by section 3.2 applies to all policies on specified plans of insurance for which the company has elected to apply *Model* select

mortality factors for purposes of calculating deficiency reserves. For policies (on such specified plans) without X factors applied, the opinion should reflect implied X factors of 100%.

4.1.1 Opinion—The opinion should indicate, as of the valuation date, whether the mortality rates resulting from the application of the company's X factors meet the requirements of the *Model*. If the mortality rates do not meet all the requirements, a qualified opinion should be rendered, disclosing those requirements that are not met.

4.1.2 Actuarial Report—An actuarial report should be prepared in support of the opinion. The report should include at least the following items:

a. Purpose—The report should indicate its purpose and refer to the specific opinion that it supports.

b. Specified Plans—The report should identify the specific plans of insurance for which the company has elected to apply *Model* select mortality factors for the purpose of calculating deficiency reserves. The report should briefly describe each plan, including its markets and underwriting bases, and indicate for each X factor class of business on the plan the amount in force on the valuation date in terms of policy or rider count, face amount, basic reserves, and deficiency reserves.

c. X Factor Compliance—The report should describe the process and key results which demonstrate that the X factors for the specified plans of life insurance comply with each of the requirements of the *Model*. The report should describe, to the extent applicable, each of the following:

1. company experience studies, industry experience, and other sources of information concerning relevant experience used as a basis for determining anticipated mortality, including a summary of the findings and results;

2. analyses performed to evaluate the credibility of relevant, historical company experience when establishing anticipated mortality for each X factor class, including a description of related experience or a statement that professional judgement had been used;

3. mortality projections made and reflected in anticipated mortality, if any, from the period of exposure of relevant experience studies to the valuation date;

4. statistical or other quantitative analyses performed in assessing the continued appropriateness of the anticipated mortality assumption

for each X factor class and for all X factor classes in aggregate, in light of relevant emerging company experience, and a summary of changes made as a result of the analyses;

5. anticipated mortality, without recognition of mortality improvement beyond the valuation date, for each X factor class and for all X factor classes in aggregate;

6. results of the tests of X factors required by the *Model*, any adjustments made to the X factors as a result of these tests, and the effect on deficiency reserves resulting from any such adjustments; and

7. any changes made in the approach or parameters applied to the statistical analyses or tests performed compared to those performed at the last annual valuation.

d. Schedule of X Factors—The report should include a schedule showing for the specified plans of life insurance the X factors for each X factor class as of the valuation date, with an indication as to which X factors are new or have been changed since the last annual valuation.

4.1.3 Additional Disclosures—The actuary should include the following, as applicable, in the actuarial report or statement of actuarial opinion:

a. the disclosure in ASOP No. 41, *Actuarial Communications*, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.2 Documentation—The appointed actuary should create records and other appropriate documentation supporting the opinion required by section 3.2 and, to the extent practicable, should take reasonable steps to ensure that this documentation will be retained for a reasonable period of time (and no less than the length of time necessary to comply with any statutory regulatory, or other requirements). The appointed actuary need not retain the documentation personally; for example, it may be retained by the appointed actuary's employer. Such documentation should identify the data, assumptions, and methods used by the appointed actuary with sufficient clarity that another actuary qualified in the same practice area could evaluate the reasonableness of the appointed

actuary's work. Unless the actuarial report required by section 4.1.2 reasonably satisfies the need for documentation, such documentation should also be available to the appointed actuary's employer or client.

4.3 Reliance on Data Supplied by Others—The appointed actuary may rely on data supplied by other persons. In doing so, the appointed actuary should disclose such reliance in the opinion. The accuracy and completeness of data supplied by others are the responsibility of those who supply the data. However, the appointed actuary should review the data for reasonableness and consistency to the extent practicable. For further guidance, the appointed actuary is directed to ASOP No. 23, *Data Quality*.

## Appendix 1

## Background and Current Practices

*Note:* This appendix is provided for informational purposes, but is not part of the standard of practice.

### Background

On plans of life insurance elected by the company, the National Association of Insurance Commissioners (NAIC) Valuation of Life Insurance Policies Model Regulation (*Model)* allows the use of *Model* select mortality factors to be applied to the 1980 CSO valuation tables for purposes of calculating deficiency reserves. The *Model* select mortality factors do not reflect the underwriting classes that have evolved since the period of underlying experience. In light of this consideration, the *Model* allows the appointed actuary to adjust the select factors via X factors to reflect anticipated mortality, without recognition of mortality improvement beyond the valuation date, taking into account relevant emerging experience. However, the *Model* requires the appointed actuary to opine annually that the adjusted mortality rates meet certain requirements set forth in the *Model*, and that such opinion be supported by an actuarial report, subject to appropriate actuarial standards of practice promulgated by the Actuarial Standards Board.

### Current Practices

Although there is no established current practice for complying with the requirements of the *Model*, there are several current analytical procedures that the appointed actuary may find useful in developing and reviewing anticipated mortality.

#### Developing Anticipated Mortality

The process of using a company's relevant experience of the recent past to set an assumption for future mortality experience can, when the exposure is large enough, proceed by using the average level of the past experience, as modified by trend factors and known changes in the environment. But often the exposure may not be large enough, either because the company is small or because a small or newer segment of a large company is the subject of the assumption. In such cases, actuaries frequently turn to the experience of other companies or other segments (appropriately modified) to help set the assumption. Such procedures are specifically recommended for forming mortality assumptions to be used in testing sales illustrations, as specified in Actuarial Standard of Practice (ASOP) No. 24, *Compliance with the NAIC Life Insurance Illustrations Model Regulation.*

Often the appointed actuary finds it necessary to blend the experience from two or more sources in order to set the assumption. Sometimes a life actuary will consider the guidance, to the extent

relevant, set forth in ASOP No. 25, *Credibility Procedures Applicable to Accident and Health, Group Term Life, and Property/Casualty Coverages*, even though that standard is not specifically applicable to individual life actuarial practice.

For some purposes, such as selecting a valuation mortality rate that will stand up in the face of moderate future fluctuations in mortality, the appointed actuary may wish to select an X factor that yields a mortality rate higher than the appointed actuary's assumption for anticipated mortality, i.e., a level of assumed mortality that has a reasonably high probability of exceeding the actual mortality that may emerge in the future. To accomplish this, the appointed actuary needs an understanding of the underlying distribution of potential mortality results.

When mortality studies are based on lives or policies exposed, either the Normal distribution (with 35 or more deaths) or the Poisson distribution (with fewer than 35 deaths) can provide a satisfactory approximation of the distribution of deaths. However, neither of these approximations accounts for varying experience across different policy sizes.

Monte Carlo methods overcome concerns about whether the experience contains a large enough data set for the Poisson or Normal approximations to be sufficiently accurate, and are particularly useful for analyses that are based on amounts of insurance or units of insurance exposed. These methods produce results that converge to the underlying distribution given enough trials.

Assessment of Anticipated Mortality

There are several methods for analyzing the appropriateness of anticipated mortality in light of emerging company experience.

Hypothesis testing is one useful technique. The appointed actuary should be aware of two types of errors associated with hypothesis testing. A Type I error is the false rejection of a correct null hypothesis, while a Type II error is the failure to reject an incorrect null hypothesis. In terms of the *Model*, the null hypothesis would presumably state that anticipated mortality is consistent with emerging experience and would only be rejected if statistically significant data indicated otherwise. In this setting, the Type I error is a company increasing anticipated mortality when it is in fact adequate, while a Type II error is a company failing to increase anticipated mortality when it is in fact inadequate. The Type I error rate can be controlled by the choice of significance level. Type II error rates are largely beyond the control of the statistician and difficult to assess, but are influenced by the choice of significance level, the amount of data available, and the magnitude of the difference between the assumed and true values.

Another approach to analyzing anticipated mortality is to treat each review of the mortality assumption as if it were the original development of the mortality assumption, making use of the now more extensive experience base. For example, the appointed actuary could use the emerging experience, plus any other experience considered relevant, to set a new assumption, and use that, or a higher level based on selecting a high probability of adequacy, as the new assumption.

Credibility procedures are also available. Such procedures may be useful when blending data from two or more sources. By extension, credibility procedures may be useful for incorporating emerging experience into an existing body of experience.

This appendix does not provide an exhaustive list of possible approaches to analyzing anticipated mortality. Actuarial literature and other sources of information provide specific guidance to the appointed actuary on various analyses that may be useful in analyzing anticipated mortality. The appointed actuary should be aware of the limitations of applying any statistical procedure to a body of data. The appointed actuary should use reasonable judgment and consider modifying the X factors if the level of emerging mortality experience is substantially greater than expected, regardless of whether the anticipated mortality for the X factor class is deemed acceptable through statistical testing. As current practices evolve, the appointed actuary should consider whether the techniques used in prior analyses continue to be appropriate or can be improved.

## Appendix 2

### Comments on the Second Exposure Draft and Task Force Responses

The second exposure draft of this actuarial standard of practice was issued in June 2000, with a comment deadline of October 15, 2000. (Copies of the exposure draft and second exposure draft are available from the ASB office.) Four comment letters were received. The Task Force on XXX Regulation of the Life Committee of the ASB carefully considered all comments received. Summarized below, printed in standard type, are the significant issues and questions contained in the comment letters. The task force's responses to these issues and questions appear in **boldface**.

Section 3. Analysis of Issues and Recommended Practices

Section 3.4, Creation of X Factor Classes—One commentator found the additional language in this section regarding reinsurance to be helpful, clear, and provided uniformity of application, while another commentator believed further clarification was necessary. **The task force added clarification with respect to reinsurance.**

Section 3.5.2, Deriving Anticipated Mortality—One commentator believed that a reference in this section to ASOP No. 25, *Credibility Procedures Applicable to Accident and Health, Group Term Life, and Property/Casualty Coverages*, would be appropriate. **The task force disagreed, based on the fact that ASOP No. 25 is not specifically applicable to life insurance. ASOP No. 25 is mentioned in appendix 1.**

One commentator felt that clarification is needed with respect to experience refunds and other adjustments under reinsurance agreements. **The task force agreed and provided clarification at the end of section 3.5.2.**

Section 3.6, Periodic Assessment of Anticipated Mortality—One commentator made a general comment about the need to apply actuarial judgment when evaluating the anticipated mortality assumption. **Although this is a general statement, the task force changed the second sentence in the first paragraph to clarify that the appointed actuary is making a decision whether to continue using the existing anticipated mortality assumption.**

Appendix 1. Background and Current Practices

One commentator noted that cautionary language was part of the discussion of hypothesis testing but not used in the discussion of other possible approaches for analyzing anticipated mortality. This commentator also mentioned that the appointed actuary needs to use professional judgment regarding methods and data. **The task force agrees with these comments. The cautionary language was rewritten and moved from the hypothesis testing discussion to the last paragraph of this appendix. At the same time, the task force made some additional wording changes to provide more consistency and readability with respect to the terminology used in the appendix.**

ACTUARIAL STANDARDS BOARD

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**Actuarial Standard**
**of Practice**
**No. 41**

# Actuarial Communications

**Revised Edition**

**Developed by the**
**General Committee of the**
**Actuarial Standards Board**

**Adopted by the**
**Actuarial Standards Board**
**December 2010**

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## APPENDIXES

December 2010

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Actuarial Communications

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 41

This document contains the final version of the revision of ASOP No. 41, *Actuarial Communications*.

Background

The current version of ASOP No. 41 has been in effect for eight years, and applies to all U.S. actuaries in all areas of practice. During that time, the ASB has received comments regarding a lack of clarity in the document and confusion in respect to its wording and structural arrangement. One of the ASB's priorities is to make sure that all ASOPs are clear and unambiguous.

First Exposure Draft

In September 2008, the ASB approved the first exposure draft of a revised ASOP No. 41 with a comment deadline of December 31, 2008. Twenty-three comment letters were received. Most had multiple comments, many of which were substantive. The majority of commentators were supportive of the effort to revise this ASOP, and most comments were positive in nature, but some indicated that the first draft needed significant revision.

In September 2008, the ASB also adopted "Revision of Deviation Language for Standards and Removal of References to PSAOs from Standards" pending the issuance of ASOP No. 41 as a final revision. Due to the passage of time since that adoption, the ASB will update this document to reflect changes in ASOP No. 41, as well as to update references for other new and revised ASOPs. It is expected that the ASB will adopt this document as a final revision at its March meeting, with an effective date of May 1, 2011, consistent with the effective date of this revised standard.

Second Exposure Draft

In December 2009, the ASB approved a second exposure draft of a revised ASOP No. 41, reflecting significant modifications of the first draft, with a comment deadline of March 31, 2010. Thirty-seven comment letters were received in response. For a summary of the substantive issues contained in the second exposure draft comment letters and the responses, please see appendix 2.

Changes from Second Exposure Draft

The review and revision of the second exposure draft focused on the dominant issue raised in 19 of 37 comment letters; namely, the apparent requirement for an actuary to complete an actuarial report with full disclosures in nearly all circumstances. This was not the intent of the second exposure draft, but the reviewers were sensitive to this possible interpretation. Accordingly, this final version reflects clarification to the guidance within this standard, in particular to recognize that in some internal and informal settings, complete disclosure of all applicable supporting information is neither practical nor necessary. Section 3.3 (formerly section 3.5) has been moved and expanded to provide guidance in these situations. Additional discussion has also been added to appendix 1.

In response to other comments some definitions have been added and other clarifying modifications have been made.

Summary of Key Changes from Current ASOP

1. The concept of a single formal actuarial report, which is required to contain all necessary disclosures, has been removed. Instead, the concept that communication is an ongoing and interactive process and that an actuarial report with all necessary disclosure elements may comprise several different pieces of communication, perhaps delivered in different forms, has been adopted. The standard directs the actuary to identify all applicable documents whenever multiple documents are used to satisfy all of the disclosure requirements of an actuarial report.

2. Section 3.4.4 makes it clear that the actuary is responsible for all actuarial assumptions and methods utilized in producing the actuarial communication, unless the actuary discloses otherwise.

3. Section 3 has been reorganized. All disclosure requirements have been moved to section 4, while additional guidance relating to disclosures remains in section 3.4.

4. The treatment of deviations from the guidance of any ASOP (including situations where assumptions are not set by the actuary) is also codified in section 4.

5. Reference to Prescribed Statements of Actuarial Opinion (PSAOs) has been removed.

6. The ASB has decided that specifying what material should be retained and for how long is not appropriate for this standard (except as may be provided in section 3.8).

The General Committee thanks everyone who took the time to contribute comments and suggestions on both exposure drafts.

The ASB voted in December 2010 to adopt this standard.

*The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.*

**ACTUARIAL STANDARD OF PRACTICE NO. 41**

# ACTUARIAL COMMUNICATIONS

## STANDARD OF PRACTICE

### Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries with respect to actuarial communications.

1.2 Scope—This standard applies to actuaries issuing actuarial communications within any practice area. This standard does not apply to communications that do not include an actuarial opinion or other actuarial findings (for example, this standard does not apply to brochures, fee quotes, or invoices).

This standard provides guidance for preparing actuarial communications, including those that may be required by the *Qualification Standards* or by other ASOPs. If such other guidance contains communication requirements that are additional to or inconsistent with this standard, the requirements of such other guidance supersede the guidance of this ASOP. However, the guidance in this ASOP applies to the extent it is not inconsistent with such other guidance.

Law, regulation, or another profession's standards may prescribe the form and content of a particular actuarial communication (such as a government form). In such situations, the actuary should comply with the guidance in this standard to the extent not prohibited by applicable law, regulation, or standard.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason, the actuary should refer to section 4 regarding deviation.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for actuarial communications issued on or after May 1, 2011.

## Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Actuarial Communication—A written, electronic, or oral communication issued by an actuary with respect to actuarial services.

2.2 Actuarial Document—An actuarial communication in any recorded form (such as paper, e-mail, spreadsheets, presentations, audio or video recordings, web sites, and court or hearing transcripts). Notes taken by someone other than the actuary are not considered actuarial documents.

2.3 Actuarial Finding—The result (including advice, recommendations, opinions, or commentary on another actuary's work) of actuarial services.

2.4 Actuarial Report—The set of actuarial documents that the actuary determines to be relevant to specific actuarial findings that is available to an intended user.

2.5 Actuarial Services—Professional services provided to a principal by an individual acting in the capacity of an actuary. Such services include the rendering of advice, recommendations, findings, or opinions based upon actuarial considerations.

2.6 Deviation—The act of departing from the guidance of an ASOP.

2.7 Intended User—Any person who the actuary identifies as able to rely on the actuarial findings.

2.8 Oral Communication—An actuarial communication made orally that has not, to the knowledge of the actuary, been recorded or transcribed verbatim. Such an oral communication is an actuarial communication, but is not an actuarial document.

2.9 Other User—Any recipient of an actuarial communication who is not an intended user.

2.10 Principal—A client or employer of the actuary.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Requirements for Actuarial Communications—The performance of a specific actuarial engagement or assignment typically requires significant and ongoing communications between the actuary and the intended users regarding the following: the scope of the requested work; the methods, procedures, assumptions, data, and other information required to complete the work; and the development of the communication of the actuarial findings.

3.1.1 Form and Content—The actuary should take appropriate steps to ensure that the form and content of each actuarial communication are appropriate to the particular circumstances, taking into account the intended users.

3.1.2 Clarity—The actuary should take appropriate steps to ensure that each actuarial communication is clear and uses language appropriate to the particular circumstances, taking into account the intended users.

3.1.3 Timing of Communication—The actuary should issue each actuarial communication within a reasonable time period, unless other arrangements as to timing have been made. In setting the timing of the communication, the needs of the intended users should be considered.

3.1.4 Identification of Responsible Actuary—An actuarial communication should clearly identify the actuary responsible for it. When two or more individuals jointly issue a communication (at least some of which is actuarial in nature), the communication should identify all responsible actuaries, unless the actuaries judge it inappropriate to do so. The name of an organization with which each actuary is affiliated also may be included in the communication, but the actuary's responsibilities are not affected by such identification. Unless the actuary judges it inappropriate, the actuary issuing an actuarial communication should also indicate the extent to which the actuary is available to provide supplementary information and explanation.

3.2 Actuarial Report—The actuary should complete an actuarial report if the actuary intends the actuarial findings to be relied upon by any intended user. The actuary should consider the needs of the intended user in communicating the actuarial findings in the actuarial report.

An actuarial report may comprise one or several documents. The report may be in several different formats (such as formal documents produced on word processing, presentation or publishing software, e-mail, paper, or web sites). Where an actuarial report for a specific intended user comprises multiple documents, the actuary should communicate which documents comprise the report.

In the actuarial report, the actuary should state the actuarial findings, and identify the methods, procedures, assumptions, and data used by the actuary with sufficient clarity

that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary's work as presented in the actuarial report.

3.3 Specific Circumstances—The content of an actuarial report may be constrained by circumstances. The actuary should follow the guidance of this standard to the extent reasonably possible within such constraints. When those constraints exist, it may be appropriate not to include some of the otherwise required content in the actuarial report. However, limiting the content of an actuarial report may not be appropriate if that report or the findings in that report may receive broad distribution.

If the actuary believes circumstances are such that including certain content is not necessary or appropriate, the actuary must be prepared to identify such circumstances and justify limiting the content of the actuarial report.

3.4 Disclosures Within an Actuarial Report—Consideration of the items to be disclosed is an important part of the preparation of any actuarial communication. The actuary should review the list of required disclosure items included in section 4 of this ASOP, and in any other relevant ASOP. Further discussion regarding some of these disclosure items follows:

3.4.1 Uncertainty or Risk—The actuary should consider what cautions regarding possible uncertainty or risk in any results should be included in the actuarial report.

3.4.2 Conflict of Interest—An actuary who is not financially, organizationally, or otherwise independent concerning any matter related to the subject of an actuarial communication should disclose any pertinent information that is not apparent. This includes any situation where the actuary acts, or may appear to be acting, as an advocate. However, applicable financial disclosure is limited in accordance with Precept 6 of the *Code of Professional Conduct* to sources of material compensation that are known to, or are reasonably ascertainable by, the actuary.

3.4.3 Reliance on Other Sources for Data and Other Information—An actuary who makes an actuarial communication assumes responsibility for it, except to the extent the actuary disclaims responsibility by stating reliance on other sources. Reliance on other sources for data and other information means making use of those sources without assuming responsibility for them. An actuarial communication making use of any such reliance should define the extent of reliance, for example by stating whether or not checks as to reasonableness have been applied. An actuary may rely upon other sources for information, except where limited or prohibited by applicable standards of practice or law or regulation. Further guidance on when such reliance is appropriate, and what the actuary's responsibilities are when such reliance is stated, is found in ASOP No.23, *Data Quality*.

3.4.4 Responsibility for Assumptions and Methods—An actuarial communication

should identify the party responsible for each material assumption and method. Where the communication is silent about such responsibility, the actuary who issued the communication will be assumed to have taken responsibility for that assumption or method. The actuary's obligation when identifying the other party who selected the assumption or method depends upon how the assumption or method was selected.

a. If the assumption or method is specified by applicable law (statutes, regulations, and other legally binding authority), the actuary should include the disclosures identified in section 4.2. These disclosures should be made whether or not the actuary believes the assumption or method is reasonable for the purpose of the communication. The actuary should also follow the guidance in paragraph (b) below whenever required by another ASOP.

b. If a material assumption or method is selected by another party, the actuary has three choices:

   1. If the assumption or method does not conflict significantly with what, in the actuary's professional judgment, would be reasonable for the purpose of the assignment, the actuary has no disclosure obligation;

   2. If the assumption or method significantly conflicts with what, in the actuary's professional judgment, would be reasonable for the purpose of the assignment, the actuary must disclose that fact and the additional information specified in section 4.3; and

   3. If the actuary has been unable to judge the reasonableness of the assumption or method without performing a substantial amount of additional work beyond the scope of the assignment, or if the actuary was not qualified to judge the reasonableness of the assumption, the actuary should disclose that fact as specified in section 4.3.

c. In all other situations, the actuary is responsible for all assumptions and methods utilized in the preparation of a communication unless the actuary discloses otherwise within the communication by including the disclosures identified in section 4.4.

3.4.5 Information Date of Report—The actuary should communicate to the intended user the date(s) through which data or other information has been considered in developing the findings included in the report.

3.4.6 Subsequent Events—The actuary should disclose any relevant event that meets the following conditions:

a. it becomes known to the actuary after the latest information date described in section 3.4.5;

b. it becomes known to the actuary before the report is issued;

c. it may have a material effect on the actuarial findings if it were reflected in the actuarial findings; and

d. it is impractical to revise the report before it is issued.

If the actuary learns of changes to data or other information (on or before the information date) after some findings have been communicated, but before the report is completed, the actuary should communicate those changes, and their implications, to any intended user to whom the actuary has communicated findings.

3.5 Explanation of Material Differences—If a later actuarial communication produced by the same actuary, which opines on the same issue, includes materially different results or expresses a different opinion from the former communication, then the later communication should make it clear that the earlier results or opinion are no longer valid and explain why they have changed. If the later communication is oral, the actuary should follow-up with a document that clarifies the reason(s) for the changes.

3.6 Oral Communications—When the actuary is providing an oral communication, the actuary should consider the extent to which (if any) the disclosures listed under section 3.4 should be included in the oral communication and include each such disclosure if appropriate in the particular circumstances. Where the actuary has a concern that the oral communication may be passed on to other parties, the actuary should consider following up with an actuarial document.

3.7 Responsibility to Other Users—An actuarial document may be used in a way that may influence persons who are not intended users. The actuary should recognize the risks of misquotation, misinterpretation, or other misuse of such a document and should take reasonable steps to ensure that the actuarial document is clear and presented fairly. To help prevent misuse, the actuary may include language in the actuarial document that limits its distribution to other users (for example, by stating that it may only be provided to such parties in its entirety or only with the actuary's consent).

Nothing in this standard creates an obligation for the actuary to communicate with any person other than the intended users.

3.8 Retention of Other Materials—An actuary may choose to keep file material other than that which is to be disclosed under this ASOP. Nothing in this ASOP requires the actuary to disclose such additional materials to any party.

If, as may be appropriate in accordance with section 3.3., a report does not include all of the supporting information identified in this ASOP, the actuary should consider retaining the supporting information that was not included in the report. The actuary is not required to create additional documentation for this purpose.

An actuary should consider retaining sufficient information for any recurring project so that another actuary could assume the assignment.

## Section 4. Communications and Disclosures

4.1 Disclosures in any Actuarial Communication—Disclosures in any actuarial communication should include the following:

4.1.1 Identification of Responsible Actuary—Any actuarial communication should identify the actuary who is responsible for the actuarial communication (see section 3.1.4).

4.1.2 Identification of Actuarial Documents—Any actuarial document should include the date and subject of the document with any additional modifier (such as "version 2" or time of day) to make this entire description unique.

4.1.3 Disclosures in Actuarial Reports—In addition to the information necessary to satisfy section 3.2, any actuarial report should disclose the following information, unless the actuary determines that it is inappropriate to do so (see section 3.3):

a. the intended users of the actuarial report;

b. the scope and intended purpose of the engagement or assignment;

c. the acknowledgement of qualification as specified in the *Qualification Standards*;

d. any cautions about risk and uncertainty (see section 3.4.1);

e. any limitations or constraints on the use or applicability of the actuarial findings contained within the actuarial communication including, if appropriate, a statement that the communication should not be relied upon for any other purpose;

f. any conflict of interest as described in section 3.4.2;

g. any information on which the actuary relied that has a material impact on the actuarial findings and for which the actuary does not assume responsibility (see section 3.4.3);

h. the information date as described in section 3.4.5;

i. subsequent event(s) (if any) as described in section 3.4.6.; and

j. if appropriate, the documents comprising the actuarial report.

Note that other ASOPs that apply to a particular assignment may have additional disclosure requirements that should also be followed.

4.2 Certain Assumptions or Methods Prescribed by Law—Where any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority), the actuary should disclose the following in the actuarial report:

a. the applicable law under which the report was prepared;

b. the assumptions or methods that are prescribed by the applicable law; and

c. that the report was prepared in accordance with the applicable law.

If the actuarial report is in a prescribed form that does not accommodate these disclosures, the actuary should make these disclosures in a separate communication (such as a cover letter to the principal), requesting that both communications be disseminated together where practicable.

4.3 Responsibility for Assumptions and Methods—In any situation not covered under section 4.2, where the actuary states reliance on other sources (as described in section 3.4.4(b) 2 and 3) and thereby disclaims responsibility for any material assumption or method, the actuary should disclose the following in the actuarial report, unless it is inappropriate to do so (see section 3.3):

a. the assumption or method that was set by another party;

b. the party who set the assumption or method;

c. the reason that this party, rather than the actuary, has set the assumption or method; and

d. either

1. that the assumption or method significantly conflicts with what, in the actuary's professional judgment, would be reasonable for the purpose of the assignment; or

2. that the actuary was unable to judge the reasonableness of the assumption or method without performing a substantial amount of additional work beyond the scope of the assignment, and did not do so, or that the actuary

was not qualified to judge the reasonableness of the assumption.

If the actuarial report is in a prescribed form that does not accommodate these disclosures, the actuary should make these disclosures in a separate communication (such as a cover letter to the principal), requesting that both communications be disseminated together where practicable.

4.4 Deviation from the Guidance of an ASOP—If, in the actuary's professional judgment, the actuary has deviated materially from the guidance set forth in an applicable ASOP, other than as covered under sections 4.2 or 4.3 of this standard, the actuary can still comply with that ASOP by providing an appropriate statement in the actuarial communication with respect to the nature, rationale, and effect of such deviation.

## Appendix 1

## Background and Current Practices

*Note*: This appendix is provided for informational purposes, but is not part of the standard of practice.

### Background

The current version of ASOP No. 41, adopted in March 2002, was adapted from and superseded Interpretative Opinion No. 3, *Professional Communications of Actuaries*. Interpretive Opinion No. 3 was itself adopted by the American Academy of Actuaries in 1981. The 2002 version of ASOP No. 41 conformed to the format adopted by the Actuarial Standards Board in May 1996 for all actuarial standards of practice, and while this standard generally followed Interpretative Opinion No. 3, it also expanded upon, clarified, and eliminated portions of that opinion.

This standard offers guidance to complement the requirements imposed by the *Code of Professional Conduct*. It was drafted and is still intended to help actuaries apply the *Code of Professional Conduct* when making professional communications (by written, electronic, or oral means) to clients, employers, regulators, policyholders, plan participants, investors, and other users of actuarial services. Actuaries commonly deal with confidential or proprietary information. The *Code of Professional Conduct* clearly precludes the actuary from disclosing this type of information to inappropriate parties.

This revision has used definitions that are consistent with those found in the *Code of Professional Conduct* and in the recently revised *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinions*. This revision also incorporates language in section 4 that is the foundation of the ASB's new approach to creating consistency in the treatment of deviation language within all ASOPs.

It should be noted that all recorded forms of communication (including—but not limited to—paper, e-mail, spreadsheets, presentations, audio or video recordings, web sites, and court or hearing transcripts) could be considered records of such communications and may be, therefore, discoverable in legal proceedings.

### Current Practices

Actuaries are currently guided by the *Code of Professional Conduct*, by ASOP No. 41, and by other actuarial standards of practice, depending on the nature of the work at hand.

In general, actuarial communications are provided in order to answer questions or address specific needs of one or more intended users. Actuarial communications may be made available to a variety of users of actuarial work products including clients, employers, regulators, policyholders, plan participants, and investors, as well as external audiences such as the general public. Actuarial communications may be delivered in many forms, including written, electronic,

or oral; and may stand alone or be part of a broader pattern of communication. While preparing an actuarial communication, an actuary should be mindful of the needs and concerns of each of the intended users. In certain situations, some intended users may receive different actuarial documents. Thus, an actuarial report for one intended user may differ from the report for a different intended user. Even the least comprehensive version of an actuarial report is subject to the guidance of this standard.

An actuary, while functioning in a professional capacity, may be involved in informal communication with others. Actuarial findings may be communicated under circumstances that make inclusion of all supporting information impractical or unnecessary. This may be particularly common in a company environment. Other circumstances such as severe time constraints (for example, union negotiations, mergers and acquisitions) may make inclusion of all recommended disclosure items impractical, if not impossible. In these instances, the content of the actuarial report is often limited. These situations are addressed in section 3.3.

## Appendix 2

## Comments on the Second Exposure Draft and Responses

The second exposure draft of this ASOP, *Actuarial Communications*, was issued in December 2009 with a comment deadline of March 31, 2010. Thirty-seven comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The General Committee carefully considered all comments received, reviewed the exposure draft and proposed changes. The ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes the General Committee and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the second exposure draft.

| GENERAL COMMENTS | |
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| Comment | Several commentators raised the issue of a potential deficiency in guidance should the proposed ASOP No. 41 be adopted as final at the same time current ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*, is withdrawn. |
| Response | The reviewers do not believe that this issue can or should be resolved within ASOP No. 41. |
| Comment | One commentator believed that the distinction between the guidance for "oral only communication" (for example, a phone call) and guidance for e-mail may not be practical. |
| Response | The reviewers disagree. E-mail creates a permanent record that can be discovered and referred to in subsequent proceedings (legal or otherwise). Accordingly, the reviewers believe that it is appropriate to consider e-mail as a "document" and subject to the applicable guidance. |
| Comment | Several commentators expressed concern that the guidance in the second exposure draft was slanted to the consulting environment and not practical within many company situations. |

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| Response | The reviewers did not intend this interpretation. In rewriting the final version of ASOP No. 41 the reviewers have attempted to be more sensitive to this issue. It is not the intention of this ASOP to impose unnecessary burdens on the internal communications of an organization. |
| **TRANSMITTAL MEMORANDUM** | |
| Question 1: Is the revised concept of an actuarial report reflected in this draft both clear and appropriate? | |
| Comment | Nineteen commentators responded to this question; only one responded in the affirmative. Most interpreted the second exposure draft to significantly "raise the bar," requiring a full-fledged report in many situations where it would be neither necessary nor practical. |
| Response | This interpretation was not the intent of the second exposure draft. The reviewers have been sensitive to these concerns in this revision. Section 3.3 of this standard has been expanded to clarify the guidance in those circumstances where it is not necessary or practical to include all supporting information. Additional discussion was added to appendix 1. |
| Question 2: Is the revised ASB position on documentation appropriate? | |
| Comment | A few commentators felt it was appropriate. The ones that disagreed were those that raised concerns about the withdrawal of ASOP No. 9 (see the first "General" comment above). |
| Response | After considering the comments, the reviewers still believe that the general approach is appropriate. Some modifications have been made to section 3.8 to incorporate guidance in those situations where full supporting information is not supplied within the document(s) of an actuarial report. |
| Question 3: Does this revised draft incorporate an appropriate emphasis on the need for the actuary to consider the needs of the intended users? | |
| Comment | The few commentators that did respond to this question answered in the affirmative. One suggested that the second exposure draft may have gone too far in this regard. |
| Response | The reviewers believe that the purpose of an actuarial communication is to satisfy the needs of the intended user. Accordingly, this final version has retained this perspective. |

| SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE | |
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| Comment | Two commentators made suggestions with respect to the description of the standard's guidance. |
| Response | The description has been revised. |
| Comment | One commentator expressed concern that the term "actuarial opinion" is not defined. |
| Response | The reviewers believe that "actuarial opinion" is well understood and did not add a definition. |
| Comment | One commentator suggested an expansion of the commentary on which communications did not fall within the purview of the standard. |
| Response | The reviewers believe that the wording is satisfactory. |
| **SECTION 2. DEFINITIONS** | |
| Comment | Several commentators suggested that the definitions in the ASOP adopt the definitions in the Qualification Standards. |
| Response | The reviewers agreed and adopted the Qualification Standards' definitions for "actuarial communication" and "actuarial services." |
| Comment | One commentator suggested that "actuarial services" be clearly defined. |
| Response | A definition consistent with the Qualification Standards has been added. Furthermore, the definition of "actuarial finding" was modified to tie more consistently to this definition. |
| Comment | One commentator suggested that definitions be added for "data," "methods," and "procedures." |
| Response | The reviewers concluded that the meanings of these terms were well understood and specific definitions were not needed. |
| Comment | Several commentators were concerned that the proposed standard can be read to imply that any notes taken by an actuary may be considered an actuarial document. |

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| Response | The reviewers do not believe that an actuary's notes constitute an actuarial communication unless they are provided to an intended user. If an actuary does not distribute his/her notes to an intended user, there is no actuarial communication and the personal notes taken by the actuary are not subject to the requirements of ASOP No. 41. If either the notes or the material contained in the notes is distributed to an intended user or becomes part of the actuarial report, this creates an actuarial communication and the resulting documents would be subject to the requirements of the standard. |
| **Section 2.1, Actuarial Communication** | |
| Comment | A few commentators suggested that the word "electronic" be deleted from definition 2.1, stating that actuarial communications may be written or oral. Either type (written or oral) can be in electronic or hard copy form. One commentator noted the definition of "actuarial communication" deleted the current reference to a principal. |
| Response | The reviewers retained the definition to remain consistent with the *Code of Professional Conduct* and the Qualification Standards. |
| **Section 2.6, Intended Audience** | |
| Comment | Several commentators suggested deletion of the definition "intended audience" and that definitions be provided for "principal" and "actuarial services." |
| Response | The reviewers agree with these suggestions and have removed the definition of "intended audience" and provided definitions for "principal" and "actuarial services." |
| **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES** | |
| **Section 3.1, Requirements for Actuarial Communications** | |
| Comment | One commentator requested the definition of "principal" be retained; another questioned the usage in sections 3.1.3 and 3.2. |
| Response | The reviewers agreed. The definition of "principal" from the *Code of Professional Conduct* was added, and it was used only when appropriate in the context of the guidance throughout the standard. |
| Comment | One commentator requested wording in section 3.1 and the addition of a section 3.1.5 to make it clear that, when an actuary communicates to the designated representative of a group of intended users, the actuary is deemed to have communicated to the group. |

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| Response | The reviewers considered this a non-actuarial issue and made no change. |
| **Section 3.1.2, Clarity** | |
| Comment | One commentator felt the phrase "language appropriate to the particular circumstances, taking into account the intended audience" needed further guidance. |
| Response | The reviewers believe this language is sufficient; not all circumstances can be anticipated. |
| **Section 3.1.3, Timing of Communication** | |
| Comment | Several commentators questioned the wording of section 3.1.3, while one commentator preferred the "guidance" in appendix 1 of the Qualification Standards. |
| Response | The reviewers agreed and revised section 3.1.3. The reviewers note that appendix 1 of the Qualification Standards is not guidance, and made no change on this account. |
| **Section 3.1.4, Identification of Responsible Actuary** | |
| Comment | Several commentators suggested revised wording for section 3.1.4. |
| Response | The reviewers were generally satisfied with the wording in the exposure draft but did incorporate minor changes. |
| **Section 3.2, Actuarial Report** | |
| Comment | Several commentators felt that the ASB had "raised the bar" too much in section 3.2 or that the wording seemed only to address consulting situations. |
| Response | The reviewers modified and expanded former section 3.5 and moved it to section 3.3 to clarify that an actuarial report may be abbreviated in certain situations. |
| Comment | One commentator felt that the requirement to provide adequate information so that another actuary could assess the reasonableness of the findings was more than was needed if the report was directed to non-actuaries. |
| Response | Absent circumstances allowing for an abbreviated report under section 3.3, the reviewers believe that information sufficient to make an objective appraisal of the work is a valuable standard. This information does not have to detract from the understandability of a report; it can be presented separately, such as in an appendix. |

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| Comment | One commentator indicated that the principal, as well as the actuary, should be able to determine what was relevant to an actuarial report. |
| Response | The reviewers disagreed and did not include such authority for the principal. |
| **Section 3.3 (formerly 3.5), Specific Circumstances** | |
| Comment | Two commentators suggested that further examples or clarification of time pressure was needed. |
| Response | The reviewers believe this is accomplished as part of the modification of this section for clarity, and the additional discussion added to appendix 1. |
| **Section 3.4.2 (formerly 3.3.2), Conflict of Interest** | |
| Comment | One commentator requested a definition of "information." |
| Response | The reviewers did not feel such a definition was needed and made no change. |
| **Section 3.4.4 (formerly 3.3.4), Responsibility for Assumptions and Methods** | |
| Comment | One commentator felt that the actuary is always responsible for the assumptions and methods; that the lead paragraph of 3.4.4 should so state and that 3.4.4.c. should be deleted. A second commentator suggested that the ASOP should allow the actuary to simply disclose that the assumption or method was not set by the actuary and does not represent the actuary's professional judgment. |
| Response | The reviewers disagree with both commentators. The first position is not practical in all situations. The second position would be an overly broad exception enabling an actuary to inappropriately avoid professional responsibility. The reviewers believe that the revisions to section 3.4.4 in this version of the standard strike the proper balance between professional responsibility and real-life practicality. |
| Comment | Two commentators wondered whether "specified by law" (section 3.4.4(a)) could be interpreted to include situations (FAS 87) where assumptions are specified by a third party under some binding authority. |
| Response | The reviewers believe the language and intent are clear. FAS 87 situations (and all circumstances where the assumption or method is not specified within law) fall under section 3.4.4(b). |
| **Section 3.4.4(b) (formerly 3.3.4(b), Responsibility for Assumptions and Methods** | |

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| Comment | One commentator suggested rewording to accommodate assumptions the actuary is not qualified to make. |
| Response | The reviewers agreed and changed the wording of 3.4.4(b)(3) and 4.3(d)(2) to reflect this. |
| Comment | One commentator thought that the actuary should be required to provide an affirmative statement of agreement with assumptions that "do not conflict significantly with what the actuary considers to be reasonable." |
| Response | The reviewers believe this would be an impractical and unnecessary requirement. |
| **Section 3.4.4(c) (formerly 3.3.4(c), Responsibility for Assumptions and Methods** | |
| Comment | One commentator suggested removing the word "prominently." |
| Response | The reviewers agreed and removed it. |
| **Section 3.4.5 (formerly 3.3.5), Information Date of Report** | |
| Comment | One commentator suggested making dates plural as different information may have different dates. |
| Response | The reviewers agreed and changed the word to "date(s)." |
| **Section 3.4.6 (formerly 3.3.6), Subsequent Events** | |
| Comment | Two commentators suggested wording changes. |
| Response | The reviewers agreed and changed some words. |
| Comment | One commentator suggested that if an actuary is aware of an event that has a material effect on the findings, then it is possible that the actuary would need to submit a revised report. |
| Response | The reviewers agree, but recognize that this is not always possible. Section 3.4.6(d) has been added to clarify this situation. |
| **Section 3.5 (formerly 3.4), Reconciliation of Material Differences** | |
| Comment | Several commentators suggested "reconcile" was too strong a requirement, and "same assignment" was imprecise. |
| Response | The reviewers agreed and revised this section. |
| **Section 3.6, Oral Communications** | |

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| Comment | One commentator expressed concern that "passed on to other parties" was too broad, and should be restricted to intended users. |
| Response | The reviewers disagreed and made no change. |
| **Section 3.8, Documentation** | |
| Comment | One commentator felt the actuary should take reasonable steps to ensure that another qualified actuary could take over the work if necessary. |
| Response | The reviewers agreed and revised this section. |
| **SECTION 4. COMMUNICATIONS AND DISCLOSURES** | |
| **Section 4.1.2, Identification of Actuarial Documents** | |
| Comment | One commentator suggested that this provision seems overly broad and cumbersome, and should be removed. |
| Response | The reviewers disagreed, feeling identification of documents is important, and made no change. |
| **Section 4.1.3, Disclosures in Actuarial Reports** | |
| Comment | One commentator felt that a report provided by the actuary will be so laden down by disclosures that clear and concise communications will be difficult. |
| Response | The reviewers disagreed and made no change. They noted that disclosures could be in a separate section of the report from the findings, and so do not prevent clarity of communication. |
| Comment | One commentator felt section 4.1.3 should be expanded to include disclosures required by section 3.4.4. |
| Response | The reviewers disagreed and made no change The disclosures required by section 3.4.4 are addressed in sections 4.2 and 4.3. |
| Comment | One commentator felt section 4.1.3 should reference the exceptions addressed in section 3.3. |
| Response | The reviewers agreed and referenced section 3.3 in section 4.1.3. |
| Comment | One commentator felt where the actuarial report consists of more than one document, the actuary should disclose the documents that comprise the full report. |

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| Response | The reviewers agreed and added paragraph j. to section 4.1.3. |
| Comment | One commentator felt that "on which the actuary relied" should be moved to immediately after "any information." |
| Response | The reviewers agreed and made this change. |
| Comment | One commentator felt it would be helpful to include examples to clarify the phrase "unless it is inappropriate to do so." |
| Response | The reviewers felt that incorporating a list of examples may limit the actuary's judgment, and made no change. |
| **Section 4.2, Certain Assumptions or Methods Prescribed by Law** | |
| Comment | One commentator requested that section 4.2 should be expanded to clarify that assumptions and methods prescribed by or under the authority of FASB, should be treated as "prescribed by law." |
| Response | The reviewers disagreed in part and made no change. An assumption or method prescribed by FASB would come under section 4.2 (assuming FASB is "other binding authority"). An assumption or method prescribed by a third party under the authority of FASB would not be covered by section 4.2. |
| **Section 4.3, Responsibility for Assumptions and Methods** | |
| Comment | One commentator questioned whether every assumption or method used for a monthly valuation had to be addressed in each actuarial report, or could reference be made to a master document? |
| Response | The reviewers made no change as this is the intent of section 3.2, which recognizes that an actuarial report often consists of multiple documents. The master document referred to in the comment fits this concept well. |
| Comment | One commentator questioned the need to disclose in an internal document "the reason why the other party set the assumption or method" |
| Response | The reviewers agreed and qualified section 4.3 by reference to section 3.3. |
| Comment | One commentator suggested adding a section 4.3(d)(3) with language such as "that the actuary agreed with the assumption or method." |
| Response | The reviewers made no change, since section 4.3 is only triggered if the actuary disowns the assumption or method. |

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| Comment | One commentator pointed out that the guidance in this section is different than the guidance for similar situations under section 5.4.5 of ASOP No. 20. |
| Response | The reviewers believe the guidance in this section is appropriate to the general situation and have made no change. Section 1.2 of this standard states that where guidance of other standards conflicts with the guidance in this standard, the other standard applies. |
| **Section 4.4, Deviation From the Guidance of an ASOP** | |
| Comment | One commentator objected to the revision of section 4.4 (from the existing ASOP) and requested the original language be retained. |
| Response | The reviewers disagreed and made no change. The reviewers believe that the disclosures required under section 4.4 are adequately strong to address the concerns of the commentator. The revised section 4.4 is part of the ASB initiative to move all substantive guidance on deviation into ASOP No. 41 (and thus achieve consistency across ASOPs.) Part of this initiative is to clarify that "deviation" means deviating from the guidance of an ASOP. Compliance with the ASOP is still possible through adequate disclosure. |

ACTUARIAL STANDARDS BOARD

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**Actuarial Standard**
**of Practice**
**No. 42**

# Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims

**Revised Edition**

**Developed by the**
**Task Force to Revise ASOP No. 42 of the**
**Health Committee of the**
**Actuarial Standards Board**

**Adopted by the**
**Actuarial Standards Board**
**March 2018**

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**Doc. No. 191**

**ASOP No. 42—Doc. No. 191**

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## APPENDIXES

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March 2018

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Health and Disability Liabilities Other Than Liabilities for Incurred Claims

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 42

This document contains the final version of a revision of ASOP No. 42, *Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims*.

History of the Standard

The ASB originally adopted ASOP No. 42, then titled *Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims,* in 2004 and updated the ASOP for deviation language in 2011.

This revision of ASOP No. 42 reflects a number of changes to other standards that have been made since its 2004 adoption, including updating the ASOP, where appropriate, to incorporate references to new standards that have since been issued, eliminate guidance that does not conform to current ASOP practices regarding references to other standards of practice, and make consistent the definitions used in the standard with those of other standards of practice. In addition, this revision of ASOP No. 42 reflects relevant legal, regulatory, and practice developments that have occurred since its initial adoption.

Exposure Draft

The exposure draft was released in May 2017 with a comment deadline of September 30, 2017. Five comment letters were received. For a summary of the issues contained in the comment letters on the exposure draft and the responses, please see appendix 2.

Notable Changes from the Exposure Draft

Notable changes include the following:

1. added a definition and guidance on collectability; and

2. added section 3.16, Reliance on Experts, to further support the guidance on collectability.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in March 2018 to adopt this standard.

**ASOP No. 42—Doc. No. 191**

Task Force to Revise ASOP No. 42

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Richard A. Lassow, Vice Chairperson

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*The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs). These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.*

# ACTUARIAL STANDARD OF PRACTICE NO. 42

# HEALTH AND DISABILITY ACTUARIAL ASSETS AND LIABILITIES OTHER THAN LIABILITIES FOR INCURRED CLAIMS

## STANDARD OF PRACTICE

### Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries estimating or reviewing **health benefit plan** actuarial assets and liabilities, other than liabilities for incurred claims, when preparing or reviewing financial reports, claims studies, rates, or other actuarial communications as of a **valuation date**. This ASOP complements ASOP No. 5, *Incurred Health and Disability Claims*.

1.2 Scope—This standard applies to actuaries when performing actuarial services with respect to estimating or reviewing **health benefit plan** actuarial assets and liabilities, other than liabilities for incurred claims, on behalf of **risk-bearing entities**. This standard does not address interpretations of statutory or generally accepted accounting practices.

This standard does not apply to actuaries when estimating or reviewing assets or liabilities in accordance with other ASOPs, such as ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, and ASOP No. 6, *Measuring Retiree Group Benefits Obligations and Determining Retiree Group Benefits Program Periodic Costs or Actuarially Determined Contributions*. Furthermore, this standard does not apply in situations where a health or disability benefit is included within, and is incidental to, a plan subject to another practice-specific standard, such as a disability benefit under a life plan or a 401(h) account that is part of a pension plan.

This standard applies to the actuary only with respect to asset and liability estimates that are communicated as an actuarial finding (as described in ASOP No. 41, *Actuarial Communications*). Actions taken by the actuary's principal regarding the use of such estimates are beyond the scope of this standard.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard will be effective for any actuarial work product with a **valuation date** on or after August 1, 2018.

## Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Block of Business—All policies of a common coverage type (for example, major medical, preferred **provider** organization, or capitated managed care), demographic grouping (for example, size, age, or area), contract type, or other segmentation used in estimating assets and liabilities for actuarial purposes, or used by a **risk-bearing entity** for evaluating its business.

2.2 Capitation—The amount of money paid to a **provider** on a periodic basis to provide specific health care services under a **health benefit plan** regardless of the number or types of services actually rendered during the contractual period. The payments are usually quantified on a per covered member basis.

2.3 Carved-Out Services—Contractually designated services such as prescription drugs or dental, or condition-specific services such as cancer, mental health, or substance abuse treatment, excluded from a **capitation**, **risk-sharing**, or other contractual arrangement.

2.4 Collectability—The likelihood of receiving the amount of money owed.

2.5 Contract Period—The time period for which a contract is effective.

2.6 Contract Reserve—An amount established when a portion of the premium due prior to the **valuation date** is designed to pay all or a part of the claims expected to be incurred after the **valuation date**. A **contract reserve** may or may not include a provision for the **unearned premium reserves**. A **contract reserve** may also be referred to as an active life reserve or policy reserve.

2.7 Exposure Unit—A unit by which the cost for a **health benefit plan** is measured. For example, an **exposure unit** may be a contract, an individual covered, $100 of weekly salary, or $100 of monthly benefit.

2.8 Health Benefit Plan—A contract, such as an insurance policy, or other financial arrangement providing medical, prescription drug, dental, vision, disability income, long-term care, or other health-related benefits, whether on a reimbursement, indemnity, or service benefit basis, regardless of the form of the **risk-bearing entity**.

2.9 Long-Term Product—A **health benefit plan** that provides medical or disability benefits for an extended period of time. Some examples are cancer, long-term care, and long-term

disability policies. The plan's benefits may not become payable for several years after policy purchase and claims usually extend beyond the **valuation date**.

2.10 Premium Deficiency Reserve—A liability representing the deficiency, if any, in future revenues and current reserves less future claims and related expenses.

2.11 Providers—Individuals, groups, or organizations providing health care services or supplies, including but not limited to doctors, hospitals, independent physician associations, accountable care organizations, physical therapists, medical equipment suppliers, and pharmaceutical suppliers.

2.12 Provider-Related Asset or Liability—An amount established for expected future incentive payments or receipts or for non-claim related amounts such as **risk-sharing arrangement** and **capitation** payments or receipts.

2.13 Risk Adjustment Data Validation (RADV)—The process of verifying the accuracy of information submitted for use in a risk adjustment model.

2.14 Risk-Bearing Entity—The entity with respect to which the actuary is estimating liabilities or assets associated with **health benefit plans** or **risk-sharing arrangements**. Examples of risk bearing entities include but are not limited to managed-care entities, insurance companies, health care **providers**, self-funded employer plans, and government-sponsored plans or risk contracts.

2.15 Risk-Sharing Arrangement—An arrangement involving two or more entities, calling for payments contingent upon certain financial, operational, or other metrics. Examples include, but are not limited to, **provider risk-sharing arrangements** such as **provider** incentives, bonuses, and withholds or governmental **risk-sharing arrangements** such as risk corridor and risk-adjustment programs.

2.16 Time Value of Money—The principle that an amount of money available at an earlier point in time has different usefulness and value than the same amount of money has at a later point in time.

2.17 Trends—Measures of rates of change, over time, of the elements, such as cost, incidence, and severity, affecting the estimation of certain assets or liabilities.

2.18 Unearned Premium Reserve—An amount established to reflect premiums that have been collected prior to the **valuation date** for coverage after the **valuation date**.

2.19 Valuation Date—The date as of which the assets or liabilities are estimated.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Introduction—The estimation of actuarial assets and liabilities is fundamental to the practice of health actuaries. It is necessary for the completion of financial statements; for the analysis and projection of **trends**; for the analysis or development of rates; and for the development of various management reports, regardless of the type of **risk-bearing entity**.

3.2 Purpose or Use of the Asset or Liability Estimate—The actuary should identify the intended purpose or use of the estimate. Potential purposes or uses of estimates include, but are not limited to, estimates for external financial reporting, pricing, internal management reporting, appraisal work, and scenario analyses. Where multiple purposes or uses are intended, the actuary should consider the potential conflicts arising from those multiple purposes and uses and should consider making adjustments to accommodate the multiple purposes to the extent that, in the actuary's professional judgment, it is appropriate and practical to make such adjustments.

3.3 Considerations for Estimating Assets and Liabilities—The actuary should include items associated with the estimation that, in the actuary's professional judgment, are applicable, material, and are reasonably foreseeable to the actuary at the time of estimation.

In determining which items to include in the estimation of assets and liabilities, the actuary should consider items including but not necessarily limited to those described below and may rely on others as described in sections 3.14, 3.15, and 3.16.

3.3.1 Health Benefit Plan Provisions and Business Practices—The actuary should consider the **health benefit plan** provisions and related business practices, including special group contract holder requirements and **provider** arrangements, which in the actuary's judgment may materially affect the cost, frequency, and severity of claims. These include, for example, elimination periods, deductibles, preexisting conditions limitations, maximum allowances, and managed-care restrictions.

The actuary should make a reasonable effort to understand any changes in plan provisions or business practices made since the last estimate of assets or liabilities. The actuary should consider how such differences or changes are likely to affect the estimation of assets or liabilities.

3.3.2 Risk-Sharing Arrangement Provisions—The actuary should consider the **risk-sharing arrangement** provisions that, in the actuary's professional judgment, are likely to materially affect the financial results of the **risk-sharing arrangement**. Examples of such provisions include the following:

a. for **risk-sharing arrangements** including a **provider** organization, allowances for items such as number of enrolled lives included, the results of membership satisfaction surveys, and actual usage of certain facilities; and

b. for **risk-sharing arrangements** including a governmental organization, such as medical loss ratio rebates, required adjustments to premiums or claims.

When estimating an asset related to an amount receivable by the **risk-bearing entity** under such a **risk-sharing arrangement**, the actuary should reflect **collectability**.

3.3.3 Economic and Other External Influences—The actuary should consider economic and other external influences such as changes in price levels, unemployment levels, medical practice, managed care contracts, cost shifting, **provider** fee schedule changes, medical procedures, epidemics or catastrophic events, and adverse selection sometimes experienced in recessionary periods or prior to contract termination.

3.3.4 Risk Characteristics and Organizational Practices by Block of Business—The actuary should consider how marketing, underwriting, and other business practices can influence the types of risks accepted. Claims administration practices can influence claim rates and **trends** and in turn influence actuarial asset and liability estimates. Furthermore, the pattern of growth or contraction and relative maturity of a **block of business** can influence the magnitude of actuarial assets or liabilities.

3.3.5 Legislative and Regulatory Requirements—The actuary should consider relevant legislative and regulatory requirements and changes as they pertain to the estimation of assets and liabilities. For example, governmental mandates can influence the provision of new benefits, risk characteristics, care management practices, rating, reserving and underwriting practices, methods used to estimate assets and liabilities, or claims processing practices.

3.3.6 Coordination of Benefits (COB), Subrogation, and Government Programs—The actuary should make a reasonable effort to understand the relevant organizational practices and regulatory requirements related to COB, subrogation, and government programs (state or federal). The actuary should consider how these items are reflected in the data (for example, negative claims or income) and make appropriate adjustments for COB, subrogation, and payments or recoveries resulting from government programs.

3.3.7 Carved-Out Services—The actuary should consider the pertinent benefits, payment arrangements, and separate reporting of those benefits subject to **carved-out services** in the estimation of assets and liabilities.

3.3.8 Time Value of Money—The actuary should consider if the **time value of money** will have a material effect in the estimation of assets and liabilities. The use of any interest discounts depends on the purpose for which assets and liabilities are

being estimated and should reflect any applicable regulation or accounting standards.

3.3.9 Special Considerations for Long-Term Products—The actuary should consider the benefits available in **long-term products**, such as lump-sum, fixed, or variable payments for services; provisions such as cost of living adjustments and inflation protections; payment differences based on institutional or home-based care; social insurance integration; and the criteria for benefit eligibility.

3.3.10 Reinsurance Arrangements—The actuary should consider the effect of reinsurance arrangements in estimating assets and liabilities. In particular, the actuary should consider the effect of extended reporting or recovery periods, **collectability**, collection delay, any amounts already received, and any regulatory limitations associated with certain types of reinsurance. Reinsurance arrangements may also include risk-sharing provisions.

3.3.11 Non-Claim Expenses—The actuary should consider whether an explicit provision for non-claim expenses should be included, or whether a particular asset or liability implicitly provides for future non-claim expenses.

3.3.12 Consistency of Assumptions and Methodology—The actuary should use assumptions and methodology consistent with those used for estimating related assets, liabilities and reserves, such as incurred **health benefit plan** claims, unless it would be inappropriate to do so.

3.4 Considerations for Estimating Contract Reserves—The actuary should estimate a **contract reserve** when such a reserve is required by the rating approach. For example, **contract reserves** are typically estimated for entry-age-rated **health benefit plans** (where premium rates are based on entry age and may be level over the lifetime of the contract), or where flat premium rate guarantees or premium rate change limitations apply for multiple-year periods. The actuary may estimate the reserve using a seriatim basis, grouping techniques, or a combination of both. The actuary should use assumptions that are reasonable and consistent with the purpose for which the reserve is being calculated, and reasonable in the aggregate. Certain assumptions may vary over time or be subject to durational effects.

3.4.1 Interest Rates—The actuary should use interest rates to reflect the **time value of money** in the present value calculation and should consider items such as the projection period and market conditions.

3.4.2 Morbidity—The actuary should use morbidity assumptions that reflect the underlying risk. These assumptions may reflect factors such as age, gender, and marital status of the insured as well as the elimination period and dependent status. In addition, the actuary should take into account the impact of durational effects such as risk selection and pre-existing condition limitations, changes in **health benefit plans**, changes in **provider** agreements, adverse selection due to

premium rate increases and plan design, and other factors that, in the actuary's professional judgment, materially affect future claim payments.

3.4.3 Persistency—The actuary should consider using persistency or termination assumptions that include both involuntary terminations, such as deaths and disablements, and voluntary terminations, as appropriate. Voluntary termination assumptions, if any, should reflect the expected impact of future premium rate increases.

3.4.4 Non-Claim Expenses—The actuary should consider whether using an assumption is appropriate for expenses such as maintenance, acquisition, and claim settlement.

3.4.5 Trend—The actuary should consider using trend assumptions for inflation, utilization, morbidity, and expense rates.

3.4.6 Premium Rate Changes—When using an assumption to reflect premium rate changes in the reserve calculation, the actuary should use a premium rate change assumption that is reasonable in relation to the projected claims costs and the manner in which the rate change will be implemented (for example, on a given date for an entire **block of business** or on the next policy anniversary). This assumption should take into account factors such as market conditions, regulatory restrictions, and rate guarantees.

3.4.7 Previous Assumptions for Estimating Contract Reserves—The actuary may determine that assumptions used as of a prior **valuation date** are no longer appropriate and may change them in accordance with the standards of the financial statements in which the reserves are reported. If the actuary determines that a change in assumptions is warranted, the actuary should follow the process set forth in sections 3.4.1-3.4.6 when selecting new **contract reserve** assumptions for future **valuation dates**.

3.4.8 Valuation Method—For a new policy form, in addition to the assumptions discussed above, the actuary may need to determine the valuation method. Examples of valuation methods are the gross premium method, the net level premium method, and the full preliminary term (one- or two-year) method. Except where the valuation method is prescribed, the actuary should choose a method appropriate for the intended use of the reserve, such as in statutory financial statements or analysis of operating income. When not using a net level premium method, the actuary should consider the expense structure, such as higher first-year costs, in selecting the valuation method.

3.5 Considerations for Estimating Premium Deficiency Reserves—The actuary should estimate a **premium deficiency reserve** when such a reserve is required. **Premium deficiency reserves** are typically established for financial reporting purposes. They may also be established for other purposes such as management reporting. When estimating

**premium deficiency reserves**, the actuary should use reasonable assumptions that are appropriate for the intended purpose, and also reasonable in the aggregate.

3.5.1. Blocks of Business—The actuary should consider blocks of business in a manner consistent with applicable financial reporting requirements. The characteristics of a **block of business** may include, but are not limited to, benefit type (for example, major medical, preferred **provider** organization, or capitated managed care), contract type (for example, group or individual policies), demographic grouping (for example, group size or geographical area), and length of rate guarantee period. A **block of business** should be large enough so that its financial results are material relative to the **risk-bearing entity** as a whole. The actuary may need to estimate a **premium deficiency reserve** for a **block of business** where a premium deficiency exists even if the **contract period** has not started.

3.5.2 Time Period—The actuary should use the **valuation date** as the beginning of the time period used to project losses from a **block of business**. In determining the end of the time period, the actuary should take into account items including, but not limited to, the end of the **contract period**, anticipated renewal of coverage, and the point at which the block no longer requires a **premium deficiency reserve**.

3.5.3 Exposure—The actuary should consider reasonable increases and decreases in **exposure units** over the time period of the calculation in the **premium deficiency reserve** calculation. This assumption should reflect changes due to factors including, but not limited to, morbidity, mortality, lapses, and the impact of expected premium rate changes.

3.5.4 Premium Rate Changes—When using a premium rate change assumption, the actuary should use an assumption that is reasonable in relation to the projected claims costs and the **risk-bearing entity's** expectations. This assumption should consider factors such as market conditions, regulatory restrictions, and rate guarantees.

3.5.5 Claim Trend—The actuary should consider factors that may materially affect future claim payments, such as durational effects, changes in **health benefit plans**, changes in **provider** agreements, adverse selection due to premium rate increases, and plan design.

3.5.6 Risk-Sharing Arrangements—The actuary should consider **risk-sharing arrangements** between the **risk-bearing entity** and other entities, such as **providers**, governmental organizations, and employers. The actuary should reflect the **collectability** of any amounts under **risk-sharing arrangements**.

3.5.7 Interest Rates—When using an interest rate assumption to reflect the **time value of money** in a present value calculation, the actuary should consider items such as the projection period and market conditions.

3.5.8 Reinsurance—The actuary should consider the expected effects of reinsurance and changes in reinsurance premiums in estimating the **premium deficiency reserve**.

3.5.9 Taxes—The actuary should consider the effect of losses assumed in the calculation of the **premium deficiency reserve** on the **risk-bearing entity's** taxes and may include a tax credit in the calculations where appropriate.

3.5.10 Non-Claim Expenses—The actuary should consider total expenses of the **risk-bearing entity** in estimating a **premium deficiency reserve** and should consider whether the expenses allocated to the **block of business** are reasonable for the purpose of estimating **premium deficiency reserves**. If only a portion of expenses are allocated to the otherwise deficient **blocks of business**, the actuary should verify that the remaining blocks of business cover the remaining expenses.

3.5.11 Applicable Authority—The actuary should consider any applicable law, regulation, or other binding authority when estimating **premium deficiency reserves** for financial reporting.

3.6 Reserve for Insufficient Administrative Fee for Self-Insured Contracts—A liability under a self-insured contract may need to be established if the administrative fees are insufficient to cover the direct fixed and variable expenses allocated to the self-insured contract. When estimating such a liability, the actuary should consider the expected income and expense flows under the contract using methods that are similar to those used in estimating a **premium deficiency reserve** for an insured **health benefit plan** and assumptions that are appropriate for self-insured contracts (see section 3.5 for further discussion).

3.7 Considerations When Estimating Provider-Related Assets and Liabilities—**Provider-related liabilities** may arise for a **risk-bearing entity**. **Risk-sharing arrangements**, such as incentive arrangements, penalty arrangements, and **capitation** arrangements can create potential assets or liabilities.

3.7.1 Provider Risk-Sharing and Capitation Arrangements—The actuary should consider the relevant contractual arrangements with **providers** to determine whether the contractual arrangements require an asset or liability to be estimated.

The actuary should consider whether a **provider-related asset or liability** for contracts in effect or not fully settled as of the **valuation date** should be estimated. In estimating the asset or liability, the actuary should consider any amounts due to or due from the **provider**, the overall financial condition of the **provider** (see section 3.7.2 for further discussion), whether losses can be offset

with profits, risk transfer arrangements (such as stop loss or quota share provisions), the timing of receipts and payments, and **collectability**.

Similarly, the actuary should consider whether the risk of a **provider** failing or leaving a network creates a need to estimate a liability for the contingency of the payment by the **risk-bearing entity** of higher **capitations** or fees for services while a replacement **provider** is identified and suitable arrangements are concluded.

3.7.2 Provider Financial Condition—When a **risk-bearing entity** shares risk with a **provider** under a risk-sharing or **capitation** arrangement, the actuary should estimate, to the extent practical, whether the **provider's** overall financial condition will allow it to meet its obligations, and, if not, adjust the asset or liability accordingly. To the extent that these assets or liabilities are not otherwise included in the claim liabilities of the **risk-bearing entity**, such assets or liabilities should be included in the **provider-related assets or liabilities**.

3.7.3 Provider Incentive or Penalty Payments—If a **provider** agreement calls for incentive or penalty payments if certain conditions are met, such as quality of care standards or claim targets, the actuary should consider whether the **risk-bearing entity** should record a **provider-related asset or liability**.

3.7.4 Provider Risk-Bearing Entities—When the **risk-bearing entity** is a **provider**, the actuary should also consider relevant contractual arrangements with other **providers** as well as non-**provider** entities to determine whether the contractual arrangements require an asset or a liability to be estimated. One primary source of potential liability between **providers** is the receipt of **capitation** by one **provider** with payments due to other **providers** using fee-for-service.

3.8 Claim Adjustment Expense Liabilities—The actuary should estimate a liability for claim adjustment expenses associated with unpaid claims, unless such liabilities are included in the liability for unpaid claims, otherwise provided for appropriately, or not required by the relevant financial reporting guidance. The actuary may consider the company's cost allocation approach in the liability estimation.

3.9 Risk Adjustment Settlements—A risk adjustment settlement may exist that will be either an asset or a liability to the **risk-bearing entity**. In addition to the relevant guidance in ASOP No. 45, *The Use of Health Status Based Risk Adjustment Methodologies*, the actuary should address the following components of the risk adjustment program, if applicable:

3.9.1 Market Neutrality—When the risk adjustment settlements are required to be revenue neutral across a market or other group of entities, the actuary should consider reasonably available aggregate market information, information specific to the **risk-bearing entity**, and **collectability**.

3.9.2 Risk Adjustment Payment Methodology—Risk adjustment payments typically follow a methodology that is governed by applicable law, regulation, or contractual arrangement. The actuary should review and understand the risk adjustment payment methodology used in estimating the settlement amounts.

3.9.3 Risk Adjustment Data Validation (RADV) Audit—The outcome of an **RADV** audit may be an amount that the insurer owes or is owed. When estimating the asset or liability that may be due from an **RADV** audit, the actuary should review relevant data validation reports.

3.10 Other Assets and Liabilities—The actuary may be requested to opine on the appropriateness of certain other assets or liabilities provided by another party. In some cases, the actuary may also estimate such assets and liabilities. When estimating or opining on such assets and liabilities, the actuary should refer to the appropriate section(s) below.

3.10.1 Liabilities for Payments to State Pools—The actuary should consider whether appropriate provision has been made for payments due under state assessment pools, such as insolvency pools, risk-sharing pools, or other arrangements.

3.10.2 Reserves for Unearned Premiums—The actuary should consider whether appropriate provision has been made for liabilities associated with the amount of premiums written and not yet earned.

3.10.3 Assets and Liabilities for Dividends, Experience Rating, and Premium Rebates—The actuary should consider the contract language or regulatory requirements defining the methodology prescribed for estimating the asset or liability, and refer to ASOP No. 5, if applicable.

3.10.4 Reserves for Extension of Benefits and Contingent Benefits Provisions—The actuary should consider whether the provisions of the **health benefit plan** require estimation of a reserve for extension of benefits or contingent benefits.

3.10.5 Prescription Drug Rebates—An asset may exist for an insurer receiving a rebate, or a liability may exist for a pharmaceutical firm or pharmacy benefits manager paying a rebate. The actuary should consider applicable rebate contracts or agreements. The actuary should consider any available historical drug usage, projected drug usage, and current emerging experience.

3.10.6 Cost Sharing Subsidies—Cost sharing subsidies may exist that pay for part or all of the cost sharing for eligible participants. Insurers may be paid on a budgeted basis with a final payment to or from the insurer based on the actual experience. The actuary should consider the following:

a. applicable law, regulation, or other binding authority;

b. the historical enrollment for members eligible for cost sharing subsidies;

c. any changes in the market that would impact the eligible enrollment;

d. any potential changes in the insurer's relative market position that could impact the eligible enrollment; and

e. **collectability**.

3.11 Follow-Up Studies—The actuary may conduct follow-up studies that involve performing tests of reasonableness of the prior period asset or liability estimates and the methods used over time. When conducting such follow-up studies, the actuary should, to the extent practicable, do the following:

a. acquire the data to perform such studies;

b. perform studies in the aggregate or for pertinent blocks of business; and

c. utilize the results, if appropriate, in estimating assets and liabilities.

3.12 Provision for Adverse Deviation—Recognizing that assets and liabilities are an estimate of the value of true amounts that will emerge, the actuary should consider what explicit provision for adverse deviation, if any, might be appropriately included. If a provision for adverse deviation is included, the asset or liability should be appropriate, in the actuary's professional judgement, for the intended use.

3.13 Evaluating Collectability—The actuary should use professional judgment when evaluating **collectability** and may consider the following:

a. materiality of the asset;

b. the expertise of other parties; and

c. other readily available information, such as financial statements.

3.14 Reliance on Data or Other Information Supplied by Others—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.

3.15 Reliance on Assumptions and Methods Selected by Others—When relying on assumptions and methods selected by others, the actuary should refer to ASOP No. 41 for guidance.

3.16 Reliance on Experts—An actuary may rely on experts in their field of knowledge when estimating or reviewing actuarial assets and liabilities. In determining the appropriate

level of reliance, the actuary should consider whether the individual or individuals upon whom the actuary is relying are experts in the applicable field. The actuary should disclose the extent of any such reliance.

3.17 Documentation—The actuary should document the methods, assumptions, procedures, and the sources of the data used. The documentation should be in a form such that another actuary qualified in the same practice area could assess the reasonableness of the work.

## Section 4. Communications and Disclosures

4.1 Actuarial Communication—When issuing an actuarial communication subject to this standard, the actuary should refer to ASOP Nos. 23 and 41. In addition, such actuarial communications should disclose the following, as applicable:

a. important dates used in the analysis;

b. significant limitations, if any, which constrained the actuary's asset or liability estimate analysis such that, in the actuary's professional judgment, there is a significant risk that a more in-depth analysis would produce a materially different result;

c. specific significant risks and uncertainties, if any, with respect to whether actual results may vary from the asset or liability estimate;

d. the risk that **provider** insolvency may have a material effect on the **risk-bearing entity's** ultimate asset or liability, as described in section 3.7.2;

e. any follow-up studies the actuary may have used in the development of the estimate of assets or liabilities, as described in section 3.11;

f. any explicit provision for adverse deviation, as described in section 3.12;

g. when updating a previous estimate, changes in assumptions, procedures, methods, or models that the actuary believes to have a material impact on the **health benefit plan** actuarial asset or liability estimate, as well as the reasons for such changes to the extent known by the actuary. The actuary may need to disclose these changes in cases other than when updating a previous estimate, consistent with the purpose or use of the **health benefit plan** actuarial asset or liability estimate. This standard does not require the actuary to measure or quantify the impact of such changes; and

h. any reliance on experts, as described in section 3.16.

4.2 Additional Disclosures—The actuary should also include the following, as applicable, in an actuarial communication:

a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

## Appendix 1

## Background and Current Practices

*Note*: This appendix is provided for informational purposes, but is not part of the standard of practice.

### Background

Health benefit plan actuarial assets and liabilities other than incurred claims are important to many health lines of business. New forms of these assets and liabilities arose in recent years with the rapid increase in managed care provider risk arrangements and healthcare reform. The attention to financial statements enhanced the importance of these assets and liabilities.

### Current Practices

Actuaries are able to obtain information relating to actuarial assets and liabilities for health benefit plan coverages from various publications from the National Association of Insurance Commissioners, including the following:

- the Accounting Practices and Procedures Manual;
- the Health Insurance Reserves Model Regulation; and
- the Health Reserves Guidance Manual.

Similar information on when assets and liabilities are required by Generally Accepted Accounting Principles is available in the Financial Accounting Standards Board's Statements of Financial Accounting Standards.

Estimating assets and liabilities may be necessary or useful in situations other than financial statement reporting, such as the acquisition of a block of a business or in experience analysis.

## Appendix 2

## Comments on the Exposure Draft and Responses

The exposure draft of this revision of ASOP No. 42, *Health and Disability Actuarial Assets and Liabilities Other Than Liabilities for Incurred Claims*, was issued in May 2017 with a comment deadline of September 30, 2017. Five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Task Force carefully considered all comments received, and the Health Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses to each.

The term "reviewers" includes the Task Force, Health Committee, and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the exposure draft.

| | |
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| **GENERAL COMMENTS** | |
| Comment | One commentator stated that the idea of collectability is treated differently in different sections of the ASOP and that actuaries are not equipped to opine on collectability. |
| Response | The reviewers agree that collectability was treated differently in various sections. Therefore, the reviewers made it clear and consistent throughout the ASOP, and added a definition for collectability. However, the reviewers disagree and believe that actuaries are equipped to opine on collectability. In addition, the reviewers further clarified the guidance, including adding language on reliance on experts. |
| **SECTION 2. DEFINITIONS** | |
| **Section 2.1, Block of Business** | |
| Comment | One commentator suggested more clarification regarding the definition for "policy." |
| Response | The reviewers believe that current language is clear with respect to what "policy" means, and made no change. |
| **Section 2.2, Capitation** | |
| Comment | One commentator suggested clarifying the definition of "captiation" by including a reference to "periodic payments." |
| Response | The reviewers agree and modified the definition. |
| **Section 2.7, Health Benefit Plan (now section 2.8)** | |
| Comment | One commentator suggested further clarification on whether accidental death and disability coverage is within the scope of a health benefit plan. |
| Response | The reviewers believe the current language is sufficient and, to the extent that accidental death and disability coverage has health coverage, it is part of a health benefit plan. Therefore, no change was made. |
| **Section 2.8, Long-Term Product (now section 2.9)** | |
| Comment | One commentator suggested that the definition for long-term product be clarified. |
| Response | The reviewers believe that the definition of long-term product is sufficiently clear and made no change. |

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| Comment | One commentator suggested that the definition of long-term product could be more clear with respect to when the benefits commence and when the benefits become payable. |
| Response | The reviewers agree and revised the definition to be more clear when benefits are payable. |
| **Section 2.11, Provider-Related Asset or Liability (now section 2.12)** | |
| Comment | One commentator felt that the definition for provider-related asset or liability needed clarification. |
| Response | The reviewers agree and provided examples to clarify the language. |
| Comment | One commentator suggested adding examples to the definition for provider-related assets or liabilities that may not arise from a risk-sharing arrangement. |
| Response | The reviewers agree and provided an example to clarify the language. |
| **Section 2.12, Risk Adjustment Data Validation (RADV) (now section 2.13)** | |
| Comment | One commentator suggested changing the risk adjustment data validation definition to clarify there are numerous risk adjustment models and not just one model. |
| Response | The reviewers agree and modified the definition for clarity. |
| **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES** | |
| **Section 3.3.3, Economic and Other External Influences** | |
| Comment | One commentator suggested revising the language regarding claims that might occur prior to contract termination. |
| Response | The reviewers agree and have revised the language. |
| **Section 3.3.6, Coordination of Benefits (COB), Subrogation, and Government Programs** | |
| Comment | One commentator suggested that the government programs described in section 3.3.6 are risk-sharing arrangements with the government and that this should be made clearer. |
| Response | The reviewers believe the government programs referred to may include provisions other than risk-sharing arrangements. Therefore, no change was made. |
| Comment | One commentator suggested that the governmental programs in section 3.3.6 be broken out or moved. |
| Response | The reviewers believe that governmental programs that are being referred to should be kept in this section since the section deals with similar adjustments that may be needed to the data due to governmental programs or coordination of benefits. Therefore, the reviewers made no change. |
| **Section 3.3.10, Reinsurance Arrangements** | |
| Comment | One commentator suggested that it should be clarified that the reinsurance risk-sharing provisions fall within risk-sharing arrangements. |
| Response | The reviewers believe that the wording is sufficiently clear, and made no change. |
| **Section 3.3.11, Expenses** | |
| Comment | One commentator suggested further clarification as to what expenses mean. |
| Response | The reviewers agree and have revised the language to reflect that expenses mean non-claim expenses. |
| **Section 3.5, Considerations for Estimating Premium Deficiency Reserves** | |
| Comment | Two commentators suggested clarification on the exposure units to be used for future contract periods. One commentator suggested further guidance on which time periods should be included in the calculation. |
| Response | The reviewers believe the current language strikes a balance of providing guidance while not being too prescriptive, and made no change. |

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| **Section 3.5.7, Interest Rates** | |
| Comment | One commentator suggested further clarification regarding duration. |
| Response | The reviewers agree and have provided more clarity by using projection period instead of duration. |
| **Section 3.7.1, Provider Risk-Sharing and Capitation Arrangements** | |
| Comment | One commentator suggested that the wording regarding the overall financial condition of the provider be consistent with section 3.7.2, Provider Financial Condition. |
| Response | The reviewers believe the language is appropriate in both sections and provided a reference in section 3.7.1 to see section 3.7.2 for further discussion. |
| **Section 3.8, Claim Adjustment Expense Liabilities** | |
| Comment | One commentator suggested clarification regarding to what items claims adjustment expenses apply. |
| Response | The reviewers believe the current wording is appropriate as it clarifies that claims adjustment expenses are associated with unpaid claims, and made no change. |
| **Section 3.11, Follow-Up Studies** | |
| Comment | One commentator suggested that the language should be changed to reflect that actuaries should conduct follow-up studies on the prior period asset or liability. |
| Response | The reviewers believe that follow-up studies are important but the section should not be overly prescriptive. The reviewers note that there are situations where actuaries may choose not to do a follow-up study, for example if the asset or liability is considered to be immaterial, and made no change. |
| **Section 3.12, Provision for Adverse Deviation** | |
| Comment | One commentator suggested additional clarification regarding when a provision for adverse deviation may be required or may be appropriate. |
| Response | The reviewers believe that the current language provides adequate guidance, and made no change. |
| **SECTION 4. COMMUNICATIONS AND DISCLOSURES** | |
| **Section 4.1, Actuarial Communication** | |
| Comment | One commentator suggested the wording of materiality in section 4.1(d) may be confusing. |
| Response | The reviewers believe the use of the word materiality is clear and direct the commentator to ASOP No. 1, *Introductory Actuarial Standard of Practice*, for the definition of materiality, and made no change. |
| Comment | One commentator suggested that an example in section 4.1(g) would clarify when an actuary may need to disclose changes. |
| Response | The reviewers believe the current wording is appropriate regarding when disclosure of changes is needed and made no change. |
| **APPENDIX (now Appendix 1)** | |
| Comment | One commentator suggested clarification of the organization that publishes the Statements of Financial Accounting Standards. |
| Response | The reviewers agree and added the organization that promulgates the Statements of Financial Accounting Standards. |

ACTUARIAL STANDARDS BOARD

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**Actuarial Standard**
**of Practice**
**No. 43**

# Property/Casualty Unpaid Claim Estimates

**Developed by the**
**Subcommittee on Reserving of the**
**Casualty Committee of the**
**Actuarial Standards Board**

**Adopted by the**
**Actuarial Standards Board**
**June 2007**
**Updated for Deviation Language Effective May 1, 2011**

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**(Doc. No. 159)**

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**APPENDIXES**

June 2007

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Property/Casualty Unpaid Claim Estimates

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 43

This booklet contains the final version of ASOP No. 43, *Property/Casualty Unpaid Claim Estimates.*

Background

Currently, no ASOP exists to provide guidance to actuaries developing unpaid claim estimates. ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, provides guidance to the actuary in issuing a written statement of actuarial opinion but not in developing an unpaid claim estimate. The Casualty Actuarial Society's *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* contains some guidance. However, that document is currently under review and the revised document is expected to contain significantly less guidance than the current version. Therefore, to address this issue, the ASB charged the Subcommittee on Reserving of the ASB Casualty Committee with creating an ASOP to provide guidance to actuaries regarding property/casualty unpaid claim estimates.

First Exposure Draft

The first exposure draft of this ASOP was approved for exposure in February 2006 with a comment deadline of June 30, 2006. Thirty-two comment letters were received and considered in developing modifications that were reflected in the second exposure draft.

Second Exposure Draft

The second exposure draft of this ASOP was approved for exposure in February 2007 with a comment deadline of May 1, 2007. The Subcommittee on Reserving carefully considered the nine comment letters received and made changes to the language in several sections in response. For a summary of the issues contained in these comment letters, please see appendix 2.

Due to the volume of comments received throughout the exposure period on the Actuarial Central Estimate concept, an additional appendix (see appendix 3) was added to address the

comments.

The Subcommittee on Reserving thanks everyone who took the time to contribute comments and suggestions on both exposure drafts.

The ASB voted in June 2007 to adopt this standard.

Subcommittee on Reserving of the Casualty Committee

Raji Bhagavatula, Chairperson

| | |
|---|---|
| Ralph S. Blanchard | Chandrakant Patel |
| Edward W. Ford | David S. Powell |
| Louise A. Francis | Jason L. Russ |
| Margaret Wendy Germani | Lee R. Steeneck |
| Mary Frances Miller | Chester J. Szczepanski |
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Casualty Committee of the ASB

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# ACTUARIAL STANDARD OF PRACTICE NO. 43

# PROPERTY/CASUALTY UNPAID CLAIM ESTIMATES

## STANDARD OF PRACTICE

### Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services relating to the estimation of loss and loss adjustment expense for unpaid claims for property/casualty coverages. Any reference to "unpaid claims" in this standard includes (unless explicitly stated otherwise) the associated unpaid claim adjustment expense even when not accompanied by the estimation of unpaid claims.

1.2 Scope—This standard applies to actuaries when performing professional services related to developing unpaid claim estimates only for events that have already occurred or will have occurred, as of an accounting date, exclusive of estimates developed solely for ratemaking purposes. This standard applies to the actuary when estimating unpaid claims for all classes of entities, including self-insureds, insurance companies, reinsurers, and governmental entities. This standard applies to estimates of gross amounts before recoverables (such as deductibles, ceded reinsurance, and salvage and subrogation), estimates of amounts after such recoverables, and estimates of amounts of such recoverables.

This standard applies to the actuary only with respect to unpaid claim estimates that are communicated as an actuarial finding (as described in ASOP No. 41, *Actuarial Communications*) in written or electronic form. Actions taken by the actuary's principal regarding such estimates are beyond the scope of this standard.

The terms "reserves" and "reserving" are sometimes used to refer to "unpaid claim estimates" and "unpaid claim estimate analysis." In this standard, the term "reserve" is limited to its strict definition as an amount booked in a financial statement. Services described above are covered by this standard, regardless as to whether the actuary refers to the work performed as "reserving," "estimating unpaid claims" or any other term.

This standard does not apply to the estimation of items that may be a function of unpaid claim estimates or claim outcomes, such as (but not limited to) loss-based taxes, contingent commissions and retrospectively rated premiums.

This standard does not apply to unpaid claims under a "health benefit plan" covered by ASOP No. 5, *Incurred Health and Disability Claims*, or included as "health and disability liabilities" under ASOP No. 42, *Determining Health And Disability Liabilities Other Than Liabilities for Incurred Claims*. However, this standard does apply to health benefits

associated with state or federal workers compensation statutes and liability policies.

With respect to discounted unpaid claim estimates for property/casualty coverages, this standard addresses the determination of the undiscounted value of such estimates. The actuary should be guided by ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*, to address additional considerations to reflect the effects of discounting.

An actuary may develop an unpaid claim estimate in the context of issuing a written statement of actuarial opinion regarding property/casualty loss and loss adjustment expense reserves. This standard addresses the determination of the unpaid claim estimate. The actuary should be guided by ASOP No. 36, *Statements of Actuarial Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, to address additional considerations associated with the issuance of such a statement.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard will be effective for any actuarial work product covered by this standard's scope produced on or after September 1, 2007.

## Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Actuarial Central Estimate—An estimate that represents an expected value over the range of reasonably possible outcomes.

2.2 Claim Adjustment Expense—The costs of administering, determining coverage for, settling, or defending claims even if it is ultimately determined that the claim is invalid.

2.3 Coverage—The terms and conditions of a plan or contract, or the requirements of applicable law, that create an obligation for claim payment associated with contingent events.

2.4 Event—The incident or activity that triggers potential for claim or claim adjustment expense payment.

2.5 Method—A systematic procedure for estimating the unpaid claims.

2.6 Model—A mathematical or empirical representation of a specified phenomenon.

2.7 Model Risk—The risk that the methods are not appropriate to the circumstances or the models are not representative of the specified phenomenon.

2.8 Parameter Risk—The risk that the parameters used in the methods or models are not representative of future outcomes.

2.9 Principal—The actuary's client or employer. In situations where the actuary has both a client and an employer, as is common for consulting actuaries, the facts and circumstances will determine whether the client or the employer (or both) is the principal with respect to any portion of this standard.

2.10 Process Risk—The risk associated with the projection of future contingencies that are inherently variable, even when the parameters are known with certainty.

2.11 Unpaid Claim Estimate—The actuary's estimate of the obligation for future payment resulting from claims due to past events.

2.12 Unpaid Claim Estimate Analysis—The process of developing an unpaid claim estimate.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Purpose or Use of the Unpaid Claim Estimate—The actuary should identify the intended purpose or use of the unpaid claim estimate. Potential purposes or uses of unpaid claim estimates include, but are not limited to, establishing liability estimates for external financial reporting, internal management reporting, and various special purpose uses such as appraisal work and scenario analyses. Where multiple purposes or uses are intended, the actuary should consider the potential conflicts arising from those multiple purposes and uses and should consider adjustments to accommodate the multiple purposes to the extent that, in the actuary's professional judgment, it is appropriate and practical to make such adjustments.

3.2 Constraints on the Unpaid Claim Estimate Analysis—Sometimes constraints exist in the performance of an actuarial analysis, such as those due to limited data, staff, time or other resources. Where, in the actuary's professional judgment, the actuary believes that such constraints create a significant risk that a more in-depth analysis would produce a materially different result, the actuary should notify the principal of that risk and communicate the constraints on the analysis to the principal.

3.3 Scope of the Unpaid Claim Estimate—The actuary should identify the following:

a. the intended measure of the unpaid claim estimate;

1. Examples of various types of measures for the unpaid claim estimate include, but are not limited to, high estimate, low estimate, median, mean, mode, actuarial central estimate, mean plus risk margin, actuarial central estimate plus risk margin, or specified percentile.

   As defined in section 2.1, the actuarial central estimate represents an expected value over the range of reasonably possible outcomes. Such range of reasonably possible outcomes may not include all conceivable outcomes, as, for example, it would not include conceivable extreme events where the contribution of such events to an expected value is not reliably estimable. An actuarial central estimate may or may not be the result of the use of a probability distribution or a statistical analysis. This description is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean.

   The terms "best estimate" and "actuarial estimate" are not sufficient identification of the intended measure, as they describe the source or the quality of the estimate but not the objective of the estimate.

2. The actuary should consider whether the intended measure is appropriate to the intended purpose or use of the unpaid claim estimate.

3. The description of the intended measure should include the identification of whether any amounts are discounted.

b. whether the unpaid claim estimate is to be gross or net of specified recoverables;

c. whether and to what extent collectibility risk is to be considered when the unpaid claim estimate is affected by recoverables;

d. the specific types of unpaid claim adjustment expenses covered in the unpaid claim estimate (for example, coverage dispute costs, defense costs, and adjusting costs);

e. the claims to be covered by the unpaid claim estimate (for example, type of loss, line of business, year, and state); and

f. any other items that, in the actuary's professional judgment, are needed to describe the scope sufficiently.

3.4 Materiality—The actuary may choose to disregard items that, in the actuary's professional judgment, are not material to the unpaid claim estimate given the intended purpose and use. The actuary should evaluate materiality based on professional judgment, taking into account the requirements of applicable law and the intended purpose of the unpaid claim estimate.

3.5 Nature of Unpaid Claims—The actuary should have an understanding of the nature of the unpaid claims being estimated. This understanding should be based on what a qualified actuary in the same practice area could reasonably be expected to know or foresee as being relevant and material to the estimate at the time of the unpaid claim estimate analysis, given the same purpose, constraints, and scope. The actuary need not be familiar with every aspect of potential unpaid claims.

Examples of aspects of the unpaid claims (including any material trends and issues associated with such elements) that may require an understanding include the following:

a. coverage;

b. conditions or circumstances that make a claim more or less likely or the cost more or less severe;

c. the underlying claim adjustment process; and

d. potential recoverables.

3.6 Unpaid Claim Estimate Analysis—The actuary should consider factors associated with the unpaid claim estimate analysis that, in the actuary's professional judgment, are material and are reasonably foreseeable to the actuary at the time of estimation. The actuary is not expected to become an expert in every aspect of potential unpaid claims.

The actuary should consider the following items when performing the unpaid claim estimate analysis:

3.6.1 Methods and Models—The actuary should consider methods or models for estimating unpaid claims that, in the actuary's professional judgment, are appropriate. The actuary should select specific methods or models, modify such methods or models, or develop new methods or models based on relevant factors including, but not limited to, the following:

a. the nature of the claims and underlying exposures;

b. the development characteristics associated with these claims;

c. the characteristics of the available data;

d. the applicability of various methods or models to the available data; and

e. the reasonableness of the assumptions underlying each method or model.

The actuary should consider whether a particular method or model is appropriate in light of the purpose, constraints, and scope of the assignment. For example, an

unpaid claim estimate produced by a simple methodology may be appropriate for an immediate internal use. The same methodology may be inappropriate for external financial reporting purposes.

The actuary should consider whether, in the actuary's professional judgment, different methods or models should be used for different components of the unpaid claim estimate. For example, different coverages within a line of business may require different methods.

The actuary should consider the use of multiple methods or models appropriate to the purpose, nature and scope of the assignment and the characteristics of the claims unless, in the actuary's professional judgment, reliance upon a single method or model is reasonable given the circumstances. If for any material component of the unpaid claim estimate the actuary does not use multiple methods or models, the actuary should disclose and discuss the rationale for this decision in the actuarial communication.

In the case when the unpaid claim estimate is an update to a previous estimate, the actuary may choose to use the same methods or models as were used in the prior unpaid claim estimate analysis, different methods or models, or a combination of both. The actuary should consider the appropriateness of the chosen methods or models, even when the decision is made not to change from the previously applied methods or models.

3.6.2 Assumptions—The actuary should consider the reasonableness of the assumptions underlying each method or model used. Assumptions generally involve significant professional judgment as to the appropriateness of the methods and models used and the parameters underlying the application of such methods and models. Assumptions may be implicit or explicit and may involve interpreting past data or projecting future trends. The actuary should use assumptions that, in the actuary's professional judgment, have no known significant bias to underestimation or overestimation of the identified intended measure and are not internally inconsistent. Note that bias with regard to an expected value estimate would not necessarily be bias with regard to a measure intended to be higher or lower than an expected value estimate.

The actuary should consider the sensitivity of the unpaid claim estimates to reasonable alternative assumptions. When the actuary determines that the use of reasonable alternative assumptions would have a material effect on the unpaid claim estimates, the actuary should notify the principal and attempt to discuss the anticipated effect of this sensitivity on the analysis with the principal.

When the principal is interested in the value of an unpaid claim estimate under a particular set of assumptions different from the actuary's assumptions, the actuary may provide the principal with the results based on such assumptions, subject to appropriate disclosure.

3.6.3 Data—The actuary should refer to ASOP No. 23, *Data Quality*, with respect to the selection of data to be used, relying on data supplied by others, reviewing data, and using data.

3.6.4 Recoverables—Where the unpaid claim estimate analysis encompasses multiple types of recoverables, the actuary should consider interaction among the different types of recoverables and should adjust the analysis to reflect that interaction in a manner that the actuary deems appropriate.

3.6.5 Gross vs. Net—The scope of the unpaid claim estimate analysis may require estimates both gross and net of recoverables. Gross and net estimates may be viewed as having three components, which are the gross estimate, the estimated recoverables, and the net estimate. The actuary should consider the particular facts and circumstances of the assignment when choosing which components to estimate.

3.6.6 External Conditions—Claim obligations are influenced by external conditions, such as potential economic changes, regulatory actions, judicial decisions, or political or social forces. The actuary should consider relevant external conditions that are generally known by qualified actuaries in the same practice area and that, in the actuary's professional judgment, are likely to have a material effect on the actuary's unpaid claim estimate analysis. However, the actuary is not required to have detailed knowledge of or consider all possible external conditions that may affect the future claim payments.

3.6.7 Changing Conditions—The actuary should consider whether there have been significant changes in conditions, particularly with regard to claims, losses, or exposures, that are likely to be insufficiently reflected in the experience data or in the assumptions used to estimate the unpaid claims. Examples include reinsurance program changes and changes in the practices used by the entity's claims personnel to the extent such changes are likely to have a material effect on the results of the actuary's unpaid claim estimate analysis. Changing conditions can arise from circumstances particular to the entity or from external factors affecting others within an industry. When determining whether there have been known, significant changes in conditions, the actuary should consider obtaining supporting information from the principal or the principal's duly authorized representative and may rely upon their representations unless, in the actuary's professional judgment, they appear to be unreasonable.

3.6.8 Uncertainty—The actuary should consider the uncertainty associated with the unpaid claim estimate analysis. This standard does not require or prohibit the actuary from measuring this uncertainty. The actuary should consider the purpose and use of the unpaid claim estimate in deciding whether or not to measure this uncertainty. When the actuary is measuring uncertainty, the actuary should consider the types and sources of uncertainty being measured and choose the methods, models, and

assumptions that are appropriate for the measurement of such uncertainty. For example, when measuring the variability of an unpaid claim estimate covering multiple components, consideration should be given to whether the components are independent of each other or whether they are correlated. Such types and sources of uncertainty surrounding unpaid claim estimates may include uncertainty due to model risk, parameter risk, and process risk.

3.7 Unpaid Claim Estimate—The actuary should take into account the following with respect to the unpaid claim estimate:

3.7.1 Reasonableness—The actuary should assess the reasonableness of the unpaid claim estimate, using appropriate indicators or tests that, in the actuary's professional judgment, provide a validation that the unpaid claim estimate is reasonable. The reasonableness of an unpaid claim estimate should be determined based on facts known to, and circumstances known to or reasonably foreseeable by, the actuary at the time of estimation.

3.7.2 Multiple Components—When the actuary's unpaid claim estimate comprises multiple components, the actuary should consider whether, in the actuary's professional judgment, the estimates of the multiple components are reasonably consistent.

3.7.3 Presentation—The actuary may present the unpaid claim estimate in a variety of ways, such as a point estimate, a range of estimates, a point estimate with a margin for adverse deviation, or a probability distribution of the unpaid claim amount. The actuary should consider the intended purpose or use of the unpaid claim estimate when deciding how to present the unpaid claim estimate.

3.8 Documentation—The actuary should consider the intended purpose or use of the unpaid claim estimate when documenting work, and should refer to ASOP No. 41, *Actuarial Communications*.

## Section 4. Communications and Disclosures

4.1 Actuarial Communication—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the unpaid claim estimate and refer to ASOP Nos. 23 and 41.

In addition, consistent with the intended purpose or use, the actuary should disclose the following in an appropriate actuarial communication:

a. the intended purpose(s) or use(s) of the unpaid claim estimate, including adjustments that the actuary considered appropriate in order to produce a single work product for multiple purposes or uses, if any, as described in section 3.1;

b. significant limitations, if any, which constrained the actuary's unpaid claim estimate analysis such that, in the actuary's professional judgment, there is a significant risk that a more in-depth analysis would produce a materially different result, as described in section 3.2;

c. the scope of the unpaid claim estimate, as described in section 3.3;

d. the following dates: (1) the accounting date of the unpaid claim estimate, which is the date used to separate paid versus unpaid claim amounts; (2) the valuation date of the unpaid claim estimate, which is the date through which transactions are included in the data used in the unpaid claim estimate analysis; and (3) the review date of the unpaid claim estimate, which is the cutoff date for including information known to the actuary in the unpaid claim estimate analysis, if appropriate. An example of such communication is as follows: "This unpaid claim estimate as of December 31, 2005 was based on data evaluated as of November 30, 2005 and additional information provided to me through January 17, 2006.";

e. specific significant risks and uncertainties, if any, with respect to whether actual results may vary from the unpaid claim estimate;

f. significant events, assumptions, or reliances, if any, underlying the unpaid claim estimate that, in the actuary's professional judgment, have a material effect on the unpaid claim estimate, including assumptions provided by the actuary's principal or an outside party or assumptions regarding the accounting basis or application of an accounting rule. If the actuary depends upon a material assumption, method, or model that the actuary does not believe is reasonable or cannot determine to be reasonable, the actuary should disclose the dependency of the estimate on that assumption/method/model and the source of that assumption/method/model. The actuary should use professional judgment to determine whether further disclosure would be appropriate in light of the purpose of the assignment and the intended users

of the actuarial communication;

g. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

h. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

i. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.2 Additional Disclosures—In certain cases, consistent with the intended purpose or use, the actuary may need to make the following disclosures in addition to those in section 4.1:

a. In the case when the actuary specifies a range of estimates, the actuary should disclose the basis of the range provided, for example, a range of estimates of the intended measure (each of such estimates considered to be a reasonable estimate on a stand-alone basis); a range representing a confidence interval within the range of outcomes produced by a particular model or models; or a range representing a confidence interval reflecting certain risks, such as process risk and parameter risk.

b. In the case when the unpaid claim estimate is an update of a previous estimate, the actuary should disclose changes in assumptions, procedures, methods or models that the actuary believes to have a material impact on the unpaid claim estimate and the reasons for such changes to the extent known by the actuary. This standard does not require the actuary to measure or quantify the impact of such changes.

## Appendix 1

## Background and Current Practices

*Note:* This appendix is provided for informational purposes but is not part of the standard of practice.

### Background

This standard defines issues and considerations that an actuary should take into account when estimating unpaid claim and claim adjustment expense for property and casualty coverages or hazard risks. The *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves* was adopted by the Board of Directors of the Casualty Actuarial Society in May 1988. The *Statement of Principles* has served as the primary guidance regarding estimation of unpaid property and casualty claim and claim adjustment expense amounts providing both principles and considerations related to practice. In conjunction with the development of this standard, the *Statement of Principles* is undergoing revision to focus on principles rather than also discussing considerations.

A decision was made to exclude unpaid claim estimates developed for ratemaking purposes from the scope of this standard. This was done to avoid placing inappropriate requirements on unpaid claim estimates in the ratemaking context, and to keep the scope workable by excluding additional considerations only applicable to the ratemaking context. Ratemaking requires more of a hypothetical analysis of possible future events than an analysis of the cost of past events. Hence, the selection and evaluation of assumptions and methods for ratemaking purposes may be different from the selection and evaluation of such for past event unpaid claim estimates.

### Current Practices

Actuaries are guided by the *Statement of Principles Regarding Property and Liability Loss and Loss Adjustment Expense Reserves* of the Casualty Actuarial Society. Other ASOPs issued by the Actuarial Standards Board pertaining to claim and claim adjustment expense estimates have included ASOP No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*; ASOP No. 20, *Discounting of Property and Casualty Loss and Loss Adjustment Expense Reserves*; ASOP No. 23, *Data Quality*; ASOP No. 36, *Statement of Opinion Regarding Property/Casualty Loss and Loss Adjustment Expense Reserves*, and ASOP No. 41, *Actuarial Communications*. In addition, since 1993, the Casualty Practice Council of American Academy of Actuaries has published practice notes addressing current National Association of Insurance Commissioners' requirements for the statement of actuarial opinion. The practice notes describe some current practices and show illustrative wording for handling issues and problems. While these practice notes (and future practice notes issued after the effective date of this standard) can be updated to react in a timely manner to new concerns or requirements, they are not binding, and they have not gone through the exposure and adoption process of the standards of actuarial practice promulgated by the Actuarial Standards

Board.

There are also numerous educational papers in the public domain relevant to the topic of unpaid claim estimates, including those published by the Casualty Actuarial Society. Some of these are refereed and others are not. While these may provide useful educational guidance to practicing actuaries, none is an actuarial standard.

## Appendix 2

## Comments on the Second Exposure Draft and Responses

The second exposure draft of this ASOP, *Property/Casualty Unpaid Claim Estimates*, was issued in February 2007 with a comment deadline of May 1, 2007. Nine comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Subcommittee on Reserving carefully considered all comments received and the Casualty Committee and ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes the subcommittee, the Casualty Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 4 refer to those in the second exposure draft.

| **GENERAL COMMENTS** | |
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| Comment | Two commentators requested that the standard comment on what would constitute reasonable review of a previous estimate. Specifically, they were concerned with actuaries reviewing an earlier estimate with the benefit of hindsight, particularly in a litigation situation. |
| Response | A sentence has been added to section 3.7.1, Reasonableness, to address this issue. |
| **SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE** | |
| **Section 1.2, Scope** | |
| Comment | One commentator suggested a clarification to section 1.2, inserting the words "or will have occurred" immediately after the words "for events that have already occurred." |
| Response | The reviewers agree and made the change. |
| Comment | One commentator was concerned that the development of unpaid claim estimates for ratemaking purposes would benefit from much of what is in this standard, despite the ratemaking scope exclusion in this standard. The recommendation was to retain the ratemaking exclusion in this standard but to then begin work on a revision that would remove such an exclusion. |
| Response | The reviewers agree with retaining the ratemaking scope exclusion for this standard but believe the ratemaking situation is outside their current charge. |

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| Comment | One commentator suggested adding the words "specific types of" before the word "recoverables" in the first paragraph of section 1.2, as otherwise it might imply that all types of recoverables are being discussed. |
| Response | The reviewers disagree with the suggestion, as the intent is to potentially include all types of recoverables related to unpaid claims, relying on the actuary in section 3.3, Scope of the Unpaid Claim Estimate, to identify the particular recoverables (if any) applicable to the given purpose or use of the unpaid claim estimate(s) being developed. The reviewers made no change. |
| Comment | Two commentators were concerned that some may be confused by the use of the term "unpaid claim estimates" rather than "reserves." |
| Response | The reviewers added a paragraph to section 1.2 for clarity. |
| Comment | One commentator was concerned that the scope exclusion for items that "may be a function of unpaid claim estimates" would inadvertently exclude recoverables that are included in unpaid claims. |
| Response | The reviewers believe that the standard is sufficiently clear (as reflected in the first paragraph, last sentence of section 1.2) that such recoverables are covered by the standard. |
| Comment | One commentator suggested adding "pricing" and "premiums" to the list of items that are a function of unpaid claim estimates or claim outcomes but not included in this standard's scope. |
| Response | The reviewers do not feel this is necessary, as ratemaking is already excluded in the section's first paragraph, and this list is not meant to be all inclusive. |
| Comment | Two commentators expressed concern that health insurance written by companies filing property/casualty annual statements may be included in the scope. One of these commentators recommended addressing this by explicitly excluding health insurance from the scope. The other commentator recommended that there was no need for a separate property casualty standard on unpaid claim estimates, as the property/casualty perspective could probably be addressed in the current ASOP No. 5, *Incurred Health and Disability Claims*. The latter commentator also suggested a definition of "property/casualty" be provided if a separate property/casualty standard was to be adopted. |
| Response | The reviewers agree that such confusion may exist, and added a paragraph to section 1.2, Scope. |
| Comment | One commentator stated the end of section 1.2 dealing with conflict with applicable law, etc. is not necessary, and that the term "provision" (found in section 1.3, Cross References) is also used in some jurisdictions in place of policy or loss reserves. |
| Response | The reviewers disagree as this wording is standard for all ASOPs and made no change. |

| SECTION 2. DEFINITIONS | |
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| **Section 2.1, Actuarial Central Estimate** | |
| Comment | One commentator objected to the term "actuarial central estimate," due to the concern that it would be a truncated mean in most situations, biased low relative to the expected value, and recommended that if absolutely needed in the standard that it be relabeled without the word "actuarial" as part of the label. |
| Response | The reviewers disagree with the deletion of the term "actuarial" and made no change. Refer to appendix 3. |
| Comment | One commentator was concerned that the use of the term "expected value" in the definition of "actuarial central estimate" would imply a statistical mean. The commentator suggested changing "expected value" to "central tendency…such as an average or an expected value." |
| Response | The reviewers considered similar wording in the drafting process and made no change. Refer to appendix 3. |
| Comment | One commentator suggested that different terms be used to describe the results from methods vs. models. Specifically, the commentator suggested the term "actuarial central estimate" be limited to describing a result from a method, while the term "actuarial distribution estimate" or some other term be used to describe the results of a model. |
| Response | The reviewers believe the standard allows the actuary to describe the results using whatever term the actuary sees fit to use (the term "actuarial central estimate" is provided as just one of many possible terms that can be used) and made no change. |
| **Section 2.3, Coverage** | |
| Comment | One commentator was concerned that the definition of "coverage" did not include self-insured first party claims. |
| Response | The reviewers could not envision a situation where a "liability" or claim would exist with regard to first party self-insured losses. Rather, this was viewed as more of a reduction in asset value. As such, the reviewers did not agree with the need to address self-insured first party claims and made no change. |
| **Section 2.5, Method and 2.6, Model** | |
| Comment | One commentator stated, "There are definite differences between 'methods' and 'models' that are much more substantial and fundamental than" what is in the proposed standard. The commentator suggested that more complete definitions be taken from the CAS Working Party paper on reserve variability. |
| Response | The definitions in the standard are abbreviated versions of what is in the referenced Working Party paper. The reviewers believe that further elaboration is unnecessary, although reference to various CAS publications has been added to appendix 1. |
| **Section 2.7. Model Risk** | |
| Comment | One commentator believed that combining reference to methods and models in the definition of "model risk" in section 2.7 caused grammatical problems. The suggested fix was to create a new term, "method risk," which would also lead to a slight change in paragraph 3.6.8, Uncertainty. |
| Response | The reviewers believe that common usage is to include what was described as "method risk" in the category of "model risk." Hence, a change was made to the definition, but a separate term (and definition) for "method risk" was not added. |

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| **Section 2.8, Parameter Risk** | |
| Comment | One commentator objected to the reference to "methods" in the definition of "parameter" risk, due to a belief that "since a 'method' does not have an underlying distribution there are no parameters to estimate." |
| Response | The reviewers believe that this is within the purview of common usage of the terms "methods" and "parameters," and made no change. |
| Comment | One commentator suggested adding a definition of "parameter" for consistency purposes. |
| Response | The reviewers believe that such a definition is unnecessary and made no change. |
| **Section 2.11, Unpaid Claim Estimates** | |
| Comment | One commentator suggested modifying this definition (and the unpaid claim estimate analysis definition) to clarify that unpaid claim estimates are synonymous with loss reserve estimates or unpaid claim liability estimates in financial reporting contexts. |
| Response | The reviewers added language to section 1.2, Scope, for clarity. |
| **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES** | |
| **Section 3.1, Purpose or Use of the Unpaid Claim Estimate** | |
| Comment | One commentator agreed with the use of the term "unpaid claim estimate" rather than "reserve" to avoid the financial reporting context, but believed that reference to the "intended purpose" of the estimate forced the discussion back solely to reserves and financial reporting. The suggested fix was to remove any discussion of "intended purpose" in the standard, and focus solely on estimating the distribution of possible future outcomes in the standard. (This concern also led to minor changes suggested in section 1.2, Scope.) |
| Response | The reviewers disagree that the only "intended purposes" would be those relating to financial reporting. Other "intended purposes" (some of which are listed in section 3.1) include merger/acquisition-related valuations, scenario analyses for risk management purposes, valuations as part of commutation discussions, etc. The reviewers made no change. |
| Comment | The last sentence of this section states "the actuary…should consider adjustments to accommodate the multiple purposes to the extent…it is appropriate and practical" to do so. One commentator asked if the intent was for the actuary to adjust the estimate or to provide different estimates for each purpose/use. |
| Response | The reviewers discussed different possible approaches to addressing this situation and decided that the standard should be silent on whether to produce multiple estimates, produce a single estimate that attempts to accommodate both purposes (assuming that this is possible), or some other option. Instead, the standard requires the actuary to consider some adjustment and leaves it up to the actuary's professional judgment as to whether or what kind of adjustment to make. The reviewers made no change. |

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| **Section 3.2, Constraints on the Unpaid Claim Estimate Analysis** | |
| Comment | One commentator suggested replacing "staff" with "resources" in this section as to be more general. |
| Response | The reviewers agree and changed the language. |
| Comment | One commentator suggested replacing "result" with "estimate" in this section so that it is more consistent with the rest of the ASOP. |
| Response | The reviewers disagree. As worded, "result" could incorporate other parts of the analysis beyond the estimate, such as analysis of uncertainty (if included in the assignment's scope). The reviewers made no change. |
| Comment | Where there is a significant risk of the type described in this section, one commentator recommended that this situation be a required disclosure. |
| Response | The reviewers disagree noting that required disclosure is already addressed in section 4.1(b) and made no change. |
| **Section 3.3, Scope of the Unpaid Claim Estimate** | |
| Comment | One commentator was concerned that the wording in 3.3(a)(1) may cause actuaries to limit themselves to only the alternatives listed. Alternate wording was suggested. |
| Response | The reviewers agree and changed the wording in response. |
| Comment | One commentator suggested an editorial change for section 3.3(c), whereby "is to be considered" would be changed to "is considered." |
| Response | The reviewers disagree with the suggestion, as section 3.3 addresses identification of the scope of the work in advance of the actual analysis. Hence, "is to be" is more appropriate than "is" in this context. The reviewers made no change. |
| Comment | One commentator suggested replacing the phrase "any other items" in section 3.3(f) with "other items" or "any other significant items," due to a concern that the current wording would be too all inclusive and could result in excessive procedures. |
| Response | The reviewers disagree, as the reference at the end of the paragraph ("needed to describe the scope sufficiently") already addresses the stated concern, and made no change. |
| Comment | One commentator suggested replacing "material to the actuary" with "material to the estimate" in section 3.5, Nature of Unpaid Claims, first paragraph. |
| Response | The reviewers agree and made the change. |
| **Section 3.6, Unpaid Claim Estimate Analysis** | |
| Comment | One commentator was concerned with the possible ambiguity with the term "factors" in this paragraph. |
| Response | The reviewers believe that this possible ambiguity is sufficiently addressed by the discussion in section 3.6. |

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| Comment | One commentator suggested that additional guidance on unpaid claim adjustment expenses be provided for situations involving prepaid expenses and third party administrators (TPAs). |
| Response | The standard already includes claim adjustment expenses in its scope, as "unpaid claims" is defined in section 1.1, Purpose, as including the related claim adjustment expenses. The reviewers also believe that prepayments to TPAs for the expense of adjusting claims is a specific situation and, as such, is too detailed for the general guidance in this standard. The reviewers made no change. |
| **Section 3.6.1, Methods and Models** | |
| Comment | One commentator stated that "we should be doing all we can to foster the rigorous use of stochastic models in favor of traditional deterministic methods" and objected to the use of "methods" and "models" as essentially interchangeable terms. |
| Response | The reviewers consider judgment to be a major component of the application of both methods and models. As such, the reviewers do not consider one to be clearly superior to the other in all situations. The reviewers made no change. |
| Comment | In section 3.6.1, in the phrase that says, "For example, different coverages within a line of business may require different methods," one commentator questioned whether the word "require" was appropriate. |
| Response | The reviewers believe that the word "require" is appropriate in this context, given that it is used in the context of an example and not in providing a direct requirement. The reviewers made no change. |
| Comment | One commentator suggested wording with regard to required disclosure if multiple methods were not used for "any component." The suggestion limited the disclosure to only material components. The same commentator also asked for clarification of the term "component." |
| Response | The reviewers reworded the section to clarify that the requirement only existed for material components. The suggested clarification of the term "component" was not adopted, as the reviewers felt that it would lead to a list of component examples that would never be complete for all applications. |
| **Section 3.6.3, Data** | |
| Comment | One commentator suggested adding guidance that "additional liabilities may be necessary if the data does not balance to recorded claim expenses, i.e., if there is a timing difference between when a claim is shown as paid in the actuarial data and when it is recorded by the principal." |
| Response | The reviewers believe that this is a specific situation and is covered by the general guidance in section 3.6.1(c). The reviewers made no change. |
| **Section 3.6.6, External Conditions** | |
| Comment | One commentator suggested that section 3.6.6, External Conditions, focused on past or current conditions, while section 3.6.7, Changing Conditions, focused on current or future conditions, and that these time horizons might be clarified in the standard. |
| Response | The reviewers do not agree that the time horizons in the two sections are constrained as suggested by the commentator and made no change. |

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| **Section 3.6.7, Changing Conditions** | |
| Comment | Two commentators suggested that the actuary should be required to evaluate the reasonableness of management's representations (as referred to in section 3.6.7) under certain circumstances. One of these commentators stated the reference to "reasonable representations" in section 3.6.7 already implies the actuary is required to perform such an evaluation but suggested the standard state this requirement explicitly. |
| Response | The reviewers disagreed that the standard should require an actuary to perform an evaluation affirming the reasonableness of management's representations and have revised the language to indicate the actuary may rely upon their representations unless, in the actuary's professional judgment, they appear to be unreasonable**.** |
| **Section 3.6.8, Uncertainty** | |
| Comment | One commentator suggested that examples of uncertainty measures be provided. |
| Response | The reviewers did not believe that such a list was necessary and made no change. |
| Comment | One commentator suggested that the original reference to the covariance of multiple component's estimates implied particular statistical tests or relationships that may not be amenable to testing. Replacement wording was suggested. |
| Response | The reviewers acknowledge the concern and developed new wording that addressed the concern expressed. |
| Comment | One commentator stated that since the concept of a risk margin is implied by this section, this section should discuss risk margins explicitly. |
| Response | The reviewers disagree that discussion of uncertainty requires discussion of a risk margin and made no change. |
| **Section 3.7.1, Reasonableness** | |
| Comment | One commentator asked if the actuary should also be assessing the reasonableness of the estimate relative to its intended purpose. |
| Response | The reviewers believe that the required disclosures in section 4.1, Actuarial Communications, and ASOP No. 41, *Actuarial Communications*, sufficiently address the commentator's concerns and made no change. |

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| **Section 3.7.2, Multiple Components** | |
| Comment | One commentator stated, "I am not certain how 'estimates of the multiple components' can be consistent. I can see how the assumptions used can be consistent, the methods can be consistent, or they can be consistently developed." As a result, the commentator suggested that this section be clarified. |
| Response | The reviewers believe that the correct focus is on consistency of the estimates of the multiple components as stated. It is not always apparent whether or not the assumptions and/or models/methods underlying the estimates are consistent until the results of those assumptions/models/methods are evaluated. For example, an estimate of gross claim liabilities and a separate estimate of net claim liabilities may each seem to be reasonable when evaluated individually based on the underlying assumptions/models/methods used in their estimation, but the resulting relationship between gross and net estimates may be found to be unreasonable, indicating that the estimates were not reasonably consistent. The reviewers made no change. |
| **Section 3.7.3, Presentation** | |
| Comment | One commentator recommended that the standard require that the methods and/or models be appropriate to the intended purpose of the estimate, and that this is more important than requiring such of the estimate presentation. |
| Response | The wording in section 3.6.1, Methods and Models, already addresses this issue and no change was made. |
| **Section 4. Communications and Disclosures** | |
| **Section 4.1, Actuarial Communications** | |
| Comment | One commentator noted that the definition of "valuation date" found in section 4.1(d) differed from that found in ASOP No. 41, *Actuarial Communications*, "the date as of which the liabilities are determined." |
| Response | The reviewers believe that the definition in section 4.1(d) of this standard conforms with standard usage of the term among casualty actuaries and made no change. |
| Comment | One commentator suggested further elaborating on this disclosure requirement by requiring "specific comments regarding the major factors or particular conditions applicable to the unpaid claim estimate." Otherwise, the commentator was concerned that this would result in too many boilerplate disclosures about the risk. |
| Response | The reviewers acknowledge the concern and addressed it by adding the word "specific" before "significant" in section 4.1(e). |
| **Section 4.2, Additional Disclosures** | |
| Comment | Where the unpaid claim estimate is an update of a previous estimate, one commentator suggested requiring that the amount of change in estimate be disclosed, with reasons provided whenever the change was significant and the reasons for the change were known. |
| Response | The reviewers did not agree and made no change. |

| Appendix | |
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| **Appendix 1—Background** | |
| Comment | One commentator suggested a change to appendix 1 regarding the proposed revision to the CAS *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves*. The commentator recommended that the wording be changed from "focus more narrowly on principles" to "focus more broadly on principles." |
| Response | The reviewers disagree, as the proposed revision would remove various sections in the current Principles statement, including extensive discussion on Considerations, and made no change. |

## Appendix 3

*Note:* This appendix is provided for informational purposes but is not part of the standard of practice.

### Comments on "Actuarial Central Estimate"

During this standard's development, the "actuarial central estimate" concept and definition elicited the most comments of any of the topics covered. The subcommittee believes that the issues raised by this topic are worthy of expanded discussion. The following is meant to provide additional clarity to these key concepts.

This appendix is organized by first providing a background as to the originally proposed wording regarding the actuarial central estimate, followed by a summary of comments received on the actuarial central estimate proposal and subcommittee responses.

#### Background

The term "actuarial central estimate" was originally created by the subcommittee due to a desire to have a "default" intended measure for the unpaid claim estimate.

The standard requires that the actuary identify (and disclose) the intended measure. The subcommittee had debated whether or not to require disclosure of the estimate's intended measure in all cases, or to allow for a default intended measure.[1] If a default did exist, the subcommittee felt that it needed to allow for many of the traditional actuarial estimation methods. But many traditional actuarial methods do not explicitly define the intended measure that results from their application. Implicitly, they attempt to produce a central estimate[2] of some sort with regard to the distribution of possible outcomes, but the resulting intended measure does not have a well-defined statistical definition. Hence, if the standard were to include a default intended measure, the subcommittee believed that it would have to create a new term and a corresponding definition.

As to the definition of the term, it is generally agreed that most traditional actuarial methods are meant to produce some measure of central tendency. But what measure? There are several different measures of central tendency, including (for example) mean, median, mode, and truncated mean. The subcommittee believed that "mean" best represented the central tendency measure implicitly underlying most traditional actuarial methods, even if such traditional methods are not statistical in nature. (For further discussion, this will be referred to as a "conceptual mean" rather than a "statistical mean.")

Next, the subcommittee considered the issue of whether this conceptual mean is intended to

1 Note that several accounting frameworks use the term "measurement objective" for this concept, rather than "intended measure."

2 Note that "central estimate" does not imply a midpoint. One respondent suggested using the words "medium or intermediate" estimate to avoid any incorrect interpretation that a "central estimate" must be a midpoint.

incorporate the entire range of all possible outcomes. In some lines of business, the subcommittee felt that this would be problematic due to the potential for doomsday and/or systemic shocks in the tail of the distribution. For example, it is doubtful whether any actuarial estimate (stochastic or deterministic) in 1999 considered the liability for Y2K events to the extent they were forecasted at that time. Many of those Y2K-event liability estimates proved to be overly pessimistic, and most financial statement preparers did not incorporate such estimates in their financial statements prior to January 1, 2000. Similarly, estimates of future mass torts that have yet to be identified (for example, "the next asbestos") are generally viewed as not reliably estimable. Hence, the subcommittee felt that requiring that the entire range of all possible outcomes be considered in the estimation of the mean is unrealistic.

In looking for other approaches for dealing with this situation, the subcommittee looked at developments in other parts of the world. The subcommittee found that the term "central estimate" was being used in various locations to describe the intended measure of traditional methods.[3] [4] Initial drafts of this standard also used the same term, but it was eventually decided that the phrase "central estimate" was too generic, with risk of confusion and misinterpretation due to common meanings of the term "central." The subcommittee felt that a new term needed to be developed that conveyed the same concepts but without the same risk of misinterpretation. This led to the term "Actuarial Central Estimate," which was designed to be non-generic, and hence capable of being defined solely by this standard.

As a result of the deliberations discussed above, the subcommittee had developed a rudimentary definition ("conceptual mean," excluding remote or speculative outcomes) and a name for a default intended measure consistent with the desired default. The resulting paragraph in the first exposure draft was as follows:

*2.1* *Actuarial Central Estimate—An estimate that represents a mean excluding remote or speculative outcomes that, in the actuary's professional judgment, is neither optimistic nor pessimistic. An actuarial central estimate may or may not be the result of the use of a probability distribution or a statistical analysis. This definition is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean.*

3 "'Central Estimate': an estimate that contains no deliberate or conscious over or under estimation," from http://www.actuaries.org.nz/publications/PS4%20General%20Insurance.pdf#search=%22central%20estimate%20actuarial%22, September 5, 2006

4 As the recently modified AASB1023 now requires companies to disclose the central estimate of their liabilities (that is the 50% PoS or "best estimate" figure). INFORMATION FOR OBSERVERS, IASB Meeting: 19 April 2005, London, Topic: Insurance Contracts - Education session (Agenda item 3)

## Comments and Responses

The comments from this standard's first exposure draft on "actuarial central estimate" and its later usage could generally be grouped into the following five categories:

- Concern with the use of the term "mean" in the "actuarial central estimate" definition, as doing so may imply statistical approaches and distributions regardless of the caveats of such in the proposed definition.
- Concern with the exclusion of "remote or speculative" outcomes in the "actuarial central estimate" definition, as doing so may lead to an estimate biased low (relative to a mean reflecting the entire distribution of possible outcomes).
- Desire for the default to allow for or possibly even promote conservatism.
- Desire that the standard promote statistical techniques.
- Preference for the term "best estimate" over "actuarial central estimate."

As a result of the comments that were received, the subcommittee decided to eliminate the concept of prescribing a default measure since opinions differed widely on what the default measure ought to be. It was felt that requiring the actuary to identify the intended measure in all circumstances allowed the actuary to describe the intended measure in the actuary's own words. However, the subcommittee felt that it was important to have terminology for the measure that results from traditional actuarial methods where the actuary is conceptually aiming for a mean estimate. The subcommittee therefore retained the term "actuarial central estimate," revised the definition and included it as an example of an intended measure in the non-exhaustive list that was provided in section 3.3(a)(1).

More detailed responses to the comments are shown below:

*Comment:*
Some commentators objected to the use of the term "mean" in the definition of "actuarial central estimate," as they believed that it was impossible to use the term without conveying an implied statistical approach.

*Response:*
The final definition replaced the term "mean" with "expected value." Additional clarification is provided in 3.3(a)(1), where it states that the "description [of actuarial central estimate] is intended to clarify the concept rather than assign a precise statistical measure, as commonly used actuarial methods typically do not result in a statistical mean."

*Comment:*
Some commentators had a concern with the exclusion of "remote or speculative" outcomes in the originally proposed "actuarial central estimate" definition, as they felt that this would lead to estimates that were biased low (relative to a statistical mean reflecting the entire distribution).

*Response:*
The subcommittee believes that nearly all methods currently in use for estimating unpaid claims, whether stochastic or deterministic, do not reflect all possible outcomes, nor should they necessarily do so. The major concern of the subcommittee in this area are those outcomes where reliable determination of the outcomes' contribution to a mean estimate are so problematic as to be speculative and which are not expected to be normal or recurring on a regular basis. Examples include the Y2K concerns prior to January 1, 2000, and estimates of future mass torts that have yet to be identified (for example, "the next asbestos"). This concern is also limited to those outcomes that could be material to an expected value estimate.

The exposure draft did not and the final standard does not require exclusion of such outcomes in the determination of the unpaid claim estimate, but the subcommittee believes that the actuary should consider whether truly all possible outcomes are included in the actuary's unpaid claim estimate (where the intended measure purports to reflect the entire distribution of possible outcomes). With regard to the "actuarial central estimate" definition, the subcommittee has eliminated the terms "speculative" and "remote," and has replaced them with wording that focused more directly on the concern that reliable estimates of such outcomes cannot be produced.

*Comment:*
Some commentators were concerned that the "actuarial central estimate" definition precluded the use of conservatism (described in some instances as a margin for adverse deviation) in the unpaid claim estimate intended measure.

*Response:*
This standard was meant to apply to work done in a variety of situations. In many of those situations, the purpose and/or use of the unpaid claim estimate will dictate whether a margin for adverse deviation is required, allowed or prohibited. The subcommittee does not believe it is the role of the actuary or ASB to dictate a certain singular treatment of margins for adverse deviation for all unpaid claim estimates. In fact, in certain instances the subcommittee believes that the treatment of such in the unpaid claim estimate is clearly not part of the role of the actuary.

The subcommittee also believes that the actuary should clearly disclose the basis of the unpaid claim estimate regarding all the items listed in section 3.3. Hence, in those instances where the unpaid claim estimate includes a margin for adverse deviation, the presence of such margin should be explicitly disclosed.

*Comment:*
Some of the commentators wanted the standard to advocate only certain techniques for calculating any unpaid claim estimate, regardless of the intended measure. In particular, these comments wanted the standard to dictate the use of stochastic models.

*Response:*
The subcommittee believes the choice of methodology should be determined by the actuary.

ACTUARIAL STANDARDS BOARD

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**Actuarial Standard**
**of Practice**
**No. 44**

# Selection and Use of Asset Valuation Methods for Pension Valuations

**Developed by the**
**Pension Committee of the**
**Actuarial Standards Board**

**Adopted by the**
**Actuarial Standards Board**
**September 2007**
**(Clarified September 2009)**

**Updated for Deviation Language Effective May 1, 2011**

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**(Doc. No. 160)**

**ASOP No. 44—September 2009**

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## APPENDIXES

## ASOP No. 44—September 2009

September 2009

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Selection and Use of Asset Valuation Methods for Pension Valuations

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 44

This document contains the clarified version of ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*.

Background

ASOP No. 44 was issued as a new standard in September 2007, with an effective date of March 15, 2008. The ASB recently became aware of a need for clarification of the wording in section 3.4.1, Bias. The intent of the section is to require disclosure of the existence of systematic bias in the asset valuation method only when such bias is, in the actuary's professional judgment, significant. While the first sentence of section 3.4.1 accurately communicates this intent, the second sentence does not, creating some confusion among practitioners. Accordingly, the ASB has clarified the standard by adding the word "significantly" before the word "skewed" in the second sentence of section 3.4.1.

The ASB voted to adopt this clarification on September 21, 2009 effective immediately for reports issued after that date.

**ASOP No. 44—September 2009**

Actuarial Standards Board

Stephen G. Kellison, Chairperson

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*The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.*

**ASOP No. 44—September 2009**

September 2007

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Selection and Use of Asset Valuation Methods for Pension Valuations

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 44

This document contains the final version of ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*.

Background

*Pension Plan Recommendations A, B, and C* were adopted and amended by the American Academy of Actuaries (Academy) during the period 1976 to 1983. In 1988, *Recommendations for Measuring Pension Obligations* was promulgated as an ASOP by the Interim Actuarial Standards Board and the Board of Directors of the American Academy of Actuaries. In 1990, the ASB republished that standard as ASOP No. 4, *Recommendations for Measuring Pension Obligations*. In October 1993, ASOP No. 4 was reformatted and published in the uniform format adopted by the ASB, with a title change, *Measuring Pension Obligations*.

The selection of economic and noneconomic assumptions, the actuarial cost method, and the asset valuation method are all key elements in the valuation of pension obligations. The evolution of actuarial practice made it necessary to update the guidance in these areas. The following provide such guidance:

1. ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*;

2. ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*;

3. This ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*; and

4. ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, which ties together the other three standards, provides guidance on actuarial cost methods, and addresses overall considerations for measuring pension obligations and determining plan costs or contributions.

## ASOP No. 44—September 2009

The comment letters on the exposure drafts of this ASOP led the Pension Committee to conclude that both the use of market value and the use of a variety of asset valuation methods other than market value are generally accepted actuarial practices. In recognition of the many circumstances in which the actuary does not select the asset valuation method and the many different asset valuation methods that are in widespread use, this ASOP provides guidance in selecting appropriate methods and, in some instances, requires disclosure of characteristics of the asset valuation method, regardless of who selected it.

The ASOP also separates considerations relevant to the choice of any asset valuation method, including market value, from those considerations that are relevant only to asset valuation methods other than market value.

This ASOP is intended to accommodate the concepts of financial economics as well as traditional actuarial practice.

### First Exposure Draft

The first exposure draft of this ASOP, then titled *Selection of Asset Valuations for Pension Valuations*, was issued in December 2001, with a comment deadline of May 15, 2002. Thirty-four comment letters were received and considered in developing modifications that were reflected in the second exposure draft.

### Second Exposure Draft

The second exposure draft of this ASOP was issued in October 2003 with a comment deadline of April 30, 2004. Fifteen comment letters were received and considered in developing modifications that were reflected in the third exposure draft.

### Third Exposure Draft

The third exposure draft of this ASOP was issued in September 2005 with a comment deadline of February 28, 2006. Five comment letters were received and considered in developing modifications that were reflected in the fourth exposure draft.

### Fourth Exposure Draft

The fourth exposure draft of this ASOP was issued in August 2006 with a comment deadline of March 1, 2007. The Pension Committee carefully considered the five comment letters received. The key changes made to the final standard in response to these comment letters are as follows:

## ASOP No. 44—September 2009

1. Section 3.4.1(b), Bias, which addressed possible bias in the *de facto* asset valuation method associated with changes in the asset valuation method, was removed. Instead, section 4.1.3, Changes in Asset Valuation Method, was expanded to require the actuary to disclose the reasons for any changes in asset valuation method.

2. Section 4.1.5, Bias, was revised to provide an example of a disclosure that describes significant systematic bias as a characteristic of an asset valuation method without using the word "bias."

In addition, a number of clarifying changes were made to the text. Please see appendix 2 for a detailed discussion of the comments received and the reviewers' responses.

Note that the section on Prescribed Statement of Actuarial Opinion (formerly section 4.3) has been deleted due to the amended *Qualifications Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* promulgated by the American Academy of Actuaries.

The Pension Committee thanks everyone who took the time to contribute comments and suggestions on the exposure drafts.

The Pension Committee thanks former committee members Thomas P. Adams, Arthur J. Assantes, Lawrence Deutsch, David L. Driscoll, Bruce C. Gaffney, Lawrence A. Golden, Marilyn F. Janzen, Daniel G. Laline Jr., John F. Langhans, Michael B. Preston, William A. Reimert, Phillip A. Romello, Joan M. Weiss, and Ruth F. Williams for their assistance with drafting this ASOP.

The ASB voted in September 2007 to adopt this standard.

Pension Committee of the ASB

David R. Fleiss, Chairperson

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**ASOP No. 44—September 2009**

# ACTUARIAL STANDARD OF PRACTICE NO. 44

# SELECTION AND USE OF ASSET VALUATION METHODS FOR PENSION VALUATIONS

## STANDARD OF PRACTICE

### Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to the actuary when performing professional services with respect to the following:

a. selection of an asset valuation method for purposes of a defined benefit pension plan actuarial valuation; and

b. appropriate disclosures regarding the asset valuation method used.

1.2 Scope—This standard applies to the actuary when performing professional services with respect to selecting or using an asset valuation method for any defined benefit pension plan that is not a social insurance program as described in section 1.2, Scope, of ASOP No. 32, *Social Insurance* (unless an ASOP on social insurance explicitly calls for application of this standard). Throughout this standard, any reference to selecting an asset valuation method also includes giving advice on selecting an asset valuation method. For instance, the actuary may advise the plan sponsor on selecting an asset valuation method, where the plan sponsor is responsible for selecting the method.

To the extent that the guidance in this standard may conflict with ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*, ASOP No.4 will govern.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard will be effective for any actuarial valuation with a

measurement date on or after March 15, 2008.

## Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Actuarial Valuation—The measurement of relevant pension obligations and, when applicable, the determination of the actuarial value of assets, periodic costs, or contributions.

2.2 Actuarial Value of Assets—The value of pension plan investments and other property, used by the actuary for the purpose of an actuarial valuation (sometimes referred to as *valuation assets* or *market-related value of assets*).

2.3 Asset Valuation Method—A method used by the actuary to determine the actuarial value of assets.

2.4 Market Value—The price that would be received to sell an asset in an orderly transaction between market participants at the measurement date (sometimes referred to as *fair value*).

2.5 Measurement Date—The date as of which the actuarial value of assets is determined (sometimes referred to as the *valuation date*).

2.6 Prescribed Asset Valuation Method—A specific asset valuation method that is mandated by law, regulation, or other binding authority. For purposes of this standard, the plan sponsor would be considered a binding authority to the extent that law, regulation, or accounting standards give the plan sponsor responsibility for selecting such an asset valuation method.

2.7 Principal—A client or employer of the actuary.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Overview—The measurement of a pension plan's assets and the relationship between the plan's assets and its obligations are integral to the valuation process. The asset valuation method potentially affects the timing and amount of future plan costs or contributions and the plan's ability to satisfy its benefit obligations. Consequently, the actuary should use professional judgment when selecting an asset valuation method.

3.2 Considerations in Selecting a Method—The actuary should consider the following factors when selecting an asset valuation method:

3.2.1 Purpose and Nature of the Measurement—The actuary should consider the purpose and nature of the measurement when selecting an asset valuation method. It may be appropriate for the actuary to select different methods for different purposes. For example, for purposes of determining contributions to an ongoing plan, the actuary may consider selecting an asset valuation method that smoothes the effects of volatility in market value on the pattern of contributions. As a second example, for measurements in conjunction with a plan termination, the actuary should consider selecting an asset valuation method that produces an actuarial value of assets that represents the value of assets expected to be available for distribution (i.e., net of any significant liquidation or surrender charges reasonably expected to be incurred).

3.2.2 Objectives of the Principal—The actuary should consider the objectives of the principal to the extent such objectives have been communicated to the actuary, are relevant to, and not inconsistent with, the purpose of the measurement, and are consistent with the actuary's responsibilities under the *Code of Professional Conduct*. For example, when the principal is a plan sponsor and the purpose of the measurement is to determine annual contributions, the actuary should consider plan sponsor objectives such as a desire for stable or predictable costs or contributions, or a desire to achieve a target funding level within a specified time frame.

3.2.3 Multiple Asset Valuation Methods—The actuary may select different asset valuation methods for different classes of assets. For example, the actuary may determine that it is appropriate to use a smoothing method for equity investments and market value for fixed income investments.

3.2.4 Adjustment of Asset Values for Timing Differences—Sometimes asset values as of the measurement date are not available. In these situations, the actuary should select an asset valuation method that adjusts the value of the assets for the time between the date as of which asset values are available and the measurement date. Such an asset valuation method may reference appropriate published asset indices or involve an adjustment using another reasonable method.

3.2.5 Use of Actuarial Assumptions—To the extent that actuarial assumptions are used as part of an asset valuation method, the actuary should be guided by ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, and No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, in selecting those assumptions. Furthermore, the assumptions should be consistent with the other assumptions used in the actuarial valuation.

It may be appropriate for the actuary to select different assumptions for different

purposes. For example, the actuary may project asset values for a few months using an assumption that differs from a long-term expected return assumption.

3.2.6 Additional Considerations—When selecting an asset valuation method, the actuary should consider other known, relevant factors such as the following:

a. the plan's investment policy and actual investment practices;

b. the characteristics of the asset classes in which the plan is invested (for example, the volatility of the return of each asset class and the correlation of the return with changes in the value of plan obligations);

c. the plan's expected future cash flows and liquidity needs;

d. the period of time over which the plan's assets are expected to be held; and

e. the characteristics of the method used to measure the pension obligation (for example, whether the pension obligation is measured on a mark-to-market basis).

3.3 Selecting Methods Other Than Market Value—If the considerations in section 3.2 have led the actuary to conclude that an asset valuation method other than market value may be appropriate, the actuary should select an asset valuation method that is designed to produce actuarial values of assets that bear a reasonable relationship to the corresponding market values. The qualities of such an asset valuation method include the following:

a. The asset valuation method is likely to produce actuarial values of assets that are sometimes greater than and sometimes less than the corresponding market values.

b. The asset valuation method is likely to produce actuarial values of assets that, in the actuary's professional judgment, satisfy both of the following:

1. The asset values fall within a reasonable range around the corresponding market values. For example, there might be a corridor centered at market value, outside of which the actuarial value of assets may not fall, in order to assure that the difference from market value is not greater than the actuary deems reasonable.

2. Any differences between the actuarial value of assets and the market value are recognized within a reasonable period of time. For example, the actuary might use a method where the actuarial value of assets converges toward market value at a pace that the actuary deems reasonable, if the investment return assumption is realized in future periods.

In lieu of satisfying both (1) and (2) above, an asset valuation method could satisfy section 3.3(b) if, in the actuary's professional judgment, the asset valuation method either (i) produces values within a sufficiently narrow range around market value or (ii) recognizes differences from market value in a sufficiently short period.

A plan's investment policy may provide that fixed-income securities are expected to be held to maturity and holding such securities to maturity is not inconsistent with the plan's investment practice and expected cash flow needs. In such situations, an asset valuation method that uses amortized cost for such securities is deemed to bear a reasonable relationship to market value relative to those assets.

3.4 Using Methods Other Than Market Value—When using an asset valuation method other than market value, regardless of who selected the method, the actuary should consider the following:

3.4.1 Bias—If the asset valuation method has significant systematic bias, the actuary should disclose such bias in accordance with section 4.1. An asset valuation method has significant systematic bias if, in the actuary's professional judgment, the method's design is expected to produce a distribution of actuarial values that is significantly skewed toward understatement or overstatement relative to the corresponding market values.

The following paragraphs are intended to clarify the meaning of bias for purposes of this standard.

a. An asset valuation method does not have significant systematic bias solely because it has one or both of the following characteristics:

1. the asset valuation method would produce actuarial values of assets that are consistently less than (or greater than) the corresponding market values during sustained periods of increasing (or decreasing) market values; or

2. the asset valuation method would produce actuarial values of assets that approach the corresponding market values asymptotically, assuming the investment return assumption is realized in future periods.

b. Examples of asset valuation methods that have significant systematic bias include the following:

1. an asset valuation method that is designed to produce a value

consistently below market value if, in all time periods relevant to the application of the asset valuation method, the actual return on market value of the assets subject to the asset valuation method were equal to the actuary's expected return on those assets (such as a method that immediately recognizes interest and dividends but defers recognition of realized and unrealized capital gains and losses); and

2. an asset valuation method that produces an actuarial value of assets equal to a smoothed value that is subject to an asymmetrical corridor around market value, such as not more than 105% of market value or less than 80% of market value.

3.4.2 Different Treatment of Realized and Unrealized Gains and Losses—If the asset valuation method treats realized gains and losses differently from unrealized gains and losses, the actuary should disclose this difference in accordance with section 4.1. An asset valuation method treats realized gains and losses differently from unrealized gains and losses if it would produce different results depending upon whether an asset is sold or held. When such a method is used, an increase in asset turnover, as might happen if the plan changes investment managers, can cause a significant change in the actuarial value of assets.

Examples of asset valuation methods that treat realized gains and losses differently from unrealized gains and losses include the following:

a. an asset valuation method that uses the average of book value and market value;

b. an asset valuation method that immediately recognizes realized gains and losses and gradually recognizes unrealized gains and losses; and

c. an asset valuation method that uses the product of the book value of assets on the measurement date multiplied by a five-year average of the ratio of market value to book value.

3.5 Assets that are Difficult to Value—Some assets do not have a readily established market value, such as certain insurance contracts, real estate, or other property. In determining the value of such assets, if audited financial statements do not provide an appropriate market value, the actuary may consider appraisals by qualified independent experts, recent sales of similar assets, the present value of reasonably expected future cash flows, or other appropriate methods. The value, so determined, may be treated as market value for purposes of this standard.

3.6 Reviewing the Asset Valuation Method—Once an asset valuation method has been

selected for a particular purpose, at each subsequent measurement date, the actuary should consider whether the selected asset valuation method continues to be appropriate for that purpose. The actuary is not required to do a complete reassessment at each measurement date. However, if a significant change in the principal's objectives has been communicated to the actuary (see section 3.2.2), the actuary should review the appropriateness of the asset valuation method. Furthermore, if the asset valuation method is other than market value, the actuary should review the appropriateness of the asset valuation method if an event such as the following has occurred:

a. a significant change in the plan provisions affecting cash flow (such as adding a lump sum payment option, or freezing or terminating the plan), in the actuarial cost method or funding policy, or in participant demographics;

b. a significant change in the plan's investment policy (such as adding a new asset class or significantly changing the proportion of assets invested in each class);

c. a prolonged significant deviation from market value; or

d. changes in relevant law, regulations, or accounting guidance.

3.7 Level of Refinement—The actuary should exercise professional judgment in establishing an appropriate balance between refined methodology and materiality. The actuary is not required to use a particular type of valuation method or to select a highly refined method when it is not expected to produce materially different results than would a less refined method. For example, it may be reasonable to assume that benefit payments are evenly distributed throughout the year, rather than reflecting the actual timing of each payment.

3.8 Reliance on Data or Other Information Supplied by Others—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.

3.9 Documentation—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41, *Actuarial Communications*. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.1.

## Section 4. Communications and Disclosures

4.1 Disclosures in Actuarial Reports—When issuing an actuarial report, as defined in ASOP No. 41, the actuary should follow the applicable disclosure requirements in ASOP No. 4, *Measuring Pension Obligations and Determining Plan Costs or Contributions*, and ASOP No. 23. In addition, the actuary should disclose the following:

4.1.1 Asset Valuation Method—The actuary should describe each asset valuation method used in the measurement in sufficient detail to permit another actuary qualified in the same practice area to reproduce the calculation if the actuary were provided with the necessary asset data.

4.1.2 Market Value and Actuarial Value of Assets—The actuary should disclose the market value and actuarial value of assets. If multiple asset valuation methods are used, in accordance with section 3.2.3, the actuary should disclose the market value and actuarial value of the assets subject to each asset valuation method. With respect to assets whose market value is determined under section 3.5, disclosure shall include the amount of such assets and a description of how the value of such assets was determined.

4.1.3 Changes in Asset Valuation Method—The actuary should describe changes, if any, in the asset valuation method from the method previously used for the same measurement purpose and the reasons for those changes. The actuary should disclose the general effects of any such changes in words or by numerical data, as appropriate.

4.1.4 Bias—If, in the actuary's professional judgment, the asset valuation method has significant systematic bias toward understatement or overstatement relative to market value, as described in section 3.4.1, the actuary should disclose the direction of the bias. For example, if the asset valuation method used to determine the plan's contribution requirements is one of the methods described in section 3.4.1(b), the disclosure might state the following: "A characteristic of this asset valuation method is that, over time, it is more likely to produce an actuarial value of assets that is less than the market value of assets."

4.1.5 Different Treatment of Realized and Unrealized Gains and Losses—If the asset valuation method treats realized gains and losses differently from unrealized gains and losses, the actuary should disclose this characteristic and the possible consequences of the use of such an asset valuation method. For example, the disclosure might state the following: "This asset valuation method treats unrealized gains and losses differently from realized gains and losses. Thus, asset turnover can cause a significant change in the actuarial value of assets."

4.1.6 Additional Disclosures—The actuary should include the following, as applicable, in an actuarial report:

a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority); however, if the assumption or method was passed, adopted, or promulgated by the plan sponsor (or by the same

governing body that establishes plan benefits or provides for plan funding) then this guidance does not apply and the actuary should follow guidance of paragraph b. below instead:

b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

4.2 Disclosures in Other Actuarial Communications—The actuary should be guided by ASOP No. 41 when considering which of the disclosures in section 4.1 should be included in an actuarial communication that is not in the form of an actuarial report.

## Appendix 1

## Background and Current Practices

*Note:* This appendix is provided for informational purposes, but is not part of the standard of practice.

### Background

Historically, actuaries have selected various methods to determine the actuarial value of pension plan assets for different measurement purposes.

### Current Practices

Actuaries use both market value and asset valuation methods other than market value. The latter asset valuation methods are usually used for smoothing the effects of volatility in market value on plan costs or contributions, or achieving consistency between the valuation of assets and obligations.

An asset valuation method that is intended to smooth the effects of market volatility typically reflects the market value of plan assets in some fashion. This is accomplished through a variety of commonly used techniques, such as the following:

1. smoothing some components of the return on market value or the difference between actual returns on market value and expected returns;

2. requiring that the actuarial value of assets fall within a specified range, such as 80% to 120%, of the market value; or

3. recognizing differences between the actuarial and market values of assets over a specified time schedule.

Actuaries often select different asset valuation methods for different purposes, such as for determining cash contribution requirements, determining employer accounting costs, or assessing the plan's funded status upon plan termination.

Asset valuation methods have been the subject of growing attention, influenced by regulatory trends and consideration of the concepts of financial economics. Actuaries who apply a financial economics approach generally advocate the use of market measurement of assets, while traditional actuarial practice includes both the use of market value and the use of a variety of asset valuation methods other than market value.

## Appendix 2

## Comments on the Fourth Exposure Draft and Responses

The fourth exposure draft of this proposed ASOP was issued in August 2006 with a comment deadline of March 1, 2007. Five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Pension Committee carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the proposed changes. Summarized below are the significant issues and questions contained in the comment letters and the responses to each. The term "reviewers" includes the Pension Committee and the ASB. Unless otherwise noted, the section numbers and titles used below refer to those in the fourth exposure draft.

| | |
|---|---|
| **GENERAL COMMENTS** | |
| Comment | Several commentators suggested various editorial changes in addition to those addressed specifically below. |
| Response | The reviewers implemented such changes if they enhanced clarity and did not alter the intent of the section. |
| **SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE** | |
| **Section 1.4, Effective Date** | |
| Comment | One commentator believed the effective date should be extended until regulations concerning asset valuation methods are issued under the Pension Protection Act of 2006. |
| Response | The reviewers disagree and made no change. Section 1.2 addresses how to reconcile any discrepancies between applicable law and this standard. |
| **SECTION 2. DEFINITIONS** | |
| **Section 2.4, Market Value** | |
| Comment | One commentator suggested that the definition be revised to capture the nuance that market value is technically not the price for which an asset might potentially be sold (the "bid price"), but rather the last price for which a security was sold. The commentator recommended that the proposed standard state that the actuary may rely on brokerage statements for market value and is not required to ascertain the difference between bid price, asked price, and last sales price. |
| Response | The reviewers believe that the current definition, which is based on the definition of "fair value" in Statement of Financial Accounting Standards No. 157, *Fair Value Measurements*, is appropriate and made no change. |

| | |
|---|---|
| **Section 2.6, Prescribed Asset Valuation Method** | |
| Comment | One commentator recommended that the definition be revised to include asset valuation methods selected by principals other than plan sponsors. |
| Response | The reviewers note that the definition is intended to be limited to those situations in which the plan sponsor is given responsibility for selecting an asset valuation method by law, regulation, or accounting standards. Thus, an asset valuation method selected by the plan sponsor or other principal in other circumstances – determining the cost of a benefit increase during collective bargaining, for example – would not be considered a prescribed asset valuation method. Hence, the reviewers made no change. |
| **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES** | |
| **Section 3.2.6, Additional Considerations** | |
| Comment | One commentator wrote that item (a) could be interpreted to mean that the actuary should not consider a plan's actual investment practices when the plan has a stated investment policy. The commentator suggested that a plan's actual investment practices should always be considered, regardless of whether the plan has a stated investment policy. |
| Response | The reviewers agree and changed the wording accordingly. |
| **Section 3.3, Relationship to Market Value, and 3.4, Further Considerations for Methods Other Than Market Value (now 3.3, Selecting Methods Other Than Market Value, and 3.4, Using Methods Other Than Market Value)** | |
| Comment | One commentator pointed out that the title of section 3.4, Further Considerations for Methods Other Than Market Value, was misleading because the section required disclosure of characteristics of asset valuations other than market value. The commentator recommended changing the section's title to correspond to the content of the section. |
| Response | The reviewers agree and renamed sections 3.3 and 3.4 to be consistent with the guidance provided in those sections. In addition, the reviewers clarified that the considerations in section 3.4 are intended to apply to all asset valuation methods other than market value, whether selected by the actuary or selected by others. |

# ASOP No. 44—September 2009

| | |
|---|---|
| **Section 3.4.1, Bias** | |
| Comment | One commentator disagreed with the requirement that the actuary disclose that an asset valuation method has significant systematic bias, believing that a full description of the asset valuation method is sufficient for the user to determine if the method is biased.<br><br>The commentator also wrote that it is inappropriate for the proposed standard to require the actuary to disclose that a prescribed asset valuation method has bias, as it puts the actuary in a position of evaluating whether a required method has characteristics that could be considered undesirable.<br><br>Finally, the commentator noted that the word "bias" is often used to describe the introduction of error into a statistical sample, and pointed out that describing an asset valuation method as having "significant systematic error" suggests that the use of that asset valuation method is inappropriate and that the actuary should not perform the assignment.<br><br>Two commentators supported the requirement that the actuary disclose that an asset valuation method has significant systematic bias. |
| Response | Regarding the first point, the reviewers do not believe that a full description of a biased asset valuation method is always sufficient for all intended users to recognize that the method has bias. The reviewers revised section 4.1.5 to provide an example of a disclosure that describes significant systematic bias as a characteristic of the asset valuation method without the use of the word "bias." |
| Comment | One commentator noted that the appropriate assumption in paragraph (a)(2) is that market values experience *expected returns* rather than *constant returns*. |
| Response | The reviewers agree and made the recommended change. A similar change was made in section 3.3(b)(2). |
| Comment | Three commentators wrote that paragraph (b) was vague and inappropriate.<br><br>One commentator pointed out that paragraph (b) could be read to imply that any change in asset valuation method produces systematic bias if the new method results in a greater actuarial value of assets than the old method.<br><br>One commentator was concerned that paragraph (b) required information about past changes in the asset valuation method that might not be available to the actuary. The commentator recommended that disclosure of significant systematic bias be limited to the future operation of the asset valuation method rather than the application of the asset valuation method in the past.<br><br>Another commentator pointed out that paragraph (b) could be read to imply that many changes in asset valuation method that are decided upon after the relevant measurement date could have been influenced by market experience subsequent to the measurement date and be deemed biased. |
| Response | The reviewers agree that paragraph (b) was problematic and deleted it. Instead of considering whether changes in the asset valuation method produce systematic bias, the standard now requires the actuary to disclose the reason for any changes in asset valuation method (section 4.1.3). |
| **Section 3.6, Reviewing the Asset Valuation Method** | |
| Comment | One commentator recommended adding a reference to changes in relevant law, regulations, or accounting guidance. |
| Response | The reviewers agree and made the change. |

| SECTION 4. COMMUNICATIONS AND DISCLOSURES | |
|---|---|
| **Section 4.1.4, Prescribed Asset Valuation Method** | |
| Comment | One commentator opposed the requirement that the actuary disclose that, in the actuary's professional judgment, an asset valuation method prescribed by the plan sponsor is not reasonable in light of the purpose of the measurement even though a regulator has approved the general use of that asset valuation method. |
| Response | The reviewers note that the standard requires the actuary to evaluate whether the prescribed asset valuation method selected by the plan sponsor is *reasonable for the purpose of the measurement*, and did not believe that general approval of an asset valuation method by a regulator indicates that the use of that method is reasonable for every measurement. |
| **Section 4.1.6, Different Treatment of Realized and Unrealized Gains and Losses** | |
| Comment | One commentator suggested that this section require disclosure of the possible consequences of treating realized gains and losses differently from unrealized gains and losses. |
| Response | The reviewers agree and made the change. |
| **Appendix 1, Background and Current Practices** | |
| Comment | One commentator wrote that the relevance of the appendix wasn't clear and that it seemed unnecessary. The commentator also noted that the appendix incorrectly equated the use of market value with financial economics. |
| Response | The reviewers note that the appendix is provided for informational purposes and is not part of the standard. It is intended to describe current actuarial practice. However, the reviewers agree that the appendix incorrectly implied that traditional actuarial practice involved only the use of asset valuation methods other than market value, and that actuaries who apply the principles of financial economics were the only actuaries who use market value. The reviewers revised the appendix to correct this. |

ACTUARIAL STANDARDS BOARD

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**Actuarial Standard**
**of Practice**
**No. 45**

# The Use of Health Status Based Risk Adjustment Methodologies

**Developed by the**
**Health Risk Adjustment Task Force of the**
**Health Committee of the**
**Actuarial Standards Board**

**Adopted by the**
**Actuarial Standards Board**
**January 2012**

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**(Doc. No. 164)**

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## APPENDIXES

January 2012

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in the Use of Health Status Based Risk Adjustment Methodologies

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 45

This document contains the final version of ASOP No. 45, *The Use of Health Status Based Risk Adjustment Methodologies*.

Background

Health status based risk adjustment methodologies have been an important tool in the health insurance marketplace since the 1970s. The use of risk adjustment has significant effects on health insurance companies, healthcare providers, consumers, employers and others. The importance and influence of health status based risk adjustment methodologies are likely to increase as healthcare programs that currently use risk adjustment expand the populations they cover and other programs adopt the use of risk adjustment. ASOP No. 12, *Risk Classification (for All Practice Areas)*, provides guidance to "all actuaries when performing professional services with respect to designing, reviewing, or changing risk classification systems used in connection with financial or personal security systems." It applies more broadly than this ASOP. This ASOP is intended to provide guidance regarding the appropriate use of health status based risk adjustment models and methods. This standard requires actuaries to explicitly consider important characteristics of the risk adjustment models and their use, rather than allowing actuaries to assume important issues are already addressed within any given risk adjustment software model.

Exposure Draft

The exposure draft of this ASOP was approved for exposure in April 2011 with a comment deadline of July 31, 2011. Ten comment letters were received and considered in developing modifications that were reflected in the final ASOP. For a summary of the issues contained in these comment letters, please see appendix 2.

Key Changes

The most significant changes from the exposure draft were as follows:

1. A definition for estimation period was added to the definitions section, the term "data collection period" was changed to "incurral period" in section 3.1.5 and further background on timing issues was added to appendix 1.

2. In Section 3.1.3, language was added to address instances where descriptions of changes from a prior model version were not available.

3. Section 3.2, Input Data, was rewritten to clarify the meaning.

4. In section 3.6, the level of transparency afforded by the model was added as a consideration in recalibration of the model.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in January 2012 to adopt this standard.

Health Risk Adjustment Task Force

Ross A. Winkelman, Chairperson

| | |
|---|---|
| Robert G. Cosway | Kevin C. McAllister |
| Ian G. Duncan | Julie A. Peper |
| Vincent M. Kane | William M. Pollock |
| John C. Lloyd | |

Health Committee of the ASB

Robert G. Cosway, Chairperson

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| David Axene | Nancy F. Nelson |
| John C. Lloyd | Donna Novak |
| Cynthia Miller | Ross A.Winkelman |

Actuarial Standards Board

Robert G. Meilander, Chairperson

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| Albert J. Beer | Thomas D. Levy |
| Alan D. Ford | Patricia E. Matson |
| Patrick J. Grannan | James J. Murphy |
| Stephen G. Kellison | James F. Verlautz |

*The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.*

# ACTUARIAL STANDARD OF PRACTICE NO. 45

# THE USE OF HEALTH STATUS BASED RISK ADJUSTMENT METHODOLOGIES

## STANDARD OF PRACTICE

### Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries applying health status based risk adjustment methodologies to quantify differences in relative healthcare resource use due to differences in health status.

1.2 Scope—This standard applies to actuaries quantifying differences in morbidity across organizations, populations, programs and time periods using commercial, publicly available or other health status based risk adjustment models or software products. It does not apply to actuaries designing health status based risk adjustment models. Actuaries who perform professional services with respect to designing, reviewing, or changing risk classification systems should be guided by ASOP No. 12, *Risk Classification (for all Practice Areas)*.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for any professional services using health status based risk adjustment methodologies performed on or after July 1, 2012.

### Section 2. Definitions

2.1 Carve-out—A medical service or condition not covered by the program under review or covered under a different reimbursement arrangement, such as a capitation. A common carve-out is mental health services.

2.2 Coding—The process of recording and submitting information (for example, diagnoses or services provided) on claims forms.

2.3 Condition Category—A grouping of medical conditions that have similar expected healthcare resource use or clinical characteristics.

2.4 Credibility—A measure of the predictive value in a given application that the actuary attaches to a particular body of data (predictive is used here in the statistical sense and not in the sense of predicting the future).

2.5 Diagnostic Services—Services (for example, lab or radiology) provided to determine whether a medical condition exists. Having these services performed does not by itself indicate a condition exists, although the result of the test may indicate it does.

2.6 Estimation Period—The period for which differences in morbidity are being quantified by the risk adjustment methodology.

2.7 Expert—One who is qualified by knowledge, skill, experience, training, or education to render an opinion concerning the matter at hand.

2.8 Health Status Based—Using healthcare claims, pharmacy claims, lab test results, health risk appraisal or other data based on underlying conditions or treatment as well as demographic information such as age and gender.

2.9 Morbidity—The incidence of or resource use associated with a medical condition or group of conditions.

2.10 Program—Health benefit programs including but not limited to commercial and employer sponsored health insurance, self-funded employer health insurance, and government sponsored health insurance, such as Medicaid and Medicare.

2.11 Recalibration—The process of modifying the risk adjustment model, usually the risk weights. Recalibration is often used to make the risk adjustment model more specific to the population, data, and other characteristics of the project for which it is being used.

2.12 Risk Adjustment—The process by which relative risk factors are assigned to individuals or groups based on expected resource use and by which those factors are taken into consideration and applied.

2.13 Risk Weight—The value assigned to each condition category that indicates the expected contribution of that condition category to an individual's estimated resource use.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Model Selection and Implementation—The actuary should select an appropriate risk adjustment model and implementation methodology, based on the actuary's professional judgment, with consideration given to the items discussed below.

3.1.1 Intended Use—The actuary should consider the degree to which the model was designed to estimate what the actuary is trying to measure. For example, the model may have been developed to estimate differences in total allowed costs, while the actuary may be trying to measure or project differences in paid costs for a high deductible plan, or differences in allowed costs for a single service category such as pharmacy.

3.1.2 Impact on Program—The actuary should consider whether the risk adjustment system may cause changes in behavior because of underlying incentives. For example, it may not be appropriate to include a health plan's cost or provider's prior charges as a risk adjustment variable when risk adjustment is used in determining health plan or provider payment.

3.1.3 Model Version—Since models are often updated, the actuary should consider the specific version of the model being utilized. If the actuary is using a new version of a previously utilized model, the actuary should consider the materiality of changes to the model. If a description of the changes from a prior version is not available, the actuary should consider comparing results under different model versions.

3.1.4 Population and Program—The actuary should consider if the population and program to which the model is being applied are reasonably consistent with those used to develop the model. For example, some models are intended for a commercial population and program while others are intended for Medicare or Medicaid. In addition, some Medicaid programs exclude carve-outs such as pharmacy and mental health services from the list of health plan at-risk services.

3.1.5 Timing of Data Collection, Measurement, and Estimation—Typically, at least small differences in timing between the development of the model and the application of the model will exist. The actuary should consider the impact of differences between the application of the model and its development with respect to timing issues such as the incurral period, estimation period, and claims run-out period.

3.1.6 Transparency—The actuary should consider the level of transparency that is appropriate for the intended use, and whether the model affords that level of transparency. For example, some commercially available models do not allow risk weights to be published.

3.1.7 Predictive Ability—The actuary should consider the predictive ability of the model and the characteristics of the various predictive performance measures commonly used and published.

3.1.8 Reliance on Experts—Risk adjustment models may incorporate specialized knowledge that may be outside of an actuary's area of expertise. The actuary should consider whether the individual or individuals upon whom the actuary is relying are experts in risk adjustment and should understand the extent to which the model has been reviewed or opined on by experts in risk adjustment models.

3.1.9 Practical Considerations—The actuary should consider practical limitations and issues with any given model and methodology including the cost of the model, the actuary's and other stakeholders' familiarity with the model, and its availability.

3.2 Input Data—The type of input data that is used in the application of risk adjustment should be reasonably consistent with the type of data used to develop the model. Also the type of input data should be reasonably consistent across organizations, populations, and time periods. If such consistency is not possible, the actuary should document why the combination of that data and the selected model was used, and any adjustments made to the data, model, or methodology to address limitations in the data. If sufficient information concerning the quality and type of input data used to develop or apply the model is not available, the actuary should consider whether use of the model is appropriate. When evaluating consistency of input data, the actuary should consider the following:

3.2.1 Provider Contracts—The actuary should consider the differences in provider contracts and the potential impact of these differences on the risk adjustment results. For example, one organization may pay fee for service and another may pay capitation. This can cause significant differences in risk adjustment results based on data quality rather than morbidity.

3.2.2 Diagnostic Services—The actuary should determine how the model handles diagnostic services and whether data for those services should be included in the data input into the model.

3.2.3 Coding and Other Data Issues—Because risk adjustment model results are affected by the accuracy and completeness of diagnosis codes or services coded, the actuary should consider the impact of differences in the accuracy and completeness of coding across organizations and time periods. This standard does not require the actuary to quantify the portion of measured morbidity differences due to coding or other data issues and the portion due to true morbidity differences. However, the actuary should consider how coding, incomplete data, and other data issues may be affecting the results and consider whether adjustments to the risk adjustment process are appropriate. Adjustments may include phase-in, the use of alternate models, and adjustment for changes in coding over time or across organizations.

3.3 Program Specifics—The specifics of the program for which risk adjustment is being used should be considered. For example, the presence of reinsurance may affect the impact of

high cost individuals or the program may carve out some services from costs that are at risk to health plans or providers.

3.4 Assigning Risk Scores to Individuals with Limited Data—The actuary should consider the minimum criteria required for an individual to be included in the risk adjustment analysis such as a minimum number of months of eligibility in the incurral period. Where these minimum criteria are not met, the actuary should identify an appropriate measure of morbidity to be used. Approaches to handling these individuals include, but are not limited to, assigning an age/gender factor, assigning an average risk score for the scored individuals or excluding them from the analysis while also dampening the results.

3.5 Addressing Model and Methodology Limitations—When implementing risk adjustment results, the actuary should consider any limitations with the data, model or underlying program fundamentals. The actuary may determine that risk adjustment results should be modified before application due to such limitations.

If using a risk adjustment model on a population for which it was not originally designed, the actuary should consider appropriate adjustments, such as recalibration and condition or demographic category groupings.

3.6 Recalibration—The actuary should consider the necessity and advantages of recalibration in the context of available resources, materiality of expected changes in results, appropriateness of the unadjusted model risk weights, level of transparency afforded by the model, and limitations in the data available for recalibration.

The actuary should consider the credibility of data and observations for specific condition categories before changes to the model are made. The actuary should consider the reasonability and implications of any changes to the relative weights for condition or other groupings.

3.7 Use in Combination with Other Rating Variables—When risk adjustment is used in combination with other rating variables such as age or gender, industry or area, the actuary should consider whether those variables capture differences in morbidity already captured by the risk adjustment model, and make the appropriate modifications.

3.8 Budget or Cost Neutrality—One of the goals of the risk adjustment application may be to shift funds without increasing or decreasing the overall budget or cost. In this situation, the actuary should consider changes in the composition of the group being risk-adjusted between the historic and projected time periods, changes in data coding and quality, program changes, and any other changes that have the potential to materially affect overall results.

Section 4. Communications and Disclosures:

4.1 Actuarial Communications—When issuing actuarial communications under this standard, the actuary should refer to ASOP No. 41, *Actuarial Communications*.

4.2 Disclosures—The actuary should include the following, as applicable, in an actuarial communication:

a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

b. the disclosure in ASOP No. 41, section 4.3., if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

## Appendix 1—Background and Current Practices

Health status based risk adjustment methodologies have been an important tool in the health insurance marketplace since the 1970s. The use of risk adjustment has significant effects on health insurance companies, healthcare providers, consumers, employers and others. Its importance and influence are likely to increase as healthcare programs that currently use risk adjustment expand the populations they cover and other programs adopt the use of risk adjustment.

Risk-adjustment is a powerful tool in the health insurance marketplace. Risk adjusters allow health insurance programs to measure the morbidity of the members within different groups and pay participating health plans fairly. In turn, health plans can better protect themselves against adverse selection and are arguably more likely to remain in the marketplace. This in turn increases competition and choice for consumers.

Risk adjusters also provide a useful tool for health plan underwriting and rating. They allow health plans to more accurately estimate future costs for the members and groups they currently insure.

Finally, risk adjusters provide a ready, uniform tool for grouping people within clinically meaningful categories. This categorization allows for better trend measurement, care management and outcomes measurement. The risk adjustment structure, like benchmarks for service category utilization, creates consistency in reporting and communication across different departments within an insurance company. For example, medical management, actuarial and finance professionals can measure the impacts of their care management programs.

Risk adjustment is widely used in government programs including Medicare Advantage, state Medicaid, and healthcare reform programs. In addition, it is used in provider payment, medical management, employer multi-option contribution setting and in many other applications that require objective estimation of morbidity.

Actuaries typically use models developed by commercial vendors or publicly available models such as CDPS, MedicaidRx or CMS' HCC models. Concurrent models are usually used to measure morbidity when the incurral and measurement periods are the same, while prospective models are usually used if the estimation period is after the incurral period.

Concurrent models are used to analyze historical costs. Concurrent models can be used to assess relative resource use and to determine compensation to providers for services rendered because it normalizes costs across members with different health statuses. Normally, concurrent models provide an assessment of what costs should have been for members, given the conditions with which they presented in the past year. Prospective models are used to estimate future costs for a group of members.

The following are examples of risk assessment (evaluation of risk at the individual or population level, resulting in risk scores) and risk adjustment (the use of risk scores to allocate reimbursement or assign costs among different individuals or populations). The risk assessment examples (Examples 1 and 2) below are taken from the American Academy of Actuaries' May 2010 Issue Brief, titled "Risk Assessment and Risk Adjustment." These examples show how the risk score for two different 32 year old males is developed based on their health claims history. (This is illustrative; not all risk adjustment models use this type of additive convention.)

Example 1: John Smith, age 32, has diabetes, asthma/COPD and dermatology diagnoses in his claims history.

| **Risk Marker** | **Risk Weight** |
|---|---|
| Male, Age 32 | 0.22 |
| Diabetes with significant co-morbidities | 1.32 |
| Asthma/COPD | 0.96 |
| Low cost dermatology | 0.30 |
| **Total Risk Score** | **2.80** |

The "Total Risk Score" in the table above is equal to the sum of the demographic and condition risk weights shown in the table. Usually, risk scores are stated relative to 1.0, with 1.0 being equal to the average expected risk score across the entire population. In this example, John Smith would be expected to cost 2.8 times an average member.

Example 2: Mark Johnson, age 32, has eligibility history but no claims.

| **Risk Marker** | **Risk Weight** |
|---|---|
| Male, Age 32 | 0.22 |
| **Total Risk Score** | **0.22** |

In this example, the total risk score is equal to only the demographic risk weight and is much lower than the total risk score for John Smith. The estimated cost ratio using risk adjustment factors would be 0.22 / 2.80 or 0.079. Therefore, Mark Johnson's costs would be expected to be 7.9% of those of John Smith, and 22% of those of an average member.

Risk scores can be aggregated for groups of individuals. The following example shows the application of relative risk scores within the risk adjustment process for the Massachusetts Health Insurance Connector (Exchange). This example is taken from Ian Duncan: *Healthcare Risk Adjustment and Predictive Modeling* (Actex Publications, 2011). In this example, the claim cost portion of the capitation rate was $393.67 per member per month (PMPM) at a 1.0 average plan type factor, 1.0 average geographic factor, and 1.0 average risk factor.

| Example of Calculation of Overall Adjustment Factor | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Rating Factors | | | |
| Member | Plan Type | Region | Age | Gender | Plan Type (a) | Geographic (b) | Risk (c) | Total (a)x(b)x(c) |
| 001 | I | North | 27 | F | 1.0619 | 0.9468 | 0.8694 | 0.8741 |
| 002* | I | North | 22 | F | 1.0619 | 0.9468 | 0.9970 | 1.0024 |
| 003 | II | North | 35 | M | 0.9461 | 0.9468 | 0.9108 | 0.8159 |
| 004* | II | Central | 44 | F | 0.9461 | 1.1589 | 1.0350 | 1.1348 |
| 005 | III | Central | 54 | M | 0.8909 | 1.1589 | 1.2533 | 1.2941 |
| | | | | | | | **Average** | **1.0242** |

*Members 002 and 004 had seven or more months of experience during the historic experience period. Therefore, they receive a condition-based risk factor rather than an age/gender risk factor.

The relative risk factor, adjusted for geographic and plan type risk, is applied to the baseline risk premium and an administrative load ($32.00) is added:

$$\$393.67 \times 1.0242 + \$32.00 = \$435.20.$$

This Health Plan would be paid $435.20 PMPM.

## Appendix 2

## Comments on the Exposure Draft and Responses

The exposure draft of this ASOP, *The Use of Health Status Based Risk Adjustment Methodologies*, was issued in April 2011 with a comment deadline of July 31, 2011. Ten comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Health Risk Adjustment Task Force of the Health Committee of the Actuarial Standards Board carefully considered all comments received, and the Health Committee and ASB reviewed (and modified, where appropriate) the changes proposed by the Task Force.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes the Task Force, the Health Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in this final version.

| **GENERAL COMMENTS** | |
|---|---|
| Comment | One commentator stated that the ASOP should describe the core knowledge an actuary needed to have in order to perform analysis using risk adjustment methods. |
| Response | ASOPs do not include qualification requirements. The reviewers refer the commentator to Precept 2 of the *Code of Professional Conduct* and the U.S. Qualification Standards promulgated by the American Academy of Actuaries. |
| Comment | Several commentators stated that the ASOP should provide more guidance and noted specific areas where they thought guidance should be provided. In many instances, the commentators suggested adding technical details and more specificity, including examples. In addition, one commentator stated that the ASOP did not provide meaningful standards of practice, only a list of considerations. |
| Response | The reviewers believe the ASOP provides sufficient guidance. Additional details might be appropriate for a practice note or textbook. The reviewers did add additional guidance concerning specific issues around the timing of models, as discussed below. |
| Comment | Several commentators stated that the ASOP should list reference material. |
| Response | The reviewers believe it is not appropriate for this ASOP to list reference material since material in this area can quickly become out of date. Therefore, no change was made to the ASOP. |
| Comment | One commentator stated that many of the considerations in the ASOP were not practical or significant, particularly for employer-specific health plan analyses. The commentator stated that the ASOP briefly mentioned practical considerations, but requested that examples of where the ASOP was not applicable be documented. |
| Response | The reviewers believe the scope of the ASOP is clearly defined, and that section 3.1.9, Practical Considerations, provides sufficient weight to practical considerations. Therefore, no change was made to the ASOP. |

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| Comment | One commentator suggested adding a section on uncertainty. |
| Response | The reviewers note that section 3.1.7, Predictive Ability, requires the actuary to consider the predictive ability of the model; and ASOP No. 41, *Actuarial Communications*, requires the actuary to communicate any cautions related to uncertainty. Therefore, no change was made to the ASOP. |
| Comment | Several commentators suggested adding additional examples under several sections. |
| Response | The reviewers believe the examples provided are sufficient, and note that the material in appendix 1 was expanded to provide additional background. |
| Comment | A commentator stated that actuaries should be required to educate intended users on the purpose of risk adjustment, the models available, their different uses, and the advantages and disadvantages. |
| Response | The reviewers believe ASOP No. 41 provides sufficient guidance on communication. Therefore, no change was made to the ASOP. |
| **SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE** | |
| **Section 1.2, Scope** | |
| Comment | One commentator suggested adding "publicly available" to "commercial or other." |
| Response | The reviewers agreed and added "publicly available" to the list in section 1.2. |
| **SECTION 2. DEFINITIONS** | |
| Comment | Two commentators suggested that definitions for data collection period, estimation period, and claim run-out period be added. |
| Response | A definition for estimation period was added to the definitions section. In section 3.1.5, "data collection period" was modified to "incurral period." Appendix 1 was expanded to include additional discussion on timing issues. |
| Comment | Several commentators suggested adding definitions and guidance regarding prospective and concurrent models, and making the distinction between "risk adjustment" and "risk assessment." |
| Response | The reviewers agreed and added discussion of these topics to the appendix. |
| **Section 2.8, Health Status Based** | |
| Comment | One commentator suggested that the definition of "health status based" be expanded to specifically list pharmacy claims. |
| Response | The reviewers believe this explicit recognition of pharmacy claims would be useful in understanding the definition and added pharmacy claims to the definition. |
| **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES** | |
| Comment | One commentator suggested making the terminology referring to risk adjustment model and risk adjustment methodology consistent with the proposed rules under the Affordable Care Act. |
| Response | The reviewers believe the terms are appropriate as included. Terminology in various ASOPs is sometimes different from that used in regulations. ASOPs are generally developed so that they do not need to be revised as new laws and regulations are proposed, passed, and changed. Therefore, no change was made to the ASOP. |

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| **Section 3.1.1, Intended Use** | |
| Comment | One commentator suggested that section 3.1.1 could be interpreted to have a "yes" or "no" answer when the more typical situation involved a degree or spectrum of closeness. |
| Response | The reviewers agreed and replaced "whether" with "the degree to which." |
| **Section 3.1.3, Model Version** | |
| Comment | One commentator stated that compliance with the requirement that a comparison to prior versions be conducted may not always be possible. |
| Response | The reviewers agreed that the language in the ASOP may unintentionally imply too high of a standard. Further language was added clarifying that the information may not be readily available and that the actuary should consider comparing results under different versions. |
| **Section 3.1.7, Predictive Ability** | |
| Comment | One commentator suggested that the actuary should consider who may have accountability to monitor predictive ability on an ongoing basis. |
| Response | The reviewers believe such a requirement is unnecessary. Therefore, no change was made to the ASOP. |
| **Section 3.1.8, Reliance on Experts** | |
| Comment | One commentator suggested that a statement such as the following be added: "the actuary should consider, if appropriate, relying on outside expertise if aspects of the model are not readily understood by the actuary." The commentator used an example of an actuary not fully understanding the clinical input used to develop a model and seemed to suggest the actuary should understand such clinical input and aspects before using a model. Another commentator stated that the reliance on experts section was potentially too prescriptive and stated that it would be impossible to know if the model developer was an expert if they were deceased. Another commentator had a concern similar to the second one listed here and asked if a reliance statement from the expert would be necessary. |
| Response | The reviewers believe actuaries relying on others can assess the expertise of those individuals. The reliance on experts language in this ASOP is consistent with the relevant requirements in ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*. Therefore, no change was made to the ASOP. |
| **Section 3.2, Input Data** | |
| Comment | One commentator stated that actuaries may not have access to input data used to develop a model and therefore could not asses the consistency of the model development and the application of the model. |
| Response | The reviewers believe this section needed further clarification and additional flexibility for practicing actuaries. This section has been edited to address these issues. |
| Comment | One commentator stated that actuaries should have a deep understanding of the data used to develop the model and be aware of any hidden variables such as race or income. |
| Response | The reviewers believe the revised section 3.2 places an appropriate level of responsibility on the actuary. Therefore, no change was made to the ASOP. |
| Comment | One commentator suggested adding other input data such as income level or socioeconomic information, self-reported health data (health-risk assessments), and lifestyle-related data. |
| Response | Sections 3.2.1, 3.2.2, and 3.2.3 talk about specific data issues that may exist in widely used models. The reviewers believe including discussion of variables not widely used may unnecessarily complicate the ASOP. If used in a model, the ASOP (specifically, section 3.2) requires the actuary to consider consistency of these variables even if they are not specifically listed. Therefore, no change was made to the ASOP. |

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| **Section 3.2.3, Coding and Other Data Issues** | |
| Comment | One commentator suggested that the term coding be included in the definitions. |
| Response | The reviewers agreed and added the definition in section 2.2. |
| Comment | One commentator suggested adding data validation to the section 3.2.2 heading and further detail and requirements regarding considering differences in coding. |
| Response | The reviewers believe the suggested changes are unnecessary and may overlap with other sections where data issues are also discussed. Therefore, no change was made to the ASOP. |
| **Section 3.4, Assigning Risk Scores to Individuals with Limited Data** | |
| Comment | One commentator requested that the discussion of assigning risk scores to individuals with limited experience be more explicit. |
| Response | The reviewers agreed and added "such as a minimum number of months of eligibility in the incurral period." |
| Comment | One commentator suggested that excluding individuals from the analysis did not dampen the results. |
| Response | The reviewers removed the word "effectively" and added "while also" since the intent in the example was an active dampening of the results, not that excluding the individuals would automatically dampen the results. |
| **Section 3.5, Addressing Model and Methodology Limitations** | |
| Comment | Two commentators suggested that, while existing communication standards require certain communications, this ASOP reinforce requirements in specific areas including adjustments to address model and methodology limitations. |
| Response | The reviewers note ASOP No. 41 includes the following statement regarding required documentation in section 3.6: "Such documentation should identify the data, assumptions, and methods used by the actuary with sufficient clarity that another actuary qualified in the same practice area could evaluate the reasonableness of the actuary's work." Therefore, no change was made to the ASOP. |
| **Section 3.6, Recalibration** | |
| Comment | One commentator suggested that an actuary should consider the extent to which an actuary could recalibrate the model because of a lack of transparency. |
| Response | The reviewers agreed the level of transparency would affect an actuary's ability to recalibrate a model, and added transparency in the list of considerations in this section. |
| Comment | One commentator suggested that actuaries be required to recalibrate when there are inconsistencies between model development and model application or communicate uncertainty if recalibration is not performed. |
| Response | The reviewers disagree and believe the ASOP requires the appropriate level of review and communication. Therefore, no change was made to the ASOP. |
| **APPENDIX 1—BACKGROUND AND CURRENT PRACTICES** | |
| Comment | One commentator noted that the background and current practices section of the appendix stated that risk adjustment has been an important tool in the health insurance marketplace since the 1970s while the background section in the exposure draft's transmittal memorandum referenced the 1980s. |
| Response | The reviewers note that the 1970s was the correct reference. |

ACTUARIAL STANDARDS BOARD

**Actuarial Standard**
**of Practice**
**No. 46**

# Risk Evaluation in Enterprise Risk Management

**Developed by the**
**Enterprise Risk Management Task Force of the**
**Actuarial Standards Board**

**Adopted by the**
**Actuarial Standards Board**
**September 2012**

**Doc. No. 165**

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## APPENDIXES

September 2012

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Risk Evaluation in Enterprise Risk Management

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 46

This document contains the final version of ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*.

Background

Enterprise Risk Management (ERM) has been defined by the Casualty Actuarial Society in 2003 as follows:

> *The discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders*.

This definition was also adopted by the Society of Actuaries in 2005.

Enterprise Risk Management is a rapidly emerging specialty within the actuarial community and, with the new CERA risk management educational certification, could well become an area of practice for actuaries with no tie to traditional actuarial work. The CERA is a globally-recognized ERM designation supported by actuarial organizations in 12 countries with rigorous educational programs.

The ERM Task Force was formed in the fall of 2009 to revisit the need for ERM standards that was previously addressed by an earlier task force in 2007. In June 2010, the Task Force presented findings to the ASB and was then asked to go forward with the development of standards for two broad topics relating to ERM, Risk Evaluation and Risk Treatment.

In March of 2011, two discussion drafts on risk evaluation and risk treatment were posted to the ASB website. The ERM Task Force reviewed the comments received and based on those comments, began work on the development of exposure drafts of standards on risk evaluation and risk treatment for presentation to the ASB.

This ASOP considers the topic of risk evaluation. The process of risk evaluation is a fundamental part of risk management systems that are found in organizations. In this context, risk is intended to mean the potential of future losses or shortfalls from expectations due to deviation of actual results from expected results. Evaluation of expected losses and provisions for expected losses is a common actuarial task that is not considered directly by this standard.

This standard applies to enterprise risk evaluation performed by actuaries. Some organizations will face requirements and requests for assessment of the risk evaluation part of the risk management system, in order to evaluate whether their risk management systems are operating at a level that meets or exceeds professional standards. Regulators in some industries may want similar evaluations.

As described above, the ERM Task Force has also been actively working on a second proposed ASOP, *Risk Treatment in Enterprise Risk Management*. The second proposed ASOP considers the topic of risk treatment, which is the process of selecting and implementing actions to modify risks. Risk treatment is found in insurers, pension plans, other financial service organizations, and most businesses or organizations, and is typically a part of a risk management system. This second proposed ASOP was exposed with a comment deadline of September 10, 2012. The Task Force plans to present the proposed final standard on risk treatment to the ASB at its December 2012 meeting. Once the proposed ASOP, *Risk Treatment in Enterprise Risk Management* is adopted, the reference in section 1.2 of this ASOP No. 46 to proposed ASOP *Risk Treatment in Enterprise Risk Management* will be updated to reflect its adoption as final.

These two standards cover the risk evaluation and risk treatment activities within risk management work but do not cover other ERM practices that are performed by insurers, pension plans, other financial service firms, and other businesses or organizations. In the future, other standards may provide guidance for other aspects of actuarial professional services in ERM. These two topics were chosen because they cover the most common actuarial services performed within risk management systems of organizations.

These standards, as with all actuarial standards of practice, apply to the actions of individual actuaries, and not to their organizations, employers or clients.

Exposure Draft

The exposure draft of this ASOP was approved for exposure in April 2012 with a comment deadline of June 30, 2012. Twenty-five comment letters were received and considered in developing modifications that were reflected in this final ASOP. For a summary of the issues contained in these comment letters, please see appendix 2. In general, the suggestions helped improve the clarity of the standard and did not result in substantive changes to the standard.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in September 2012 to adopt this standard.

Enterprise Risk Management Task Force

David N. Ingram, Chairperson

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|---|---|
| Maryellen J. Coggins | David Y. Rogers |
| Eugene C. Connell | Max J. Rudolph |
| Wayne H. Fisher | David K. Sandberg |
| Kevin M. Madigan | John W.C. Stark |
| Claus S. Metzner | |

Actuarial Standards Board

Robert G. Meilander, Chairperson

| | |
|---|---|
| Albert J. Beer | Thomas D. Levy |
| Alan D. Ford | Patricia E. Matson |
| Patrick J. Grannan | James J. Murphy |
| Stephen G. Kellison | James F. Verlautz |

*The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.*

**ASOP No. 46—September 2012**

# ACTUARIAL STANDARD OF PRACTICE NO. 46

# RISK EVALUATION IN ENTERPRISE RISK MANAGEMENT

## STANDARD OF PRACTICE

### Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to risk evaluation systems, including designing, developing, implementing, using, maintaining, and reviewing those systems.

1.2 Scope—This standard applies to actuaries when performing risk evaluation professional services for the purposes of enterprise risk management (ERM).

Risk evaluation is often performed as one part of an ERM control cycle. Within a typical ERM control cycle, risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached. Risks are monitored and reported as they are taken and as long as they remain an exposure to the organization.

This standard focuses on five aspects of risk evaluation: risk evaluation models, economic capital, stress testing, emerging risks, and other risk evaluations. Guidance for activities related to risk treatment is addressed in proposed ASOP, *Risk Treatment in Enterprise Risk Management*.

This standard does not apply to actuaries when performing risk evaluation professional services that are not for the purposes of ERM. Examples of risk evaluation services that may be performed for purposes other than ERM include pricing of insurance products, and the evaluation of liabilities of insurers and pension plans.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for any professional services with respect to risk evaluation in enterprise risk management performed on or after May 1, 2013.

## Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Economic Capital—The amount of capital an organization requires to survive or to meet a business objective for a specified period of time and risk metric, given its risk profile.

2.2 Emerging Risk—New or evolving risks that may be difficult to manage since their likelihood, impact, timing or interdependency with other risks are highly uncertain.

2.3 Enterprise Risk Management—The discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders.

2.4 Enterprise Risk Management Control Cycle—The continuing process by which risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached.

2.5 Organization—The entity for which ERM is being performed. Examples include public or private companies, government entities, and associations, whether for profit or not for profit.

2.6 Risk—The potential of future losses or shortfalls from expectations due to deviation of actual results from expected results.

2.7 Risk Appetite—The level of aggregate risk that an organization chooses to take in pursuit of its objectives.

2.8 Risk Evaluation System—A combination of practices, tools, and methodologies within a risk management system used to measure the potential impacts of risk events on the performance metrics of an organization.

2.9 Risk Limit—A threshold used to monitor the actual risk exposure of a specific unit or units of the organization to ensure that the level of aggregate risk remains within the risk tolerance.

2.10 Risk Management System—A combination of practices, tools and methodologies that an organization uses to identify, assess, measure, mitigate, and manage the risks it faces during the course of conducting its business.

2.11. Risk Metric—A measure of risk. Examples include value at risk, expected policyholders deficit, and conditional tail expectation.

2.12 Risk Mitigation—Action that reduces the frequency or severity of a risk.

2.13 Risk Profile—The risks to which an organization is exposed over a specified period of time.

2.14 Risk Tolerance—The aggregate risk-taking capacity of an organization.

2.15 Scenario Test—A process for assessing the impact of one possible event or several simultaneously or sequentially occurring possible events on an organization's financial position.

2.16 Stress Test—A process for measuring the impact of adverse changes in one or relatively few factors affecting an organization's financial position.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Risk Evaluation—An actuary may be called upon to evaluate risk in many contexts, using various tools such as economic capital models and stress and scenario tests. In performing services related to risk evaluation, the actuary should consider, or may rely on others who have considered, the following:

a. information about the financial strength, risk profile, and risk environment of the organization that is appropriate to the assignment. Such information may include the following:

1. the financial flexibility of the organization;

2. the nature, scale, and complexity of the risks faced by the organization;

3. the potential differences between the current and long-term risk environments;

4. the organization's strategic goals, including goals for the level and volatility of profits, both short term and long term;

5. the interests, including the risk/reward expectations, of relevant stakeholders. These stakeholders may include some or all of the following: owners, boards of directors, management, customers, partners, employees, regulators and others potentially impacted by the organization's management of risk;

6. regulatory or rating agency criteria for risk levels and the implications of

potential risk levels on the continuation of business operations as reflected in ratings or other external measures of security;

7. the degree to which the organization's different risks interact with one another; actual and perceived diversification benefits; and dependencies or correlations of the different risks;

8. limitations to the fungibility of capital across the organization; and

9. the extent to which the organization's exposure to risks may differ from the exposures of its competitors.

The actuary may rely on management's opinions of the risk environment, may form an independent opinion of the risk environment, may rely on a third party's evaluation of the risk environment, or may infer a risk environment from current conditions (such as market prices and political climate, among others).

b. information about the organization's own risk management system as appropriate to the assignment. Such information may include the following:

1. the risk tolerance of the organization;

2. the risk appetite of the organization. This may be explicit or inferred from objectives of the organization including those related to solvency, market confidence, earnings expectations, or other objectives;

3. the components of the organization's enterprise risk management control cycle;

4. the knowledge and experience of the management and the board of directors regarding risk assessment and risk management; and

5. the actual execution of the organization's enterprise risk management control cycle including how unexpected outcomes are acted upon.

c. the relationship between the organization's financial strength, risk profile, and risk environment as identified in (a) above, and the organization's risk management system as identified in (b) above. If in the actuary's professional judgment, as appropriate to the assignment, a significant inconsistency exists, then that inconsistency should be reflected in the risk evaluation.

d. the intended purpose and uses of the actuarial work product.

3.2 Considerations Related to Risk Evaluation Models—In developing, reviewing, or maintaining models used in risk evaluation, the actuary should consider, or may rely on others who have considered, the following:

a. whether the models are fit for the purpose. In making that determination, the actuary may review the following:

1. the degree to which the models need to be reproducible and adaptable to new risks;

2. the sophistication of the models in proportion to the materiality of the risks they cover;

3. the practical considerations for the models, including usability, reliability, timeliness, process effectiveness, technological capabilities, and cost efficiency;

4. the inherent statistical and theoretical limitations of the models;

5. the quality, accuracy, appropriateness, timeliness, and completeness of data underlying the models;

6. the appropriateness of the methodologies used for model verification and validation, calibration, and sensitivity testing;

7. the appropriateness of the methodologies used for modeling dependencies among risks; and

8. the appropriateness of the cash flow and discounting methodologies used in the models.

b. whether the model assumptions are appropriate. In making that determination, the actuary should consider the following:

1. whether the assumptions are supportable, appropriately documented, and allow for deviations from the expected;

2. whether the assumptions are regularly revisited to determine their appropriateness; and

3. whether the assumptions that explicitly reflect anticipated management actions in response to future events are supportable and appropriately documented.

3.3 Economic Capital—Within ERM programs, actuaries are often called upon for assistance in determining the economic capital of the organization.

3.3.1 Considerations Relating to an Economic Capital Model—In performing actuarial tasks relating to designing, developing, and reviewing an economic capital model,

the actuary should consider the following, if appropriate to the assignment:

a. the appropriateness of the selected time frame, basis of measuring loss (for example, solvency, regulatory standards, earnings loss, reputation damage), and risk metric underlying the organization's definition of economic capital relative to how it is used to support strategic decisions;

b. the degree to which the economic capital model reflects the significant risks of the organization and the interdependencies of those risks in a consistent and comprehensive manner; and

c. the appropriateness of the method used to model each risk. Some risks are more appropriately modeled stochastically while others may be more appropriately modeled using stress tests.

3.3.2 Reliance on Accounting Framework—The actuary's references to and reliance on accounting frameworks in an economic capital model should be consistent throughout the model and appropriate for the model's intended use.

3.3.3 Methods—In determining economic capital, the actuary should select a method or combination of methods where the input(s) to the method(s) and the results of the method(s) are consistent with the tasks and considerations listed in sections 3.1, 3.2, and 3.3.1. Examples of methods include the following:

a. Stress Tests—A specific degree of adversity is assumed and the financial impact of that adverse experience upon the organization is estimated by the actuary.

b. Stochastic Models—A distribution of possible future outcomes is determined either directly or through a model that calculates the impact of a risk assumption on the financial outcomes. Using stochastic models for economic capital requires the specification of a confidence interval.

c. Reference to Standard Measures—Regulatory and rating agency capital models produce standard risk metrics. Definitions of economic capital sometimes make reference to required regulatory and rating agency capital.

3.3.4 Assumptions—The actuary should use professional judgment in the selection of assumptions, recognizing that economic capital models often focus on perceived remote, highly unlikely conditions or losses that might be experienced by an organization. In forming that judgment, the actuary should consider the following, if appropriate:

a. historical data available;

b. prices in the marketplace;

c. opinions of other experts;

d. the fit of the assumed distribution to available data;

e. the ability of the assumed distribution to reflect possible extreme values;

f. sensitivity of results to changes in assumptions;

g. internal consistency of the assumptions; and

h. consistency in the application of assumptions.

3.3.5 Validation of the Economic Capital Model—Economic capital is often determined based on the results of stochastic models that produce a large number of outcomes. The actuary should devise appropriate tests of the distribution of outcomes calculated by the model (for example, in comparison to the range of results in similar models or to historical outcomes over time) and the sensitivity of those distributions to changes in the assumptions and parameters. The actuary should also perform validation tests to determine whether the model results are reasonably consistent with relevant items of the underlying balance sheet and income statements of the organization.

3.3.6 Disclosure—The actuary should comply with the disclosure requirements outlined in section 4.1.1.

3.4 Stress and Scenario Testing—Stress and scenario tests are used for many risk management and regulatory purposes.

3.4.1 Considerations Relating to Stress and Scenario Tests—The actuary should consider the following, if appropriate to the assignment:

a. the extent to which various stress tests reflect similar or different degrees of adversity. Using different degrees of adversity may affect the comparability of stress tests;

b. any items in the organization's business plan that describe how the organization will function during an extreme event(s) as well as any historical organizational examples;

c. that an extreme event scenario may be a single event or a series of events that, taken together, have catastrophic results;

d. how actions and reactions of various stakeholders and markets during extreme events may differ from those during "normal" times;

e. whether the assumed interdependencies are appropriate under the stress or scenario testing assumptions due to the possibility of unanticipated consequences when risks interact in ways not seen historically;

f. how to define situations that result in a non-quantifiable risk and how to show plausible financial effects on the organization; and

g. that some stress and scenario tests will be hypothetical situations for which the actuary will not need to validate the degree to which the scenario is realistic.

3.4.2 Methods—A basic requirement for a stress or scenario test is a forecasting process or system. The actuary should consider whether the objectives of the stress or scenario test will be accomplished based on the forecasting process or system used. Approaches that may be used for stress and scenario testing include the following:

a. Models of Single Subsystems of the Organization—Some very simple stress tests can be performed by modifying a single element that is being stressed. However, in most cases, even the simplest stress test requires the consideration of interdependencies throughout the organization. The results from various sub-models may be consolidated.

b. Fully Integrated and Automated Forecasting Model—Economic capital models or business forecasting models may already be designed to reflect the interdependency of various elements or assumptions.

3.4.3 Assumptions for Stress Tests—The type and degree of stress for the stress test may be specified by others. Alternatively, the actuary may be called upon to identify the stresses that are important to the organization and to set assumptions regarding the type and degree of stress to be tested. In either case, the actuary should form a perspective regarding the ways that the defined stress impacts upon various elements of the organization, including consideration of the following:

a. Effect on Other Assumptions—Many assumptions may differ significantly from their baseline values because of the defined stress.

b. Management Responses—During an extreme event, management may delay decisions or make quick decisions that are inconsistent with business plans or prior practice.

c. Regulatory and Legislative Reactions—Regulatory capital limits may be changed and organizations may have an immediate need for additional capital.

d. Risk Mitigation—Risk mitigation alternatives and mechanisms to utilize those alternatives may or may not be present or fully effective.

e. Time Element—Some secondary effects under a scenario might occur in a later time period than the stress itself.

3.4.4 Constructing Scenarios—Many different types of scenario tests are possible. In some cases, the broad outline of a scenario might be specified by others and the actuary would make assumptions for many details. In other cases, the actuary is responsible for determining appropriate scenarios to be tested.

a. The actuary should consider whether the scenarios need to be developed with consideration of the many different elements of the broad environment that might change from the baseline simultaneous with the main event under consideration.

b. In addition, the actuary should consider the other effects upon the organization as described in items (a) through (e) of section 3.4.3.

3.4.5 Disclosure—The actuary should comply with the disclosure requirements outlined in section 4.1.2.

3.5 Emerging Risks—In performing actuarial professional services regarding the evaluation of emerging risks, the actuary should consider the following:

a. the potential impact of emerging risks across various time horizons; and

b. the potential secondary effects from an organization's assumed actions in light of the onset of an emerging risk. These secondary effects may also arise from actions taken by individuals or entities not affiliated with the organization whose risks are being evaluated.

The actuary should comply with the disclosure requirements outlined in section 4.1.3.

3.6 Other Risk Evaluations—In the course of managing risks in an ERM program, there are many situations where specific risk evaluations are performed to facilitate the monitoring and mitigation of key risks. These evaluations are used in risk treatment programs such as hedging, asset liability management, or reinsurance. The actuary should apply the guidance in sections 3.1 and 3.2 to these evaluations.

3.7 Specific Circumstances—Certain risk evaluations may be performed under significant time constraints and for use over a limited period of time. The actuary should use judgment as to the appropriate level of detail and the frequency of evaluation in consideration of this guidance.

3.8 Reliance on Data or Other Information Supplied by Others—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 41, *Actuarial Communications*, for guidance.

3.9 Documentation—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.

Section 4. Communications and Disclosures:

4.1. Actuarial Communication—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the risk evaluation and refer to ASOP Nos. 23 and 41, and if applicable, ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*. In particular, consistent with the intended use or purpose, the actuary should disclose the following, as appropriate:

4.1.1 Economic Capital and Economic Capital Models—The actuary should document and communicate the results of the economic capital model and their intended use, as described in section 3.3. The actuary should also disclose any known limitations of the economic capital model including an assessment of the potential impact of these limitations on model results and their use. The actuary should also disclose the time frame, the basis of measuring loss, and the risk metric.

4.1.2 Stress and Scenario Tests—The actuary should document and communicate the results of the stress and scenario tests and their intended use, as described in section 3.4. The actuary should also disclose any known limitations of the stress and scenario tests including an assessment of the potential impact of these limitations on results. The actuary should also disclose the time frame and the basis of measuring loss.

4.1.3 Emerging Risks—The actuary should disclose the methodologies and sources of information for identifying and evaluating emerging risks, as described in section 3.5. The actuary should also disclose the time frame and the basis of measuring loss.

4.1.4 Changes in System/Process—The actuary should disclose any material changes in the system, process, methodology, or assumptions from those previously used for the same type of measurement. The general effects of any such changes should be disclosed in words or by numerical data, as appropriate.

4.1.5 Assumptions—The actuary should disclose the significant assumptions used in the risk evaluation such as accounting constructs, economic values, stand-alone or portfolio views of risk. The actuary should disclose the interdependencies among risks and statistical distributions used in the evaluation. The actuary should

disclose any other significant assumptions used in the analysis, including anticipated future actions by management to manage or mitigate risks identified by the actuary.

4.1.6 Risks Included—The actuary should disclose the risks included in the risk evaluation and their relative significance. The actuary should also disclose known material risks not included and the rationale for not including those risks in the risk evaluation.

4.1.7 Model Validation—The actuary should disclose whether and how the modeled future economic conditions have been reviewed and tested for reasonableness. Items such as the sensitivity of the results to significant changes in the assumptions, time frame, basis of measuring loss, and risk metric may be disclosed.

4.2 Deviation from Guidance in the Standard—If the actuary departs from the guidance set forth in this standard, the actuary should include the following where applicable:

a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

b. the disclosure in ASOP No. 41, section 4.3, if the actuary disclaims responsibility for any material assumption or method in any situation not covered under section 4.2.1 above; and

c. the disclosure in ASOP No. 41, section 4.4, if the actuary otherwise deviated materially from the guidance of this ASOP.

## Appendix 1

## Background and Current Practices

*Note*: This appendix is provided for informational purposes, but is not part of the standard of practice.

### Background

Enterprise Risk Management (ERM) has been a developing area of practice for actuaries for over 10 years. In 2001, the Casualty Actuarial Society (CAS) Advisory Committee on Enterprise Risk Management produced a report that recommended areas of research and education that were needed by actuaries entering this emerging field. In 2002, the Society of Actuaries (SOA) formed a Risk Management Task Force that wrote guides to Economic Capital and Enterprise Risk Management practice as well as initiating several research projects. In 2004, the task force evolved into a new Risk Management Section of the Society of Actuaries and became the first and largest joint activity in 2005 when it became the Joint Risk Management Section co-sponsored by the SOA, CAS, and the Canadian Institute of Actuaries (CIA). The Joint Risk Management Section has been tightly linked with an annual ERM Symposium event that started as a joint activity of the SOA, CAS, and the Professional Risk Managers' International Association (PRMIA), a non-actuarial risk management organization.

Enterprise Risk Management is also becoming a standard practice of many organizations that employ actuaries and its use has been steadily spreading. Poor ERM practice has been blamed by many for some or all of the ills of the 2008-2009 Global Financial Crisis. The G20 heads of state have called for significant improvements to risk management practices in the financial sector and have charged the Financial Stability Board and the International Monetary Fund to take steps to promote and sometimes require better risk management practices from financial sector firms. The International Association of Insurance Supervisors has responded to that by promulgating an Insurance Core Principle paper on Enterprise Risk Management requiring insurance regulators to promote ERM practice and self assessment of solvency needs by insurers globally. The National Association of Insurance Commissioners has developed a new requirement for an Own Risk and Solvency Assessment (ORSA) process that includes an assessment of risk management practices for larger insurers and the New York State Insurance Department has recently (December 2011) published a requirement that all insurers domiciled in the state must adopt an Enterprise Risk Management regime.

At the most fundamental level Enterprise Risk Management can be understood as a control cycle. Within a typical risk management control cycle, risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached. Risks are monitored and reported as they are taken and as long as they remain an exposure to the organization. This cycle can be applied to specific risks within a part of an organization or to an aggregation of all risks at the enterprise level.

Risk evaluation has long been a part of actuarial practice. Actuarial risk evaluations were long used by insurers to assess their capital needs and pricing for risks. Actuarial risk evaluations have also long been used and continue to be the objective functions in risk mitigation activities such as reinsurance, asset liability management and hedging within risk treatment programs. Risk evaluation is a key activity of the new ERM practice. An economic capital model has become a new standard tool for ERM programs. Stress tests are another risk evaluation process that has long been used by actuaries that has recently reemerged as a primary tool for ERM. The risk evaluation activities of actuaries in all of these situations are the subject of this standard. Actuarial services relating to risk treatment activities, specifically risk appetites, tolerances and limits as well as risk mitigation activities are considered in another standard on risk treatment in ERM.

## Current Practices

Actuaries build, operate and maintain complex internal models for determination of economic risk capital using stochastic techniques to analyze long-term contingent liabilities and the associated value at risk or conditional tail expectation and develop and implement schemes to allocate the capital in a way that supports corporate goals for risk adjusted return. Actuaries have a central role and in many cases are the sole professionals involved in the preparation of these risk evaluations. Actuaries are also called upon to review economic capital models prepared by actuaries or by others professionals, to provide or review the assumptions underlying an economic capital model, document an organization's economic capital model; analyze the impact of a strategic decision on an organization's economic capital; recommend allocations of economic capital to units within an organization; and opine on the appropriateness of an organization's economic capital model relative to the organization's risk profile, risk tolerance, risk appetite or risk limits.

Actuaries also perform stress tests and other risk assessments for financial and other entities for the purposes of assessing the resiliency of the entity, for determining the effectiveness of risk mitigation activities and for reporting to regulators. Stress tests are increasingly important to prudential supervision of insurers as regulators find them to be a good way to ensure some consistency in risk evaluation and to better communicate a very complex topic. Actuaries may be asked to give opinions about the appropriateness of an organization's actual level of capital based upon stress tests.

Stress tests performed by actuaries are also used by organizations as a component of or to validate economic capital models, to set risk limits and as an aid in forming and communicating organization strategy.

Emerging risks are an important focus of the risk management programs of some organizations. Actuaries assist with the processes that organizations employ to assess their exposure to emerging risks. The actuary may be called upon to help with or perform tasks relating to identification and monitoring of emerging risks, propose or execute actions to be taken in the event of the onset of such risks and to analyze the impact of emerging risks on the stakeholders of the organization.

Actuaries also perform risk evaluation for a variety of other purposes. The actuary may be called upon to do the following:

a. perform or review a risk evaluation of an entity prepared as part of merger and acquisition activity;

b. perform or review a risk evaluation of a portion of an organization's business (for example, business unit or block of business) as part of a decision to buy/sell this portion of the business;

c. perform or review a risk evaluation by a regulatory agency as part of an audit or an investigation;

d. perform or review a risk evaluation by a rating agency as part of its rating process;

e. perform or review a risk evaluation for a public entity's obligations; and

f. perform or review a risk evaluation of an organization's strategic plans and goals.

## Appendix 2

## Comments on the Exposure Draft and Responses

The first exposure draft of this ASOP, *Risk Evaluation in Enterprise Risk Management*, was issued in April 2012 with a comment deadline of June 30, 2012. Twenty-five comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The ERM Task Force carefully considered all comments received and the ASB reviewed (and modified, where appropriate) the proposed changes.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes members of the ERM Task Force and the ASB. Also, unless otherwise noted, the section numbers and titles used in this appendix refer to those in the first exposure draft.

| **GENERAL COMMENTS** | |
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| Comment | Several commentators suggested that the use of the term "confidence level," which appeared in many places throughout the standard should be replaced with the more generic term "risk metric" because confidence level was only appropriate when the risk evaluation method was a stochastic model. |
| Response | The reviewers agree. In particular, the reviewers believe that the term "confidence level" was inappropriate for stress tests and in some other situations. The reviewers replaced the terms as suggested and added language regarding confidence intervals within the discussion of stochastic models in section 3.3.3(b). |
| Comment | Several letters were received from organizations. Some were supportive and shared their perspective on standards of practice for emerging practice areas, and others thought it was too early for these discussions and to put an ASOP in place. One noted that since "ERM is not an actuarial process" there is no need for an ASOP. |
| Response | The reviewers thank these organizations for sharing their perspectives and refer readers to the background section for information regarding why this ASOP was prepared at this point in time. In particular, it is important to note that ASOPs apply to individual actuaries practicing in the area covered by the ASOP and do not require the role to be one that is only performed by actuaries (other examples include ASOP No. 23, *Data Quality*, and ASOP No. 21, *Responding to or Assisting Auditors or Examiners in Connection with Financial Statements for All Practice Areas*). |

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| Comment | Several commentators were concerned that the ASOP definitions were not consistent with those used by other professional organizations. |
| Response | The reviewers spent a considerable amount of time researching and discussing the definitions used by professional organizations, but found little consistency between the definitions. For the purpose of this ASOP, the reviewers accepted definitions that would provide clarity to the users of the ASOP and not for any other purpose. Therefore, no further changes were made for this purpose. |
| Comment | One commentator questioned the need for more than one ASOP covering ERM. |
| Response | The reviewers have determined that Risk Evaluation in ERM and Risk Treatment in ERM are necessary ASOPs to develop at this time, but anticipate that as ERM practice evolves, the ASB and the ERM Task Force will continue to review the ERM standards to determine if more should be promulgated or if the existing ERM ASOPs should be expanded. Therefore, no changes were made. |
| Comment | One commentator suggested that in many places throughout the standard wording should be added to emphasize the possibility that interdependencies of risks may change. |
| Response | The reviewers believe that this suggestion is focused on a technical detail that is not required in an ASOP, and therefore no change was made. |
| Comment | Several commentators stated that the ASOP should provide more guidance and noted specific areas where they thought guidance should be provided. In many instances, the commentators suggested adding technical details and more specificity, including examples. In addition, one commentator stated that the ASOP did not provide meaningful standards of practice, only a list of considerations. |
| Response | The reviewers believe the ASOP provides appropriate guidance in light of the current state of ERM. Therefore, no change was made. Other information might be appropriate for a practice note or textbook. It is the understanding of the reviewers that the American Academy of Actuaries' ERM Committee is in the process of preparing a practice note on ERM. |
| Comment | Some commentators suggested that the standard sometimes used the word "significant" and other times the word "material" when it seemed that the same concept was intended. |
| Response | The reviewers looked at each instance of the use of either word and made changes to improve clarity. |
| Comment | One commentator wanted to know how this standard ties to other initiatives such as ORSA and Solvency II. |
| Response | The standard does not directly tie to these initiatives. Since ERM is evolving, the reviewers are aware that there will be new initiatives in many different areas. The reviewers believe that it is better to provide general guidance now in this ASOP to actuaries dealing with risk evaluation issues rather than wait for these initiatives to be finalized. At some point in the future, there may be a need for a new standard that directly addresses actuarial risk evaluation work specifically for some particular accounting or regulatory need. |

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| Comment | Several commentators suggested minor wording changes. |
| Response | The reviewers looked at each suggestion and made changes where they agree that the clarity of the standard was improved. |
| Comment | One commentator disagree with the ASOP assertion that "no group has specific professional standards for enterprise risk management work performed by individuals," specifically referencing ISO 31004. |
| Response | The reviewers note that this ASOP provides guidance for an actuary performing ERM work, not guidelines for the implementation of ERM as appears to be the objective of ISO 31004. Therefore, no change was made. |
| **SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE** | |
| **Section 1.1, Purpose** | |
| Comment | One commentator suggested the ASOP should include "interpreting" risk evaluation systems in its purpose and scope. |
| Response | The reviewers note that "interpretation" is inherent in performing professional services with respect to risk evaluation and therefore did not expand the examples provided. |
| **Section 1.2, Scope** | |
| Comment | One commentator was concerned that the limitation of this standard to risk evaluations performed within an ERM program would produce situations where similar work within and outside of ERM programs are subject to different requirements. |
| Response | The reviewers note that this standard provides guidance strictly for actuaries performing risk evaluations for the purpose of ERM, and for no other purpose. Other standards provide actuaries with guidance for certain risk evaluations performed for purposes other than ERM. No inappropriate differences in guidance were suggested or known to the reviewers. Therefore, no changes were made. |
| Comment | Several commentators suggested that modifications to the description of the ERM control cycle were needed. |
| Response | The reviewers note the ERM control cycle is used as context for this ASOP. It is not meant to be limiting, and incorporates all types of quantitative and qualitative models. Therefore, no change was made. |

| SECTION 2. DEFINITIONS | |
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| Comment | Several commentators suggested modifications to the definitions. Some of these suggestions were in conflict with each other. Some commentators felt that the definitions should conform to one or multiple sources that, in some cases, are in conflict themselves. |
| Response | The reviewers spent a considerable amount of time researching and discussing the definitions, and ultimately believe that the purpose of the definitions is to provide clarity to the users of the ASOP. It is not the intention of the ASOP to provide guidance on definitions for usage other than within the context of the standard itself. Therefore, the reviewers made a limited number of edits to the definitions for the purpose of improving clarity. |
| Comment | Several commentators suggested that the ASOP include additional definitions, such as for "risk transfer," "reverse stress test," "ORSA," and "sensitivity test." |
| Response | The reviewers considered the addition of each of these definitions and did not add definitions for these terms for several reasons. "Risk transfer" was used only once in the draft ASOP, within a definition that has since been removed. "Reverse stress test" is also not a term used in the standard. The reviewers believe that an organization's own risk and solvency assessment (ORSA) is inherent in the risk management control cycle and, as such, is not explicitly referenced within the standard itself. Instead, the regulatory requirement is mentioned in the background. Finally, while "sensitivity testing" is mentioned within the standard, its use relates to gaining comfort with a model itself and therefore the reviewers believe its meaning is widely understood. |
| **Section 2.1, Counterparty Risk** | |
| Comment | Several commentators observed that the term "counterparty risk" was not used within the draft ASOP and recommended deletion. |
| Response | The reviewers agree and removed the definition. |
| **Section 2.2, Economic Capital** | |
| Comment | Several commentators suggested replacing the language "at a selected confidence level" with "for a selected risk metric," and one commentator suggested removing the reference to "selected confidence level." |
| Response | The reviewers agree and replaced the phrase "over a specified period of time at a selected confidence level" with "for a specified period of time and risk metric." |
| Comment | One commentator suggested replacing the word "needed" with "indicated," while another commentator suggested replacing "needed" with "available." |
| Response | The reviewers agree with editing the definition, but instead replaced the term "the amount of capital needed" with "the amount of capital an organization requires" as a more appropriate edit for how the term is used within this ASOP. |

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| Comment | One commentator suggested including reference to an "economic basis of calculation." |
| Response | The reviewers believe the revised definition is appropriate for the use of the term in this ASOP and made no further changes. |
| **Section 2.3, Emerging Risk** | |
| Comment | One commentator suggested that emerging risks are not "new"; rather, they only appear to be new as we gain knowledge of them. |
| Response | The reviewers believe that certain emerging risks might be new—such as those related to developments in technology—and made no change. |
| Comment | One commentator suggested that the definition was too limiting, and another suggested additional language to expand the definition. |
| Response | The reviewers believe the definition is appropriate for the use of the term in this ASOP and made no change. |
| **Section 2.5, Enterprise Risk Management Control Cycle** | |
| Comment | One commentator suggested changing the order of the definition so that risk mitigation preceded risk taking, and inserting "risk avoidance." Another commentator suggested including the phrase "not necessarily in that order." A third commentator suggested that the term "control cycle" implies a sequence, and recommended that it be replaced by "process." |
| Response | The reviewers edited the definition, replacing "taken" with "accepted or avoided." While the reviewers agree that, in practice, an ERM process within an organization may be conducted in a different order with multiple levels of iteration, they believe that the revised definition is appropriate for both broadly describing the phases of ERM and for the manner in which the term is used within this ASOP. |
| Comment | One commentator suggested adding the phrase "risks are monitored and reported as they are taken and as long as they remain an exposure to the organization," which is a sentence used in the Background. |
| Response | The reviewers believe the revised definition is appropriate for the use of the term in this ASOP and made no further changes. |

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| **Section 2.7, Risk** | |
| Comment | Several commentators thought that the definition of "risk" should also include reference to the opportunity for gain. One commentator also suggested that the definition of risk should be directly tied to the achievement of an objective. |
| Response | The reviewers spent a considerable amount of time researching and discussing the definition of "risk" both before the release of the exposure draft and since receiving comments. The reviewers decided that the definition of risk should remain focused on "the potential for future losses" since 1) an evaluation of "risk versus reward" implies one-sidedness, and 2) a significant amount of risk evaluation work focuses on tail events. Additionally, the reviewers consider the term "expectations" to be consistent with "objectives." Therefore, the reviewers believe the current definition is appropriate and made no changes. |
| **Section 2.8, Risk Appetite and Section 2.14, Risk Tolerance** | |
| Comment | One commentator suggested that the word "aggregate" is not necessary in the definition of risk appetite since risk appetite might be further defined by type of risk. Two other commentators questioned the relationship between "risk appetite" and "risk tolerance." |
| Response | The reviewers spent a considerable amount of time researching and discussing the definitions of both "risk appetite" and "risk tolerance," and understand that widely varying definitions for these terms are currently being used by organizations. For the purpose of this ASOP, the reviewers believe that the word "aggregate" is appropriate since risk appetite typically focuses on an organization as a whole, even when that focus relates to an "aggregate" view of a single type of risk. In addition, the reviewers felt the fundamental distinction between "risk appetite" and "risk tolerance" is that an organization's risk appetite reflects a choice, while their risk tolerance relates to what the organization is able to take, or "capacity." Therefore, the reviewers believe the current definitions are appropriate and made no changes. |
| **Section 2.12, Risk Mitigation** | |
| Comment | Two commentators suggested replacing "severity" with "impact," and another suggested adding the phrase "and aids in understanding the frequency and/or severity of the risk assumed." |
| Response | The reviewers believe that for purpose of this ASOP, the use of "severity" is appropriate, and that further expansion of the definition might not add additional clarity. Therefore, the reviewers made no change. |
| **Section 2.13, Risk Profile** | |
| Comment | One commentator suggested that the definition reference "scale" and "combination of risks" to ensure that users understand how risk profiles change in response to risks taken. |
| Response | The reviewers believe that the current definition captures this view, and therefore made no changes to the definition. |

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| **Section 2.15, Scenario Test** | |
| Comment | Several commentators suggested that a scenario test may include measuring the impact of a single event, and one commentator suggested that a scenario test may include testing events that occur sequentially as well as simultaneously. |
| Response | The reviewers agree, and replaced the phrase "several simultaneously occurring" with "one or several simultaneously or sequentially occurring" possible events. |
| **Section 2.16, Stress Test** | |
| Comment | Two commentators suggested changes to the definition of stress test, broadening the definition to include tests of scenarios. One commentator questioned whether there is a difference between the two definitions. |
| Response | The reviewers believe that the current definition of stress test captures the distinction between scenario tests and stress tests in a manner that is consistent with how the terms are used within this ASOP, namely that scenario tests focus on testing the impact of possible events, while stress tests focus on the incremental impact of varying underlying assumptions or factors. Therefore, the reviewers did not modify the definition of a stress test. |
| **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES** | |
| Comment | Two commentators suggested that "etc." be removed. |
| Response | The reviewers agree and removed references to this abbreviation. |
| Comment | One commentator suggested that "risk management actuaries need to either (1) consider the risk, or (2) document that they have chosen not to consider the risk." |
| Response | The reviewers agree with this comment, and believe that considerations are appropriately captured in section 3 and disclosures are captured in section 4.1.6. |
| Comment | One commentator recommended using "may rely on others who have considered" and "if appropriate" consistently throughout the standard. |
| Response | The reviewers carefully considered the use of these phrases throughout the standard and believe their current use is appropriate. |
| **Section 3.1, Risk Evaluation** | |
| Comment | Two commentators suggested that there needed to be more clarity around what an actuary "should consider" and "may include." |
| Response | The reviewers reviewed and reworded the list of considerations to increase clarity. |

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| Comment | One commentator suggested changing the heading of section 3.1 from "Risk Evaluation" to "Environmental Scan," based on the premise that including a general scan of the inner and outer environment of the entity undergoing the risk evaluation is a first step that precedes evaluating the risks associated with the entity. |
| Response | The list of items in section 3 is intended to serve as general considerations for all risk evaluation work performed in connection with ERM, and does not imply an order of action. Therefore, no changes were made. |
| Comment | One commentator suggested that "risk evaluation" should be defined. |
| Response | The reviewers believe that the definition of risk evaluation is widely understood. |
| Comment | One commentator believed that the criteria in this section and section 3.2, Considerations Related to Risk Evaluation Models, are more geared to the reviewing risk evaluation systems than the other stated purposes of the standard. |
| Response | The reviewers believe that the criteria identified in these sections are important considerations for all professional services with respect to risk evaluation systems and therefore made no change. |
| Comment | One commentator stated that section 3.3.1(b) mentions consistency in the measurement of risks, while 3.3.1(c) only mentions that some risks may be best modeled stochastically while others may be best modeled via stress tests. There should be some guidance as to how consistency concerns can be addressed via apparently inconsistent modeling approaches across risks. |
| Response | The reviewers believe the current wording is appropriate and made no change. |
| Comment | One commentator recommended deleting "risk context," and adding "risk profile" and "risk environment" in section 3.1(a). |
| Response | The reviewers agree and made the change. |
| Comment | One commentator suggested changing section 3.1(a)(1) as follows: "…the financial strength <u>and flexibility</u> of the organization." Financial strength relates to what's on the balance sheet at a particular time, but flexibility includes the ability to raise additional capital. |
| Response | The reviewers agree and made the change. |
| Comment | A commentator suggested clarifying who determines financial strength in section 3.1(a)(1). |
| Response | The reviewers do not believe such clarification was needed and made no change. |
| Comment | One commentator remarked that section 3.1(a)(3) states that the actuary may rely on management's opinion of the risk environment, which is redundant with section 3.1, which states the actuary may rely on others for all of section 3.1. It could be interpreted that the actuary may only rely on others for 3.1(a)(3) because the wording is only repeated in that section. |
| Response | The reviewers reworded section 3.1(a)(3) to increase clarity. |

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| Comment | One commentator suggested that "risk environment" be defined. |
| Response | The reviewers included definitions in this standard for those terms it felt needed clarification. In this case, the reviewers considered this recommendation but decided that the term was self-explanatory, and made no change. |
| Comment | One of the commentators suggested that determining stakeholder interests is impossible and suggested additional guidance if stakeholder interests conflict with risk appetite. |
| Response | The reviewers note that an actuary "may include" information about stakeholder interests if possible and as appropriate to the assignment. Therefore, no change was made. |
| Comment | One commentator suggested adding "regulators" as an additional stakeholder given their importance. |
| Response | The reviewers agree and made the change. |
| Comment | One commentator felt that sections 3.1(a)(5) and 3.1(b)(2) are redundant, stating "…aren't all of the risk/reward expectations of all those listed in 3.1(a)(5)… included in the risk appetite of the organization?" |
| Response | The reviewers note that section 3.1(a)(5) includes both internal and external stakeholders, while 3.1(b)(2) covers the internal risk management system. There could be overlap in some circumstances, but for some organizations, the expectations of stakeholders and what is considered in risk appetite will be different. Therefore, no changes were made. |
| Comment | One commentator asked what "fungibility of capital" means. |
| Response | The reviewers believe that this is a common financial term and does not need a definition in the ASOP. |
| Comment | There were several comments on section 3.1(a)(9). One commentator asked why it is important for the actuary to know the extent to which the organization's exposures (not risks) are different from its competitors' in the context of risk evaluation. Another questioned how to assess competition's risk exposure vs. the organization's without proprietary information from competitors. |
| Response | The reviewers believe that competitive differences in risk exposures may provide useful information regarding strategic risks that, in turn, support a robust risk evaluation. The reviewers agree that assessment of the competition's exposures may be limited to publicly available information, and do not believe the guidance states otherwise. Therefore, no change was made. . |
| Comment | One commentator recommended including the "risk language" used by an organization as a consideration and definition. |
| Response | The reviewers believe this topic is inherent in section 3.1(a) and made no change. |

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| Comment | One commentator suggested removing "a significant inconsistency exists" in section 3.1(c). |
| Response | The reviewers believe that the current wording expresses the intended meaning and made no change. |
| Comment | One commentator suggested that section 3.1(c) needed clarification and also suggested that "risk context" be defined. |
| Response | The reviewers reordered the section to increase clarity. In addition, the term "risk context" has been deleted from the standard. |
| **Section 3.2, Considerations Related to Risk Evaluation Models** | |
| Comment | One commentator stated that the inclusion of a section on evaluating risk modeling approaches seems premature. |
| Response | The reviewers believe that this section provides important guidance for actuaries working with risk evaluation models, and therefore no changes were made. |
| Comment | One commentator suggested that this section should require models to include the capability of evaluating mitigation steps and sensitivity testing of possible alternative mitigations. |
| Response | The reviewers believe that this recommendation would make this standard too prescriptive and, therefore, no change was made. |
| Comment | One commentator suggested the following wording change:<br>• Section 3.2(a)(5) - [Suggested wording underlined.] "the quality, accuracy, appropriateness, <u>timeliness,</u> and completeness of data underlying the models" |
| Response | The reviewers agree with the suggestion and made the suggested change. |
| Comment | One commentator suggested that model "verification" should be included in 3.2.(a)(6). |
| Response | The reviewers agree and edited the section. |
| Comment | Several commentators suggested the following wording changes:<br>• Section 3.2(a)(7) - add "and how those dependencies might change"<br>• Section 3.2(b)(1) - [Suggested new wording underlined] "…whether the assumptions, <u>including any deviations from the expected,</u> are supportable, <u>appropriate and</u> appropriately documented, and allow for deviations from the expected…" |
| Response | The reviewers believe the current draft wording is appropriate, and therefore made no change. |

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| Comment | One commentator asked if we intended to include parameter uncertainty in section 3.2(b)(1). |
| Response | The reviewers did intend to address parameter uncertainty and believe this was achieved in the current language. Therefore, no further change was made. |
| Comment | One commentator suggested that sections 3.2(b)(1) and 3.2(b)(3) were redundant. |
| Response | The reviewers believe that assumptions related to future management actions require specific consideration. Therefore, no change was made. |
| **Section 3.3, Economic Capital** | |
| Comment | One commentator suggested that the terminology "basis of measuring loss" in section 3.3.1(a) was not clear. |
| Response | The reviewers disagree since several examples were provided. Therefore, no further changes were made. |
| Comment | One commenter suggested that undiscounted reserves may serve as a source of capital. |
| Response | The reviewers agree with the comment, but view it as one of many sources of capital and do not believe that it needs special treatment in the standard. |
| Comment | One commentator noted that, in addition to the risks reflected by the economic capital model, there is a need for the actuary to consider the correlations between those risks. |
| Response | The reviewers agree with the comment and reworded section 3.3(1)(b) to refer more broadly to risk interdependencies. |
| Comment | One commentator suggested that the accounting framework needs to be consistent with the primary purpose of the economic capital model. |
| Response | The reviewers agree and note that this is covered in section 3.3.2. Therefore, no change was made. |
| Comment | One commentator suggested that stress testing should only apply to capital adequacy. |
| Response | The reviewers disagree and note that stress testing of growth rates, loss frequency or severity, and many other aspects of the organization's business which are not related to capital adequacy is appropriate and valuable. Therefore, no changes were made. |
| Comment | One commentator suggested that use of standard measures should be considered reliance on others. |
| Response | The reviewers note that reliance on others is covered in section 3.8, and therefore made no change. |

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| Comment | One commentator suggested that a key consideration for the economic model should include corporate business plans. |
| Response | The reviewers agree that corporate business plans are important considerations in risk evaluation, and note that this is implicit in section 3.1(a). Therefore, no change was made. |
| Comment | One commentator recommended removing the expectation in section 3.3.5 that the economic capital model results would be reasonably consistent with "relevant items of the underlying balance sheet and income statements of the organization." |
| Response | The reviewers believe that the results of economic capital models should be reasonably consistent with relevant balance sheet or income statement items, and that validation tests should confirm that this occurs. Therefore, no changes were made. |
| Comment | One commentator suggested replacing the word "reproduces" with "consistent" or "reconciled." |
| Response | The reviewers agree and have modified the language from "the model reasonably reproduces" to "the model results are reasonably consistent with." |
| Comment | Several commentators suggested adding guidance on "reverse stress testing." |
| Response | The reviewers took no action since they believe reverse stress testing falls under the broader category of stress testing. |
| Comment | One commentator suggested changing the title of this section to Stress Testing since scenario testing is a subset of stress testing. |
| Response | The reviewers disagree with the suggestion and therefore did not modify the title of the section. |
| Comment | One commentator suggested removing the following sentence: "These tests are now emerging as a key tool for solvency assessment by regulators." |
| Response | The reviewers agree with the suggestion and removed the sentence. |
| Comment | Several reviewers questioned the use of the term "catastrophic," indicating that it may imply limiting the analysis to certain types of events or to a single event when multiple events may also stress an organization. |
| Response | The reviewers agree and changed references from "catastrophic" in sections 3.4.1(b) to "extreme" and removed a reference in 3.4.1(c). |
| Comment | One commentator recommended specifically mentioning how regulators' actions change during extreme events. |
| Response | The reviewers believe that the existing terminology in section 3.4.1(d) ("stakeholders and markets") is sufficiently broad to be understood to include regulators, and therefore did not make any change. |

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| Comment | One commentator felt that the actuary might not be able to consider how actions and markets will change under extreme events. |
| Response | The reviewers agree and modified the language in section 3.4.1(a). |
| Comment | Two commentators suggested deleting the sentence "In these situations, the actuary should document the assumptions and methodology used" in 3.4.1(g). |
| Response | The reviewers agree and have removed the sentence. |
| Comment | One commentator suggested combining the Economic Capital and Scenario/Stress Testing Methods sections. |
| Response | The reviewers disagree with this recommendation because of significant differences between the topics, and therefore made no change. |
| **Section 3.4, Stress and Scenario Testing** | |
| Comment | One commentator suggested that the introductory paragraph would become dated over time and recommended that the paragraph be revised so that it is neither educational nor a value judgment. |
| Response | The reviewers accepted this recommendation and modified the wording. |
| Comment | One commentator suggested that the language in section 3.4.2(a) should be changed to avoid raising potential issue of using the term "forecasts." |
| Response | The reviewers agree and have modified the language from "performed with forecasts of" to "performed by modifying." |
| Comment | Multiple commentators noted that the language in section 3.4.2(a) implies that only an actuary can do or supervise model combinations. |
| Response | The reviewers agree and have removed the phrase "manually under the supervision of an actuary." |
| Comment | One commentator suggested using the term "interdependencies" instead of "contagion effects" since that term is used throughout the standard. |
| Response | The reviewers agree and have replaced the term "contagion effects" with "interdependencies." |
| Comment | One commentator pointed out that regulators may change capital requirements during times of stress. |
| Response | The reviewers agree and modified the language in section 3.4.3(c) from "insurance risk based capital limits may be changed" to "regulatory capital limits may be changed." |

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| Comment | One commentator noted that the actuary should consider the potential for risk mitigations to fail. |
| Response | The reviewers agree and modified the language in section 3.4.3(d) to include the phrase "or fully effective." |
| **Section 3.5, Emerging Risks** | |
| Comment | One commentator suggested adding recognition of the idea that a part of an emerging risk evaluation may include consideration of whether it might be beneficial to undertake mitigation of the risk. |
| Response | While they agree, the reviewers believe that risk mitigation is reflected in the forthcoming standard on risk treatment and therefore did not make any change in this section of the standard. |
| Comment | One commentator recommended that this section be expanded and even tied to the scenario section as scenarios are often used to 'assess' emerging risks, issues, and trends. |
| Response | The reviewers agree that scenarios are often used to assess emerging risks. However, the reviewers also feel that the stress testing section appropriately provides the necessary guidance and does not need to be repeated here. Therefore, no further changes were made. |
| **SECTION 4. COMMUNICATIONS AND DISCLOSURES** | |
| **Section 4.1, Actuarial Communications** | |
| Comment | One commentator suggested adding a requirement that time frame, basis of measuring loss, and confidence interval be disclosed. |
| Response | The reviewers agree and added a requirement that time frame, basis of measuring loss, and risk metric (which, based on other comments, has replaced the term confidence interval) be disclosed. |
| Comment | One commentator felt the requirement to disclose changes from prior risk evaluations was not possible in some situations and the wording should be softened. |
| Response | The reviewers believe that the disclosure of differences from prior risk evaluations is extremely important especially because of the various possible ways that risk can be calculated. Therefore the current language is felt to be appropriate and no change was made. The reviewers also note that this disclosure is required "as appropriate." |
| Comment | Several commentators suggested that the requirement to disclose all risks not included and the reason for such was unrealistic. |
| Response | The reviewers agree and the statement in section 4.1.6 was modified to suggest the disclosure applies to known "material" risks not included. |

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| Comment | One commentator felt that the phrase "as well as failure of those attempts to manage or mitigate risks" should be added to the end of the sentence in section 4.1.5. |
| Response | The reviewers believe that the current language encourages a reasonable level of disclosure and therefore did not make the change. |
| Comment | One commentator questioned why only ASOP Nos. 23, 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*, and 41, *Actuarial Communications*, are referenced. |
| Response | The reviewers believe these three ASOPs are often relevant. However, this does not mean that an actuary should not consider other ASOPs, if relevant. |

ACTUARIAL STANDARDS BOARD

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**Actuarial Standard**
**of Practice**
**No. 47**

# Risk Treatment in Enterprise Risk Management

**Developed by the**
**Enterprise Risk Management Task Force of the**
**Actuarial Standards Board**

**Adopted by the**
**Actuarial Standards Board**
**December 2012**

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**Doc. No. 169**

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## APPENDIX

December 2012

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Risk Treatment in Enterprise Risk Management

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 47

This document contains the final version of ASOP No. 47, *Risk Treatment in Enterprise Risk Management*.

Background

Enterprise Risk Management (ERM) has been defined by the Casualty Actuarial Society in 2003 as follows:

> *The discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders.*

This definition was also adopted by the Society of Actuaries in 2005.

Enterprise Risk Management is a rapidly emerging specialty within the actuarial community and with the new CERA risk management educational certification, could well become an area of practice for actuaries with no tie to traditional actuarial work. The CERA is a globally-recognized ERM designation supported by actuarial organizations in 12 countries with rigorous educational programs.

The ERM Task Force was formed in the fall of 2009 to revisit the need for ERM standards that were previously addressed by an earlier task force in 2007. In June 2010, the Task Force presented findings to the ASB and was then asked to go forward with the development of standards for two broad topics relating to ERM, Risk Evaluation and Risk Treatment.

In March of 2011, discussion drafts for two topics were posted to the ASB website on risk evaluation and risk treatment. The ERM Task Force reviewed the comments received and based on those comments, began work on the development of exposure drafts of standards on risk evaluation and risk treatment for presentation to the ASB.

This ASOP considers the topic of risk treatment. The process of risk treatment is a fundamental part of risk management systems that are found in organizations. In this context, risk is intended to mean the potential of future losses or shortfalls from expectations due to deviation of actual results from expected results.

This standard applies to enterprise risk treatment activities performed by actuaries. Some organizations will face requirements and requests for assessment of the risk treatment part of the risk management system in order to evaluate whether their risk management systems are operating at a level that meets or exceeds professional standards. Regulators in some industries may want similar evaluations.

This standard, along with ASOP No. 46, *Risk Evaluation in Enterprise Risk Management,* is intended to cover the risk evaluation and risk treatment activities within enterprise risk management work but does not cover other ERM practices that are performed by insurers, pension plans, other financial service firms, and other businesses or organizations. These two topics were chosen because they cover the most common actuarial services performed within enterprise risk management systems of organizations. In the future, other standards may provide guidance for other aspects of actuarial professional services in ERM.

These standards, as with all standards of practice, apply to the actions of individual actuaries and not to their organizations, employers or clients.

Exposure Draft

The exposure draft of this ASOP was approved for exposure in June 2012 with a comment deadline of September 10, 2012. Eight comment letters were received and considered in developing modifications that were reflected in this final ASOP. For a summary of the issues contained in these comment letters, please see appendix 2. In general, the suggestions helped improve the clarity of the standard and did not result in substantive changes to the standard.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in December 2012 to adopt this standard.

**ASOP No. 47—December 2012**

Enterprise Risk Management Task Force

David N. Ingram, Chairperson

| | |
|---|---|
| Maryellen J. Coggins | David Y. Rogers |
| Eugene C. Connell | Max J. Rudolph |
| Wayne H. Fisher | David K. Sandberg |
| Kevin M. Madigan | John W.C. Stark |
| Claus S. Metzner | |

Actuarial Standards Board

Robert G. Meilander, Chairperson

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|---|---|
| Albert J. Beer | Thomas D. Levy |
| Alan D. Ford | Patricia E. Matson |
| Patrick J. Grannan | James J. Murphy |
| Stephen G. Kellison | James F. Verlautz |

*The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.*

# ACTUARIAL STANDARD OF PRACTICE NO. 47

# RISK TREATMENT IN ENTERPRISE RISK MANAGEMENT

## STANDARD OF PRACTICE

### Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services with respect to risk treatment within a risk management system, including designing, implementing, using, maintaining, and reviewing those systems.

1.2 Scope—This standard applies to actuaries when performing professional services with respect to risk treatment for the purposes of enterprise risk management (ERM).

Risk treatment is often performed as part of an ERM control cycle. Within a typical ERM control cycle, risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached. Risks are monitored and reported as they are taken and as long as they remain an exposure to the organization.

This standard focuses on four aspects of risk treatment: determining risk tolerance, choosing risk appetites, setting risk limits, and performing risk mitigation activities. Guidance for activities related to risk evaluation is addressed in ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*.

This standard does not apply to actuaries when performing professional services with respect to risk treatment that are not for the purposes of ERM. Examples of risk treatment services that may be performed for purposes other than ERM include designing a health insurance program and executing a product-specific reinsurance or hedging program.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for any professional services with respect to risk treatment in enterprise risk management performed on or after May 1, 2013.

## Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Basis Risk—The residual risk that results from an imperfect risk offset or transfer process. For example, basis risk may arise from a hedge that pays off based upon an index while the exposure is an investment in a managed selection of individual stocks, or from a capital market hedge based upon industry-wide losses used to offset an insurer's specific storm exposure.

2.2 Counterparty Risk—The risk that the party providing a risk offset or accepting a risk transfer does not fulfill its obligations.

2.3 Enterprise Risk Management—The discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders.

2.4 Enterprise Risk Management Control Cycle—The continuing process by which risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached.

2.5 Organization—The entity for which ERM is being performed. Examples include public or private companies, government entities, and associations, whether for profit or not for profit.

2.6 Risk—The potential of future losses or shortfalls from expectations due to deviation of actual results from expected results.

2.7 Risk Appetite—The level of aggregate risk that an organization chooses to take in pursuit of its objectives.

2.8 Risk Limit—A threshold used to monitor the actual risk exposure of a specific unit or units of the organization to ensure that the level of aggregate risk remains within the risk tolerance.

2.9 Risk Management System—A combination of practices, tools and methodologies that an organization uses to identify, assess, measure, mitigate, and manage the risks it faces during the course of conducting its business.

2.10 Risk Mitigation—An action that reduces the frequency or severity of a risk.

2.11 Risk Profile—The risks to which an organization is exposed over a specified period of time.

2.12 Risk Tolerance—The aggregate risk-taking capacity of an organization.

2.13 Risk Treatment—The process of selecting actions and making decisions to transfer, retain, limit, and avoid risk. This can include determining risk tolerance, choosing risk appetites, setting risk limits, performing risk mitigation activities, and optimizing organizational objectives relative to risk.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Risk Treatment—An actuary may be called upon to perform a variety of risk treatment activities. In performing services related to risk treatment, the actuary should consider, or may rely on others who have considered, the following:

a. information about the financial strength, risk profile, and risk environment of the organization that is appropriate to the assignment. Such information may include the following:

1. the financial flexibility of the organization;

2. the nature, scale and complexity of the risks faced by the organization;

3. the potential differences between the current and long-term risk environments;

4. the organization's strategic goals, including goals for the level and volatility of profits, both short term and long term;

5. the interests, including the risk/reward expectations, of the relevant stakeholders. These stakeholders may include some or all of the following: owners, boards of directors, management, customers, partners, employees, regulators and others potentially impacted by the organization's management of risk;

6. regulatory or rating agency criteria for risk levels and the implications of potential risk levels on the continuation of business operations as reflected in ratings or other external measures of security;

7. the degree to which the organization's different risks interact with one another, actual and perceived diversification benefits, and dependencies or correlations of the different risks;

8. limitations to the fungibility of capital across the organization, under both normal and stressed conditions; and

9. the extent to which the organization's exposure to risks may differ from the exposures of its competitors.

The actuary may rely on management's opinions of the risk environment, may form an independent opinion of the risk environment, may rely on a third party's evaluation of the risk environment, or may infer a risk environment from current conditions (such as market prices and political climate, among others).

b. information about the organization's own risk management system as appropriate to the assignment. Such information may include the following:

1. the risk tolerance of the organization;

2. the risk appetite of the organization. This may be explicit or inferred from objectives of the organization including those related to solvency, market confidence, earnings expectations, or other objectives;

3. the components of the organization's enterprise risk management control cycle;

4. the knowledge and experience of the management and the board of directors regarding risk assessment and risk management; and

5. the actual execution of the organization's enterprise risk management control cycle, including how unexpected outcomes are acted upon.

c. the relationship between the organization's financial strength, risk profile, and risk environment as identified in (a) above, and the organization's risk management system as identified in (b) above. If, in the actuary's professional judgment, as appropriate to the assignment, a significant inconsistency exists, then that inconsistency should be considered in the risk treatment activities and communicated by the actuary.

d. the intended purpose and uses of the actuarial work product.

3.2 Using Models in Risk Treatment—An actuary may use models to provide support for risk treatment decisions, for example, the setting of specific risk tolerance or the selection of a risk mitigation strategy. When using models in risk treatment, the actuary should consider the inherent statistical, theoretical, and other limitations of the models. Such models are usually risk evaluation models and, as such, the actuary designing or implementing models for risk treatment purposes should refer to ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*.

3.3 Organizational Risk Parameters of Risk Tolerance, Risk Appetite, and Risk Limits—An actuary may be called upon to review or recommend organizational risk parameters, or may be involved in designing, operating, or using a system to monitor risks relative to these parameters.

In performing services related to these parameters, as appropriate to the actuary's assignment, the actuary should consider, or may rely on others who have considered, the following:

a. the financial and non-financial benefits associated with each planned, risk-taking activity and the aggregation of those activities;

b. the degree of concentration of the risks of the organization;

c. the opportunities available to mitigate breaches of risk limits and risk tolerance, as well as the cost and effectiveness of such mitigation strategies;

d. regulatory or accounting constraints that may affect the risk environment;

e. the relationships between the risk tolerance, risk appetite, and risk limits; and

f. the historical volatility of the organization's results in the context of its current risk profile.

3.4 Risk Mitigation—An actuary may be called upon to review or recommend an organization's risk mitigation strategy, or may be involved in designing or using processes to mitigate risks relative to the organization's risk tolerance, risk appetite, or risk limits.

In performing services related to risk mitigation, the actuary should consider, or may rely on others who have considered, the following:

a. information relating to qualitative aspects of the organization as appropriate to the actuary's assignment. Such information may include the following:

1. the resilience of the organization under duress caused by common fluctuations in experience as well as from extreme adverse conditions;

2. the operational capabilities of the organization needed to implement the risk mitigation strategy; and

3. the potential risk to the organization's reputation as a result of the risk mitigation strategy.

b. information relating to the cost of, potential effectiveness of, and constraints upon risk mitigation activities as appropriate to the assignment. Such information may include the following:

1. the availability of risk mitigation instruments both in the current and future environments;

2. the counterparty credit risk inherent in the risk mitigation instruments and the organization's ability to monitor and mitigate the counterparty risk over time;

3. the nature and degree of the basis risk that is inherent in the risk mitigation instruments;

4. the degree of confidence that the risk mitigation process can be maintained or repeated over time;

5. the availability of data on current and potential future risk positions, before and after mitigation;

6. the variability of outcomes after risk mitigation;

7. the accounting treatment of the gross and net risk positions related to risk mitigation;

8. regulatory constraints on risk mitigation options; and

9. the granularity of modeling needed to capture the effects of the risk mitigation processes as well as the practicalities of achieving that granularity.

3.5 Reliance on Data or Other Information Supplied by Others—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, and ASOP No. 41, *Actuarial Communications*, for guidance.

3.6 Documentation—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.

## Section 4. Communications and Disclosures

4.1 Actuarial Communication—When issuing an actuarial communication subject to this standard, the actuary should consider the intended purpose or use of the risk treatment activities and refer to ASOP Nos. 23 and 41, and, if applicable, ASOP No. 38, *Using Models Outside the Actuary's Area of Expertise (Property and Casualty)*. In particular, consistent with the intended use or purpose, the actuary should disclose the following as appropriate:

4.1.1 Risk Treatment—The actuary should disclose significant inconsistencies between a) the organization's financial strength, risk profile, and risk environment, and b) the organization's risk management system that have been considered in the risk treatment activities as described in section 3.1.

4.1.2 Model Limitations—The actuary should disclose any known significant limitations of the models used in risk treatment, and the impact of those limitations on risk treatment activities and decisions as described in section 3.2.

4.1.3 Risk Tolerance, Risk Appetite, and Risk Limits—The actuary should disclose considerations important to conclusions reached when reviewing or recommending these organizational risk parameters, or when designing, operating, or using a system to monitor risks as described in section 3.3.

4.1.4 Risk Mitigation—The actuary should disclose considerations important to conclusions reached when reviewing or recommending an organization's risk mitigation strategy, or when designing processes to mitigate risks relative to the organization's risk tolerance, risk appetite, or risk limits as described in section 3.4.

4.1.5 Changes in System/Process—The actuary should disclose any material changes in the system, process, methodology, or assumptions from those previously used for the same type of risk treatment activity. The general effects of any such changes should be disclosed in words or by numerical data, as appropriate.

4.1.6 Assumptions—The actuary should disclose the significant assumptions used in the risk treatment activity such as accounting constructs, economic values, and stand-alone or portfolio views of risk. The actuary should disclose the different target criteria underlying the risk treatment activity (solvency, regulatory standards, earnings volatility, reputation damage, etc.). The actuary should disclose any other significant assumptions used in the analysis, including anticipated future actions by management to manage or mitigate risks identified by the actuary.

4.2 Deviation from Guidance in the Standard—If the actuary departs from the guidance set forth in this standard, the actuary should include the following where applicable:

a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

b. the disclosure in ASOP No. 41, section 4.3., if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

## Appendix 1

## Background and Current Practices

*Note*: This appendix is provided for informational purposes, but is not part of the standard of practice.

### Background

Enterprise Risk Management (ERM) has been a developing area of practice for actuaries for over 10 years. In 2001, the Casualty Actuarial Society (CAS) Advisory Committee on Enterprise Risk Management produced a report that recommended areas of research and education that were needed by actuaries entering this emerging field. In 2002, the Society of Actuaries (SOA) formed a Risk Management Task Force that wrote guides to Economic Capital and Enterprise Risk Management practice as well as initiating several research projects. In 2004, the task force evolved into a new Risk Management Section of the Society of Actuaries and became the first and largest joint activity in 2005 when it became the Joint Risk Management Section co-sponsored by the SOA, CAS, and the Canadian Institute of Actuaries (CIA). The Joint Risk Management Section has been tightly linked with an annual ERM Symposium event that is a joint activity of the SOA, CAS, CIA, and the Professional Risk Managers' International Association (PRMIA), a non-actuarial risk management organization.

Enterprise Risk Management is also becoming a standard practice at many organizations and its use has been steadily spreading. Poor ERM practice has been blamed by many for some or all of the ills of the 2008-2009 Global Financial Crisis. The G20 heads of state have called for significant improvements to risk management practices in the financial sector and have charged the Financial Stability Board and the International Monetary Fund to take steps to promote and sometimes require better risk management practices from financial sector firms. The International Association of Insurance Supervisors has responded to that by promulgating an Insurance Core Principle paper on Enterprise Risk Management, requiring insurance regulators to promote ERM practice and self assessment of solvency needs by insurers globally. The National Association of Insurance Commissioners has developed a requirement for an Own Risk and Solvency Assessment (ORSA) process that includes an assessment of risk management practices for larger insurers and the New York State Insurance Department (December 2011) published a requirement that all insurers domiciled in the state must adopt an Enterprise Risk Management regime.

At the most fundamental level, Enterprise Risk Management can be understood as a control cycle. Within a typical risk management control cycle, risks are identified, risks are evaluated, risk appetites are chosen, risk limits are set, risks are accepted or avoided, risk mitigation activities are performed, and actions are taken when risk limits are breached. Risks are monitored and reported as they are taken and as long as they remain an exposure to the organization. This cycle can be applied to specific risks within a part of an organization or to an aggregation of all risks at the enterprise level.

Risk evaluation and risk treatment have long been a part of actuarial practice. Actuarial risk evaluations were long used by insurers to assess their capital needs and pricing for risks.

Actuarial risk evaluations have also long been used and continue to be the objective functions in risk mitigation activities such as reinsurance, asset liability management and hedging within risk treatment programs. Risk evaluation is a key activity of the new ERM practice. An economic capital model has become a new standard tool for ERM programs. Stress tests are another risk evaluation process that has long been used by actuaries that has emerged as a primary tool for ERM. The risk evaluation activities of actuaries in all of these situations are the subject of Actuarial Standard of Practice No. 46, *Risk Evaluation in Enterprise Risk Management*.

The risk treatment activities of actuaries are the subject of this standard. Actuaries have provided analytical support and guidance in the development of informal or implicit risk appetites long before that phrase was in wide usage. For decades, actuaries have been providing support and guidance for decisions involving risk mitigation activities such as reinsurance, asset liability management and, more recently, hedging within risk treatment programs. Risk treatment is a key activity of ERM practice. Actuaries are taking more prominent roles in the development of articulated risk tolerance, appetite, and limits as well as becoming more intimately involved in risk mitigation activities.

## Current Practices

Actuaries often have a central role in the operation of the control cycle for individual risks including insurance risk, equity risk, credit risk, interest rate risk, operational risk and liquidity risk. Within those control cycles, actuaries may use tools and processes such as reinsurance, hedging and duration/convexity matching as well as the more general risk mitigation processes such as underwriting, risk selection, and risk avoidance. In many organizations, actuaries are not the only risk managers. Actuaries might be a part of a multi-disciplinary team or may be managing one risk while other teams, including non-actuaries, manage other risks.

At the enterprise level, actuaries often participate with top management of the organization to manage the control cycle for the aggregate risk of the organization. They might focus on the relationship between the actual risk profile, the risk tolerance, and the risk appetite of the organization. In addition, strategic risk will be managed at this level along with reputational risk. In almost all cases, actuaries work with non-actuarial experts to manage these enterprise level risks.

Actuaries are also called upon to review risk treatment processes performed by actuaries or by other professionals; to provide or review the organization's risk tolerance, risk appetite, or risk limits; and to document the underlying assumptions. An actuary might be asked to analyze the impact of a strategic decision on an organization's risk treatment processes, recommend allocations of risk appetite to units within an organization, or opine on the appropriateness of an organization's risk appetite relative to the organization's risk profile and financial strength.

In most organizations, risk appetite or tolerance are key metrics that guide the risk treatment process. However, the terms risk tolerance and risk appetite do not have standardized definitions. These terms usually relate to the amount and types of risk that an organization is able to take and is planning to take consistent with the resources and objectives of the organization. In some organizations, these terms are solely used with regard to the aggregate risk of the entire

organization, but in others, the terms are applied to broad types of risks or even to individual transactions. In some organizations, one of these two terms is a subset of the other, while in others, the terms refer to intersecting sets of risks where each set has elements that are not common to the other.

In working with risk treatment, the organization will usually want to consider both the threats to the organizations that are posed by the risks taken as well as the opportunities for gains that are associated with those risks, considering the costs and benefits of any risk mitigation activities under consideration or in use. The actuary is often asked to help with the following:

1. the strategic evaluation of potential opportunities and the risks associated with them. This would include strategic approaches to risk treatment that change both the opportunity and risk sides of expectations.

2. tactical choices of potential actions within the strategic direction, considering the risks and opportunities of each action as well as risk mitigation choices.

3. tactical choices of potential actions that can be taken to reduce the risk of actions that have already been taken. This often includes evaluation of the trade-offs of various risk mitigation alternatives.

4. selecting and implementing actions to reduce the severity of losses for an emerging adverse event. This often includes a cost benefit analysis of potential actions.

## Appendix 2

## Comments on the Exposure Draft and Responses

The first exposure draft of this ASOP, *Risk Treatment in Enterprise Risk Management*, was issued in June 2012 with a comment deadline of September 10, 2012. Eight comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Enterprise Risk Management Task Force of the Actuarial Standards Board carefully considered all comments received, and the ASB reviewed (and modified, where appropriate) the changes proposed by the Task Force.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes the Task Force and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

| **TRANSMITTAL MEMORANDUM** | |
|---|---|
| Comment | One commentator expressed the view that the task force achieved the objectives identified in its list of four questions for reviewers and that the ability to rely on non-actuaries as part of the risk treatment process is critical to successful implementation. |
| Response | The reviewers thank the commentator for sharing this view. |
| **GENERAL COMMENTS** | |
| Comment | One commentator stated that since this document defines risk as only being "the potential of future losses or shortfalls," it neglects consideration of risk versus reward. |
| Response | The reviewers spent a considerable amount of time researching and discussing the definition of "risk," both before the release of the exposure draft and since receiving comments. The reviewers decided that the definition of risk should remain focused on "the potential for future losses" since 1) an evaluation of "risk versus reward" implies one-sidedness, and 2) a significant amount of risk evaluation work focuses on tail events. Therefore, the reviewers believe the current definition is appropriate and made no changes. |

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| Comment | Two commentators remarked on the use of the terms "should" and "may."<br>• The first commentator suggested using "should, if appropriate" throughout the document unless there is an overriding reason to do otherwise. The use of "should" alone can be very prescriptive and burdensome and sets the bar too high for risk treatment in ERM.<br>• The second commentator believed that the guidance here is insufficient to aid practice because it is too broad and hence requires the use of the phrase "may include" too frequently. This commentator feels if the scope is narrowed, then "may include" could be changed to "should consider" in several paragraphs. On a final note, this commentator stated, "the current scope probably forced this draft ASOP into a general principles format rather than an operational guidance format." |
| Response | The reviewers examined the use of "may" and "should" throughout the standard, and made several changes. |
| Comment | One commentator found the ASOP to be too generic to provide guidance in certain situations. |
| Response | The reviewers believe the ASOP provides appropriate guidance in light of the current state of ERM. Therefore, no change was made. |
| Comment | One commentator did not disagree with any of the principles expressed in the document, but strongly believes that ERM is not exclusively an actuarial process and, therefore, extends beyond a purely actuarial function. |
| Response | The reviewers note that ASOPs apply to individual actuaries practicing in the area covered by the ASOP and do not require the role to be one that is only performed by actuaries. |
| Comment | One commentator believes that Chief Risk Officers (CROs) who are also actuaries will be at a disadvantage under this standard because they will have to provide different levels of documentation and disclosure than a non-actuary performing that same role. In addition, the commentator expressed concerns regarding how a CRO/actuary will need to deal with work done by non-actuaries on his/her staff. |
| Response | The reviewers believe the documentation and disclosures called for by this standard represent appropriate practice and hence will help ensure appropriate practice by actuaries. In addition, the standard specifically allows reliance on others, including non-actuaries on staff, in performing certain roles. |

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| Comment | One commentator believes that it is premature to develop a standard related to ERM due to the evolving nature of ERM, and that expressing the ERM principles in the form of a guidance document may be more appropriate at this time. |
| Response | The reviewers note that some actuaries have been practicing in the ERM field for many years. While we recognize that this is a changing area of practice, we believe it is appropriate to provide guidance to members of the actuarial profession at this time. |
| Comment | One commentator believes that this particular ASOP should provide more clarity with respect to how outside actuaries who are relied on by companies for ERM expertise could be affected. The ASOP as written suggests that a third party actuary who provides risk treatment analysis would be subject to the ERM ASOPs that, in turn, could require the company to state a reliance on the third party when reporting risk analysis. While this may be the ASOP's intent, the relationship expectation between a company and its third parties should be more clearly detailed. |
| Response | The reviewers note that this ASOP provides guidance to individual actuaries, not companies. |
| Comment | One of the commentators states this standard would be adding to existing and growing compliance requirements in the ERM landscape. This commentator worries that all of these requirements require CROs to spend more time understanding reporting requirements rather than actually managing our companies' risks and that promulgation of actuarial standards for ERM may result in other professional associations providing similar, but conflicting ERM standards (for example, the American Institute of Certified Public Accountants, the Chartered Financial Analyst Institute or others). |
| Response | The reviewers believe that the standard will eventually ease the compliance burden of actuarial professionals and note that this standard was prepared with an eye to the current requirements that exist or are under development. |
| Comment | Several commentators suggested modifying language to increase the consistency with ASOP No. 46, *Risk Evaluation in Enterprise Risk Management*. |
| Response | The reviewers agree, and made changes throughout the standard to increase consistency with ASOP No. 46. |
| **SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE** | |
| Comment | One commentator pointed out that in section 1.1, "risk treatment system" is not defined and suggested changing the text to "risk treatment portion of the risk management system." |
| Response | The reviewers agree and removed the reference to "risk treatment systems." |
| Comment | Several commentators suggested modification to the description of the ERM control cycle were needed, including the order in which risk management activities occur. |
| Response | The reviewers note the ERM control cycle is used as a context for this ASOP. It is not meant to be limiting, or suggest a fixed sequence of events. Therefore, no change was made. |

| SECTION 2. DEFINITIONS | |
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| Comment | One of the commentators felt that the definition of "counterparty risk" may be too limited, stating, this risk includes a variety of types including, but not limited to, items such as bond redemptions, credit arrangements, and vendor relationships. |
| Response | The reviewers believe that the current definition incorporates these types of risk and therefore made no change. |
| Comment | One reviewer found the second sentence in the definition of "enterprise risk management control cycle" unclear. |
| Response | The reviewers modified the definition to be consistent with the definition of "enterprise risk management control cycle" in ASOP No. 46. |
| Comment | Several commentators asked if the term "risk profile" should be included. |
| Response | The reviewers agree and inserted the definition for "risk profile" as defined in ASOP No. 46. |
| Comment | Many commentators had remarks on the definitions of "risk appetite," "risk tolerance," and "risk limit." Many felt that the definitions were unclear or duplicative. Others stated that these definitions were not the same as those used for similar terms in other documents. |
| Response | The reviewers researched the definitions of "risk appetite," "risk tolerance," and "risk limit" and understand that widely varying definitions for these terms are currently being used by organizations. In addition, the reviewers note that the purpose of the definitions is to provide clarity to the users of the ASOP. It is not the intention of the ASOP to provide guidance on definitions for usage other than within the context of the standard itself. Therefore, the reviewers did not make changes to these definitions. |
| Comment | One commentator stated, with respect to the definition of "risk mitigation," that all risk treatment activities effectively seek to reduce frequency or severity. For example, setting a risk limit is one form of risk mitigation. Based on the use of the term in section 3.4, it seems like the definition of risk mitigation is more focused on the treatment of risks that either already transferred to the organization or are planned on being transferred to the organization. |
| Response | The reviewers disagreed and made no change. |
| **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES** | |
| Comment | One commentator felt that sections 3.1 and 3.3 exhibited a high degree of overlap. |
| Response | The reviewers agree and revised the introductions to sections 3.1 and 3.3 to improve clarity. |
| Comment | One commentator recommended language to clarify section 3.1(a). |
| Response | The reviewers modified the section to be consistent with ASOP No. 46. |
| Comment | One commentator suggested including "business model" in section 3.1(a). |
| Response | The reviewers believe that "business model" is included within "strategic goals" in section 3.1(a)(4) and, therefore, made no change. |

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| Comment | There were several suggestions for improving subsections of section 3.1(a), including: removing "current and potential future" in section 3.1(a)(1), adding "those regarding" before "the level" in section 3.1(a)(4), and adding language to address the limitations of the fungibility of capital during times of stress in section 3.1(a)(8). |
| Response | The reviewers agree and made appropriate changes to these sections. |
| Comment | One commentator suggested adding "counterparties" to the list of stakeholders in section 3.1(a)(5) and another noted that expected values and volatility should also be considered any time correlation is considered in section 3.1(a)(7). |
| Response | The reviewers note that the list in section 3.1(a)(5) is not intended to be comprehensive. The reviewers believe the current language in these sections is sufficiently clear and therefore made no changes. |
| Comment | One commentator suggested moving section 3.1(b)(4) to section 3.4(b). |
| Response | The reviewers agree and moved the item to the appropriate section. |
| Comment | One commentator suggested that the language "potential future variability of the costs and benefits" in section 3.1(b)(4) is "too open-ended." |
| Response | The reviewers agree and changed the language to "the variability of outcomes after risk mitigation" to section 3.1(b)(4), which is now in section 3.4(b). |
| Comment | One commentator suggested deleting section 3.3(a) and adding "and the aggregation of those activities" at the end of section 3.3(b). |
| Response | The reviewers agree and made the changes. |
| Comment | Three commentators recommended changes in the wording of section 3.4 to improve clarity. |
| Response | The reviewers made minor changes to this section to improve clarity. |
| Comment | One commentator suggested that section 3.4(b) should include regulatory constraints on risk treatment options. |
| Response | The reviewers agree and added "regulatory constraints on risk mitigation options." |
| Comment | One commentator suggested that section 3.4(b) should mention the "sensitivity of risk treatment options to changing conditions." |
| Response | The reviewers agree and added "the variability of outcomes after risk mitigation." |

| SECTION 4. COMMUNICATIONS AND DISCLOSURES | |
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| Comment | One commentator recommended that section 4.1.1 give guidance for the situation of a new actuary stepping into a role where contact with the prior person in the role is limited. The commentator felt that the words "as appropriate" do not give sufficient guidance as to how to handle successor issues where the predecessor is not available. |
| Response | While the reviewers agree that this situation is challenging, the reviewers believe that disclosing the impact of material changes in systems, process, methodology, and assumptions is important, and the term "as appropriate" allows for the reasonable use of professional judgment when making these disclosures. |

ACTUARIAL STANDARDS BOARD

**Actuarial Standard of Practice No. 48**

# Life Settlements Mortality

**Developed by the Life Settlements Mortality Task Force of the Life Committee of the Actuarial Standards Board**

**Adopted by the Actuarial Standards Board December 2013**

**Doc. No. 175**

# T A B L E O F C O N T E N T S

## APPENDIXES

**ASOP No. 48—December 2013**

December 2013

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Reporting and Validation of Mortality used in Life Settlements Investments

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice No. 48

This document contains the final version of ASOP No. 48, *Life Settlements Mortality*.

Background

The life settlements market arose from the viatical settlements market, which grew quickly in the 1980s. Actuaries are involved in various aspects of the market, including working with Life Expectancy (LE) providers to establish appropriate survival curves for risk appraisal, determining a value for a buyer who wishes to purchase a specific life insurance policy or portfolio, and valuing the policies in a portfolio for financial reporting purposes. An understanding of mortality assumptions and of how individual risk assessment affects the mortality assumptions for individual lives is critical to a proper actuarial valuation and risk analysis. To date, actuarial practices have varied widely in this market, and there are no specific regulatory standards defining life settlements mortality tables or assumptions.

The life settlements market has demanded actual-to-expected (A/E) results from the LE providers, but in the absence of specific guidelines and disclosures, practices for calculating A/E results have varied widely. A limited number of states require LE providers to file A/E ratios, but again, lack of specific guidelines has led to concerns with mortality tables and methodologies used. At issue are survival curves defined for exposure measurement and methodologies for adjusting such curves to reflect individual risk assessments. Also, measurement of exposures based on multiple underwritings has posed significant difficulties.

Exposure Draft

In May 2013, the ASB approved the exposure draft with a comment deadline of July 31, 2013. Ten comment letters were received and considered in making changes that are reflected in this final ASOP. For a summary of issues contained in these comment letters, please see appendix 2. The majority of commentators supported the effort to issue this ASOP, although a few comments indicated a concern with the scope of the ASOP, and one commentator believed this ASOP should not be issued.

Changes made to the final standard in response to the comment letters include the following:

1. Sections 2.16, Mean Life Expectancy, and 2.17, Median Life Expectancy, were revised to

remove examples of formulas that could be used to calculate mean and median life expectancy.

2. Section 2.20, Mortality Assumption, was revised to include mortality rates and survival curves period by period. Survival curves are commonly used in the life settlements market to illustrate the mortality assumption.

3. Section 4.1, Disclosures, was revised after considering the feedback on a question raised in the exposure draft transmittal letter to require the actuary to disclose: a description of how the mortality assumption was developed and how the mortality assumption differs from that of the life expectancy provider, a description of how multiple life expectancy evaluations are handled (previously in section 4.2(f)), and the reason for choosing an IBNR assumption (if any).

4. Section 4.2, Disclosures when Performing A/E Analysis, was revised to allow the actuary to determine whether presentation of historical A/E results is appropriate with appropriate disclosure if they are not presented.

Please see appendix 2 for a detailed discussion of the comments received and the reviewers' responses.

The ASB thanks everyone who took the time to contribute comments and suggestions on the exposure draft.

The ASB voted in December 2013 to adopt this standard.

**ASOP No. 48—December 2013**

Life Settlements Mortality Task Force

Timothy A. DeMars, Chairperson

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|---|---|
| Mary J. Bahna-Nolan | Linda M. Lankowski |
| Peter J. Bondy | Scott E. Morrow |
| Jeremy J. Brown | Arshad H. Qureshi |
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Life Committee of the ASB

Jeremy J. Brown, Chairperson

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| David A. Brentlinger | David Y. Rogers |
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Actuarial Standards Board

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| Beth E. Fitzgerald | Thomas D. Levy |
| Alan D. Ford | Patricia E. Matson |
| Patrick J. Grannan | James J. Murphy |
| Stephen G. Kellison | James F. Verlautz |

*The ASB establishes and improves standards of actuarial practice. These ASOPs identify what the actuary should consider, document, and disclose when performing an actuarial assignment. The ASB's goal is to set standards for appropriate practice for the U.S.*

**ASOP No. 48—December 2013**

# ACTUARIAL STANDARD OF PRACTICE NO. 48

## LIFE SETTLEMENTS MORTALITY

## STANDARD OF PRACTICE

### Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice provides guidance to actuaries developing and evaluating **mortality assumptions** and evaluating mortality experience associated with **life settlements**.

1.2 Scope—This standard applies to actuaries performing professional services, when reporting on or evaluating mortality experience with respect to **life settlements** or when developing, analyzing, or using **mortality assumptions** with respect to **life settlements**.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority), or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for work performed on or after April 30, 2014.

### Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Actual-to-Expected (A/E) Analysis—The process of calculating and analyzing **A/E ratios** over a selected time period; for example, across different ages, genders, and **durations**. This is also known as an A/E study.

2.2 Actual-to-Expected Ratio—Actual deaths (either face amount or number of lives) in a group of lives being evaluated, over a specified period divided by the **expected deaths** over the same period.

2.3 Debits and Credits—The components of a system used by underwriters to determine a set of **mortality multiples** to apply to a base mortality table. Debits increase the **mortality multiple** due to various **impairments** that an **insured** may have; credits reduce the **mortality multiple** due to good health characteristics.

2.4 Duration—The length of time since a **life expectancy** estimate was issued.

2.5 Expected Deaths—The number of deaths statistically expected in a given time interval.

2.6 Graduation—The process of making adjustments to experience results in order to have a smooth progression in the mortality rates over the whole age range.

2.7 Historical A/E Mortality Basis—**Mortality assumptions** developed from a base mortality table using information such as **underwriting** multipliers, improvement factors, medical records, and other pertinent information relevant to the individual life expectancies as of their associated **underwriting** dates.

2.8 Impaired Mortality—A **mortality assumption** that has been adjusted for **impairments**.

2.9 Impairment—A health factor or condition that tends to increase an **insured's** probability of death.

2.10 Incurred but not Reported (IBNR) Deaths—Adjustment to observed deaths in a given time period to account for deaths that have occurred but have not been reported due to the time lag in reporting systems or errors and incomplete information available from reporting sources regarding deaths.

2.11 Incurred Death—A death occurring during a period of exposure being analyzed, whether reported during that period or not.

2.12 Insured—An individual whose life is covered by a life insurance policy.

2.13 Life Expectancy (LE)—The expected future lifetime of an **insured**. Two primary types of life expectancies, mean and median, are reported by **LE providers** in the **life settlements** market.

2.14 Life Expectancy Provider (LE Provider)—An entity that applies medical **underwriting** analysis to determine a **mortality assumption** or **life expectancy**.

2.15 Life Settlement—The life insurance policy or policies sold to an investor. The term "life settlement" includes viatical and other life settlements. Generally, a viatical life settlement is any life settlement where the **insured** has a **life expectancy** of less than two to three years, depending on state regulation.

2.16 Mean Life Expectancy—The average **life expectancy** based on the assumed **survival curve**.

2.17 Median Life Expectancy—The point in time at which, based on the assumed **survival curve**, there is a 50% probability that the person will still be alive.

2.18 Modification Factor—A factor that is used to adjust standard mortality to reflect rating classification. This may include items such as flat extras, mortality multiples, and age ratings.

2.19 Modified A/E Mortality Basis—**Mortality assumptions** other than the **historical A/E mortality basis**. Use of this basis may result in **life expectancy** estimates that differ from those originally provided.

2.20 Mortality Assumption—A set of values representing mortality rates or the survival curve period by period. This may reflect an assumption of future mortality improvement or deterioration or **modification factors**. This term may apply to either a single **insured** or group of **insureds**.

2.21 Mortality Multiple—A **modification factor** typically determined from a **debit/credit underwriting** methodology.

2.22 Survival Curve—The probability data set representing the assumed probability of survival to the end of every period in the future for an **insured**.

2.23 Underwriting—The process of evaluating medical and other information received on a given **insured** to determine **modification factors** reflecting risk classification for that **insured**.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Purpose of the Assignment—The actuary should understand the purpose of the assignment and be familiar with any regulatory or accounting standards that may have a bearing on the actuary's work product. Assignments that may result in different sets of **mortality assumptions** include fair value valuation (for example, under Accounting Standards Codification 820, *Fair Value Measurements and Disclosures*) and performing or using an **A/E study**.

3.2 Required Knowledge—The actuary should be reasonably knowledgeable about relevant aspects of mortality table construction, exposure methods, mortality improvement, older age and **impaired mortality**, **graduation**, and related issues.

3.3 Developing Mortality Assumptions—When an actuary is developing **mortality assumptions**, the following apply.

3.3.1 Base Mortality Table Selection—The actuary should select a base mortality table that is appropriate for the purpose of the assignment. The actuary should choose a table (which may be a combination of tables) that in the actuary's professional judgment reflects the characteristics of the underlying population. The actuary may use credible data to create new mortality tables if existing tables do not adequately fit the underlying population. If the actuary uses a mortality table prescribed by another party or applicable law, the actuary should refer to ASOP

No. 41, *Actuarial Communications,* section 3.4.4, and the disclosures in sections 4.3(a) and (b) of this ASOP.

3.3.2 Mortality Table Modifications—The actuary should consider whether modifications to the base mortality table(s) are needed to fit the population being examined. In making these modifications, the actuary should consider items that may lead to a differentiation in mortality, such as socio-economic effect (i.e., a tendency for mortality rates to differ based on sociologic and economic factors), antiselection, selection period, **impairment**(s), **impairment** level, marketing methods, policies settled versus policies evaluated but not sold as **life settlements**, and variations in **LE** estimates provided by different **LE providers**.

3.3.3 Mortality Improvement or Deterioration—The actuary should consider whether incorporating historical and projected mortality improvement or deterioration is appropriate. These adjustments could be due to mortality improvement caused by medical advancements or new approved drugs, which could cause a shift in expected mortality for a group of **insureds** within the population.

3.3.4 Application of Individual Underwriting to Mortality Assumptions—If the actuary has access to **underwriting** information on individual **insureds** in the population, the actuary should consider adjusting the **mortality assumptions** to reflect this information. The actuary should consider using available data regarding factors such as the **impairment**(s), **impairment** level, **debits or credits** assigned, **mortality multiples**, and life expectancies and their associated **survival curves**, as appropriate for the purpose of the assignment.

If **LEs** are used, the actuary should make a reasonable effort to learn and understand the basis for the **LEs** including whether the **LE** information provided is a **mean** or **median LE**. If the actuary has unresolved concerns about the **LEs** used that have a material impact, the actuary should make the disclosure in section 4.1(f).

3.3.5 Mortality Assumption Adjustments Using A/E Analysis—The actuary should consider adjusting **mortality assumptions** when A/E results are available.

3.4 A/E Analysis—When performing an **A/E analysis**, the actuary should produce results by **duration**. As data and credibility allow, the actuary should analyze results by gender, smoking class, age bands, level of **mortality multiples**, **impairment** type, and other pertinent categories.

3.4.1 Incurred Deaths—The actuary should be aware of the methodology and sources used in determining **incurred deaths** and the completeness of such approach for determining deaths. The actuary should consider whether to adjust actual results to reflect **IBNR** deaths. The actuary should consider using a supplemental external source of recorded deaths, such as the Social Security Death Master File, if available, to improve the timeliness of reported deaths.

3.4.2 Multiple Life Expectancies for a Single Life—The actuary should assess whether the method for handling data regarding an **insured** underwritten multiple times (and creating multiple exposures) is appropriate for the intended use of the A/E study, given the reasons a specific **insured** was underwritten more than once. If the actuary uses a method prescribed by another party, the actuary should refer to ASOP No. 41, section 3.4.4, and the disclosures in section 4.3(a) and (b) of this ASOP.

3.4.3 Use of a Modified A/E Mortality Basis—The actuary may analyze results based on a **historical A/E mortality basis** or a **modified A/E mortality basis**. If a **modified A/E mortality basis** is used, the actuary should prepare results using a **historical A/E mortality basis** for comparative purposes, if the actuary believes doing so is appropriate. The actuary should refer to Section 4.2 (e).

3.5 Reliance on Data or Other Information Supplied by Others—When relying on data or other information supplied by others, the actuary should refer to ASOP No. 23, *Data Quality*, for guidance.

3.6 Credibility of Data Used in Evaluation of Mortality—When considering the credibility of the data used in setting assumptions, the actuary should refer to ASOP No. 25, *Credibility Procedures*, for guidance.

3.7 Documentation—The actuary should prepare and retain documentation in compliance with the requirements of ASOP No. 41. The actuary should also prepare and retain documentation to demonstrate compliance with the disclosure requirements of section 4.

## Section 4. Communications and Disclosures

4.1 Disclosures—When issuing actuarial communications relating to mortality in **life settlements**, the actuary should refer to ASOP Nos. 23, 25, and 41. In addition, the actuary should disclose the following items:

a. a description of how the **mortality assumption** was developed including any modifications to the **mortality assumption** to reflect risk characteristics;

b. a description of the methods used to adjust results for the impact of multiple **life expectancy** evaluations on the same **insured** or on the same policy;

c. whether the actuary has information about the **LE provider's** mortality assumption and, if so, how the actuary's **mortality assumption** differs from that of the **LE provider**;

d. the extent of historical or projected mortality improvement or deterioration assumed for the assignment;

e. the method used for determining **incurred deaths**, including any **IBNR** assumption, and discussion of the significance and reason for choosing such **IBNR** assumption;

f. any unresolved concerns the actuary may have about the data, assumptions used, or methodology used that could have a material impact on the actuarial work product;

g. the **mortality assumption** for estimating the price that would be received to sell the asset in an orderly transaction between market participants, and the basis for that assumption, when performing work related to fair-value projections;

4.2 Disclosures when Performing an A/E Analysis—In addition to the disclosures in section 4.1, the actuary should disclose the following items if an **A/E analysis** is performed:

a. the source of the expected **mortality assumptions** and why the actuary believes they were appropriate for the assignment;

b. results of the **A/E analysis** by **duration**;

c. as data and credibility allow, a presentation of results by gender, smoking class, age bands, level of **mortality multiples**, **impairment** type, and other pertinent categories;

d. whether a **historical A/E mortality basis** or a **modified A/E mortality basis** was used for the **A/E analysis**. Such disclosure should indicate the implications of the method, the reasons for the choice of method, and whether the method could distort the results of the analysis;

e. if results on a **modified A/E mortality basis** are disclosed, the actuary should disclose results based on a **historical A/E mortality basis** for comparative purposes if the actuary believes doing so is appropriate. If results on a **modified A/E mortality basis** are disclosed and the actuary does not disclose **historical A/E mortality basis** results, the actuary should disclose why they are not being disclosed;

f. a description of the methods used to adjust results for the impact of multiple policies on the same **insured**;

g. when **IBNR** is included in the analysis, a presentation of results with and without **IBNR**; and

h. a statement that A/E results may not be indicative of future results.

4.3 Other Disclosures—The actuary should include the following, as applicable, in an actuarial communication:

a. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law;

b. the disclosure in ASOP No. 41, section 4.3, if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

c. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

## Appendix 1

## Background and Current Practices

*Note:* This appendix is provided for informational purposes and is not part of the standard of practice.

### Background

Life Settlements are financial transactions in which a third party buys an existing life insurance policy for more than its cash surrender value but less than its net death benefit. The life settlements market grew out of the viatical settlements market, where chronically ill AIDS patients sold their policies, often to individual investors. The viatical settlements market essentially ended with the advent of antiretroviral drugs, which extended the lives of AIDS patients, lowering the economic value of their life insurance policies. From there, the market focus shifted to other health-impaired policyholders, primarily at older attained ages.

In the life settlements market, a mortality assumption is determined, which allows the buyer to project expected premiums, death benefits, and other relevant cash flows period by period. These expected cash flows are then discounted to determine the policy value. To determine the mortality assumption for an insured, it is common to use life expectancy (LE) estimates, often measured in months, produced by LE providers. The accuracy of the LE estimates is of great interest to the life settlements market since the value of a policy is highly dependent on the mortality assumption derived based on the LE estimate.

The life settlements market is highly dependent on actuarial expertise. In particular, analysis of actual mortality experience as compared to expectations (actual/expected or A/E analysis) has generated controversy in the life settlements market.

An A/E study is a backward-looking evaluation of underwriting results based on assumed mortality. The mortality assumption may be based on the mortality tables and modification factors used to produce the original LE estimate. At times, the mortality assumptions may be modified to reflect factors relevant to current LE estimates so that past results may be measured against current underwriting methodologies and tables.

## Current Practices

Actuaries working in the life settlements market have been asked to assess mortality for many different purposes, including the following:

- an A/E study of an LE provider;
- the determination of survival curves for an LE provider;
- the pricing/modeling of life settlements policies and portfolios on behalf of investors;
- the valuation for financial reporting; and
- risk models to examine extension risk and its consequences for investor performance.

The discussion below focuses on A/E studies, which have been central to the life settlements market and an area of interest in life settlement discussions. However, as noted above, there are several other mortality-related tasks that actuaries may be asked to perform.

An actuary performing an A/E study on a block of lives or policies has several options for creating mortality assumptions for individual lives. The analyses differ regarding whether the original LE provider's mortality assumption is adjusted. A historical A/E mortality basis utilizes the LE provider's methodology in use at the time each LE was issued. Two modified A/E mortality bases used today are as follows:

1. Adjusted to Current Methodology A/E Mortality basis—A/E analysis that typically defines expected deaths using mortality tables, underwriting multipliers, improvement factors, and any other aspects of the underwriter's current methodology applied to the medical records and any other pertinent information for each insured that existed at the time the insured was underwritten. This attempts to measure how accurate the LE provider's current methodology is by back-testing it to obtain the A/E analysis that would have developed if the LE provider's current methodology had been in place from the time it began issuing LEs.

2. Back-solving the actual LE into a mortality table—A/E analysis that defines expected deaths by using the back-solving method with the actual LE that was issued and mortality assumptions that may or may not have actually been used when the LE was issued by the LE provider. This has commonly been used when the LE provider's table is proprietary, non-existent, deemed not relevant, or in the actuary's judgment is not appropriate for the life settlement population being studied.

In performing an A/E study, there are several methods that are used to handle multiple underwriting opinions on individual lives. The results of the A/E study can vary substantially depending on the method chosen. Some of the methods in use today are as follows:

1. Earliest submission—Counts only the earliest LE estimate produced for each insured. As a result, no single insured counts more than any other. This method does not reflect all instances of underwriting.

2. Latest submission—Counts only the latest LE estimate produced for each insured. Considerations are the same as in method 1. This method excludes time periods where it is known that no deaths occurred.

3. One-year look-back—Includes only the latest LE estimate within each calendar year.

4. Fractional method—The earliest LE estimate contributes one exposure up until the time that the insured is underwritten a second time, at which point each contributes half an exposure. Repeat as necessary. Only one total exposure per year per insured is used, and a subject contributes only one death in the calculation.

5. Non-fractional method—Several LE estimates may be used for one insured. Possible reasons for inclusion depend on time elapsed since prior LE opinion used or material change in health status. One insured that has been underwritten many times may have a much larger impact on the A/E results than another insured who was underwritten once.

For A/E studies, there have been a wide range of adjustments made to account for IBNR. The level of IBNR chosen is crucial since the results of the A/E analysis could vary substantially. Given the age of the life settlements market, data availability, and the reliability of the methods used to determine deaths that have occurred, determining the appropriate IBNR level is difficult.

To the extent experience is available, a lag study is sometimes performed on the historical level of IBNR experienced. The results of the lag study, to the extent credible, are then used to determine the level of IBNR. Often a lag study is not feasible. In utilizing other resources to determine the level of IBNR, such as social security information, some practitioners account for differences between the population of life settlement participants and the population being considered. A further problem is that the methodologies for determining maturities may change over time, as has happened when access to the Social Security Death Master File became more restricted.

## Appendix 2

## Comments on Exposure Draft and Responses

The exposure draft of this ASOP, *Life Settlements Mortality*, was issued in May 2013 with a comment deadline of July 31, 2013. Ten comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Life Settlements Task Force carefully considered all comments received, reviewed the exposure draft, and proposed changes. The Life Committee and the ASB reviewed the proposed changes and made modifications where appropriate.

Summarized below are the significant issues and questions contained in the comment letters and responses.

The term "reviewers" in appendix 2 includes the Life Settlements Task Force, the Life Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

| **GENERAL COMMENTS** | |
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| Comment | One commentator asked whether the standard applies to valuation work involved in calculating the "theoretical" Fair Market Value of individual life policies. If so, may an actuary simply rely on a survival table produced by one independent LE provider or would more than one be required? |
| Response | The reviewers believe the standard does apply to certain aspects (see section 1.2, Scope) of valuation assignments involved in calculating the "theoretical" Fair Market Value of individual policies with respect to life settlements and feel that the guidance in the standard is appropriate. |
| Comment | One commentator noted that the standard seems to have two very different goals:<br><br>1. guidance on appropriate calculation of actual-to-expected results for mortality; and<br>2. dealing with appropriate documentation for the selection and use of mortality assumptions with respect to Life Settlement reports per ASOP No. 41, *Actuarial Communications*.<br><br>The commentator stated that the actuarial profession should carefully consider whether it is truly in its best interest to attempt to meet this need via an ASOP.<br><br>The commentator also suggested that this draft be bifurcated into two different standards. If this is not viable, then the drafters should be explicitly clear so that one purpose does not overwhelm the other and confuse readers. |
| Response | The reviewers believe a single standard is appropriate. |
| Comment | One commentator suggested adding a paragraph in the background section of the transmittal memo that discusses the difficulties of using LE estimates from multiple LE providers. In addition, the commentator suggests the appendix should include these points. Otherwise, the document should be limited to A/E calculations. |
| Response | The reviewers do not believe this discussion is necessary in the transmittal memo or the appendix. The transmittal memo and appendix are not meant to provide guidance. Therefore, no change was made. |

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| Comment | One commentator suggested that the background section of the transmittal memo mention that actuaries are globally involved. |
| Response | The standard applies to actuarial practice only in the U.S.; therefore, no change was made. |
| Comment | One commentator believed it is not correct to state that actuaries are involved in all aspects of the market in the background section of the transmittal memo. It should be made clear that actuaries are not underwriters. The commentator suggested changing "all" to "various." |
| Response | The reviewers agree and changed "all" to "various." |
| Comment | One commentator suggested that the standard address in course of settlement claims. |
| Response | The reviewers believe that these claims would be either in reported claims or incurred but not reported claims and made no change. |
| Comment | One commentator suggested the standard address stochastic analysis in determining suitable confidence intervals for actual deaths when performing Actual-to-Expected studies. |
| Response | The reviewers believe that such practice would be permitted under the standard and made no change. |
| Comment | Two commentators suggested the standard address how monthly mortality rates are determined from annual mortality rates. |
| Response | The reviewers disagree with expanding the standard to address the subject and made no change. |
| Comment | One commentator stated that in some cases the actuary has only the (mean or median) Life Expectancy number, which was calculated by someone other than a qualified actuary, to use as a single data point in backing into an assumed table of mortality rates, and the actuary often isn't told how that one data point was determined. Because of this, the commentator cannot support the actuarial profession accrediting and codifying the use of these practices as sound actuarial practice through publication in an Actuarial Standard of Practice. |
| Response | The reviewers believe the ASOP appropriately addresses this concern, and therefore made no change. |
| Comment | One commentator stated that actuaries should aggregate mortality experience data properly recorded and then contributed by the major companies in the industry, develop a credible experience table applicable to that business, and then create from that table suitable mortality tables to be used for pricing, valuation, and other financial risk management for their principals. |
| Response | The reviewers believe this is beyond the scope of the ASOP and made no change. |
| Comment | One commentator stated that there is not much life settlement data at many ages; therefore, it is up to the actuary to consider how to determine reasonable mortality for life settlements. The commentator stated that both a suitable underlying mortality table and system of mortality ratios for impairments is needed and must be considered reasonable by the actuary. |
| Response | The reviewers believe the guidance in the standard is appropriate and made no change. |
| Comment | One commentator stated that the same LE can be generated by more than one mortality table, including modifiers. Therefore, it is important that the actuary review LEs at many different ages and mortality levels or review the basic mortality curve and modifiers. |
| Response | The reviewers believe the guidance in the standard is appropriate and made no change. |
| Comment | One commentator stated that mortality multiples can be determined from a debit/credit underwriting methodology, but can also be based on actuarial and underwriting studies that develop the relationship between standard mortality and the mortality on a life with particular impairments. |
| Response | The reviewers believe the ASOP adequately provides for this and made no change. |

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| Comment | One commentator stated that the purpose and scope of this ASOP is aimed at actuaries doing mortality and A/E studies for life expectancy providers in the life settlements market. The commentator believes it should be pointed out that there are other uses of life expectancies and anticipated mortality, such as for financial planning. |
| Response | The reviewers agree LEs can be used for other reasons; however, the purpose of the ASOP was to address life settlements mortality. Therefore, no changes were made. |
| **TRANSMITTAL MEMORANDUM QUESTIONS** | |
| **Question 1: Life expectancy providers may provide survival curves with their estimates. As drafted, this standard does not require disclosure when the actuary chooses a different survival curve assumption. Should it?** | |
| Comment | Four commentators believed the actuary should disclose whether a survival curve assumed is different from that of the life expectancy provider. |
| Response | The reviewers agree and added a disclosure requirement in the new section 4.1(c). |
| Comment | One commentator believed this question makes the assumption that the normal practice is for the actuary to use the survival curve as provided by the LE provider. The commentator suggested a change in language to demonstrate this is not necessarily the case.<br><br>The commentator believed it is most important for the actuary to disclose how the LE provider reports are used. |
| Response | The reviewers revised section 4.1(a) to require a description of how the mortality assumption was developed. |
| Comment | One commentator stated that the level of disclosure for setting mortality assumptions for a life settlement population should be the same as that required for other types of calculations. |
| Response | The reviewers believe the disclosure level in the standard is appropriate and made no change. |
| **Question 2: Methodologies for Actual to Expected studies for life settlements may vary depending on the purpose of the study. The task force chose to define a "historical method" as being distinct from any number of "modified methods." Is this distinction clear? Is it clear when a historical method is required?** | |
| Comment | Three commentators believed the distinction was clear and adequate. |
| Comment | Some commentators question whether results based on a "historical method" should be required. They suggested the requirement either be removed or allow the actuary to decide on whether the disclosure of results based on a "historical method" is appropriate. |
| Response | The reviewers revised the wording in sections 3.4.3 and 4.2(e) to allow the actuary to decide whether it is appropriate to prepare and disclose historical results. |
| Comment | One commentator suggested that these terms be clarified for the benefit of other actuaries that do not have a lot of experience in this area. |
| Response | The reviewers agree and clarified the terms in response to the comment. |
| **Question 3: Are the disclosures required in this standard sufficient and clear?** | |
| Comment | One commentator believed the disclosures are sufficient and clear. |
| Comment | One commentator believed the disclosures are redundant and noted that the standard states "the actuary should refer to ASOP [No.] 41." In addition, items 4.1(f), 4.1(g), and 4.1(h) refer to specific sections of ASOP No. 41. |
| Response | The reviewers believe some level of redundancy is useful and retained the draft wording, noting that section 4.1(f), 4.1(g), and 4.1(h) are employed in other standards. These items were moved to a new section 4.3. |
| **Question 4: One insured may have had multiple life expectancy estimates. Are the disclosures for handling this situation appropriate?** | |
| Comment | Two commentators believed the disclosures are appropriate. |

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| Comment | One commentator believed the standard requires disclosure of the handling of multiple life expectancy estimates only when the method is prescribed by another party. |
| Response | The disclosure was moved from section 4.2 to 4.1, which is not limited to the situation where the method is prescribed by another party. |
| **SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE** | |
| **Section 1.1, Purpose** | |
| Comment | One commentator believes one of the intents of the standard is for the purpose of developing mortality assumptions (as in section 3.3). The commentator recommended new wording: "...to actuaries developing and evaluating mortality assumptions, and evaluating mortality experience, associated…." |
| Response | The reviewers adjusted the description to be more general. The reviewers decided to use some of the recommended new wording in section 1.2, Scope. |
| **Section 1.2, Scope** | |
| Comment | One commentator stated that the scope of the proposed ASOP appears so broad that it includes virtually all actuarial work with regard to life settlements but is entirely focused on A/E calculations. The commentator suggested that the scope of the ASOP should be more specific. |
| Response | The reviewers note section 1.2, Scope, is limited to certain types of work related to mortality and that the guidance is not limited to A/E calculations. |
| **SECTION 2. DEFINITIONS** | |
| Comment | One commentator found the phrase "historical method" (historical A/E analysis in the definitions) confusing and believes a "modified method" is not so much a modified method as an alternative expected basis. |
| Response | The reviewers agree and changed the terms to improve clarity. |
| **Section 2.3, Debits and Credits** | |
| Comment | One commentator found this very unclear. The commentator asked whether debits and credits should be described in terms of percentages added to, or subtracted from, 100% of "standard" morality for the age and gender. The commentator thought an example might help. |
| Response | The reviewers believe the definition is clear and made no change. |
| **Section 2.4, Duration** | |
| Comment | One commentator asked: "Is it always measured in years? Never in months?" |
| Response | The reviewers deleted "measured in years" from the definition. |
| **Section 2.5, Expected Deaths** | |
| Comment | One commentator suggested that the standard provide guidance on calculating expected deaths. |
| Response | The reviewers disagree with expanding the standard to address the subject and made no change. |
| Comment | One commentator found this very unclear. The commentator suggested working the term "mortality assumption" into the definition, so that it can be referenced when defining Historical A/E Analysis and Modified A/E Analysis. |
| Response | The definition was modified to make it clearer, and, given the new definition, the reviewers concluded that including the term "mortality assumption" was not necessary. |

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| **Section 2.7, Historical A/E Analysis** | |
| Comment | One commentator recommended the following definition: "A/E analysis based upon expected mortality rates consistent with those underlying the providers' life expectancies and incorporating, as available, the mortality tables, underwriting multipliers, improvement factors, and other pertinent information used by the providers in determining the life expectancies." |
| Response | The reviewers adjusted the definition of a "Historical A/E Analysis" (now referred to as "Historical A/E Mortality Basis") to refer to "mortality assumptions" rather than "mortality tables." The reviewers did not specify "providers" in the definition because there are situations where a historical A/E analysis is performed using original mortality assumptions that were not provided by an LE provider. |
| Comment | One commentator pointed out that the term "mortality tables" is used, but it is not defined. |
| Response | The reviewers changed "mortality tables" to "mortality assumptions." |
| Comment | One commentator suggested the phrase be reworded as follows: "…and other pertinent information applicable to the individual life expectancies as of their associated underwriting dates." |
| Response | The reviewers added the suggested wording with minor modifications. |
| **Section 2.10, Incurred but not Reported (IBNR) Deaths** | |
| Comment | One commentator suggested the following wording: "Deaths occurring during a period of exposure being analyzed but not reported during that period. Usually estimated based on past experience." |
| Response | The reviewers believe the existing definition is appropriate and made no change. |
| **Section 2.11, Incurred Claim** | |
| Comment | One commentator suggested the following wording: "A death occurring during a period of exposure being analyzed, whether reported during that period or not." |
| Response | The reviewers implemented the suggested wording. |
| **Section 2.13, Life Expectancy (LE)** | |
| Comment | Two commentators suggested grammatical changes to the definition. |
| Response | The reviewers revised the definition. |
| **Section 2.14, Life Expectancy Provider (LE Provider)** | |
| Comment | One commentator suggested deleting the phrase "specializing in the assessment of older or impaired lives." The commentator noted that LE providers determine life expectancies on young lives as well as old, and on unimpaired as well as impaired, lives. |
| Response | The reviewers deleted the phrase "specializing in the assessment of older or impaired lives." |
| Comment | One commentator suggested changing "underwriting services" to "underwriting analysis." |
| Response | The reviewers agree and made the change. |
| Comment | One commentator suggested the second sentence about being the underwriter is not necessary. |
| Response | The reviewers agree and deleted the sentence. |
| Comment | One commentator suggested adding a sentence such as, "LE Provider is not limited to those entities who have sought and obtained official status as such by any of the states." |
| Response | The reviewers do not believe the additional sentence suggested is necessary and made no change. |

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| **Section 2.16, Mean Life Expectancy** | |
| Comment | One commentator suggested changing the formula to an integral. |
| Response | The reviewers believe that the formula is unnecessary and deleted it. |
| Comment | One commentator believes the term "mean life expectancy" is redundant. |
| Response | The reviewers believe the term "mean life expectancy" is necessary because of the terminology used in the life settlements market. |
| Comment | One commentator suggested adding "The average life expectancy; also referred to as the actuarial or complete life expectancy." |
| Response | The reviewers do not believe the additional terms are necessary and made no change. |
| Comment | One commentator stated that it seems unwise to specify a particular formula, especially when the formula is an approximation of the complete expectation formula and in a more exacting context would be written without an equal sign. Perhaps the formula given should be characterized as an example. |
| Response | The reviewers believe that the formula is unnecessary and deleted it. |
| Comment | One commentator was surprised to see "mean" and "median" life expectancies defined in terms of months, since most mortality estimates are annual. |
| Response | The reviewers have adjusted the definitions to be more generic. The unit of time is no longer specified. |
| **Section 2.17, Median Life Expectancy** | |
| Comment | One commentator suggested a change in the stated formula from a summation to an integral. |
| Response | The reviewers believe that the formula is unnecessary and deleted it. |
| Comment | One commentator believes "predicted median survival" or simply "median survival" would be a better term to use than "median life expectancy." The commentator suggested changing the description to "…the smallest number m satisfying…." |
| Response | The term "median life expectancy" is used in the life settlements market. The reviewers decided no change to the term was necessary. The reviewers determined that a formula was unnecessary. |
| **Section 2.18, Modification Factor** | |
| Comment | One commentator suggested replacing "reflect rating classification" with "reflect impaired mortality." |
| Response | The reviewers believe the term "rating classification" encompasses preferred, standard, and impaired cases and made no change. |
| **Section 2.21, Mortality Multiple** | |
| Comment | One commentator suggested the definition be changed to "A modification factor typically determined from a debit/credit underwriting methodology used to create a multiple intended to be applied to a standard mortality risk table." |
| Response | The reviewers note mortality multiples in the life settlements market may be applied to preferred, standard, or impaired risk tables and made no change. |
| **Section 2.22, Survival Curve** | |
| Comment | One commentator stated that "Read literally, this means that there is one 'curve,' or set of probabilities, for each insured age x." |
| Response | The reviewers disagree, as the definition refers to "an insured." |

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| Comment | One commentator asked whether the definition was intended to mean that each "curve" is a set, or table, of survival probabilities for all values of *t* from 1 to ω–x. |
| Response | The reviewers believe the wording is clear and made no change. |
| **Section 2.23, Underwriting** | |
| Comment | One commentator suggested adding "and/or estimating life expectancy" after "…reflecting risk classification…." |
| Response | The definition is meant to address the underwriting process rather than LE estimation. The reviewers made no change. |
| **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES** | |
| **Section 3.2, Required Knowledge** | |
| Comment | One commentator stated that section 3.2 sets out the requirement that an actuary "should be knowledgeable" about a variety of topics, with no limitations on this requirement. |
| Response | Another commentator asked whether the subjects included are in the current syllabus for actuarial exams. The commentator suggested including recommended sources if the subject is covered. If not, the commentator asked whether sources should be included. The commentator asked, "If the ABCD is to determine whether a practicing actuary has the 'required knowledge,' on what will its opinion be based?"<br><br>The reviewers note that the actuary needs to apply judgment in determining the degree of knowledge needed in a particular situation. The reviewers added the word "reasonably" and words "relevant aspects of." |
| **Section 3.3.1, Base Mortality Table Selection** | |
| Comment | One commentator suggested that some context be provided for the use of the word "population." The commentator was concerned that some readers would not understand "population" refers to "appropriate population." |
| Response | The reviewers changed "population" to "underlying population." |
| **Section 3.3.2, Mortality Table Modifications** | |
| Comment | One commentator suggested adding "For example, policy face amount may be utilized as a proxy for the socio-economic effect." |
| Response | The reviewers do not believe such an example is needed and, therefore, made no change. |
| **Section 3.3.4, Application of Individual Underwriting to Mortality Assumptions** | |
| Comment | One commentator believes the current wording does not clearly distinguish the actuarial role from the underwriting role. |
| Response | The reviewers disagree and made no change. |
| Comment | One commentator stated that the mortality experience for life settlements is available only for a limited portion of the survival curve. Therefore, consideration must be given to the lack of long-term experience and the selection of ultimate mortality. Consideration should be given to the "wearing off" of underwriting rating by which preferred or substandard extra mortality may be graded toward zero as the insured survives well beyond the original LE or reaches the ultimate age in the mortality table. |
| Response | The reviewers believe that mortality multiples can encompass wearing off and other factors affecting ultimate mortality and made no change. |

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| **Section 3.3.5, Mortality Assumption Adjustments Using A/E Analysis** | |
| Comment | One commentator suggested adding the following: "Adjustments should be considered to A/E assumptions reflecting the specific experience of the population (i.e. the life settlement portfolio), and then the experience of the specific LE Provider. Mortality tables designed for life insurance valuation (for example, 2008VBT) have implicit conservatism for life insurance that produce aggressive assumptions for life settlements and are not appropriate without adjustments." |
| Response | The reviewers disagree with expanding the standard to address the subject and made no change. |
| **Section 3.4, Actual-to-Expected Analysis** | |
| Comment | One commentator believed this section ignores that one of the main contributors to wide variation in historical A/E results is the impact of the underlying mortality table. The commentator believes that any A/E results crossing time periods where the underlying mortality tables vary greatly cannot be reasonably combined. |
| Response | The reviewers note, in performing mortality studies, the actuary needs to make judgments about which data to use and how to adjust the data and made no change. |
| **Section 3.4.1, Incurred Claims** | |
| Comment | One commentator suggested replacing "Incurred Claims" with "Incurred Deaths" or "Incurred Maturities." |
| Response | The reviewers changed the term to "Incurred Deaths." |
| Comment | One commentator suggested the following: "The actuary should consider whether any IBNR assumption is reasonable based on supporting analysis or lack thereof. If there is no data to support an IBNR assumption, it should be sufficient for the actuary to disclose that they have assumed zero IBNR or provided for a short delay in reporting." |
| Response | The reviewers changed "adjusting" to "whether to adjust." |
| **Section 3.4.2, Multiple Life Expectancies for a Single Life** | |
| Comment | One commentator asked if the method used should be consistent with the method used in analyses of life-insurance mortality experience. The commentator suggested the standard state whether the method is or is not consistent and explain and justify the reason if it is different. |
| Response | There are several methods used in the analyses of life-insurance mortality experience. In addition, there are several issues that are unique to the life settlements market that might necessitate using a different method. For these reasons, the reviewers decided to not require the explanation of any differences and made no change. |
| **Section 3.4.3, Use of a Modified A/E Analysis** | |
| Comment | One commentator suggested adding the phrase, "the modifications made shall be explicitly and completely disclosed and," after the introductory phrase, "If a modified A/E method is used." |
| Response | The reviewers believe section 4 appropriately addresses the concerns of the commentator and made no change. |
| **SECTION 4. COMMUNICATIONS AND DISCLOSURES** | |
| Comment | One commentator suggested that section 4.2 be presented as section 4.1 and the section 4.1 be moved to section 4.2 and titled "Disclosures under other Actuarial Communications utilizing Life Settlement Mortality." |
| Response | The reviewers believe disclosures for all situations should be listed first and disclosures for specific situations should be listed second. The disclosures related to ASOP No. 41 were moved to the new section 4.3. |

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| Comment | One commentator suggested section 4.1 and section 4.2 be renumbered 4.1.1, 4.1.2, etc. |
| Response | The reviewers disagree and note the numbering system follows standard ASOP formatting, and made no change. |
| **Section 4.1, Disclosures** | |
| Comment | One commentator suggested an item be added to section 4.1 for something like "the method used for interpreting and utilizing results from LE Providers." |
| Response | The reviewers revised section 4.1(a) to require a description of how the mortality assumption was developed. |
| Comment | One commentator suggested that item 4.1(c) (incurred claims and IBNR) be removed since it will generally apply only to A/E calculations. |
| Response | The reviewers believe the disclosure is necessary for more than just A/E calculations and made no change. |
| Comment | One commentator believed item 4.1(e) should reflect purchases and sales. |
| Response | The wording was adjusted to reflect market participants. |
| Comment | On 4.1(e), one commentator stated "This is an area that deserves special caution. The actuary should clearly communicate that he/she cannot assign a 'market value' or determine a 'market mortality assumption,' because that will vary widely depending on the outlook of the individual buyer/seller. This additional unknown should be documented with the rationale for the actuary's estimate." |
| Response | The reviewers believe the disclosures discussed in sections 3.4.1 and 4.1.3(d) of ASOP No. 41 regarding risk and uncertainty address the issue raised and made no change. |
| **Section 4.2, Disclosures when Performing an A/E Analysis** | |
| Comment | One commentator suggested adding a requirement to disclose the total A/E results in addition to the durational requirement set forth in 4.2(b). |
| Response | The reviewers do not believe this should be a requirement and made no change. |
| Comment | On 4.2 (e), one commentator stated that the purpose of the historical A/E comparison is not clear from the ASOP. Such a comparison may not be useful for the actuary's or client's purposes. The ASOP should recommend, but not require, a historical A/E analysis for comparative purpose only if it meets the purpose of the analysis. |
| Response | The reviewers revised the wording to allow the actuary to disclose that historical A/E analysis results are not being presented and why. |
| **APPENDIX: BACKGROUND AND CURRENT PRACTICE** | |
| Comment | One commentator suggested removing the last sentence in the paragraph on "Adjusted to Current Methodology A/E analysis" (see Current Practices section of Appendix 1) where it is stated that an Adjusted analysis "attempts to address the question of how accurate the LE provider's estimates are today." The commentator believes this statement inappropriately implies that historical A/E analyses are not relevant in addressing how accurate the LE provider's estimates are today. |
| Response | The reviewers agree and revised the last sentence to address the commentator's concern. |
| Comment | One commentator suggested deleting the statement regarding "the main deficiency" of using the "Latest submission" (see Current Practices) method. The commentator believes this reflects an inappropriate bias. |
| Response | The reviewers agree and deleted the last two sentences. |

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| Comment | One commentator stated that the discussion in the background section is limited to buyers of policies and suggested that this be adjusted to reflect buyers "and sellers." |
| Response | The reviewers believe the discussion provides a good overview of the market and made no change. |
| Comment | One commentator suggested that the background section reflect the fact that part of the problem with the life settlement market is that the participants in the market often do not utilize qualified actuaries at all or may utilize non-credentialed actuaries. |
| Response | The reviewers believe the suggested statement is not appropriate in this particular document and made no change. |
| Comment | One commentator was surprised that the standard does not comment on the industry practice of measuring LEs in months rather than years. The commentator feels that this industry practice gives the non-actuarial investor community a sense of spurious accuracy. |
| Response | The reviewers agree that the industry practice of measuring LEs in months should be mentioned and adjusted the wording in the background section. |

ACTUARIAL STANDARDS BOARD

**Actuarial Standard**
**of Practice**
**No. 49**

# Medicaid Managed Care Capitation Rate Development and Certification

**Developed by the**
**Medicaid Rate Setting and Certification Task Force of the**
**Health Committee of the**
**Actuarial Standards Board**

**Adopted by the**
**Actuarial Standards Board**
**March 2015**

**Doc. No. 179**

## T A B L EO FC O N T E N T S

## APPENDIXES

# ASOP No. 49—March 2015

March 2015

**TO:** Members of Actuarial Organizations Governed by the Standards of Practice of the Actuarial Standards Board and Other Persons Interested in Medicaid Managed Care Capitation Rates and their Certification

**FROM:** Actuarial Standards Board (ASB)

**SUBJ:** Actuarial Standard of Practice (ASOP) No. 49

This document contains the final version of ASOP No. 49, *Medicaid Managed Care Capitation Rate Development and Certification*.

## Background

This ASOP was developed to establish guidance for actuaries preparing, reviewing, or giving advice on capitation rates for Medicaid programs, including those certified in accordance with 42 CFR 438.6(c). Since the federal regulations took effect, actuaries have used various methods to prepare the capitation rates. This ASOP incorporates the appropriate aspects of these methods to establish guidance and considerations in the rate development process.

## Exposure Draft

In December 2013, the ASB approved the exposure draft with a comment deadline of May 15, 2014. Twenty-six comment letters were received and considered in making changes that are reflected in this final ASOP. For a summary of issues contained in these comment letters, please see appendix 2.

The significant changes made to the final standard in response to the comment letters are as follows:

1. Section 1.2 was edited to clarify situations when this ASOP applies.

2. Language was added to section 3.1 to require the actuary to have knowledge of and understand the requirements of 42 CFR 438.6(c).

3. Section 3.2.2 was modified to add a reference to ASOP No. 12, *Risk Classification,* and to clarify that capitation rates may vary by Medicaid eligibility groups.

4. In section 3.2.12(a)(1) was changed from “should” to “may.”

The ASB voted in March 2015 to adopt this standard.

**ASOP No. 49—March 2015**

Task Force on Medicaid Rate Setting and Certification

Robert M. Damler, Chairperson

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Michael E. Nordstrom
David Ogden
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Actuarial Standards Board

Patricia E. Matson, Chairperson

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*The Actuarial Standards Board (ASB) sets standards for appropriate actuarial practice in the United States through the development and promulgation of Actuarial Standards of Practice (ASOPs).These ASOPs describe the procedures an actuary should follow when performing actuarial services and identify what the actuary should disclose when communicating the results of those services.*

# ACTUARIAL STANDARD OF PRACTICE NO. 49

# MEDICAID MANAGEDCARE CAPITATION RATE DEVELOPMENT AND CERTIFICATION

# STANDARD OF PRACTICE

## Section 1. Purpose, Scope, Cross References, and Effective Date

1.1 Purpose—This actuarial standard of practice (ASOP) provides guidance to actuaries when performing professional services related to Medicaid (Title XIX) and Children's Health Insurance Program (CHIP or Title XXI) managed care **capitation rates**, including a certification on behalf of a state to meet the requirements of 42 CFR 438.6(c).

1.2 Scope—This standard applies to actuaries performing professional services related to Medicaid managed care **capitation rates** including, but not limited to, the following:

a. certification on behalf of a state to meet the requirements of 42 CFR 438.6(c);

b. **capitation rate** bid or rate acceptance; and

c. department of insurance **capitation rate** filing.

This standard also applies to actuaries performing professional services related to managed care **capitation rates** for CHIP. Throughout this standard the term "Medicaid" also refers to CHIP.

If the actuary departs from the guidance set forth in this standard in order to comply with applicable law (statutes, regulations, and other legally binding authority) or for any other reason the actuary deems appropriate, the actuary should refer to section 4.

1.3 Cross References—When this standard refers to the provisions of other documents, the reference includes the referenced documents as they may be amended or restated in the future, and any successor to them, by whatever name called. If any amended or restated document differs materially from the originally referenced document, the actuary should consider the guidance in this standard to the extent it is applicable and appropriate.

1.4 Effective Date—This standard is effective for actuarial communications issued on or after August 1, 2015.

## Section 2. Definitions

The terms below are defined for use in this actuarial standard of practice.

2.1 Actuarially Sound/Actuarial Soundness—Medicaid **capitation rates** are "**actuarially sound**" if, for business for which the certification is being prepared and for the period covered by the certification, projected **capitation rates** and other revenue sources provide for all reasonable, appropriate, and attainable costs. For purposes of this definition, other revenue sources include, but are not limited to, expected reinsurance and governmental stop-loss cash flows, governmental **risk adjustment** cash flows, and investment income. For purposes of this definition, costs include, but are not limited to, expected health benefits, health benefit settlement expenses, administrative expenses, the cost of capital, and government-mandated assessments, fees, and taxes.

2.2 Base Data—The historical data set used by the actuary to develop the **capitation rates**. The data may be from Medicaid fee-for-service data, **MCO** data, or from a comparable population data source.

2.3 Capitation Rate—A monthly fee paid for each member assigned or each event (for example, maternity delivery) regardless of the number or actual cost of services provided under a system of reimbursement for **MCOs**. **Capitation rates** can vary by member based on demographics, location, covered services, or other characteristics. **Capitation rates** can be structured so that an **MCOs** is fully at risk, or so that an **MCO** shares the risk with other parties.

2.4 Disproportionate Share Hospital (DSH) Payments—Additional amounts paid to hospitals that serve a disproportionally large number of Medicaid or uninsured patients. These payments may be subject to a hospital-specific limit. An annual allotment to each state limits federal financial participation in these payments. These payments are subject to requirements set forth in Section 1923(i) of the Social Security Act.

2.5 Encounter Data—Information about an interaction between a provider of health care services and a member that is documented through the submission of a claim to an **MCO**, and shared between the **MCO** and the state Medicaid agency.

2.6 Enhanced or Additional Benefits—Benefits offered by **MCOs** to their Medicaid members that are above and beyond the benefits offered by the state Medicaid plan. Common examples are adult dental services, non-emergency transportation, and adult vision services.

2.7 Federally Qualified Health Center (FQHC)—An organization that (1) receives grants under Section 330 of the Public Health Service Act; (2) does not receive a grant under the Section 330 of the Public Health Service Act, but otherwise meets all requirements to receive such a grant; or (3) is an outpatient health clinic associated with tribal or Urban Indian Health Organizations (UIHO). The organization must have also applied for recognition, and been approved as a federally qualified health center for Medicare and Medicaid, as described in Sections 1861(aa)(3) and 1905(l)(2) of the Social Security Act. Payments to these organizations are subject to requirements set forth in Section 1902(bb) of the Social Security Act.

2.8 Intergovernmental Transfer (IGT)—A transfer of public funds between governmental entities (for example, county government to state government or state university hospital to state Medicaid agency).

2.9 Managed Care Organization (MCO)—The entity contracting with the state Medicaid agency to provide health care services for selected subsets of the Medicaid population.

2.10 Medical Education Payments—Payments for graduate medical education as part of the rate structure for inpatient hospital payments or as supplemental payments under 42 CFR 447.272. These payments may include direct graduate medical education (GME) or indirect medical education (IME) costs. These payments may be included as part of Medicaid managed care **capitation rates** or may be made directly to providers for managed care enrollees.

2.11 Minimum Medical Loss Ratio—A provision that requires the **MCO** to use no less than a stated portion of its earned premium for defined medical or care management expenditures.

2.12 Performance Incentive—A payment mechanism under which an **MCO** may receive funds in addition to the **capitation rates** for meeting targets specified in the contract between the state and the **MCO**.

2.13 Performance Withhold—An amount included in the **capitation rates** that is paid if the **MCO** meets certain state requirements that may be related to quality or operational metrics. The amount may be withheld or paid up front with the monthly **capitation rate**.

2.14 Rating Period—The time period for which managed care Medicaid **capitation rates** are being developed.

2.15 Risk Adjustment—The process by which relative risk factors are assigned to individuals or groups based on expected resource use and by which those factors are taken into consideration and applied.

2.16 Rural Health Clinic (RHC)—A clinic that meets certain requirements for providing primary care services in specific areas, as outlined in the Public Health Service Act and defined in Section 1905(l)(1) of the Social Security Act. Medicaid payment rates to RHCs may be specified in applicable law.

2.17 State Plan Services—The benefits provided to Medicaid beneficiaries who are eligible under a qualifying category of Medicaid assistance in a state.

## Section 3. Analysis of Issues and Recommended Practices

3.1 Overview—An actuary may be developing, certifying, or reviewing Medicaid Managed Care **capitation rates** on behalf of a state Medicaid agency or an **MCO**. When certifying

whether **capitation rates** meet the requirements of 42 CFR 438.6(c) or reviewing such a certification, the actuary must-have knowledge and understanding of those requirements.

Title 42 CFR 438.6(c) requires that **capitation rates** paid by the state to the **MCOs** be certified as **actuarially sound**. The soundness opinion applies to all contracted **capitation rates**. However, the actuary is not certifying that the underlying assumptions supporting the certification are appropriate for an individual **MCO**.

An actuary providing actuarial services for a contracting **MCO** may be required to develop and submit **capitation rates** to the state Medicaid agency for a **rating period**. While the federal regulation 42 CFR 438.6(c) does not extend to an **MCO** actuary, the **MCO** actuary may be required under the terms of a proposal or contract to submit an actuarial opinionfor the **capitation rates** that may or may not indicate compliance with 42 CFR 438.6(c).

3.2 Medicaid Managed Care Capitation Rate Development Process and Considerations—The actuary should address the following when developing **capitation rates**.

3.2.1 Form of the Capitation Rates (Single Rate or Capitation Rate Ranges)—The **capitation rate** certification may apply to a single point estimate **capitation rate** or a range of **capitation rates**. If a range of **capitation rates** is prepared, the contracted rates with an **MCO** may be at either end of the range or a point within the range. The **capitation rates** may vary by **MCO**.

3.2.2 Structure of the Medicaid Managed Care Capitation Rates—**Capitation rates** are usually separately developed and paid in individual **capitation rate** cells based on characteristics that cause costs to differ materially. Examples of these characteristics include age, gender, qualifying event (for example, maternity delivery), geographic region, Medicaid eligibility group, eligibility for Medicare benefits, diagnosis or **risk adjustment** factors, and **MCO** differences. In determining the rating structure, the actuary should consider how well the structure aligns capitation revenue and **MCO** risk as well as the complexity of the rating structure. A certification of the **capitation rates** under 42 CFR 438.6(c) applies to each of the individual **capitation rate** cells. For further guidance, see ASOP No. 12, *Risk Classification*.

3.2.3 Rebasing and Updating of Rates—When developing **capitation rates** for subsequent **rating periods**, the actuary should either rebase the rates or update existing rates. Rebasing of rates generally refers to using **base data** from a more recent time period to develop **capitation rates** along with updating assumptions used to develop the rates. Updating of rates involves adjusting existing rates to reflect the impacts of any program, benefit, population, trend, or other changes between the **rating period** of the existing rates and the **rating period** of the updated rates.

The actuary should consider the following in making the determination whether to rebase rates or update existing rates: availability of updated data, likely materiality of rebasing, changes in the underlying population, quality of data since the last rebasing, and time elapsed since the last rebasing.

3.2.4 Base Data—The actuary should use **base data** (for example, population, benefits, provider market dynamics, geography) that is appropriate for the program for which **capitation rates** are being developed. The **base data** may span more than one year.

The actuary should use **base data** sources for utilization or unit cost that are relevant to the given Medicaid population and appropriate for the given use. Program-specific historical experience from the following sources are examples of **MCO** data that may meet these criteria:

a. financial reports;

b. summary **encounter data** reports;

c. **encounter data** with payment information;

d. **encounter data** without payment information;

e. sub-capitation payment information; and

f. provider settlement payment reports.

If the managed care program is new or if previously carved-out services are to be included in the rates, the actuary may need to use alternative data sources. Such alternative data sources typically include fee-for-service experience and experience from other states, although other sources may be appropriate. That experience may be available in several forms, including the following:

1. financial reports;

2. summary claims data reports;

3. raw claims data with payment information; and

4. state-specific provider settlement payment reports.

If the covered population is new, the actuary should identify data sources for similar populations and make appropriate adjustments.

3.2.5 Covered Services—When developing capitation rates under 42 CFR 438.6(c), the actuary should reflect covered services for Medicaid beneficiaries, as defined in

the contract between the state and the **MCOs**, which may include cost effective services provided in lieu of **state plan services**.

When developing capitation rates for other purposes, the actuary should reflect the cost of all services, including **enhanced or additional benefits**, provided to Medicaid beneficiaries.

3.2.6 Special Payments—Payments in addition to the Medicaid fees may be made by states directly or through the MCOs to providers of Medicaid services. These payments are usually made to hospitals, but other provider types may also qualify for such payments. These payments are sometimes reciprocation for the provider paying a special tax or assessment fee.

The actuary should identify any special payments to providers (for example, supplemental payments or bonuses) and include these payments in development of the **capitation rates** in a manner that reflects the payment policy for these special payments in the **rating period**.

3.2.7 Base Data Period Adjustments—The actuary should consider **base data** period adjustments of the following three types:

a. Retroactive Period Adjustments—The retroactive period adjustments reflect changes that occurred during the **base data** period to standardize the data over the **base data** period.

b. Interim Period Adjustments—The interim period adjustments reflect changes that occurred between the **base data** period and the **rating period**.

c. Prospective Period Adjustments—The prospective period adjustments reflect changes that will occur in the **rating period**.

3.2.8 Other Base Data Adjustments—The actuary should consider other **base data** adjustments, which may include the following:

a. Missing Data Adjustment—Circumstances that may cause data to be missing include, but are not limited to, the following:

1. certain claims are not processed through the same system as the **base data**;

2. Medicaid fee-for-service data may not include all services or expenses to be covered by the **capitation rate**; or

3. Medicaid **encounter data** may not reflect services that are sub-capitated and not reported through the **encounter data** system.

b. Incomplete Data Adjustment—The incomplete data adjustment reflects claims that were in course of settlement, claims that were incurred but not reported, or amounts that are due for reinsurance or claim settlements.

c. Population Adjustment—The population adjustment modifies the **base data** to reflect differences between the population underlying the base period and the population expected to be covered during the **rating period**.

d. Funding or Service Carve-Out Adjustments—The funding or service carve-outs are not the financial responsibility of the **MCO**. Funding carve-outs may include graduate **medical education payments**, **disproportionate share hospital payments**, or provider taxes. Service carve-outs reflect services that will not be covered by the **capitation rate**.

e. Retroactive Eligibility Adjustments—Medicaid beneficiaries are often provided retroactive eligibility coverage for a period prior to submitting an application for Medicaid coverage. The retroactive eligibility adjustment reflects the exclusion of periods of retroactive eligibility, if any, that are not the responsibility of the **MCO**.

f. Program, Benefit, or Policy Adjustments—The program, benefit, or policy adjustments reflect differences in benefit or service delivery requirements between the base period and the **rating period** that impact the financial risk assumed by the **MCO**.

g. Data Smoothing Adjustments—The data smoothing adjustments address anomalies or distortions in the **base data**, such as large claims or limited enrolment.

3.2.9 Claim Cost Trends—The actuary should include appropriate adjustments for trend and may consider a number of elements in establishing trends in utilization, unit costs, or in total. Medicaid utilization trend rates may be particularly affected by changes in demographics and benefit levels, and by policy or program changes. Medicaid unit cost trends may be particularly affected by changes in state-mandated reimbursement schedules (if applicable), Medicaid fee-for-service fee schedules, and provider contracting performed by the **MCOs**. The trend assumption should not include adjustments captured elsewhere in the capitation rate development.

3.2.10 Managed Care Adjustments—The actuary may apply managed care adjustments based on the assumption that the program will move from the level of managed care underlying the **base data** to a different level of managed care during the **rating period**. The adjustments may be to utilization, unit cost, or both, and the impact of the adjustments may be either an increase or a decrease to the **base data**. If managed care adjustments are included, the changes reflected in the

adjustments should be attainable in the **rating period**, in the actuary's professional judgment.

The actuary should consider the following when reviewing the need for and developing the managed care adjustments:

a. state contractual and operational requirements, and relevant laws and regulations;

b. current characteristics of the provider markets; and

c. the maturity level of the managed Medicaid program.

3.2.11 Non-Claim Based Medical Expenditures—The actuary should consider Medicaid-specific payments that are not included in the **base data** or that are included in the **base data** but for which the historical costs do not represent future costs. The actuary should determine whether these amounts will be an expense to the **MCOs**, and if so, how the amounts should be reflected. These types of payments include, but are not limited to, the following:

a. **disproportionate share hospital payments**;

b. **federally qualified health centers** or **rural health clinics** supplemental settlement payments;

c. **medical education payments**;

d. **intergovernmental transfers**; and

e. pharmacy rebates anticipated to be collected by the **MCO**.

3.2.12 Non-Medical Expenses—The actuary should include amounts for appropriate non-medical expenses in the development of the **capitation rates**. The non-medical expenses may vary by **MCO**.

a. Administration—The actuary should include a provision for administrative expenses appropriate for the Medicaid managed care business in the state.

1. Determination of Administrative Expenses—In determining administrative expenses, the actuary may take into account relevant characteristics and functions of the **MCOs** and the Medicaid program, such as the following:

i. overall size of the **MCO** across all lines of business;

ii. age and length of time participating in Medicaid;

iii. organizational structure; and

iv. demographic mix of enrollees.

2. Types of Administrative Expenses—Appropriate types of administrative expenses include, but are not limited to, the following:

i. marketing;

ii. claims-processing;

iii. medical management costs including those required to achieve savings from fee-for-service or prior periods assumed in the medical cost targets; and

iv. general corporate overhead.

b. Underwriting Gain—The actuary should include a provision for underwriting gain, which is typically expressed as a percentage of the premium rate, to provide for the cost of capital and a margin for risk or contingency. The underwriting gain provision provides compensation for the risks assumed by the **MCO**. These risks may include insurance, investment, inflation, and regulatory risks, as well as risks associated with social, economic, and legal environments. The actuary should consider the effect of any risk sharing arrangements discussed in section 3.2.14, and **performance withholds** and incentives discussed in section 3.2.15.

The methods used to develop the underwriting gain provision of the **capitation rate** should be appropriate to the level of capital required and the type and level of risk borne by the **MCO**. The actuary may reflect investment income in establishing the underwriting gain component of the **capitation rate**, although an explicit adjustment is not required. Elements of investment income that the actuary may reflect include investment income from insurance operations and investment income on capital and underlying cash flow patterns.

An actuary working on behalf of an **MCO** may determine that a negative underwriting gain is appropriate for that plan's circumstances. In this case, the negative underwriting gain should be disclosed in the actuarial communication.

c. Income Taxes—The actuary should consider the effect of expected income taxes on the underwriting gains and investment income retained by the **MCO**.

d. Taxes, Assessments, and Fees—The actuary should include an adjustment for any taxes, assessments, or fees that the **MCOs** are required to payout of the **capitation rates**. If the tax, assessment, or fee is not deductible as an expense for corporate tax purposes, the actuary should apply an adjustment to reflect the costs of the tax. Taxes, assessments, and fees may differ among the **MCOs** in the program. The actuary preparing a certification under 42 CFR 438.6(c) should consider the need to adjust **capitation rates** for each **MCO** to reflect each **MCO's** expected expenses for these items.

3.2.13 Risk Adjustment—An actuary working on behalf of the state should determine whether to adjust capitation payments to different **MCOs** by using a **risk adjustment** methodology. Considerations in making this determination include program enrollment procedures that may affect differences in risk across **MCOs** or among the populations used to develop the rates and to which the rates will be applied, data availability and quality, timing, and other practical considerations including cost. ASOP No. 45, *The Use of Health Status Based Risk Adjustment Methodologies*, provides further guidance. Risk-adjusted rates that may be developed from **actuarially sound** base rates and application of an appropriate risk adjustment method are considered **actuarially sound**, even if the resulting rates fall outside of the unadjusted rate ranges or vary from the single point rates.

The actuary, whether working on behalf of the state or an **MCO**, should understand and consider the potential impact of the **risk adjustment** methodology being used, if any, on the **capitation rate**.

3.2.14 Reinsurance, Risk Corridors, and Other Risk Sharing Arrangements—The actuary should consider the effect of any risk sharing arrangements between the **MCO** and the state Medicaid agency or the federal government.

The actuary should consider how payments related to risk sharing arrangements have been reported in the base period data, how these payments are to be estimated in the future, and how these payments will be reflected in the **capitation rates**.

3.2.15 Performance Withholds and Incentives—The actuary should consider how the existence of the withholds and incentives will affect the plan costs, including claims and administration costs. The **capitation rates** should reflect the value of the portion of the withholds for targets that the **MCOs** can reasonably achieve. The **capitation rates** should not reflect the value of incentives. The actuary should also consider any limitations to the amount of incentive payments or withholds specified in legislative regulations or guidance.

3.2.16 Minimum Medical Loss Ratios—The actuary should consider governmental and contractual **minimum medical loss ratio** requirements as well as the sharing of gains or losses. Such provisions may affect the underwriting gain provision component of the **capitation rates**.

3.2.17 State Initiatives—In setting capitation rates, the actuary should only include the impact of state initiatives that are supported by corresponding cost saving policies including, but not limited to, program changes or reimbursement changes.

3.2.18 Inaccurate or Incomplete Information Identified after Opinion or Rate Certification—If the actuary determines after the opinion or certification was issued that he or she used inaccurate or incomplete information, the actuary should notify the principal if, in the actuary's professional judgment, the new information is material to the **actuarial soundness** of the rates and is not inherent in the assumptions already included in the rates.

3.3 Qualified Opinion on Actuarial Soundness—The actuary should provide a qualified opinion if, in the actuary's judgment, the rates are not **actuarially sound**. Further, the opinion should be qualified if a negative underwriting gain is determined to be appropriate for a specific plan's circumstance by an actuary working on behalf of an **MCO**.

3.4 Documentation—The actuary should document the methods, assumptions, procedures, and sources of the data used. The documentation should be in a form such that another actuary qualified in the same field could assess the reasonableness of the work. The actuary should consider documentation to address the Centers for Medicare & Medicaid Services' regulations specific to Medicaid managed care **capitation rate** development and certification. For further guidance, see ASOP No. 23, *Data Quality*; ASOP No. 25, *Credibility Procedures*; and ASOP No. 41, *Actuarial Communications.*

## Section 4. Communications and Disclosures

4.1 Communications—When issuing actuarial communications under this standard, the actuary should refer to ASOP No. 41.

4.2 Disclosures—The actuary should include the following, as applicable, in an actuarial communication:

a. as required by 42 CFR 438.6(c), a statement that **capitation rates** provided with a rate certification are considered "**actuarially sound**," according to the following criteria:

1. the **capitation rates** "have been developed in accordance with generally accepted actuarial principles and practices";

2. the **capitation rates** "are appropriate for the populations to be covered, and the services to be furnished under the contract"; and

3. the **capitation rates** "have been certified, as meeting the requirements of this paragraph [42 CFR 438.6(c)], by actuaries who meet the *Qualification Standards* established by the American Academy of Actuaries and follow the practice standards established by the Actuarial Standards Board."

b. the definition of "**actuarial soundness**";

c. disclosure of any items causing the opinion to be qualified such as the use of a negative underwriting gain by an actuary working on behalf of a Medicaid **MCO**;

d. the disclosure in ASOP No. 41, section 4.2, if any material assumption or method was prescribed by applicable law (statutes, regulations, and other legally binding authority);

e. the disclosure in ASOP No. 41, section 4.3., if the actuary states reliance on other sources and thereby disclaims responsibility for any material assumption or method selected by a party other than the actuary; and

f. the disclosure in ASOP No. 41, section 4.4, if, in the actuary's professional judgment, the actuary has otherwise deviated materially from the guidance of this ASOP.

## Appendix1

## Background and Current Practices

*Note*: This appendix is provided for informational purposes only and is not part of the standard of practice.

### Background

Medicaid is a program that pays for health care services for certain low-income persons in the United States and its Territories, as authorized by Title XIX of the Social Security Act. The federal and state governments cooperatively administer Medicaid. The Centers for Medicare & Medicaid Services (CMS) is the agency charged with administering Medicaid on behalf of the federal government. The federal government establishes certain requirements for Medicaid, and the states administer their own programs. The federal government and the states share the responsibility for funding Medicaid.

Medicaid programs were originally fee-for-service (FFS) programs in which the state paid the providers directly. In the 1980s, some states began to contract with managed care organizations (MCOs) to provide health care services for selected subsets of the Medicaid population. In some cases, states may need to obtain a CMS waiver in order to waive certain Medicaid regulations and contract with MCOs. In many states, the state or its contractor develops capitation rates that are offered to the MCOs, rather than the MCOs proposing rates to the state. Under this arrangement, typically the MCOs may accept the rates or decline to participate in the program, though some negotiation may be possible.

Beginning in August 2003,the capitation rates paid by the state to the MCOs must be certified as actuarially sound under 42 CFR 438.6(c). The actuary performing the rate certification process may be an employee of the state Medicaid agency or contracted as a consulting actuary. Normally, the certifying actuary will not have as specific knowledge of each MCO's operations and experience as an actuary working on behalf of the MCO. The soundness certification applies to all contracted capitation rates. However, the actuary is not certifying that the capitation rates are appropriate for an individual MCO.

Since the federal regulations took effect, actuaries have used various methods to prepare the capitation rates. This ASOP has been developed to incorporate the appropriate aspects of these methods to establish guidance and considerations in the rate development process.

## Current Practices

The current Medicaid capitation rate setting and certification methodology varies state by state, but actuaries across the country use many of the considerations outlined in the ASOP. Actuaries rely on the August 2005 practice note and traditional health care actuarial principles in the development of the actuarially sound capitation rates.

In many states, the capitation rates are developed independently by the state Medicaid agency and the certifying actuary. The capitation rates are often offered to the contracting MCO without negotiation, but the contracting MCOs and their actuaries may have the ability to review the capitation rate development and provide comment. Further, a state Medicaid agency may negotiate rates with each MCO based on a rate range or allow a competitive bid. Due to the unique nature of these contracting arrangements, the certifying actuary has a greater responsibility in the determination of the capitation rates (either the point estimates or capitation rate ranges), since the certifying actuary is not directly affiliated with the contracted MCO.

Actuaries rely on data and information provided by the state Medicaid agency, the contracted MCOs, and other publicly available information. Actuaries may publish a data book that outlines the baseline data, adjustments to the baseline data, actuarial assumptions, and the development of capitation rates. Public meetings may be held where the capitation rate development process is presented to the contracted MCOs. Following the public meetings, the MCOs may provide questions to the state Medicaid agency and the certifying actuary regarding the capitation rate development process and assumptions. The certifying actuary reviews the comments and adjusts the capitation rates, if appropriate.

The state Medicaid agency presents the actuarial rate certification and related documentation to CMS for review and approval. CMS may submit questions to the state Medicaid agency and the certifying actuary regarding the capitation rate development and the related contract with the MCOs. The certifying actuary will often provide written responses to CMS.

## Additional Resources

The following resources may assist in furthering actuaries' understanding of the capitation rate development process.

- American Academy of Actuaries, Health Council Practice Note, *Actuarial Certification of Rates for Medicaid Managed Care Programs,* August 2005, http://actuary.org/content/actuarial-certification-rates-medicaid-managed-care-programs

- Centers for Medicare and Medicaid Services, Medicaid website, http://medicaid.gov/

- Medicaid and CHIP Payment and Access Commission (MACPAC), http://www.macpac.gov/

- CMS Medicaid Managed Care Rate Setting Guidance, 2015 http://www.medicaid.gov/medicaid-chip-program-information/by-topics/delivery-systems/managed-care/downloads/2015-medicaid-manged-care-rate-guidance.pdf

- Federal Register / Vol. 67, No. 115 / Friday, June 14, 2002 / Rules and Regulations, page 41097, Sec. 438.6 Contract Requirements (c) Payments under risk contracts,http://www.cms.gov/Regulations-and-Guidance/Regulations-and-Policies/QuarterlyProviderUpdates/downloads/cms2104f.pdf

## Appendix 2

## Comments on the Exposure Draft and Responses

The exposure draft of proposed ASOP, *Medicaid Managed Care Capitation Rate Development and Certification*, was issued in December 2013 with a comment deadline of May 15, 2014. Twenty-six comment letters were received, some of which were submitted on behalf of multiple commentators, such as by firms or committees. For purposes of this appendix, the term "commentator" may refer to more than one person associated with a particular comment letter. The Medicaid Task Force and the Health Committee of the Actuarial Standards Board carefully considered all comments received, and the Health Committee and ASB reviewed (and modified, where appropriate) the changes proposed by the Task Force.

Summarized below are the significant issues and questions contained in the comment letters and the responses.

The term "reviewers" in appendix 2 includes the Task Force, Health Committee, and the ASB. Also, unless otherwise noted, the section numbers and titles used in appendix 2 refer to those in the exposure draft.

| **TRANSMITTAL MEMORANDUM QUESTIONS** | |
|---|---|
| **Question 1: This ASOP has been prepared to apply both to actuaries developing actuarial statements of opinion for a Medicaid MCO and to actuaries developing rate certifications under 42 CFR 438.6(c).Is this appropriate? Or, should the ASOP be limited to actuaries developing rate certifications under 42 CFR 438.6(c)?** | |
| Comment | Several commentators indicated support for both limiting the ASOP to 42 CFR 438.6(c) rate certifications and for applying it to all Medicaid rate setting actuarial opinions; however, the majority of the responses supported having the ASOP apply to all Medicaid rate development statements of actuarial opinion. |
| Response | The reviewers believe that the ASOP provides appropriate guidance and covers appropriate situations involving Medicaid capitation rate development, Medicaid certifications, and Medicaid statements of actuarial opinion. |
| **Question 2: As written, this ASOP applies to Children's Health Insurance Program (CHIP) managed care capitation rate development. Is this appropriate?** | |
| Comment | Several commentators supported having the ASOP apply to CHIP capitation rate development and certification. Additionally, comments were received indicating that the ASOP should also apply to the Medicaid expansion programs. |
| Response | The reviewers retained language indicating applicability of the ASOP to CHIP capitation rate development and certification. The reviewers reviewed the ASOP language to make sure it applies to the appropriate healthcare programs funded under Title XIX (Medicaid) and Title XXI (CHIP). |

| | |
|---|---|
| **Question 3: Is the definition of "actuarially sound/actuarial soundness" in section 2.1 clear?** | |
| Comment | The comments received suggested that the following terms in the "actuarially sound/actuarial sound" definition be separately defined: "revenue in aggregate"; marginally or fully-loaded administrative expenses; reinsurance cash flows; underwriting gain; investment income; and taxes. |
| Response | The reviewers made no change to the definition of "actuarial soundness." The reviewers modified the definition of "underwriting gain" in section 3.2.11(b).The reviewers determined the other suggested definitions were not needed but in some cases the guidance in the standard was clarified. |
| Comment | Commentators suggested that the terms "generally accepted actuarial practices" and "certified by an actuary who meets the qualification standard" should be included in the definition of "actuarial soundness." |
| Response | The reviewers believe that the definition of "actuarial soundness" is appropriate for this standard and does not need to include these additional terms. |
| Comment | Several commentators suggested that the word "attainable" is insufficiently described. |
| Response | The reviewers determined that further description of the word "attainable" would be overly prescriptive and made no change. |
| **Question 4: Is section 3.2.16, Inaccurate or Incomplete Information Identified after Opinion or Rate Certification, which discusses the actions required of the certifying actuary if the underlying data is identified to be inaccurate or incomplete, clear and appropriate?** | |
| Comment | Commentators suggested that additional information should be provided regarding who the actuary should notify if the actuary determines that the capitation rates should be changed due to inaccurate or incomplete data, to include CMS or MCOs. |
| Response | The reviewers disagree and believe that the requirement to provide notice to the principal is sufficient and, therefore, made no change. |
| Comment | Commentators suggested providing clear guidelines on a process for reporting inaccuracies and including the new or corrected information in the rate development, and increasing transparency when this situation arises and the rates are corrected. |
| Response | The reviewers disagree that the ASOP should specify such a process and, therefore, made no change. |
| Comment | Commentators suggested providing MCOs with a process for sending information to the actuary about errors in the data. |
| Response | ASOPs provide guidance for actuaries, not organizations. The reviewers disagree that the ASOP should specify such a process and, therefore, made no change. |
| Comment | Two commentators were concerned that the term "incomplete" would be misinterpreted to mean that the actuary would need to change the rates due to prospective assumptions not equaling actual assumptions. |
| Response | The reviewers believe that the ASOP appropriately differentiates between incomplete data and prospective assumptions and, therefore, made no change. |
| Comment | Two commentators did not understand the timing around making a correction given the words "If prior to issuance..." in the section. |
| Response | The reviewers revised this section to address this comment. |

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| **Question 5: Does the ASOP restrict practice inappropriately?** | |
| Comment | Most commentators stated that the ASOP does not restrict practice inappropriately. Two commentators thought it restricted practice if it applies to actuaries that develop rates outside of 42 CFR 438.6(c). One commentator felt that the guidelines around development of the administrative components of the rates were too prescriptive. |
| Response | The reviewers made some revisions to the guidance to address the comments expressing concern regarding inappropriate restriction of practice. |
| **Question 6: Does this ASOP provide sufficient guidance for actuaries practicing in these areas?** | |
| Comment | Several commentators indicated that the ASOP provided sufficient guidance and some that indicated the ASOP did not provide sufficient guidance. Where commentators indicated the ASOP did not provide sufficient guidance, some provided general recommendations while others provided more specific recommendations. |
| Response | While some commentators indicated that the ASOP did not provide sufficient guidance, in most cases they provided specific comments on where they believed additional guidance was necessary. The reviewers have addressed those comments in the relevant sections. |
| **Question 7: Does this ASOP provide sufficient guidance to actuaries in identifying and addressing potential inconsistencies in the expectations of actuaries working for Medicaid MCOs and those actuaries working for State Medicaid Agencies?** | |
| Comment | Commentators were divided in their response to this question. Several commentators believed that the ASOP did provide sufficient guidance on this topic. Several other commentators believed that the ASOP should provide additional guidance, either generally or in specific sections. Several other commentators believed that the ASOP did not provide sufficient guidance, but that the ASOP should be limited to actuaries working for state Medicaid agencies and thus did not need to provide additional guidance. |
| Response | The reviewers determined that the ASOP should apply to both actuaries working for Medicaid MCOs and actuaries working for state Medicaid agencies. The reviewers made clarifications and modifications in relevant sections in response to the comments received. |
| Comment | Several commentators felt that the ASOP could go further in addressing these differences. One commentator asked if there could be an illustration of circumstances when the MCO actuary is not certifying compliance with 42 CFR 438.6(c) and is not bound by the ASOP; and sought clarification of whether or not the MCO actuary needed to comply with the ASOP when completing a certification. Another commentator suggested further guidance on issues for actuaries working for state Medicaid agencies. |
| Response | The reviewers note the MCO actuary would be required to comply with the ASOP regardless of whether or not the actuary is completing a certification related to the 42 CFR 438.6(c). The reviewers modified the scope section by adding examples of situations to which the ASOP applies. |
| **SECTION 1. PURPOSE, SCOPE, CROSS REFERENCES, AND EFFECTIVE DATE** | |
| **Section 1.1, Purpose** | |
| Comment | Several commentators questioned the applicability of the ASOP to various populations including: the Aged, Blind and Disabled - SSI population, ACA Medicaid expansion populations, and Medicare-Medicaid dual integration populations. |
| Response | The reviewers reviewed the ASOP language to make sure it applies to the appropriate healthcare programs funded under Title XIX (Medicaid) and Title XXI (CHIP) and made no change. |

| SECTION 2. DEFINITIONS | |
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| **Section 2.3, Capitation Rate** | |
| Comment | One commentator mentioned the particular situation in Minnesota where risk is shared with providers. The suggestion was made to add a phrase to the end of the definition "or with providers." |
| Response | The reviewers agree and modified the definition. |
| **Section 2.8, Intergovernmental Transfers (IGTs)** | |
| Comment | One commentator recommended that the ASOP define medical and non-medical IGTs and to consider whether or not the actuary should be required to report certain IGTs separately if they increase the federal government or state share of Medicaid costs. |
| Response | The reviewers believe this type of reporting is beyond the scope of the standard and made no change. |
| **Section 2.10, Medical Education Payments** | |
| Comment | One commentator suggested noting that medical education payments may be made directly from the state to the providers. |
| Response | The reviewers believe that the definition addresses this situation and made no change. |
| Comment | One commentator suggested expanding this section to discuss all supplemental payments and not just medical education payments. |
| Response | The reviewers note that section 3.2.6, Special Payments, was modified to include supplemental payments as one example of special payments. The reviewers believe the revised section appropriately covers special payments, including supplemental payments. |
| **Section 2.15, Risk Adjustment** | |
| Comment | One commentator wanted the definition of "risk adjustment" expanded to include capitation rate structural elements used such as maternity delivery case rate payments. |
| Response | The reviewers believe this is addressed in section 3.2.2, Structure of the Medicaid Managed Care Capitation Rates, as amended, and made no change to section 2.15. |
| **Section 2.17, State Plan Services** | |
| Comment | Several commentators requested clarification on definitions related to "state plan services," "covered services," and "in-lieu-of services." |
| Response | The reviewers modified section 3.2.5, Covered Services, to provide additional clarity. |
| **SECTION 3. ANALYSIS OF ISSUES AND RECOMMENDED PRACTICES** | |
| **Section 3.1, Overview** | |
| Comment | Several commentators recommended that language be added stating that the rates [under 42 CFR 438.6 (c)] should be appropriate for each individual MCO, with one commentator stating that such appropriateness should be achieved using risk adjustment. |
| Response | The reviewers note that certification of capitation rates under 42 CFR 438.6 (c) for individual MCOs is allowed under this standard but do not believe it should be required by the standard. Therefore, no change was made. |
| Comment | One commentator recommended that the ASOP clarify that the actuary may, in some circumstances, be certifying different rates by MCO. |
| Response | The reviewers agree and believe the standard makes clear this is permitted and made no change. |
| Comment | One commentator recommended that the ASOP explicitly prohibit actuaries from considering state budgetary limitations when setting rates. |
| Response | The reviewers have added additional guidance related to state initiatives in section 3.2.17. |

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| **Section 3.2.1, Form of the Capitation Rates (Single Rate or Capitation Rate Ranges)** | |
| Comment | Several commentators recommended that the ASOP state or reinforce that the assumptions used to develop rates at each end of the rate range should be attainable and consider the interdependence of various assumptions and not just represent an aggregation of the best or worst case scenarios for each rating variable. |
| Response | The reviewers believe that the definition of actuarial soundness addresses this issue and made no change. |
| Comment | One commentator recommended that the rate range width should be required to be disclosed. |
| Response | The reviewers believe that requiring such a disclosure is beyond the scope of this ASOP and made no change. |
| Comment | One commentator recommended defining the midpoint of the rate range as the best estimate, and several commentators recommended that further requirements be added to inform the principal (state or MCO) of the effect of the choice of the rate within the rate range. |
| Response | The reviewers believe such a change would not be appropriate and made no change. |
| Comment | One commentator recommended that the ASOP clarify that maternity case rate payments and other event based payments are covered by this ASOP. |
| Response | The reviewers agree and have updated section 3.2.2, Structure of the Medicaid Managed Care Capitation Rates, to also include event based payments. |
| Comment | One commentator recommended clarifications around assumptions specific to geographic areas and that administrative expenses may be higher on the low end of the rate range than on the high end of the rate range. |
| Response | The reviewers believe that the definition of actuarial soundness addresses this issue and made no change. |
| **Section 3.2.2, Structure of the Medicaid Managed Care Rates** | |
| Comment | Several commentators recommended that section 3.2.2 clarify that event based (i.e., case rate) payments are also capitation rates. |
| Response | The reviewers agree that adding event based payments to this section would be helpful and updated the language. |
| Comment | One commentator recommended that section 3.2.2 reference ASOP No. 12, *Risk Classification*. |
| Response | The reviewers agree that such reference would be helpful and added it. |
| Comment | One commentator recommended that the list of examples should include Medicaid eligibility groups. |
| Response | The reviewers agree and added “Medicaid eligibility groups” to the list of examples. |
| Comment | One commentator recommended that “MCO differences” be excluded from the list of examples because it implied that MCOs with inefficient cost structures would be rewarded. |
| Response | The reviewers note that the listing only provides examples of characteristics that may affect the rating structure. Therefore, no change was made. |
| Comment | One commentator stated clarification should be provided that not all assumptions need to be developed at the rate cell level, including the standard practice of administrative loads being applied uniformly across rate cells. |
| Response | The reviewers do not believe that further clarification needs to be provided and made no change. |

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| Comment | Several commentators believed that the ASOP would require separate administrative loads be developed for each rate cell and recommended not requiring this. |
| Response | The reviewers believe that the ASOP allows the actuary to use his or her judgment about whether or not a single administrative load, margin, or cost of capital assumption is appropriate for all rate cells. Therefore, no change was made. |
| Comment | One commentator suggested including a definition regarding a "competitive procurement." |
| Response | The reviewers disagree that this definition needs to be included in the ASOP and made no change. |
| Comment | One commentator requested the inclusion of a definition of "covered services." |
| Response | The reviewers believe section 3.2.5, Covered Services, provided appropriate guidance and did not add a definition. However, some clarifications were made to section 3.2.5. |
| Comment | One commentator requested clarification of the terms "should" or "should consider." |
| Response | The reviewers note these terms are discussed in ASOP No. 1, *Introductory Actuarial Standard of Practice*, and made no change. |
| Comment | One commentator stated that language regarding non-state plan services is not appropriate since it is a regulatory issue and not an actuarial requirement. |
| Response | The reviewers believe that the ASOP provides appropriate guidance regarding the treatment of enhanced or additional benefits in the rate certification process and made no change. |
| Comment | One commentator stated that data quality issues should be further addressed in the ASOP. |
| Response | The reviewers believe this ASOP, in conjunction with ASOP No. 23, *Data Quality*, appropriately addresses data quality and made no change. |
| Comment | One commentator stated the need for the ASOP to address the impact on third party vendors or providers that may be receiving a sub-capitation payment from the health plan to the provider. |
| Response | The reviewers believe that financial impacts to third-party vendors are outside the scope of this standard and made no change. |
| **Section 3.2.3, Rebasing and Updating of Rates** | |
| Comment | One commentator suggested that the practice of using interim financial results to develop an experience adjustment was essentially rebasing and this practice should be addressed in section 3.2.3. |
| Response | The reviewers believe that the existing language appropriately addresses such situations, even though it does not specifically describe this practice. Therefore, no change was made. |
| Comment | One commentator suggested that competitive procurements were a form of rebasing and this should be addressed in the rebasing section. |
| Response | The reviewers did not feel that a discussion of competitive procurements was warranted in this section and made no change. |
| Comment | Several commentators recommended that the ASOP require actuaries to consider the adequacy of the rates in total or by rate cell in deciding whether to rebase. |
| Response | The reviewers note that rate adequacy is addressed in other areas of the ASOP and, therefore, made no change. |
| Comment | One commentator recommended that program and benefit changes be a required consideration in rebasing rates. |
| Response | The reviewers believe this is dependent on specific facts and circumstances, and therefore made no change. |

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| Comment | One commentator recommended that capitation rate development, including the rebasing of rates, should occur and be distributed to interested parties well in advance of the effective date of rates. |
| Response | The reviewers believe this recommendation is outside the scope of the ASOP and made no change. |
| **Section 3.2.5, Covered Services** | |
| Comment | One commentator thought that "in lieu of services" should be defined or clarified given that policy and regulatory considerations impact the appropriateness of including these services in the rate development. Another commentator thought that the word "may" should be changed to "should" in the sentence "Non-state plan services may be included in the capitation rate if the service is provided in lieu of a state plan service." Another commentator thought that this section should clarify that costs incurred for the use of innovative, non-traditional programs that obviate the need for or reduce medical costs and improve patient care should be included as covered services. |
| Response | The reviewers note section 3.2.5 was divided into two sections in the final ASOP (section 3.2.5, Covered Services, and new section 3.2.6, Special Payments). The reviewers believe the updated sections are clear and appropriate. |
| Comment | One commentator noted that the sentence "In determining covered services, the actuary should include state plan services that form the basis for the claims experience used to develop the rates" was difficult to read. |
| Response | The reviewers modified section 3.2.5 and believe the guidance on determining covered services is clear. |
| Comment | One commentator indicated that the use of the word "consistently" in the sentence "The actuary should also identify any special payments to providers (for example, supplemental payments or bonuses) and make sure that these payments are handled consistently between the base data and the capitation rates" should be modified to reflect that there are situations where there is a change in practice between the base period and rating period. |
| Response | The reviewers agree and revised this sentence, which is now included in new section 3.2.6, Special Payments. |
| Comment | One commentator noted that the phrase "enhanced or additional services" should be "enhanced or additional benefits" to be consistent with the definitions. |
| Response | The reviewers agree and revised the word "services" to "benefits" in this phrase. |
| Comment | One commentator noted that if a definition for "covered services" is added to the definitions there may be no need to include the words "unless provided for by a waiver" at the end of the section. |
| Response | The reviewers modified section 3.2.5 and believe the guidance on determining covered services is now clear. |
| Comment | One commentator asked for further clarification of state plan, non-state plan and in-lieu-of benefits. |
| Response | The reviewers modified section 3.2.5 and believe the guidance regarding covered services is now clear. |
| Comment | One commentator asked that the ASOP include a definition regarding "critical access hospitals." |
| Response | The reviewers disagree that this definition needs to be included in the ASOP and made no change. |

| **Section 3.2.7, Other Base Data Adjustments** | |
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| Comment | One commentator recommended adding two additional paragraphs related to "area factor adjustments" and "affiliated provider organizations." |
| Response | The reviewers disagree that these items should be included in this section. The reviewers believe sections 3.2.2, Structure of the Medicaid Managed Care Capitation Rates; section 3.2.4, Base Data; and section 3.2.9, Claim Cost Trends, adequately address this issue, and therefore made no change. |
| Comment | One commentator thought that this section should include a section on a base data adjustment for potential increased access in the managed care program versus what was available in a fee-for-service program. |
| Response | The reviewers disagree and believe section 3.2.9 adequately addresses this issue. Therefore, no change was made. |
| Comment | Two commentators thought that this section did not address adjustments needed for missing or incomplete encounter data. |
| Response | The reviewers disagree. The examples in the section 3.2.7(a) are not all-inclusive. Therefore, no change was made. |
| Comment | One commentator proposed expanding section 3.2.7(a)(1) to read "certain claims or a portion of provider payments are not processed through the same system as the base data;" in order to include consideration for bulk retrospective provider payments such as "pay for performance" incentives that may not be attributable to particular claims. |
| Response | The reviewers believe this issue does not warrant a specific example and made no change. |
| Comment | One commentator thought that the sentence "The actuary should consider other base data adjustments, which may include the following:" should be changed to "The actuary should consider other base data adjustments, which should include the following to reflect all applicable costs incurred during the base data period:" |
| Response | The reviewers believe the language as written is clear and made no change. |
| Comment | One commentator recommended that section 3.2.7(f) explicitly mention changes in medical practice, including newly approved drugs and devices, as a situation in which base data and capitation rates may need to be adjusted. |
| Response | The reviewers believe this issue does not warrant a specific example and made no change. |
| Comment | One commentator recommended that the ASOP be revised to provide that actuaries should disclose to MCOs the methodology, assumptions, and data that serve as the basis for adjustments to base year data. The commentator also recommended that language be added to section 3.2.7 stating that actuaries should avoid using Fee for Service (FFS) data as the basis for the base data adjustments if the FFS data is more than one year removed from the rating year. |
| Response | The reviewers believe that section 4 of this ASOP and other applicable ASOPs (including ASOP No. 41, *Actuarial Communications*) provide appropriate guidance regarding disclosures. The reviewers disagree with adding specific instructions around what data may or may not be used to develop base year data adjustments. ASOP No. 23 provides the actuary with guidance for data selection. Therefore, no change was made. |

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| **Section 3.2.8, Claim Cost Trends** | |
| Comment | One commentator suggested that a list of items for developing claim cost trends should be added to this section. |
| Response | The reviewers believe the level of detail in this section is sufficient and made no change. |
| Comment | One commentator thought that the actuary should be directed in this section to disclose the basis of trend estimates such as the source, applicability, claims experience, time periods, trend surveys, etc. |
| Response | The reviewers disagree and believe that section 4 of this ASOP and other applicable ASOPs (including ASOP No. 41) provide appropriate guidance regarding disclosures. Therefore, no change was made. |
| Comment | One commentator thought that the wording "Trends should be exclusive of other adjustments" indicated that a blending of the utilization component of trend with the adjustment in section 3.2.9, Managed Care Adjustments, was prohibited; yet they felt that if historic managed care data was used to develop the trends, it would be an unnecessary exercise to separate historical utilization trend and managed care savings components. |
| Response | The reviewers revised the sentence for clarity and believe no further guidance is necessary. |
| Comment | Two commentators recommended that this section be amended to add a requirement that actuaries should reflect new technological and pharmaceutical advancements in the trend assumptions. |
| Response | The reviewers believe the level of detail in this section is sufficient and made no change. |
| Comment | One commentator requested a specific section on network re-pricing and stated this section should specify that the fee schedule used to re-price claims be attainable to the MCOs. |
| Response | The reviewers believe that this issue is covered by the definition of "actuarial soundness." Therefore, no change was made. |
| **Section 3.2.9, Managed Care Adjustments** | |
| Comment | One commentator thought that the ASOP should clarify that managed care savings should be documented by category of service and should clarify that the level of managed care adjustments should not be linking to non-medical loads in the rate development. |
| Response | The reviewers disagree that this wording should be added and made no change. |
| Comment | One commentator suggested that the ASOP clarify that managed care impacts must be considered in aggregate and not in isolation (for example, reduction in ER utilization may be accompanied by higher primary care utilization, possibly with higher per unit costs in both settings, as delivery of care is managed towards the appropriate setting.). |
| Response | The reviewers disagree that this wording should be added and made no change. |
| Comment | Several commentators felt that the words "...adjustments should be attainable in the rating period..." were not sufficient guidance to recognize the various items that can impact the timing of attaining managed care savings and suggested additional wording be added to the ASOP that clarifies the limitations that can cause managed care adjustments to be obtained during the rating period. |
| Response | The reviewers believe this issue is covered by the definition of "actuarial soundness. "Therefore, no change was made. |
| Comment | One commentator thought that the wording "state contractual and operational requirements, and relevant laws and regulations" allowed actuaries to add managed care adjustments due to state budget limitations. |
| Response | The reviewers added a new section 3.2.17, State Initiatives, to clarify the guidance. |

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| Comment | One commentator thought that section 3.2.9(b) should be revised to "current characteristics and desired changes in those characteristics of the.…" |
| Response | The reviewers believe the language is clear and, therefore, made no change. |
| Comment | Several commentators recommended that wording should be added to this section indicating that base data adjustments need to be done in a transparent and data-driven manner. |
| Response | The reviewers believe that transparency and use of underlying data are appropriately covered in this standard as well as ASOP Nos. 23 and 41 and, therefore, made no change. |
| Comment | One commentator recommended adding language that the actuary should make sure that managed care savings are not double counted with trend assumptions. |
| Response | The reviewers note this is addressed in new section 3.2.9, Claim Cost Trends. Therefore, no change was made. |
| Comment | One commentator thought that this section did not distinguish between changes from base year data that are likely to be achievable when a new Medicaid managed care program is implemented and managed care efficiencies have not previously been implemented and the nature and scope of changes that can be expected when a program is well-established and the baseline data already reflect the impact of Medicaid health plan performance. |
| Response | The reviewers note this is addressed in section 3.2.9(c) and made no change. |
| **Section 3.2.11, Non-Medical Expenses** | |
| Comment | One commenter suggested that the ASOP recommend a correlation between underwriting gain and the level of risk or uncertainty. |
| Response | The reviewers agree and have added clarifying language to section 3.2.11(b). |
| Comment | One commentator suggested that medical management costs should be considered medical expenses and not administrative costs. |
| Response | The reviewers note the ASOP only lists medical management as a possible administrative expense. Therefore, no change was made. |
| Comment | One commentator expressed concern that the ASOP requires developing distinct rates for each MCO based on administrative expenditures and profit or non-profit status. |
| Response | The reviewers note that new section 3.2.12, Non-Medical Expenses, states non-medical expenses *may* vary by MCO and, therefore, made no change. |
| Comment | One commenter expressed concern over requiring the consideration of cost of capital and stated that it should be left to the actuary to consider. |
| Response | The reviewers believe the updated ASOP includes appropriate consideration of cost of capital in section 2.1, Actuarially Sound/Actuarial Soundness and new section 3.2.12 (b), Underwriting Gain. |
| Comment | One commentator expressed concern about establishing different non-medical expenses by rate cell. |
| Response | The reviewers modified the language to remove "for each rate cell" to avoid implying that the non-medical expenses were required to vary by rate cell. |
| **Section 3.2.11(a), Administration** | |
| Comment | One commenter recommended clarifying what is an appropriate administrative load for Medicaid managed care and what are acceptable data sources or information to use. |
| Response | The reviewers believe that such clarification is not appropriate in this ASOP and therefore made no change |

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| **Section 3.2.11(a)(1), Determination of Administrative Expenses** | |
| Comment | One commentator suggested additional requirements for the actuary in determining the administrative payments to affiliated organizations to make sure they are reasonable and appropriate. |
| Response | The reviewers believe section 3.2.11 and the definition of "actuarial soundness" appropriately address this concern and made no change. |
| Comment | One commenter recommended deleting section 3.2.11(a)(1) on administrative expenses and stated that it would limit states' ability to place limits on administrative costs. |
| Response | The reviewers modified the language from "should" to "may" and also made other changes to this section to clarify guidance. |
| Comment | One commentator suggested that several of the considerations for administrative expenditures under 3.2.11(a)(1) should not be required and instead be made permissible. |
| Response | The reviewers modified the language from "should" to "may" and also made other changes to this section to clarify guidance. |
| Comment | One commentator suggested that the complexity of providing services for certain populations (such as aged or disabled enrollees) should be required as a consideration of administrative expenditures. |
| Response | The reviewers note that the list is not meant to be all inclusive. The reviewers believe the ASOP provides appropriate guidance and made no change. |
| **Section 3.2.11(a)(2), Types of Administrative Expenses** | |
| Comment | One commentator suggested adding contract provisions as a type of administrative expenditure. |
| Response | The reviewers believe the ASOP provides appropriate guidance and made no change. |
| **Section 3.2.11(a)(2)(i), Types of Administrative Expenses** | |
| Comment | One commentator suggested deleting the phrase regarding "competitive environment." |
| Response | The reviewers agree and made the change. |
| **Section 3.2.11(a)(2)(iv), Types of Administrative Expenses** | |
| Comment | One commentator suggested defining "general corporate overhead." |
| Response | The reviewers disagree and made no change. |
| **Section 3.2.11(b), Underwriting Gain** | |
| Comment | Several commentators recommended "cost of capital" be defined and explained how this related to margins for risk or underwriting gain. |
| Response | The reviewers believe the ASOP provides appropriate guidance and made no change. |
| Comment | One commentator recommended that the actuary must consider investment income when determining the underwriting gain. |
| Response | The reviewers believe the use of the word "may" is appropriate for the ASOP and made no change. |
| Comment | One commentator recommended addressing the importance of allowing negative underwriting gain margins in rate development. |
| Response | The reviewers believe the ASOP adequately addresses negative underwriting gain and, therefore, made no change. |

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| Comment | Several commentators suggested that the effects of risk sharing arrangements, performance withholds, and minimum medical loss ratios should be addressed in determining the underwriting gain assumption. |
| Response | The reviewers added language to clarify the guidance. |
| Comment | One commentator recommended that the margin for the underwriting gain should be explicit in the capitation rate. |
| Response | The reviewers believe the ASOP provides appropriate guidance and made no change. |
| Comment | One commentator asked for guidance on how an appropriate underwriting gain provision was determined and for requirements about disclosing negative underwriting gain provisions. |
| Response | The reviewers believe it is beyond the scope of the ASOP to specify how the underwriting gain provision should be determined or deemed appropriate. The reviewers note that section 4 of the ASOP provides guidance for actuarial communications and disclosures, including specific mention of disclosure of negative underwriting gains. Therefore, no change was made. |
| Comment | One commentator recommended that the ASOP address new Medicaid managed care populations in regard to the underwriting gain provision. |
| Response | The reviewers disagree that additional guidance is needed and made no change. |
| Comment | One commentator asked whether payment delays should also be considered in the standard. |
| Response | The reviewers note that "cash flow patterns" are addressed in section 3.2.11(b). Therefore, no change was made. |
| **Section 3.2.11(c), Income Taxes** | |
| Comment | One commentator recommended that section 3.2.11(c) be revised so that actuaries may consider income taxes, but would not be required to do so. |
| Response | The reviewers believe this is an appropriate consideration in setting Medicaid managed care capitation rates and made no change. |
| Comment | One commenter recommended deleting section 3.2.11(c) and making section 3.2.11(d) permissive at the state's discretion. |
| Response | The reviewers disagree and made no change. |
| **Section 3.2.11(d), Taxes, Assessments, and Fees** | |
| Comment | One commentator expressed concern that section 3.2.11(d) was too specific relative to the rest of the ASOP and that the actuary would be required to make several explicit forecasts that the actuary may not be able to do. |
| Response | The reviewers believe this section does not place an unreasonable requirement on the actuary and made no change. |
| **Section 3.2.12, Risk Adjustment** | |
| Comment | Several commentators recommended that the risk adjustment section refer to section 3.2.7 or include discussion of data quality and appropriateness for risk adjustment. |
| Response | The reviewers believe that additional guidance is not necessary since ASOP No. 23 applies and is referenced in section 3.4, Documentation, and ASOP No. 45, *The Use of Health Status Based Risk Adjustment Methodologies*, is referenced in section 3.2.12, Risk Adjustment. Therefore, no change was made. |
| **Section 3.2.14, Performance Withholds/Incentives** | |
| Comment | Several commentators suggested the actuary should document any differences between the ASOP and CMS requirements. |
| Response | The reviewers note that section 4 of this ASOP provides guidance in this area. |

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| Comment | Several commentators felt the language regarding including withhold amounts that are reasonably achievable was overly prescriptive while others felt the language did not provide enough guidance. |
| Response | The reviewers believe the language is appropriate and made no change. |
| Comment | One commentator recommended that data related to the characteristics of the covered population be considered when actuaries evaluate the effect that performance withholds and incentives could have on plan costs. The commentator also stated there should be clear expectations communicated to the MCO up front regarding targets and improvement goals before the rate period begins. |
| Response | The reviewers did not believe adding this consideration or required communication was necessary or appropriate. Therefore, no change was made. |
| **Section 3.2.15, Minimum Medical Loss Ratios** | |
| Comment | One commentator felt a statement should be added recognizing that minimum medical loss ratio provisions increase the level of risk borne by the MCO that the actuary should consider when determining the underwriting gain provision of the capitation rates. |
| Response | The reviewers note this is adequately addressed in this section and made no change. |
| **Section 3.3, Qualified Opinion on Actuarial Soundness** | |
| Comment | A commentator felt that an entire actuarial opinion should not be qualified when a negative underwriting gain is utilized. |
| Response | The reviewers note a qualified opinion is meant to highlight special circumstances with respect to actuarial soundness within the rate certification. Section 3.2.12(b), Underwriting Gain, requires the disclosure of a negative underwriting gain assumption. The reviewers changed the language from “for example” to “further”. However, no other change was made. |
| **Section 3.4, Documentation** | |
| Comment | One commentator requested that the actuary be required to test capitation structures for appropriateness using emerging experience. |
| Response | The reviewers believe the ASOP provides appropriate guidance and made no change. |
| Comment | Several commentators requested that the actuary be required to provide appropriate documentation to the MCOs. |
| Response | The reviewers note the distribution of the actuary’s work product and documentation is governed by ASOP No. 41 and other related ASOPs. Therefore, no change was made. |
| Comment | One commentator asked what CMS regulations actuaries should consider in their documentation. |
| Response | The reviewers believe that listing all specific regulations the actuary should consider is outside the scope of this ASOP and made no change. |