

Health Practice Note 1995–6
November 1995

Group Long-Term Disability Income Insurance

Introduction

This practice note was prepared by a work group organized by the Committee on State Health of the American Academy of Actuaries. The work group was charged with developing a description of some of the current practices used by health actuaries in the United States. This work group was originally formed in 1993 and issued the first set of Health Practice Notes that year; changes have been made to this set of practice notes to reflect additional information on current practices.

The practice notes represent a description of practices believed by the work group to be commonly employed by health actuaries in the United States in 1995. The purpose of the practice notes is to assist actuaries who are faced with the requirement of preparing a statutory statement of opinion by providing examples of some of the common approaches to this work. However, no representation of completeness is made; other approaches may also be in common use. It should also be recognized that the information contained in the practice notes provides guidance, but is not a definitive statement as to what constitutes generally accepted practice in this area. Moreover, these practice notes are based upon the model Standard Valuation Law of the National Association of Insurance Commissioners (NAIC). To the extent that the laws of a particular state differ from the NAIC model, practices described in these practice notes may not be appropriate for actuarial practice in that state. This practice note has not been promulgated by the Actuarial Standards Board, nor is it binding on any actuary.

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Comments are welcome as to the appropriateness of the practice notes, desirability of annual updates, substantive disagreements, etc. Comments should be sent to Peter L. Perkins at his Directory address.

Q. What does this practice note address?

A. This practice note addresses questions and issues regarding the actuary's responsibilities for compliance with the model Standard Valuation Law (SVL), the NAIC model *Actuarial Opinion and Memorandum Regulation* (hereafter the *Model Regulation*), and the Actuarial Standards Board's actuarial standards of practice (ASOPs) related specifically to determining adequate reserve levels for group long-term disability (GLTD) insurance coverage.

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While many valuation issues are common to life and health insurance in general, the degree of emphasis varies by type of business, and each product type presents its own unique problems, responses, methods, and bases for setting assumptions. This is one of several health insurance product practice notes that has been compiled to provide guidance to actuaries.

The actuary may also refer to Health Practice Note 1995–1, *General Considerations*, for items of general concern.

Q. What are *Section 7* and *Section 8* opinions?

A. Actuarial Compliance Guideline (ACG) No. 4, *Statutory Statements of Opinion Not Including an Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurers*, describes *Section 7* opinions as relating only to the requirements of the SVL and the *Model Regulation*, and not requiring an opinion as to asset adequacy. Section 8 statements of actuarial opinion are required to be based on asset adequacy analysis, as described in ASOP No. 22.

Q. What is *group long-term disability insurance*?

A. *Group long-term disability insurance* is income replacement insurance included under accidental health group for statutory statement purposes, and covers the risk that a person insured under the applicable group contract will be unable to work as a result of disability.

This practice note has been written to cover most of the typical GLTD valuation issues. It does not, however, address all product questions, especially those relating to the less common provisions found in some GLTD contracts. For purposes of this practice note, GLTD is considered to include contracts that replace income for a period of at least 2 years.

Q. For purposes of this practice note, what are *reserves* and *liabilities*?

A. Traditional meanings of the terms are intended, particularly those reserves, liabilities, and related actuarial items for which the valuation actuary must provide a statutory statement of opinion regarding their adequacy. Only statutory reserves are addressed in this practice note. Capital and surplus, and the assets backing them, are *not* addressed.

Liabilities addressed in this practice note include the following:

1. disabled life reserves (DLR),

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2. liabilities for claims incurred but not yet reported (IBNR), and
3. active life reserves (ALR).

Company practice may vary, with DLR established at the time when the claim is reported or when it is approved. The actuary makes sure that valuation practice conforms to the company's claims approval process. Also, as addressed below, the actuary addresses reserving for future claim expenses. Practice varies as to whether to establish a separate reserve liability or to make provision for this liability in other claim reserves.

Q. What is *gross premium valuation*?

A. *Gross premium valuation* (GPV) is the calculation of the present value of future asset and liability cash flows on a block of business, including gross premiums, benefit payments, and expenses.

Q. What is *cash flow testing*?

A. See Health Practice Note 1995–1, *General Considerations*.

ASOP No. 22, *Statutory Statements of Opinion Based on Asset Adequacy Analysis by Appointed Actuaries for Life or Health Insurance Companies*, defines *cash flow testing* (CFT) as the “process of projecting and comparing, as of a given date called the *valuation date*, the timing and amount of asset and obligation cash flows after the valuation date.”

The actuary generally will wish to be able to opine that the assets held are, in aggregate, adequate to meet the long-term obligations required of GLTD contracts, under reasonably anticipated scenarios for economic trends, interest rates, rates of claim incidence and termination, and anticipated levels of benefit payment in light of contractual specifications regarding cost-of-living adjustments (COLA) and Social Security and other offsets. This may be done with or without CFT.

The actuary may use asset adequacy analysis to test statutory reserves actually held for margins, or use the analysis to calculate directly the reserves to be held.

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Fundamentals of Reserving for Disability Insurance

Q. Which laws and regulations apply?

A. The Standard Valuation Law (SVL), as most recently amended (1990), and including the *Model Regulation*, defines standards for statutory minimum reserves. However, the latest revision to the *Model Regulation* has not been uniformly adopted by all states, and a number of states have not yet adopted any version of the *Model Regulation*. This raises the question of which laws and regulations a company should follow.

In general, the company either follows the version of the laws and regulations adopted by the state of company domicile, or the most recent *Model Regulation* if no version has been adopted by that state. However, the actuary filing an opinion as appointed actuary is also expected to take into account the applicable laws and regulations of each state in which his or her opinion is filed, and to conform to the requirements of those laws and regulations.

Q. Which ASOP applies to reserves for disability insurance?

A. ASOP No. 5, *Incurred Health Claim Liabilities*, describes the analysis that actuaries undertake in valuing reserves for disability insurance. This ASOP outlines major considerations for all health insurance, including GLTD, even though it does not address many issues specific to this business.

Q. Is cash flow testing necessary for GLTD?

A. ASOP No. 14 (*When to Do Cash Flow Testing for Life and Health Insurance Companies*), section 5, lists situations in which cash flow testing may be necessary, and ASOP No. 7 (*Performing Cash Flow Testing for Insurers*) outlines factors that should be taken into consideration when cash flow testing is performed. GLTD business usually accumulates substantial reserves; assets underlying these reserves typically need to be invested to generate suitable returns to support assumptions used in valuation. Default assumptions for the C-1 risk will depend on the riskiness of assets underlying reserves. Since those who are on claim have no call on the assets underlying the reserves for their benefits, there is generally no significant exposure to the interest rate or C-3 risk.

The most significant risk for GLTD usually is the C-2 insurance risk arising from deviations in claim termination experience from that assumed in valuation and pricing. The actuary also usually considers the reinvestment risk associated with assets backing the long-term portion of DLR

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liabilities. If actuaries use cash flow testing to opine on the adequacy of assets, they typically are prudent to perform the analysis under a variety of plausible scenarios for deteriorating claims termination experience. These scenarios may be developed deterministically or stochastically. Secular trends in claims termination experience may also be analyzed by statistical techniques applied to historical data.

Q. What is the actuary's responsibility if cash flow testing is not done for GLTD business but is performed for other blocks of business? What typically is done regarding the adequacy of assets allocated to GLTD?

A. The actuary typically documents the reasons for not performing cash flow testing or uses other techniques to determine asset adequacy. Assets backing GLTD reserves generally are reviewed for duration, quality, and yield. GLTD business relies on investment income, at least for a portion of its profits. It is important that the assets allocated to GLTD be appropriate in duration and of reliable quality. The analysis usually includes a discussion of sources or methods to use in making such a review of assets.

Q. What methods can be used to demonstrate adequacy for GLTD?

A. Refer to ASOP Nos. 5 (*Incurred Health Claim Liabilities*) and 14. Other methods may address assets, as well as insurance obligation and other risks, in particular the risk that changes in the economic environment and changes in litigation trends may affect the pattern of claim termination rates.

Q. How can an actuary “demonstrate that a block of business is relatively insensitive to influences such as changes in economic conditions?”

A. This is one of the more difficult aspects of disability valuation. Attempts to relate morbidity trends to economic indicators can be difficult at best. Recognizing that there may be some correlation between economic strength and disability termination rates, the actuary generally will wish to be well versed in the design of the products offered and the markets in which they are sold.

For example, a company that offers generous benefits in cyclical industries typically would expect to experience wider swings in experience than a company offering more modest schedules in stable, established industries. Established disability insurers can also attempt to consider their own trend in termination rates during prior economic cycles. Incidence rates may be more likely to vary

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with economic conditions than termination rates. The actuary also generally takes into account the influence that changes in economic conditions may have on assets backing reserves and on the rate of discount used in calculating reserves.

Other factors that the actuary generally considers include the business climate of the jurisdiction, and any experience that the company or other disability insurers may have had with past claims litigation.

Q. What minimum claim reserve contingency margin may be considered adequate to provide for adverse deviations?

A. Reserves generally may be considered adequate if they are sufficient, in aggregate, to cover reasonable contingencies and expenses. Both disabled life claims and unreported claims are subject to random fluctuations, and to cyclical trends typically driven by economic conditions. Reserve margins usually may be considered adequate in the IBNR if they cover reasonably anticipated increases in reported claims, and in case reserves for decreases in claim termination rates among open claims. Contingency margins will normally represent a smaller percentage of underlying reserves as the number of claims increases.

ASOP No. 5, section 5.1, states that varying degrees of conservatism or margin are appropriate, depending on the purpose of the estimate. The degree of conservatism depends on the assumptions. For example, the actuary typically will not adopt the 1987 GLTD table without validating, at least in the aggregate, the reasonableness of its assumptions as to claims termination to those of the claims block being valued.

Adequacy testing, such as that performed through GPV, may be used in determining whether such margins are called for. Retrospective tests such as Schedule O may also provide guidance regarding needed levels of margin.

Q. When may a gross premium valuation be performed to demonstrate reserve adequacy?

A. GLTD business is usually written on a 1-year term basis with minimal rate guarantees. Typically, no opinion of the adequacy of the IBNR reserve is made without addressing the question of rate adequacy. This may require a gross premium valuation. Also, pricing may require an assessment of claim incidence and termination rate adequacy.

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Q. May a claim reserve estimate be considered adequate if it does not include a provision for claim settlement expenses?

A. No. Claim expense reserves *are required* by the *Model Regulation*. One method is to develop a claims expense factor as a percentage of paid claims or claim reserves, and to adjust benefit reserves accordingly. In evaluating the appropriate adjustment for expenses, the actuary usually decides whether an inflation assumption is necessary. In general, the expense adjustment factor for open approved claims reflects the cost of ongoing maintenance, but not the initial claims investigation expense. For incurred but not reported claims, the expense adjustment typically will also include the cost of initial investigation. For example, the actuary may choose to develop separate factors for expenses attributable to benefit payments during any period in which benefits are paid while the insured is disabled under an *own occupation* provision.

Q. What does the valuation actuary consider regarding business not yet issued as of the valuation date?

A. Generally, the actuary is responsible for the valuation of business already in force, and considers rate adequacy only from the standpoint of its impact on IBNR. However, as a matter of practice, the actuary generally verifies that methods and assumptions for reserves on in-force business are appropriate in light of any changes anticipated in product design, underwriting, claim adjudication practices, or target markets that may affect claim patterns. This includes rate adequacy and other considerations.

Disabled Life Reserves on Open Claims, Reported and Approved (Case Reserves)

Q. How should claims be grouped for the application of tabular reserves or development methodologies?

A. ASOP No. 5 refers to reported and unreported claims. Tabular reserves usually are appropriate for reported claims, and development methodologies are generally appropriate for unreported claims.

Q. What continuance tables are appropriate for open claims?

A. Many actuaries have used the 1964 CDT or the 1985 CIDA tables, or modifications thereof. Commencing with disabilities *on or after January 1, 1993*, SVL specifies the use of the

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1987 GLTD table; however, at the time of this writing, only a limited number of states has adopted the 1987 GLTD.

Q. When is it appropriate to use a company's own experience?

A. The actuary may use the company's own experience during the first 2 years of disability, provided its statistical credibility can be demonstrated; and the actuary may use a company's own experience during the first 5 years, provided it has statistical credibility and prior state of domicile approval.

Q. What are the major factors to consider in setting termination rates?

A. Termination rates used in valuation generally vary by a claimant's age at disability, sex, duration, and elimination period. The actuary may also develop and utilize termination rates that recognize other parameters, such as cause of disability, occupation, industry, Social Security status, the definition of *disability*, and such factors as plan design.

Q. Is lump-sum settlement experience included in studies to calculate termination rates?

A. If a claim is settled by lump-sum payment, it is generally preferable to use an implied termination date in lieu of the actual settlement date. The actuary may choose to exclude experience for such claims, especially if the number of settlements is immaterial in comparison to the total claims in the study. Similarly, nonstandard claims, such as those obtained via reserve buyouts, and possibly claims or administrative services only (ASO) business, may also be excluded from the termination study. In any event, the actuary typically takes into account the materiality of the amount of lump-sum settlements in deciding whether to include them in termination experience.

Q. What margins are appropriate for adverse deviation of termination rates?

A. Valuation termination rates include an appropriate margin for adverse deviation, such as the margin that is added to the 1987 GLTD Basic Table to create the valuation table through a 10% reduction in termination rates. In determining margins included in termination rates, the actuary generally takes into account any margins included in other components of the reserve. The actuary is referred to the article, "Pricing and Underwriting of Group Disability Income Coverages," by

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Roy Goldman, in *Transactions*, published by the Society of Actuaries, vol. XLII, pp. 171–230.

Q. What specific factors are considered in monitoring the appropriateness of termination rates?

A. Termination rates are monitored periodically for appropriateness, via actual to expected termination studies, Schedule O reserve tests, or other similar analyses. The actuary generally is prudent to pay especially close attention to mix-of-business changes and the impact they may have on reserve adequacy, as, for example, in the case of a shift from primarily 2-year own-occupation business to a block of claims that is evenly distributed between 2-year own-occupation and own occupation to 65.

Q. What offsets other than Social Security may be taken into account?

A. The actuary may wish to adjust claim reserves in the very early durations to account for offsets other than Social Security (SS) that have not yet shown up on the reserving system. This is particularly relevant for blue collar claims or public employee claims, where many claimants can be expected to receive workers' compensation and public employee pension offsets, or benefits under state disability laws. However, the actuary is usually prudent to recognize that some of these benefits may be temporary in nature.

Q. What other adjustments does the actuary take into account in setting morbidity assumptions?

A. The following are typical adjustments that are considered, although they by no means constitute an exhaustive list:

1. Reserves for claims in course of settlement or claims not yet approved may be calculated as the probability of approval multiplied by the reserve that would be held for the same claim if it had been approved. The probability of approval typically recognizes the probability of the claimant reaching the end of the elimination period.
2. Reserves for claims in course of settlement that have completed the elimination period (EP), which also include the retrospective liability for amounts past due that would be paid if the claim is approved, typically are considered.
3. The DLR appropriately accounts for the claim's benefit end date, such as age 65, age 70,

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or an age implied by a reduced benefit duration table.

4. The actuary may also choose to account explicitly for the end dates of benefit offsets.
5. Social Security (SS) family benefits last only as long as there are eligible dependents. If dependent information is available, this may be explicitly accounted for at the claimant level. If not, then an aggregate probability of family SS ending in a given year may be applied to all claims.
6. The probability of receipt of SS may be modeled by applying block approval rates to all claims without SS, or by applying a different set of approval rates to only those claims that have been neither denied for SS at all levels of appeal nor deemed to be ineligible.
7. The actuary may wish to consider amounts of claim overpayments that will be recovered from claimants who eventually receive SS.

Q. What interest rates are used to discount reserves?

A. Reserve interest rates are commonly based on new money interest rates and, therefore, vary by a claim's year of incurral. The actuary may choose a reserve interest rate that reflects actual new money rates, or new money rates less an adjustment for profit or contingencies. Another common approach is to use a single-portfolio rate of interest; this should be validated through cash flow testing or through other tests of asset adequacy consistent with SVL requirements. The NAIC *Model Regulation* approved in 1993 requires claims to be valued at a reserve interest rate no higher than the rate appropriate for single-premium deferred annuities issued in the same year as the date of claim, and reduced by 100 basis points.

Disabled Life Reserves for Claims Incurred But Not Yet Reported

Any methodology for establishing a liability for incurred but not yet reported (IBNR) claims consists, essentially, of finding the best proxy to predict the claims that will develop from a given block of GLTD premium. Typically, this is the premium itself, although the use of other bases, such as covered payroll, may also be appropriate.

Q. How do companies develop factors for IBNR reserves?

A. Development methods may be used that examine claim reporting patterns from the date

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disabled. This leads to a series of factors to be applied to monthly premiums or another exposure basis and represents the proportion of claims covered by those premiums that may still be unreported. The sum of the results is usually multiplied by an appropriate target loss ratio (TLR) to arrive at expected net claims. With late reporting, the applied series is often shorter. The actuary may shorten the series by increasing the final factor for the results of the tail by truncating the series at a sufficiently distant point or by some other method. Whichever method is used, the actuary recognizes the impact of the method with regard to matching reported claims and liabilities, and takes steps to be sure that the application of the chosen method does not result in a material mismatch.

The actuary may also consider establishing a reserve for claims that have closed but that may reopen. Part of this liability may be covered by keeping some disabled life reserves open for a period of time after the claim is terminated. Another acceptable approach is to increase the IBNR to cover this liability. Setting up reserves as a percentage of claims closed in the previous year may be appropriate.

The actuary may choose to segment the block of GLTD business when using development methods that examine claim reporting patterns from date of disability.

Q. What variables typically affect the rate at which claims become known?

A. The following variables may impact the rate at which claims become known, and therefore may be considered when developing IBNR factors:

1. Elimination Period (EP)—Claims with EPs of 3 or less months may exhibit a different reporting lag than claims with an EP of 6 months.
2. Claim Procedures—Claims that are paid via a paperless phone-in claim system may exhibit a shorter reporting lag than claims paid on the basis of a standard claim submission form. Claims paid subject to employer authorization may be subject to a longer reporting lag.
3. STD Coverage—The reporting lag will most likely be shorter on cases where the company is also paying STD claims.
4. Third Party Administration (TPA) Relationship—The presence of a TPA, which either pays claims or assists in claim submissions, may impact the reporting lag.

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Q. What kind of segmentation of business might be used in the development of IBNR factors?

A. When using aggregate IBNR methods (such as a target loss ratio (TLR) times premium earned in the EP, plus the time of the average claim lag), the actuary may wish to consider the following:

1. The average lag factor may vary for new cases versus ongoing cases versus canceled cases. The average lag factor is used to account for claims that were incurred in past months that are not completely developed. New cases and canceled cases have fewer past undeveloped months; it may therefore be appropriate to use smaller average lag factors for these cases.
2. When adjusting expected loss ratios for actual experience, the actuary may find it desirable to utilize different actual to expected factors by year of issue or for the current year's sales versus ongoing cases.
3. The TLR is often related to (a) pricing assumptions applied to the current block of business and (b) the results of current analysis of actual to expected experience. The actuary may also deem it appropriate to increase the TLR during times of poorer than expected experience, such as during a recession.
4. In order to appropriately respond to changes in the mix of business by elimination period and size of case, periodic studies are often made to make sure all assumptions are appropriate for the current situation.

Approximate methods may be appropriate if it can be demonstrated that over time they closely reproduce results. For example, it might be determined that multiplying premiums received for the elimination period plus 2 months by the TLR would produce the same aggregate results achieved from more detailed methods.

Q. What provisions can be made for claims that have been reported, but that have not completed the elimination period?

A. The IBNR reserve may be designed to cover only unreported claims, or may also be designed to account for liabilities on claims that have been reported but have not completed the elimination period. In the former case, the DLR accounts for all reported claims, even those that have not completed the EP. In the latter, the DLR accounts for only claims that are known and have completed the EP.

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While both methodologies are in common use, it is usually important to ensure consistency between the IBNR and the DLR, so that all liabilities are appropriately accounted for.

Q. How do changes in claims administration affect the calculation of IBNR factors?

A. Any significant changes to claim processing procedures or DLR calculations usually warrant new studies. For example, if the company's previous practice was to add claims to the DLR within a few days of notification of pending claim, but now the company adds the claims only after the claims are approved for payment, the factors for IBNR would change. When using development methods, the actuary may also find it appropriate to make sure that the factors are developed from periods covered by the same claim practices. For example, a significant change in practice 15 months ago might suggest that the study cover claims reported in the last 15 months instead of the last 36 months.

Q. How does a company check the validity of its IBNR factors?

A. Follow-up studies are usually done to test the validity of prior IBNR calculations and adjust current ones. Subsequent claim payments and current reserves for claims unreported at the time of the prior IBNR calculation are discounted back to the date of the IBNR calculation to measure its accuracy. The more conservative IBNR calculations usually will be those that were found to be adequate for each calculation in a series of yearly calculations.

Other Considerations in Reserving for GLTD

Q. Should claim cycles and underwriting cycles be reflected in the projection assumptions?

A. As discussed above, claim and underwriting cycles for GLTD are extremely difficult to predict with any degree of precision and, unless the actuary has clear evidence to the contrary, are usually best ignored in the reserve valuation process. Typically, it is more appropriate for cyclical fluctuations to be considered as part of capital adequacy analysis.

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Q. Is an active lives reserve (ALR) held for cases with rate guarantees that extend 2 or more years beyond the expiration of the current policy year?

A. If a load is being charged for rate guarantees, then the actuary normally assumes that at least part of that load is to cover an increase in expected claims in the years beyond the current policy year, and that a liability exists.

Depending on the nature and extent of such guarantees, the actuary may determine that the liability is immaterial, or may account for it by including a specific factor in the IBNR reserve and possibly, also, the DLR. One approach is to adjust the actual to expected factor in calculating the IBNR reserve; another is to establish a separate ALR.