

Prepared by:

**Michael E. Weiland**  
FSA, MAAA

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# Premium deficiency reserve requirements for accident and health insurance



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## EXECUTIVE SUMMARY

In the United States, premium deficiency reserves (PDRs) are, when needed, one of several categories of accident and health liabilities required under statutory accounting principles, GAAP, and by actuarial standards of practice. The topic of PDRs has been discussed in various authoritative guidance materials and also in published actuarial literature. Despite all of this published information, issues concerning the calculation and reporting of this reserve are still interpreted differently among various industry professionals such as actuaries, accountants, and insurance regulators.

Professional disagreements on PDRs often arise because of the level of perceived authoritativeness of source documents. Confusion also arises from the lack of specificity, inconsistency in terminology, and apparent contradictions among the documents.

In order to bring some clarity to the confusion, this research report addresses the following 15 key questions surrounding statutory PDRs:

1. What is a PDR?
2. When should testing for a PDR be done?
3. How does the PDR coordinate with other reserves?
4. How is the amount of a PDR determined?
5. How should contracts be grouped in determining and reporting a PDR?
6. What is the appropriate time period to use in the PDR calculation?
7. Should PDR assumptions contain conservatism?
8. Are only contracts in force at the valuation date used in the PDR calculation?
9. Should investment income be incorporated in the PDR calculation?
10. Should premium rate increases be included in the PDR calculation?
11. Should direct or fully allocated expenses be used to calculate the PDR?
12. Is federal income tax (FIT) included in the PDR calculation?
13. Where do PDRs go in the National Association of Insurance Commissioners (NAIC) Annual Statement Blanks?
14. What documentation and disclosures are required?
15. Will the Patient Protection and Affordable Care Act (PPACA) have an impact on PDR calculations?

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This report discusses the issues to consider when answering these questions. The content highlights differences in terminology or interpretation, as well as areas requiring actuarial judgment. In order to avoid the author paraphrasing or misinterpreting the referenced material, the text of key published sources is cited extensively.

### **Caveats**

The regulations discussed in this report apply to statutory reserves and not GAAP reserves. Much of the commentary on the regulations provided in this report reflects the perspective of insurance companies that file the NAIC's Annual Statement Blanks for Life, Accident, and Health (Blue Book) and for Health (Orange Book) and may not be applicable to other companies. Before filing the NAIC's Annual Statement Blank in a specific jurisdiction, PDR requirements must be reviewed based on a jurisdiction's specific statutes and regulations. Many aspects of these requirements are subject to interpretation and actuarial judgment. The commentary in this report expresses the opinion of the author; it does not represent a position or endorsement by Milliman. There are differences in opinion on the levels of authoritativeness of the sources cited. The interpretation and authoritativeness of this information must be validated by each organization to arrive at its own opinion.

PPACA and related regulations are complex and there is uncertainty surrounding many underlying details and implications. This report represents the author's understanding of the law as enacted and the regulations that have been released, and may not reflect its final implementation.

Milliman is not a law firm, is not authorized to practice law, and does not provide legal advice. Milliman does not intend to benefit or create a legal duty to any third-party recipient of its work.

### **Qualification statement**

I, Michael E. Weiland, am a consulting actuary for Milliman. I am a member of the American Academy of Actuaries and I meet the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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## BACKGROUND

### Focus of statutory accounting principles

The solvency of an insurance company and its ability to meet long-term contractual obligations is the primary focus of statutory accounting principles, and requiring adequate statutory reserves is the principal means of ensuring financial soundness. For accident and health (A&H) business, statutory reserves include contract reserves, unearned premium reserves, claim reserves, premium deficiency reserves (PDRs), and other reserves.

### Key sources of statutory accounting principles, requirements, and guidance

Below are brief descriptions of key sources of statutory accounting principles, model laws, standards of practice, guidance, and discussion. State-specific statutes and regulations have not been included.

*NAIC Health Insurance Reserves Model Regulation (HIRMR)*: This minimum health reserve standard applies to all individual and group health (accident and sickness) insurance coverages. Although PDRs are not specifically mentioned in the standard, an actuary is expected to establish additional reserves if the aggregate reserves are not adequate, as measured by a gross premium valuation.

*NAIC Statement of Statutory Accounting Principle (SSAP) 54*: The process of codification resulted in the NAIC Accounting Practice and Procedures Manual (APPM) which is comprised of Statements of Statutory Accounting Principles (SSAPs). According to the APPM's preamble, it is not intended to preempt a state's legislative and regulatory authority. Rather, it is intended to establish a comprehensive basis of accounting that should be recognized and adhered to, if not in conflict with state statutes and/or regulations, or used when the state statutes and/or regulations are silent. SSAP 54 establishes statutory accounting principles for income recognition and policy reserves for all individual and group A&H contracts covered by the NAIC HIRMR. SSAP 54 (specifically paragraphs 18, 23, and 34) states when premium deficiency reserves must be established.

*NAIC Health Reserves Guidance Manual (HRGM)*: The NAIC published an updated version of the HRGM in February 2007. The stated purpose of the manual "is to provide guidance regarding the calculation and documentation of health reserves for statutory financial statements" described in the NAIC HIRMR. Its intended audience consists of (1) actuaries and other parties who estimate reserves for health coverage, and (2) examiners who review the statutory financial statements on behalf of regulatory agencies. It outlines the guidance for valuing minimum health reserves based on actuarial principles and standards of practice and provides guidance with respect to claim reserves, contract reserves, provider liabilities, and PDRs. Section VI of the manual, which specifically addresses PDRs, received some material revisions as part of the 2007 update.

*Actuarial Standards of Practice (ASOP) 42, Determining Health and Disability Liabilities Other Than Liabilities for Incurred Claims*: The Actuarial Standards Board (ASB) promulgates ASOPs, which "are intended to provide actuaries with a framework for performing professional assignments and to offer guidance on relevant issues, recommended practices, documentation, and disclosure." The primary guidance for PDRs can be found in ASOP 42, which was adopted by the ASB in March 2004. This ASOP provides guidance on when to establish a PDR and general considerations when determining a PDR.

*American Academy of Actuaries (AAA) Premium Deficiency Reserves Discussion Paper*: The AAA's Premium Deficiency Reserves Work Group of the Health Practice Financial Reporting Committee published this discussion paper in March 2007. The paper has no authority and is nonbinding on actuaries. It was "developed to provide some insight into (i) the testing for the need for PDRs, (ii) the manner in which a PDR, if needed, might be determined and (iii) some details around the financial reporting of PDRs." Extensive numerical examples are contained in the paper to illustrate the testing and reporting of PDRs under various scenarios.

### Differences among the published sources

Professional disagreements on PDRs often arise that are due to the level of perceived authoritativeness of the above-mentioned source documents. Confusion also arises that is due to the lack of specificity, consistency in terminology, and apparent contradictions between the documents. In order to avoid the author paraphrasing or misinterpreting the referenced material, the text of key published sources is cited extensively throughout this report.

## FINDINGS

The following sections present 15 key questions surrounding statutory PDRs, citations from relevant source materials, and a discussion of the issues to consider when answering them. The discussion highlights differences in terminology or interpretation, as well as areas requiring actuarial judgment.

### 1. What is a PDR?

At a high level, the PDR concept is intuitive to most actuaries. ASOP 42 defines a PDR as: *"A liability established when, for a period of time, the value of future premiums, current reserves, and unpaid claims liability are less than the value of future claim payments and expenses plus the anticipated liabilities at the end of the period."*

The NAIC HRGM states: *"A premium deficiency is a reserve established when future premiums and current reserves are not enough to cover future claim payments and expenses for the remainder of a contract period."*

The brief definitions provided in these sources are relatively easy to understand, but the practical application of the concept is often open to judgment and interpretation. As if to emphasize the judgment required, after defining a PDR the NAIC HRGM immediately goes on to say that *"Considerable judgment must be exercised in determining the 'contract period'..."*

**ASOP 42 defines a PDR as:**  
**"A liability established when, for a period of time, the value of future premiums, current reserves, and unpaid claims liability are less than the value of future claim payments and expenses plus the anticipated liabilities at the end of the period."**

### 2. When should testing for a PDR be done?

Neither the NAIC HIRMR nor SSAP 54 explicitly specifies the frequency with which a PDR review should take place. The NAIC HIRMR does state: *"Such a gross premium valuation is to be performed whenever a significant doubt exists as to reserve adequacy with respect to any major block of contracts, or with respect to the insurer's health business as a whole. In the event inadequacy is found to exist, immediate loss recognition shall be made and the reserves restored to adequacy."*

The NAIC HRGM provides clear guidance and states: *"This reserve should be reviewed at least annually and adjusted as necessary. Valuations may be done monthly, quarterly, or any time frame that the actuary determines is reasonable. As of the date of each successive statutory financial statement, the premium deficiency reserve must be adjusted to reflect the losses that have been realized because [of] the previous financial statement, and any new deficiencies that have arisen. With respect to previously existing deficiencies, the actuary may judge that a previously established amortization schedule continues to be appropriate, and adjust the reserve in accordance with that amortization schedule without re-evaluating the reserve from basic financial data. The use of the term 'amortization' is intended to permit modification of a prior deficiency reserve amount for quarterly reporting rather than require recalculation of the reserve based on underlying data each time. However, a calculation based on underlying data should be performed at least annually."*

### 3. How does the PDR coordinate with other reserves?

The NAIC HRGM states: *"The deficiency reserve is in addition to claim reserves and contract reserves. The deficiency reserve is also in addition to rate stabilization reserves, retroactive premium liabilities, provider reserves, provider withhold or bonus pools, and other reserves not held to specifically make future benefit payments."*

The AAA discussion paper points out that an actuary may have several options to consider and states: *"There is an interaction among PDRs, contract reserves, and any additional actuarial reserves. Potential future losses that need to be recognized in current liabilities might be recorded in any of these. The concept of PDRs was extended to health products without addressing the interactions. The use of one rather than another of these options will affect current and future earnings patterns and how the reported loss is interpreted.... There is no single preferred approach, although accounting guidance may prohibit the use of a particular approach in certain cases."*

### 4. How is the amount of a PDR determined?

SSAP 54, paragraph 18, states: *"When the expected claims payments or incurred costs, claim adjustment expenses and administrative costs exceed the premiums to be collected for the remainder*

*of a contract period, a premium deficiency reserve shall be recognized by recording an additional liability for the deficiency, with a corresponding charge to operations."*

The formula described in SSAP 54 is not typically used by companies that complete the NAIC's Annual Statement Blank for Life, Accident, and Health companies. For these companies, a classical deficiency reserve calculation would normally include the current statutory reserves in addition to the future premiums, and the reference to "incurred costs" would be removed.

While the term "premium deficiency reserve" is not specifically used in the NAIC HIRMR, the regulation does state: *"With respect to any block of contracts, or with respect to an insurer's health business as a whole, a prospective gross premium valuation is the ultimate test of reserve adequacy as of a given valuation date. Such a gross premium valuation will take into account, for contracts in force, in a claims status, or in a continuation of benefits status on the valuation date, the present value as of the valuation date of: all expected benefits unpaid, all expected expenses unpaid, and all unearned or expected premiums, adjusted for future premium increases reasonably expected to be put into effect."*

The NAIC HRGM states: *"A gross premium valuation or other method is needed to determine the amount of a premium deficiency reserve."* It also clearly defines the calculation of a reserve value for testing premium deficiency as follows:

*"The reserve value for testing premium deficiency is the sum of:*

- Present value of future paid claims through the end of the deficiency period;*
- Present value of future expenses; and*
- Present value of claim and contract reserves at the end of the deficiency period.*

*Less:*

- Current claim reserve, including special large claim reserves;*
- Current contract reserve;*
- Present value of future earned premiums; and*
- Current balance sheet accrual for future expenses.*

*A deficiency period is defined for any block where the internal calculations result in a positive result from the above test. If the values vary for different periods, the deficiency period is the period with the greatest value."*

**While the gross premium valuation formula itself is relatively straightforward, the assumptions underlying the calculation and determining how to group results is open to significant judgment and interpretation.**

While the gross premium valuation formula itself is relatively straightforward, the assumptions underlying the calculation and determining how to group results is open to significant judgment and interpretation.

#### **5. How should contracts be grouped in determining and reporting a PDR?**

This is a foundational issue in determining the need for a PDR and how it should be reported, and does not enjoy a universally accepted interpretation. Actuarial judgment is needed on this issue.

SSAP 54, paragraph 18, states: *"For purposes of determining if a premium deficiency reserve exists, contracts shall be grouped in a manner consistent with how policies are marketed, serviced, and measured. A liability shall be recognized for each grouping where a premium deficiency is indicated. Deficiencies shall not be offset by anticipated profits in other policy groupings."*

The SSAP 54 grouping criteria of *"consistent with how policies are marketed, serviced, and measured"* leaves much room for interpretation and has been a key source of debate over the years.



The AAA discussion paper (which is not authoritative or binding) states:

*"The whole [PDR] process may be thought of as consisting of two levels:*

- 1. Testing – the minimum level at which financial projections are performed; and*
- 2. Reporting – management's combination of the testing level results for reporting in the various external statements."*

The AAA discussion paper lists factors to be considered in grouping at the testing level, such as materiality of product line, similarity of products, marketing methods, rate restrictions, group vs. individual, etc.

The NAIC HRGM has a section discussing "Contract Groupings" with grouping considerations similar to the AAA discussion paper testing level concepts listed above.

The NAIC HRGM also has a section called "Applicable Lines of Business" (similar to the AAA discussion paper reporting level concept) that states:

*"All health coverage is to be included in one of these specified lines of business by the company.*

- 1. Comprehensive Medical (to include other medical type coverage and Medicare supplement as well as any coverage where the benefits are substantially subject to inflationary cost trends; e.g., dental and vision);*
- 2. Long Term Care Insurance;*
- 3. Income Protection (disability income) Insurance; and*
- 4. Limited Benefit Plans (e.g., hospital indemnity, critical illness and other coverage where the benefits are not significantly subject to inflationary cost trends)."*

The NAIC HRGM further states: *"In the event that the total of the results for a specified line of business will not cover all the deficiencies of internally tested groupings within that line, the company shall hold the net amount as a premium deficiency reserve."*

It is important that the actuary maintain internal consistency in grouping methodology from valuation to valuation as much as possible. If change is needed, the NAIC HRGM's section on disclosure and documentation states: *"To the extent possible, any change in contract groupings should be identified well in advance of its use."*

**It is important that the actuary maintain internal consistency in grouping methodology from valuation to valuation as much as possible.**

## **6. What is the appropriate time period to use in the PDR calculation?**

The published sources each use different terminology and apparently contradictory standards for the time period covered in the PDR calculation. Similar to "grouping," this issue does not enjoy a universally accepted interpretation. Actuarial judgment is needed on this issue.

SSAP 54 states that deficiency reserves should be based on *"the remainder of a contract period."* The term "contract period" is not defined, but has the implication that (if needed) premiums will be increased to an adequate level during the next (new) contract period.

The NAIC HIRMR states: *"Such a gross premium valuation will take into account...all expected benefits unpaid, all expected expenses unpaid, and all unearned or expected premiums, adjusted for future premium increases reasonably expected to be put into effect."*

The time periods implied by SSAP 54 and the NAIC HIRMR appear contradictory. The NAIC HRGM states: *"The apparent contradiction between these two requirements must be resolved using actuarial judgment. The actuary must consider realistic assumptions regarding lapsation, rate increases, and*

*claims trend." It also states: "The ending of the time period is more difficult to determine, and requires a substantial amount of judgment in many cases."*

The NAIC HRGM does offer clear guidance on one aspect of the time period: *"Premium deficiencies that are likely to occur only for a few months or only for part of a rating period usually need not be recognized, because premiums are anticipated to be sufficient over the entire year or rating period."*

#### **7. Should PDR assumptions contain conservatism?**

Neither the NAIC APPM nor NAIC HRGM specifically addresses the need for conservatism in a PDR. The NAIC HRGM does use terms such as *"reasonable enrollment assumptions," "future rate increases should be reasonable,"* and *"the interest rate used...should be reasonable"* in describing the assumptions.

While the need for conservatism in a PDR is not specifically addressed in the published material, the preamble of the NAIC APPM does state the following concerning utilizing conservatism in statutory reserves:

*"Paragraph 29, ...In order to provide a margin of protection for policyholders, the concept of conservatism should be followed when developing estimates as well as establishing accounting principles for statutory reporting."*

*Paragraph 30, Conservative valuation procedures provide protection to policyholders against adverse fluctuations in financial condition or operating results. Statutory accounting should be reasonably conservative over the span of economic cycles and in recognition of the primary responsibility to regulate for financial solvency. Valuation procedures should, to the extent possible, prevent sharp fluctuations in surplus."*

Given the lack of clarity on this issue, actuarial judgment is needed and the actuary will want to discuss any potential conservatism with all relevant parties. If a PDR is not needed, auditors and regulators may still want to know how much margin in the assumptions would lead to a PDR situation.

#### **8. Are only contracts in force at the valuation date used in the PDR calculation?**

SSAP 54, paragraph 18, states: *"Such accruals shall be made for any loss contracts, even if the contract period has not yet started."*

The NAIC HRGM states:

*"Unlike other reserve calculations that consider only contracts in force at the valuation date, a premium deficiency reserve calculation should consider all of the following:*

- a) Contracts in force at the valuation date, including any increase or decrease in enrollment under the group contracts that is reasonably anticipated to occur after the valuation date;*
- b) Contracts expected to become effective after the valuation date, for which rate guarantees were made prior to the valuation date; and*
- c) Individuals whose coverage originated under contracts or certificates that were terminated before the effective date, but whose coverage remains in force because of claim status or waiver-of-premium status."*

#### **9. Should investment income be incorporated in the PDR calculation?**

SSAP 54, paragraph 34, states: *"If a reporting entity utilizes anticipated investment income as a factor in the premium deficiency calculation, disclosure of such shall be made in the financial statements."*

The NAIC HRGM states: *"The question has been raised whether it is appropriate to include investment income in the analysis, given that the future income streams are also being discounted to the valuation date. It is appropriate, because the future profit or loss is partly dependent on the*

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amount of future investment income, and the present value of that profit or loss must include a discount for the time value of money."

#### 10. Should premium rate increases be included in the PDR calculation?

The NAIC HRGM states: *"Reasonable rate increases and any market and regulatory restrictions on rates should be considered in establishing deficiency reserves. Assumptions for future rate increases should be reasonable, considering assumptions for future levels of claim costs."*

Taking premium rate increases into account in a PDR calculation may result in anticipated future profits. The actuary should take into account a company's historical track record with premium rate increases, marketing and state regulatory considerations affecting the implementation of future premium increases, and the impact of higher anti-selective lapsation and claim costs resulting from the higher rates.

State-specific requirements should be reviewed, as some states may not allow the projection of future premium rate increases or may only allow inclusion of rate increases currently on file with the state.

#### 11. Should direct or fully allocated expenses be used to calculate the PDR?

The NAIC HRGM states: *"Generally, the expenses considered for a particular grouping should represent a reasonable allocation of all the reporting entity's expenses.... If other lines of business can cover overhead, the test for a deficiency and the calculation of the deficiency reserves can be performed using only direct costs."*

Special consideration should be given to start-up situations and when exiting a particular line of business. The AAA discussion paper states: *"...it is hard to craft an approach that seems to produce an intuitively reasonable result while conforming to the relative authoritative guidance. Under these circumstances, it may be necessary to seek regulatory relief from a strict application of the requirements."*

#### 12. Is federal income tax (FIT) included in the PDR calculation?

The published sources use apparently contradictory standards for the inclusion of FIT in the PDR calculation. Actuarial judgment is needed on this issue.

The NAIC HRGM clearly states: *"The deficiency reserve should be calculated on a pre-tax basis; any tax impact related to the establishment of deficiency reserves should be incorporated into the calculation of deferred tax assets/liabilities under SSAP No. 10."*

As a general consideration on taxes, ASOP 42 states: *"The actuary should consider the effect of losses assumed in the calculation of the premium deficiency reserve on the risk-assuming entity's taxes and may include a tax credit in the calculations where appropriate."*

In general, PDRs are not deductible from a tax-reporting perspective and a company should consider the tax impact of establishing a PDR versus strengthening the reserve basis.

#### 13. Where do PDRs go in the NAIC annual statement blank?

In the NAIC's Annual Statement Blank for Life, Accident, and Health (Blue Book) at year-end 2011, the most likely place to record a PDR would be in Exhibit 6—Aggregate Reserves for Accident and Health Contract—Line 2 (and its footnote).

In the NAIC's Annual Statement Blank for Health (Orange Book) at year-end 2011, the most likely place to record a PDR would be in the Underwriting and Investment Exhibit—2D—Aggregate Reserve for Accident and Health Contracts Only—Line 2 (and its footnote).

#### 14. What documentation and disclosures are required?

As a starting point, an actuary should review ASOP 41, Actuarial Communications, before preparing PDR documentation. The NAIC HRGM clearly states: *"The company should disclose, in documentation that can be made readily available to regulators upon their request (such as the actuarial memorandum supporting the actuarial opinion), the contract groupings it has used for purposes of determining*

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**As a starting point, an actuary should review ASOP 41, Actuarial Communications, before preparing PDR documentation.**

*reserve values for testing premium deficiency for each specified line of business. The company should include in the disclosure, whether or not it combined lines of business due to lack of materiality of one of the specified lines of business. The basis for any change to the groupings should be disclosed as well.... If a deficiency reserve is not required for any grouping, the disclosure should note this and the actuarial tests that established that none was necessary should be documented as below. The company should disclose, in that same documentation available to regulators, each contract grouping that had a positive premium deficiency reserve value. All other contract groupings' reserve value for testing premium deficiency should be documented."*

The NAIC HRGM goes on to describe the three key items that should be documented for each contract grouping:

- 1. The distinguishing characteristics of each contract grouping.*
- 2. The assumptions used in the calculation of reserve values for testing premium deficiency (including margin for conservatism in any grouping without a positive deficiency value).*
- 3. The time period over which revenues and costs were projected.*

The AAA's Health Practice Financial Reporting Committee developed a public policy practice note, "Revised Actuarial Statement of Opinion Instructions for the NAIC Health Annual Statement Effective December 31, 2010." In a discussion of the Scope section of the revised health actuarial opinion, the practice note states: "Note that the premium deficiency reserves are included in the line with aggregate health policy reserves. The scope of the opinion should include the methods and assumptions used to determine the premium deficiency reserve, even if that value is zero."

#### **15. Will the patient protection and affordable care act have an impact on PDR calculations?**

At the time this report was written there were still uncertainties surrounding the full implementation of PPACA regulations. With the exception of the NAIC Patient Protection and Affordable Care Act Medical Loss Ratio (MLR) Regulation, PDRs were not explicitly mentioned in PPACA regulations. For PPACA-affected products, the following are items to consider when calculating a PDR:

- *Grouping:* Currently, the NAIC HRGM would allow a company's individual medical, small group medical, and large group medical business to be grouped under the "Applicable Line of Business" known as "Comprehensive Medical." As discussed above, the results of one internally tested grouping could be used to offset another within the overall Applicable Line of Business. The PPACA does not appear to prohibit this grouping approach.
- *Rate increases:* For individual and small group health insurance plans impacted by PPACA, the actuary needs to consider the likelihood of receiving rate increases that exceed the U.S. Department of Health and Human Services (HHS) threshold for potentially "unreasonable" rate increases (rate increases that exceed 10% are subject to additional scrutiny and review).
- *MLR/rebates:* Under PPACA, the actuary will need to consider required MLRs and rebates as part of the PDR calculation. (As an aside, incurred claims used in the MLR calculation include the change in "contract reserves.") The NAIC PPACA MLR Regulation states in the definition of "Contract Reserves" that "Contract reserves should not include premium deficiency reserves."
- *The three R's:* In March 2012, HHS published a final rule on standards related to risk adjustment, reinsurance, and risk corridors that goes into effect in 2014. Additional details around these programs are still forthcoming. Risk adjustment applies to non-grandfathered individual and small group plans, both inside and outside of the exchanges. Reinsurance is a transitional program from 2014 to 2016 that applies to non-grandfathered individual plans. Risk corridor is also a transitional program from 2014 to 2016 that applies to qualified health plans. When performing PDR calculations the actuary will need to consider the impact of these programs.

**With the exception of the NAIC Patient Protection and Affordable Care Act Medical Loss Ratio (MLR) Regulation, PDRs were not explicitly mentioned in PPACA regulations.**

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## ACKNOWLEDGEMENTS

Milliman last published a research report on the topic of premium deficiency reserves in September 2002. Since that time the National Association of Insurance Commissioners (NAIC) and the American Academy of Actuaries (AAA) have released new guidance on the topic. In addition, the Patient Protection and Affordable Care Act (PPACA) was passed in 2010 with various provisions that have the potential to impact premium deficiency reserves. The author would like to thank Robert W. Beal, FSA, MAAA (author of the 2002 report) for providing peer review of this update.



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3000 Bayport Drive  
Suite 1050  
Tampa, FL 33607  
+1 813 282 9262 tel  
+1 813 282 8276 fax

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