

A PUBLIC POLICY PRACTICE NOTE

# Long-Term Care Life Insurance Combination Product Valuation

April 20, 2022

Developed by the Long-Term Care Combo Product Valuation Practice  
Note Work Group

of the Life Practice Council of the American Academy of Actuaries



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**Practice Note on Long-Term Care Insurance**

**Long-Term Care Combo Product Valuation  
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**American Academy of Actuaries**  
**Practice Note**  
**Long-Term Care Insurance Combination Product Valuation**

This practice note is not a promulgation of the Actuarial Standards Board, is not an actuarial standard of practice, is not binding upon any actuary, and is not a definitive statement as to what constitutes generally accepted practice in the area under discussion. Events occurring subsequent to this publication of the practice note may make the practices described in this practice note irrelevant or obsolete.”

This practice note was prepared by the Long-Term Care Combo Product Valuation Practice Note Work Group organized by the Life Practice Council of the American Academy of Actuaries (Academy). The group is charged with creating a Combination Product Valuation Practice Note that addresses the application of the NAIC Valuation Manual to these products from primarily a life insurance perspective. A life insurance perspective is appropriate since the majority of combination products sold today are issued by life insurance companies. The prior 2019 Combination Product Valuation Practice Note was organized by the Health Practice Council of the Academy.

The Life Practice Council recognized the specific considerations that valuation actuaries faced when setting reserves for combination products, and that many of these considerations are not fully addressed in the Valuation Manual. This practice note was written with those unique considerations in mind. The work group expects that actuarial practice for determining principle-based statutory reserves for life insurance products, including combination products, will continue to evolve over time. It is likely that additional actuarial practice will develop that is not contained in this practice note.

This practice note references portions of the January 1, 2022 edition of the Valuation Manual. These references may not be consistent with later editions of the Valuation Manual.

## Defining Combination Products

### 1. **What insurance contracts constitute “combo products”?**

“Combo products” refers to insurance products that provide a combination of life insurance and health insurance benefits. These products are generally life insurance policies that include a rider or built-in feature that provide a benefit other than one paid at death. The benefits from riders are sometimes called “living benefits,” and the policies may also be called “hybrid” policies.

A common combo product is a life insurance policy with a terminal illness rider that allows the policyholder to collect some or all of their death benefit (“accelerating” their benefit) prior to dying. Other combo products include riders that accelerate the life insurance face amount in the event of long-term care type illnesses, or for critical illnesses like heart attacks or when a policyholder is diagnosed with cancer.

Combination life and health products may provide benefits beyond the death benefit of the life insurance contract, such as additional long-term care (LTC) payments following the acceleration of death benefits.

### 2. **Are other health benefits besides LTC-type benefits included in this Combo Product Valuation Practice note?**

Yes, this practice note applies to all combination products—i.e., life insurance policies that have a non-life benefit, such as life insurance policies with critical illness riders, terminal illness riders, or other “living benefit” riders.

Valuation Manual Section II, Subsection 6. paragraph B. indicates that supplemental benefits including accidental death and dismemberment (AD&D), Disability Waiver of Premium, and others *may* be included with the base policy, but this leaves open the option of valuing these benefits independent of the base policy.

## How are combination product reserves reported?

### 3. **How are combination products represented in statutory financial reporting?**

#### a. Life / health / split

Because combination products inherently contain elements of both life and health insurance, it is often unclear in Statutory Statement of Accounting Principles (SSAP) guidance and in Statutory Annual Statement reporting instructions how to approach financial reporting of these products.

Actuaries typically take into consideration whether the entirety of the product is reported as life insurance business or whether combination product financials are separated into life and health components and reported separately. Either approach is reasonable under existing guidance. However, once that determination has been made, the chosen financial statement presentation should be consistently applied. The decision to classify product financials as “all life” vs. “partially life and partially health” will impact—at a minimum—the financial statement presentation of the items below (as well as cross checks performed among them):

- Analysis of Operations by Lines of Business
- Analysis of Increase in Reserves
- Exhibit 1—Premiums and Annuity Considerations for Life and Accident and Health Contracts

- Exhibit 5—Aggregate Reserves for Life Contracts
  - If reporting the entirety of the product as life insurance, actuaries typically consider the geography of health reserves within Exhibit 5. For example, it may be appropriate to show active life reserves in subsection 5E (“Disability—Active Lives”) and claim reserves in subsection 5F (“Disability—Disabled Lives”). In other cases, using subsection 5G (“Miscellaneous Reserves”) may be appropriate.
- Exhibit 6—Aggregate Reserves for Accident and Health Contracts
- Exhibit 8—Claims for Life and Accident and Health Contracts
- Schedule S—Reinsurance
- Schedule T—Premiums and Annuity Considerations
  - Guarantee Association Model Act indicates that LTC riders to annuity or life insurance policies must be classified as the type of benefits of the base policy.
- State Page
- Exhibit of Life Insurance
- Long-Term Care Experience Reporting Form
- Note that Form 5 is required for “Hybrid Products” regardless of financial statement presentation.
- VM-20 Supplement

**4. Are there any unique considerations on how to fit combination product reporting into VM-31?**

VM-31 establishes minimum reporting requirements for policies or contracts subject to a principle-based valuation according to the methods defined in VM-20. If components of a combination product are not valued under VM-20 (see Topic 2, Application of VM-20), then certain reporting requirements of VM-31 may not apply to such components.

However, the decision, rationale, and support for excluding items from VM-20 should be included in the company’s VM-31 report. This stems from the requirement that “[t]he PBR Actuarial Report must include descriptions of all material decisions made and information used by the company in complying with the minimum reserve requirements and must comply with the minimum documentation and reporting requirements...”

Many actuaries would consider the exclusion of any component of a combination product from the scope of VM-20 as a “material decision.”

## Application of VM-20

**5. Valuation Manual Section II, Subsection 6 uses the term “determined by referencing” in paragraphs D.2 and D.3. Is that wording based on contract language, or should it be evaluated in terms of actual direct benefit interaction?**

Paragraph D.2 implies that the value of the rider’s premium, charge, value, or benefits can only be determined in concert with the base policy; i.e., by “referencing” the base policy and its features or performance. Conversely, it may be more straightforward to ask whether the rider’s premium, charge, value, or benefits can be determined without the base policy. If not, then the interaction of the base policy and rider is confirmed. The wording in Subsection 6 is in terms of actual direct benefit interaction and not actual contract language.

**6. A life insurance policy has an acceleration of benefits rider for LTC. This rider includes an inflation protection feature. When the benefit is triggered, the rider accelerates a portion of**

***the face amount and also pays the policyholder an additional amount under the inflation feature of the rider. The inflation payout during the acceleration period does not impact the base contract face amount or any other base contract feature. What are the considerations for such a rider when valuing under VM-20?***

There may be many different considerations, depending on the structure of the rider. The inflation component of the acceleration rider could be thought of as similar to an extension of benefits feature, and thus representative of pure LTC dollars. If there are no dependencies between the base and rider in determining benefits of either, then some actuaries might treat the inflation feature as separate to the base policy and value it independently. Other actuaries might treat the inflation feature, the acceleration rider, and the base policy as a single package and value these together following the VM-20 requirements of the base policy. In understanding the choices in approach, the following considerations may be relevant:

- Does the rider draw down the base policy's face amount faster when the rider is paying a benefit and the inflation feature is included than it would if the inflation feature were not included?
- Is the acceleration of benefits charged dollar-for-dollar against the policy cash value; as a proportional reduction to the face amount and cash value; or some other arrangement?
- Is the drawdown of the face amount agnostic to whether the inflation feature is or is not attached to the acceleration rider?

***7. In the case of an acceleration of benefit rider where there is no separately identified premium or charge, and the benefit upon claim is the death benefit discounted with interest, what are the requirements for VM-20 valuation?***

Valuation Manual Section II, Subsection 6, paragraph D.1 illustrates that riders without separately identified premiums or charges shall be included with the base policy and follow the VM-20 requirements of the base policy. In this situation, the rider's impact on the base policy's cash flows will be reflected in the modeled reserve components. Because the VM-20 requirements include the net premium reserve as well as the modeled reserves, the paragraph D.1 requirements extend also to the net premium reserve. However, it is less clear how the acceleration of benefit rider's impact would be factored into the net premium reserve calculations. It could be that in aspects of the net premium reserve calculation that require determination of the present value of benefits, this includes consideration for the company's experience regarding utilization of the rider benefit, since there are no industry standard tables for acceleration benefits.

## Prudent Estimate Assumptions

***8. What assumptions do actuaries typically consider in the modeling of combination products?***

Most actuaries would consider the following prudent estimate assumptions in modeling the deterministic reserve (DR) or stochastic reserve (SR) of combination products: mortality, policyholder behavior, expense, morbidity, and assets assumptions.

Morbidity assumptions usually consist of the following components:

- a. Incidence rates
- b. Claim termination rates: include recovery rates and disabled life mortality rates
- c. Severity: for reimbursement type policies, the utilization rates of the claim benefit (i.e. the portion of the daily maximum benefit that is claimed), including the impact that any benefit inflation has in this estimate

Some actuaries would consider other assumptions that impact the projected cash flows.

**9. Given there is not an industry table for morbidity assumptions, what can actuaries rely upon in setting assumptions? If a company has limited experience, what are other sources of data that can be utilized?**

The applicable rules under VM-20, as noted below.

VM-20 Section 9.A.6: “The company shall use its own experience, if relevant and credible, to establish an anticipated experience assumption for any risk factor. To the extent that company experience is not available or credible, the company may use industry experience or other data to establish the anticipated experience assumption, making modifications as needed to reflect the circumstances of the company.”

VM-20 Section 9.A.6.b: “For risk factors that do not lend themselves to the use of statistical credibility theory, and for risk factors to which statistical credibility theory can be appropriately applied but cannot currently be applied due to lack of industry data, the company shall establish anticipated experience assumptions in a manner that is consistent with accepted actuarial practice and that reflects any available relevant company experience, any available relevant industry experience, or any other experience data that are available and relevant. Such techniques include:

- a. Adopting standard assumptions published by professional, industry, or regulatory organizations to the extent they reflect any available relevant company experience or reasonable expectations.
- b. Applying factors to relevant industry experience tables or other relevant data to reflect any available relevant company experience and differences in expected experience from that underlying the base tables or data due to differences between the risk characteristics of the company experience and the risk characteristics of the experience underlying the base tables or data.
- c. Blending any available relevant company experience with any available relevant industry experience and/or other applicable data using weightings established in a manner that is consistent with accepted actuarial practice and that reflects the risk characteristics of the underlying policies and/or company practices.”

In addition to the Industry experience, other experience data might include reinsurance data, standalone LTC business experience, surveys, etc.

VM-20 Section 9.A.6.c.: “For risk factors that have limited or no experience or other applicable data to draw upon, the assumptions shall be established using sound actuarial judgment and the most relevant data available, if such data exists.”

**10. For new combo products, what considerations might actuaries take into account when setting assumptions (i.e. will mortality be more like UL or LTC)?**

Actuaries typically determine prudent mortality assumptions pursuant to VM-20 Section 9.C. For life combo products, actuaries may give special considerations to the following items:

- a. Determine mortality segments—separate or aggregate company experience; considerations of the company’s own underwriting, e.g. APS
- b. VM-20 Section 9.C.1.b.i.: “If company experience data is limited or not available, the company can use an applicable industry basic table in lieu of company experience as provided in Section 9.C.3.”



- c. Prescribed mortality margin may not be appropriate, which can be confirmed by sensitivity tests.
- d. VM-20 Section 9.C.2.h: “Mortality improvement shall not be incorporated beyond the valuation date. However, historical mortality improvement from the central point of the underlying company experience data to the valuation date may be incorporated.”
- e. Whether mortality margins should apply to active life, disabled life, or total life mortality.

Actuaries determine policyholder behavior assumptions pursuant to VM-20 Section 9.D.

Product characteristics such as the premium payment mode (single premium, multi-pay, or lifetime payment) can impact the lapse assumption. For certain product designs, some actuaries might consider reducing lapses if LTC benefits are being received (i.e. for disabled lives), and then setting lapses for recovered claimants. Lapses for policies with LTC riders may be lower than lapses for base life insurance policies alone.

Expense assumptions are subject to the requirements of VM-20 Section 9.E. These are also discussed in questions 14 and 15.

Asset assumptions are subject to the requirements of VM-20 Section 9.F.

Morbidity assumptions are discussed in Question 9.

For all other assumptions, VM-20 Section 9.A.1: “The company shall use prudent estimate assumptions in compliance with this section for each risk factor that is not stochastically modeled by applying a margin to the anticipated experience assumption for the risk factor if such a risk factor has been categorized as a material risk.”

In setting the prudent estimate assumptions, most actuaries also consider the following factors and appropriately reflect their expected impact on assumptions:

- rider design, such as AB, EB, inflation
- benefit design, such as reimbursement vs indemnity
- other product features, such as elimination period and return of premium

## Margins

### **11. Does the Valuation Manual provide guidance for setting margins for morbidity assumptions?**

Yes.

Valuation Manual Section 9 paragraph B, “Assumption Margins,” indicates that the company shall determine an explicit set of initial margins for each material risk independently. Each material risk might include incidence rates, selection factors, morbidity trends (e.g. morbidity improvement), recovery rates, disabled mortality rates, utilization, claim settlement expenses, and cost of care inflation.

The materiality is as defined in Section 2: Minimum Reserve, Subsection H where the company is instructed to establish a standard for determining materiality. Note that the materiality standard is based on the impact relative to the size of the net premium reserve (NPR), DR, and SR as opposed to the impact relative to the overall financial statement.

Another consideration is Section 9 paragraph D, “Policyholder Behavior Assumptions.”

“The company shall perform testing to determine whether the modeled reserve is materially affected by variations in the size and direction of the margin. ... If the impact on the modeled reserve is material, the company shall establish margins accordingly.” (Section 9.D.3.e.)

Testing shall be done “using a methodology that recognizes that the appropriate size and/or direction of a margin in the early durations may be quite different from that in later durations.” (Section 9.D.3.e.)

“To the extent that there is an absence of relevant and fully credible data, the company shall determine the margin such that the policyholder behavior assumption is shifted toward the conservative end of the plausible range of behavior, which is the end of the range that serves to increase the modeled reserve.” (Section 9.D.3.a.)

“The company must reflect the data uncertainty associated with using data from a similar but not identical block of business to determine the anticipated experience assumption.” (Section 9.D.3.c.) This suggests that if the morbidity assumption is based on experience for a related product (for instance, a product that is substantially stand-alone LTC), then additional margins should be applied.

Per Section 9.A.7, the company should sensitivity test risk factors that are not stochastically modeled and examine the impact on the modeled reserve.

Actuaries might also consider the requirements of VM-31 Section 3.D.1.d., “Assumption and Margin Development.” This subsection requires a description of the methods used to determine margins. Details may need to be provided that help in the understanding the rationale behind the development of margins. Qualified actuaries will often include a description of testing performed to determine the size and direction of the margins by duration, including how the results of sensitivity tests were used in connection with setting the margins.

**12. Could following the prescribed mortality margin result in a negative reserve margin? If so, what might actuaries consider in that situation?**

Actuaries typically consider what is in scope of PBR. Elsewhere in this practice note, the inclusion of extension and inflation riders are considered. If these types of riders are not considered in scope, the emergence of a negative reserve margin due to prescribed mortality margins may not be realistic.

Valuation Manual Section 9 paragraph C, “Mortality Assumptions,” describes the use of prescribed mortality margins. Separate prescribed margins will be added to company experience mortality rates and to the applicable industry basic tables.

The prescribed margin percentages shall be increased, *as appropriate*, to reflect the level of uncertainty related to situations, as listed in VM-20 Section 9.C.6.d. There does not appear to be guidance on *reducing* the prescribed mortality margin. However, actuaries may consider the term “as appropriate” when deciding whether a margin that increases the underlying mortality rate is appropriate.

Valuation Manual Section 9 paragraph B, “Assumption Margins,” indicates that it is not permissible to adjust the initial margin to recognize, in whole or in part, implicit or prescribed margins that are present, or are believed to be present, in other risk factors. It does not appear that margins on other assumptions could be adjusted to offset the negative reserve impact due to the prescribed mortality margins.

There is a guidance note in VM-31 Section 3.D.11.a that states that pursuant to VM-20, margins must increase the reserve, so the impact of each margin must be positive. Because initial drafting language was focused on term and universal life with secondary guarantees (ULSG) insurance, the challenge facing actuaries valuing combo products under VM-20 is how to implement the requirements for a product with certain natural risk offsets. Carefully documenting the decisions made using actuarial judgment for the considerations listed above will aid the regulators’ understanding of the company’s position.

**13. With the interaction of benefits within a combination product, what considerations might be relevant when setting margins.**

Actuaries typically consider the following:

VM-20 Section 9 paragraph B, “Assumption Margins,” indicates that the company shall determine an explicit set of initial margins for each material risk independently.

Next, if applicable, the level of a particular initial margin may be adjusted to take into account the fact that risk factors are not normally 100% correlated. The initially determined margin may only be reduced to the extent the company can demonstrate that the method used to justify such a reduction is reasonable.

VM-20 Section 9 paragraph B, “Assumption Margins,” indicates that it is not permissible to adjust the initial margin to recognize, in whole or in part, implicit or prescribed margins that are present, or are believed to be present, in other risk factors.

Although no guidance is found in VM-20, actuaries typically generally consider how a margin on disabled mortality interacts with a margin on total lives or active lives mortality. VM-20 Section 9.C.2.f. implies that the mortality assumption might be applicable to active lives:

“The company may remove from the company experience data any policies for which the experience is reflected through adjustments to the prudent estimate assumptions as provided under Section 9.C.7.e below, including policies insuring impaired lives and those for which there is a reasonable expectation, due to conditions such as changes in premiums or other policy provisions, that policyholder behavior will lead to mortality results that vary significantly from those that would otherwise be expected.”

## Expenses

**14. What unique combination products expenses are typically considered by actuaries?**

- Expenses unique to combination products may include claim management expenses. These claims management expenses may vary by: initial vs. ongoing claims, indemnity vs. reimbursement-type claims, etc. Some of these claim expenses may not arise for many years if policies are sold far in advance of when companies expect to incur LTC claims.
- Potential additional ongoing expenses associated with additional regulatory requirements. Riders qualifying under 101(g) may have ongoing work related to the annual incidental tests. Riders that qualify under 7702B may have ongoing work related to annual rate certifications and LTC experience reporting in annual financial statements. Some states may require the issuing company to be health licensed in order to issue riders qualifying under 7702B. Riders that qualify under 7702B may have additional expenses associated with appointment and maintenance of health licenses for agents. Consulting expenses may be incurred if outside consultants are relied upon for morbidity assumptions. Actuaries typically consider how often to update these assumptions. Additional underwriting (UW) expenses may include cognitive screening and more frequent APS expenses. Certain companies may recognize additional modeling and programming expenses for combination products where this modeling is more complex than with their existing business.

Reinsuring combination products may also require additional expenses and effort to upgrade software, programs, and to incorporate new processes and data fields.

**15. What approaches do actuaries typically consider in modeling of claims management expenses?**

- Claim management expenses may be higher under an expense reimbursement scheme as compared to an indemnity scheme.
- Claim management expenses may be a constant per year or month of claim or vary by claim duration. For example, the initial chronic illness certification and development of a plan of care may be more expensive than the ongoing claim processing and annual reassessments.
- Existing life insurance claim management professionals may require additional training, or other claims management resources may need to be hired. For example, the development of a plan of care requires a licensed health care practitioner (LHCP).
- Some companies may outsource claims management (or some portion of the process) to third parties (e.g. a third-party administrator).

## Reserves Calculation

**16. How do actuaries perform an NPR calculation under VM-20?**

There is no clear guidance under VM-20 for how to calculate the life and health components of an NPR. Actuaries should be comfortable that the risks are being appropriately captured. Prior to VM-20, some companies calculated separate reserves for life (CRVM) and health (LTC), but under VM20 a single NPR may be calculated for the entire contract.

**17. What methods do actuaries use in estimating LTC morbidity in VM20 reserve calculations? [Claim costs vs. first principles morbidity]**

Actuaries typically use the following methods:

First principle models can capture the interaction of cash flows between the attached hybrid rider and the base contract and assess the margin impacts from the interactions of mortality and morbidity assumptions. Thus, it fits well under the VM-20 DR and SR calculation methodology.

A claim cost approach is intended to capture the overall present value of the rider benefits. The claim cost approach works best when the valuation discount rates are known as of the valuation date, if they do not interact with projected cash flows, and if cash flow timing does not materially change the final reserve.

A first principles approach is more suitable to calculating DR and SR, if possible. If companies intend to use a claim cost approach for DR/SR calculation, careful consideration is needed to implement it under VM-20. Of particular note, the reduction of the face amount, cash value, and other life insurance benefits—as LTC payments are made—may be difficult to model using a claim cost approach.

For the purpose of NPR calculations, companies may consider either a claim cost approach or a first principles approach for projecting the rider benefits.

**18. VM-20 prescribes mortality margins for life insurance. What are the considerations around mortality margins when valuing a life insurance policy with acceleration/extension of benefits rider provisions? For example, whether or not there should be a margin separate to the prescribed margin, or whether the prescribed margin be considered applicable to active lives as well as disabled and recovered lives?**

The VM-20 prescribed mortality margin is intended for the total population mortality, which includes both lives that are active and disabled. VM-20 was drafted under a general assumption that higher mortality rates result in higher reserves, and not necessarily with consideration for combo products where higher mortality rates may result in a decrease in reserves. The directional impacts of margins on disabled life mortality and active life mortality might be different between the base plan death benefits and the rider payouts, on an aggregate or durational basis. Thus, companies may consider setting up different margins for disabled life mortality from prescribed total population mortality. Actuaries might consider methods to ensure that the total population mortality is preserved, e.g., through conserving total population deaths in the projection.

As of the release of this practice note, VM-20 does not allow mortality improvement in the calculation of reserves. To the extent that the Valuation Manual allows mortality improvement in future versions, margins that recognize mortality improvement should be considered.

**19. For NPR calculation under ULSG category, Section 3.B.7 implies that present value of benefits may include combo rider benefits if combo rider cash flows are integrated. In this case, what would be the appropriate morbidity assumption used for NPR? Shall that be consistent with the DR/SR assumptions?**

A consistent margin assumption between NPR, DR, and SR for the morbidity assumptions is not currently required under VM-20. If overall morbidity margins—including incidence rates, disabled mortality and recoveries and claim utilizations—assumed for the NPR calculation are materially different from DR/SR calculations, actuaries would provide justifications in the VM-31 Report.

**20. Section 3.B.5.c.ii.3. of VM-20 indicates that the net single premium (NSP) shall only include death benefits. However, there are ULSG products that guarantee both death benefits and LTC/CI rider benefits. The secondary guaranteed (SG) premiums or SG charges include the LTC/CI rider cost. Other than the NSP component of the NPR, the rider premiums or charges will impact the actual shadow account value (ASG), fully funded shadow account value (FFSG) and expense allowance. To be consistent with 3.B.7, when might a company reflect rider benefits in calculating the NSP?**

A company may consider including the rider benefits in NSP calculation, if the following are all true:

- a. The rider benefits are required to be considered under VM-20 with base contract cash flows
- b. The secondary guarantee covers both rider and base contract
- c. The NPR calculation for the base contract is based on Section 3.B.6. Actuaries would ensure that the NSP with rider on a per unit in force basis is no less than NSP without considering rider benefits in the actual implementation.

**21. Does principle-based reserving (PBR) change how a claim reserve is calculated?**

Under the current Valuation Manual Subsection 7, the claim reserve for LTC benefits is not subject to PBR requirements. The Academy's Long-Term Care Combo Product Valuation Practice Note Work Group interpretation is that VM-20 does not currently regulate how claim reserve shall be calculated.

**22. Does PBR apply if a policyholder is on claim?**

When a policyholder is on claim, the policyholder may still be eligible for death benefits, surrender benefits, and hybrid rider benefits. From a DR and SR projection point of view, the on-claim population shall be included in the cash flows (i.e., death and surrender benefits) and the

associated base contract cash flows subject to VM-20. In deriving VM-20 minimum reserves (the DR and SR excess amounts), claim reserve shall be considered in the total reserve and assets.

As an example of a consistent treatment of the claim reserve in VM-20, actuaries who include lives on claim at the time of valuation in the DR and the SR calculation are also able to model claim recoveries (and subsequent death claims) in the DR and SR.

**23. What contract reserves should be held for accelerated death benefit riders using an actuarial present value or lien method?**

The actuarial present value method employs actuarial assumptions such as the disabled life mortality rate and the discount rate. Actuaries typically consider any differences arising between the discount rate specified in the contract and the market discount rate at the time of claims, as well as potential changes in the estimate of disabled life mortality. A contractual discount rate that is less than the valuation rate may indicate the need for an active life reserve.

## Exclusion Testing

**24. If a combination product consists of many riders (acceleration of benefit, extension of benefits, inflation protection, etc.), which riders do actuaries typically include in a Stochastic Exclusion Ratio Test and Deterministic Exclusion Test?**

For the Stochastic Exclusion Ratio Test (SERT), the ratio in Section 6.A.2.a may be calculated using either an “an adjusted deterministic reserve” or using a “gross premium reserve developed from the cash flows from the company’s asset adequacy analysis models.”

Under the adjusted deterministic reserve method, none of the required adjustments impacts the inclusion or exclusion of combination product features or riders. Thus, if actuaries include product features or riders within the (unadjusted) deterministic reserve calculation, they might also include those same features or riders in the adjusted deterministic reserve calculation. Refer to questions 5 and 6 for further discussion of this. If using the gross premium reserve method, the cash flows included may be the same as those used in the company’s asset adequacy analysis model.

Under the Deterministic Net Premium Test, the company must demonstrate that the sum of the valuation net premiums for all future years is less than or equal to the sum of the corresponding guaranteed gross premiums. Valuation net premiums are to be determined according to minimum reserve requirements. Thus, for each reserve amount that composes a portion of the total minimum reserve, a valuation net premium is to be determined. Similarly, a guaranteed gross premium that is inclusive of all product features and riders, and subject to the guidance in Section 6.B.6, is to be determined.

For a product that includes acceleration and extension of benefits, actuaries might wish to illustrate the gross and net premiums for each component (base life insurance, acceleration, and extension of benefits). This illustration can demonstrate a reasonable relationship of net to gross premiums across the contracts.

**25. For purposes of VM-20 Section 6, “Stochastic and Deterministic Exclusion Tests,” how is “anticipated experience” defined when the LTC rider is valued along with the base policy?**

In the SERT (VM-20 Section 6 A.2.b.) the adjusted deterministic reserve is defined using “anticipated experience assumptions” with no margins. VM-01 defines “anticipated experience assumption” as “an expectation of future experience for a risk factor given available, relevant information pertaining to the assumption being estimated.”

Actuaries sometimes adopt the “anticipated experience assumptions” used when calculating the SERT as the current best estimate of future LTC morbidity (comprised of claim incidence, termination, and utilization), active and disabled life mortality, and lapse assumptions. These assumptions might be based on credible historical company data, on industry data (such as through a study), or a blend of these.

**26. For a LTC life contract that utilizes an up-front funding vehicle such as premium deposit funds, Single Premium Immediate Annuities (SPIAs), deferred annuities, etc., are the annuities similar to cash flows used in the Stochastic Exclusion Ratio Test or the life product cash flows?**

The treatment of the funding vehicle will depend on how the contract is related to the life+LTC contract. If the funding vehicle stands on its own, then cash flows from that vehicle that are used to fund the life+LTC contract can be considered “premium.” The assumptions in reserve calculations should reflect the reality or expectation of future policyholder behavior.

If there is an embedded link between the two contracts, then the treatment of the cash flows from the funding vehicle will depend on the nature of the funding vehicle. For instance, annuities and premium deposit funds are not in scope under VM-20.

## Impact of Reinsurance

**27. How do actuaries calculate NPR Reserve Credit for Combo Products?**

For YRT reinsurance contracts, actuaries calculate the NPR reserve credit in accordance with Section 8.B.1. which references SSAP No. 61R of the AP&P Manual. SSAP No. 61R specifies that the  $\frac{1}{2}$  cx reserve is calculated with the applicable valuation mortality table (e.g., the 2017 CSO for policies issued in 2021).

For the acceleration rider, because the underlying benefit cash flow interacts with the base policy, actuaries might consider the  $\frac{1}{2}$  cx reserve credit as also covering the acceleration rider.

If an inflation benefit applied to an acceleration of benefits (AOB) rider produces AOB benefit payments in excess of the base policy amount, the company might apply the  $\frac{1}{2}$  cx reserve credit to the total benefits including any inflation.

For the extension of benefits (EOB) rider, if the company chooses to model this under VM-20 (i.e., as a benefit integrated with the base policy) because there are no prescribed statutory morbidity table, some actuaries might consider using the YRT premium in the  $\frac{1}{2}$  cx calculation, in lieu of the valuation table, provided that the YRT premium are expected to be in line with the projected morbidity cost.

For EOBs separate from the cash flows of the base policy, determination of the reinsurance reserve credit might be calculated similarly to that of stand-alone LTC, or a related product.