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Educational Note

Valuation of Group Life and Health Policy Liabilities

Committee on Life Insurance Financial Reporting

June 2010

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Members should be familiar with educational notes. Educational notes describe but do not recommend practice in illustrative situations. They do not constitute Standards of Practice and are, therefore, not binding. They are, however, intended to illustrate the application (but not necessarily the only application) of the Standards of Practice, so there should be no conflict between them. They are intended to assist actuaries in applying Standards of Practice in respect of specific matters. Responsibility for the manner of application of Standards of Practice in specific circumstances remains that of the members in the life insurance practice area.

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Memorandum

To: All Life Insurance Practitioners

From: Tyrone G. Faulds, Chairperson
Practice Council

B. Dale Mathews, Chairperson
Committee on Life Insurance Financial Reporting

Date: June 4, 2010

Subject: **Educational Note – Valuation of Group Life and Health Policy Liabilities**

The Committee on Life Insurance Financial Reporting (CLIFR) has prepared the attached educational note to assist actuaries in applying the Standards of Practice in the valuation of group life and health policy liabilities. In preparing this educational note, CLIFR has obtained extensive input from experts practising in the group life and health area.

In accordance with the Canadian Institute of Actuaries' (CIA) Policy on Due Process for the Approval of Guidance Material Other than Standards of Practice, this educational note has been prepared by CLIFR and has received final approval for distribution by the Practice Council on November 26, 2009.

As outlined in subsection 1220 of the Standards of Practice, "*The actuary should be familiar with relevant Educational Notes and other designated educational material*." That subsection explains further that a "practice which the Educational Notes describe for a situation is not necessarily the only accepted practice for that situation and is not necessarily accepted actuarial practice for a different situation." As well, "Educational Notes are intended to illustrate the application (but not necessarily the only application) of the Standards, so there should be no conflict between them."

If you have any questions or comments regarding this educational note, please contact Dale Mathews at her CIA Online Directory address, Dale_Mathews@manulife.com.

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1. INTRODUCTION

This is an educational note on the Valuation of Group Life and Health Policy Liabilities in life insurer financial statements prepared in accordance with generally accepted accounting principles (GAAP) in Canada. It is intended to provide guidance to actuaries in performing the valuation of group life and health liabilities and to provide supplemental information to the Standards of Practice.

This note draws on the work done previously by the Committee on Life Insurance Financial Reporting (CLIFR) and reflects input from a number of actuaries currently practising in this area. For the definition of certain terms used in this note, please see the Glossary in Appendix A.

2. SCOPE

This educational note applies to employee group insurance, association group insurance and creditor group insurance. This note applies to both participating and non-participating group life and health policies. From a valuation point of view (with the exception of "ownership dividends" that are ignored here), there is no substantive difference between a participating and non-participating group policy, and in each case, it is the policy provisions that identify the considerations relevant to the valuation of policy liabilities.

The principles described for the valuation of direct written business apply to the valuation of assumed group life and health reinsurance.

3. GROUP LIFE AND HEALTH BUSINESS CHARACTERISTICS

Group life and health insurance is an arrangement whereby the members of a group, and sometimes their dependents, are insured under a master policy or contract. Typically, each insured member receives a certificate of insurance. The term "group insurance" includes:

employment benefits—employee groups sponsored by their employers,

association plans—employee or professional groups sponsored by their union or professional group, and

creditor group insurance—creditor groups sponsored by the creditor of a group of debtors, where membership in the group qualifies the insured.

Most group life and health coverage is provided as an employment benefit for the benefit of the company's employees and their dependents, and is at least partially paid for by the employer. Association plans generally cover associations of individuals or groups for group coverage. Benefits are provided to a group of people with a common link such as a profession or an aggregation of small groups to form one large group. In the former case, premiums are generally paid by the members and in the latter, premiums are generally paid by a combination of employer and employee contributions. Creditor group insurance is coverage provided to a collection of participants who have taken loans (including mortgages). Premiums may be single

premiums or periodic premiums, typically paid by the creditor and may be financed by a portion of the loan repayments made by the participants.

Underwriting of group life and health insurance is generally done at the group level and relies on high participation rates rather than individual evidence of insurability. Exceptions arise for certain situations such as optional insurance, association or creditor groups, late entrants, or amounts exceeding underwriting maximums, where a form of individual underwriting is typically performed. Premium rates are generally guaranteed for one year, though longer premium rate guarantees are sometimes provided. Premiums are generally paid monthly except for paid-up life, paid-up creditor insurance or single premium plans. For employee groups, an average premium rate applicable to the group for the following year is often applied, with the insurer bearing the risk arising from changing demographic profiles over the policy year.

It is often the case that many provisions of the group life and health contract are not standard but are developed through a process of negotiation between the group policyholder and the insurer. For that reason, in the valuation of group life and health insurance it is especially important that the actuary be familiar with the provisions of the contracts, so that all the risks are reflected appropriately in the valuation of policy liabilities.

4. BENEFIT DESCRIPTIONS

The list below is not meant to be exhaustive, but rather offers examples of the types of benefit coverage that, typically, is offered. The purpose of these descriptions of benefits is to provide a framework for the discussion in this educational note, and not to limit possible interpretations. The best source for benefit descriptions is the contract.

4.1 Long-Term Disability (LTD)

LTD insurance provides protection to members of group life and health policies from loss of income due to long-term disability arising from accident or sickness. Typically, LTD benefits are payable monthly once the member has been disabled as defined in the contract for a defined period of time known as the elimination period. Both the definition of disability and the elimination period are outlined in the terms of the contract between the insurer and the group policyholder. In most cases, the definition of disability is the complete inability to perform the essential tasks of one's own occupation (i.e., regular occupation) during the first two years and any occupation for which they are reasonably fit thereafter. Benefits are usually paid to age 65 as long as the person continues to be disabled as defined in the contract.

LTD benefits usually cover some percentage of the disabled member's compensation. However, benefits may include some additional items such as the expense of running an office. Where covered, these extra items are usually only covered for a short period of time such as one or two years. Benefit offsets may apply to LTD benefits, where the amount of benefits is reduced to reflect other sources of earnings such as government benefits, including Canada Pension Plan (CPP), Québec Pension Plan

(QPP), workers' compensation payments, and U.S. Social Security Disability Insurance (SSDI).

Some LTD plans include Cost Of Living Adjustment (COLA) provisions that periodically increase benefits to help claimants deal with increases in the cost of living.

LTD plans often provide for partial benefits during periods of partial disability or rehabilitation, where the amount of the partial benefit is determined by reducing full benefits by the amount of employment income received. In some cases, the offset is less than the full amount of employment income as an incentive for the member to work to the full extent of his or her abilities.

4.2 Short-Term Disability (STD)

STD insurance provides disability coverage for a short period of time immediately upon disability or after a short elimination period. STD is also known as Weekly Indemnity (WI). Typically, the benefit period is between four and six months, though it can be up to 12 months or longer, and is often coordinated with the elimination period of applicable LTD coverage.

4.3 Medical or Extended Health Care (EHC)

This benefit is also known as Supplementary Health. Covered expenses include reasonable charges incurred for medically necessary services, medication and supplies for the treatment of injury or disease, as described in the contract. Coverage is usually subject to internal limits such as deductibles, coinsurance and/or various maxima, and is coordinated with the medical coverage provided by provincial health insurance plans. In most contracts the coverage wraps round the provincial health insurance plan. Therefore, the risks covered by the contract will be affected by changes in the provincial health insurance plan.

Coverage also may include benefits to provide for emergency medical treatment while traveling out of province (within Canada) or out of country. For this type of travel insurance, planned treatment is not generally covered.

4.4 Dental

Covered expenses include reasonable charges, often limited to dental fee schedules, incurred for necessary dental services as described in the contract. Typically, coverage is subject to internal limits such as deductibles, coinsurance and/or various maxima.

4.5 Term Life

Term life insurance provides benefits upon death of the insured member during the contract period. Upon termination of a member's coverage, the member has the option to convert some or all of the coverage to an individual life insurance policy, called a group conversion benefit (see below).

4.6 Group Conversion Benefits

Group conversion benefits provide for conversion to an individual policy, without evidence of insurability, upon termination of the member's group coverage, either due to termination of the group contract without replacement coverage, or termination of the member's participation. Under Canadian Life and Health Insurance Association (CLHIA) guidelines, group conversion benefits must be provided for term life insurance, and may apply to other group coverages as well.

4.7 Waiver of Premium or Extended Death Benefits

Waiver of premium insurance provides continued group life insurance coverage without premiums for insured members who satisfy the definition of disability following the elimination period. Typically, the waiver of premium benefit ends at a specified age (65), but can continue as a lifetime benefit. The definition of disability for waiver of premium is either the same as, or more stringent than, for LTD. Also, the waiver of premium elimination period would usually be the same as or longer than the LTD elimination period. In group life and health contracts, waiver of premium benefits generally continue to provide extended life insurance coverage on disabled lives regardless of whether the group policy remains in force.

4.8 Accidental Death and Dismemberment

Accidental death provides benefits in the event of a death that meets the contract definition of accidental, and dismemberment provides benefits upon loss of limbs, etc., as defined in the contract.

4.9 Optional Life

Additional amounts of life insurance are sometimes offered on an optional basis, usually in conjunction with a basic level of mandatory employee group term life insurance. The premium is usually step-rated (i.e., varies by age) and rates may be very competitive with individual term insurance. Risk characteristics and liabilities may be more similar to individual insurance than to group insurance. Individual selection (underwriting) rules may apply, becoming more demanding as the amount of insurance increases.

4.10 Critical Illness

Critical Illness (CI) is a relatively new coverage in Canada that guarantees the payment of a benefit, typically a lump sum, if the insured suffers a critical illness such as cancer or a heart attack. The definition of critical illness varies and could include 20 or more different illnesses, including cancer, heart attack, stroke, and organ transplants. To qualify for a benefit, contracts will typically specify that the insured must survive a critical illness for a fixed period of time, usually 30 days, to receive the coverage amount.

4.11 Paid-up Life Insurance

Paid-up life insurance involves a single premium payment for permanent life insurance coverage on a member. It is sometimes used as a way to provide life

coverage to retirees. Face amounts on paid-up life are typically level, but decreasing face amounts are sometimes provided.

4.12 Survivor Income Benefits (SIB)

Survivor Income Benefits are also known as spousal income benefits. Upon the death of an insured member, an annuity may be paid to the beneficiary or beneficiaries. The period for which the annuity is payable depends on the contract provisions, and may, for example, be until the date at which the deceased member would have become age 65, the age at which the beneficiary attains age 65, or the death of the beneficiary. A lump sum death benefit may also, at the election of the beneficiary, be settled in the form of an annuity and in this case, the valuation would be consistent with annuity valuation and may be reported with the annuity line of business on the insurer's financial statements.

4.13 Survivor Health Benefits

Upon death of an insured member, survivor health benefits provide continuing health insurance coverage to the surviving covered dependents for a defined period (usually six to 24 months).

4.14 Total and Permanent Disability Benefits

Similar to waiver of premium, total and permanent disability benefits are also provided with some group life insurance. They provide benefits to an insured member upon total and permanent disability as defined in the contract, with the value of the benefit typically related to the face amount of the member's life insurance. Benefits could be paid in a lump sum or in installments, and are sometimes deferred to a future date based on the age of the claimant. Total and permanent disability, usually considered part of the group term life coverage, has not been commonly available in recent years, but there are still group policies in force with this coverage. The disability definition is usually more stringent than for disability income benefits.

Accelerated death benefits have become standard features in group contracts. With this feature, a portion of the death benefit is paid in advance if the claimant is terminally ill.

4.15 Creditor Insurance

Typically, creditor life insurance pays the outstanding balance of a loan, mortgage or credit card upon death of the group life insured (the debtor). Creditor "critical illness" coverage is a relatively new product that also pays the outstanding balance of a loan, mortgage or credit card, provided that the life insured is diagnosed with a "critical illness" under specified conditions. Creditor disability insurance covers regular loan payments as long as the debtor meets the definition of disability. Creditor insurance may be either single premium or level premium and the premium is usually guaranteed for the term of the loan. Creditor plans typically require the applicant to complete a short form evidence questionnaire.

Creditor "job loss" insurance covers regular loan payments for a short time should the debtor become unemployed. Life insurers must obtain an amendment to their license to permit the writing of this coverage.

4.16 Association Plans

Association business refers to group insurance covering the members of an association of individuals where the association has been formed to bring together common objectives and interests. The contract is generally with the association, which could be a professional or trade group such as physicians, accountants, or musicians. The member typically has a certain choice of benefit amounts and coverage options (Life, LTD, Medical, Dental, etc.). Sometimes, STD coverage that will pay a professional's office expenses for a limited period of time while the person is disabled is offered.

Association groups generally have a higher level of risk than employee groups because of anti-selection; risk characteristics and liabilities may be more similar to individual insurance than group insurance. Individual selection (underwriting) rules may apply, and may become more demanding as the amount of insurance increases. The specific characteristics of both the association group and the coverage would be considerations in the assumptions used to project the liability cash flows.

4.17 Flexible Benefit Plans

Under flexible benefit (flex) plans, a variety of benefits are available at various coverage levels with each member having a choice of benefit levels. Flex benefits generally create additional risk since the member selects the benefit level. To reduce the risk on flex plans, controls are imposed, such as cost sharing, limits on changing benefit levels, and evidence requirements when increasing benefit levels.

5. FINANCIAL ARRANGEMENTS

Most employer group life and health insurance policies are sold on a yearly renewable term basis with no guarantee of renewability, and commonly carry a 30-day grace period for premium payment. The premium level is usually guaranteed for the year, except for medical benefits where there is often a conditional guarantee that allows premiums to change under certain circumstances, such as a major change to the covered expenses under a provincial health insurance plan. Premium guarantees are sometimes extended beyond one year, especially for new business. Renewal premium determination (and/or some form of profit sharing) for a group policy may follow the insurer's normal practices or may be specified in a financial agreement.

Some of the more common financial arrangements are described below. This list is not intended to be exhaustive or to limit the possible interpretations, but rather, it provides a framework for discussion in this educational note. The best source for the description of the financial arrangements is the contract and any supplemental financial agreement with the policyholder.

5.1 Fully Pooled

Under fully pooled arrangements, the group policyholder pays an agreed premium rate (sometimes referred to as the manual rate) that is based on the experience of a pool of groups. The premium rates may vary by a number of factors, such as industry, location (high employment areas versus low), gender, age and occupation of members. The pooled experience may include all the group experience of the insurer, or only some of it, and may also reflect industry experience.

5.2 Prospectively Rated

Under prospectively rated arrangements, the group policyholder's premium rates are a weighted average of the insurer's manual rates and rates based on the group's own experience. The weight given to a group's actual experience is based on the credibility of the group's experience. The premium rating is done for future periods only and the policyholder is not eligible for any refunds of past experience gains.

In the rate-setting process, adjustments to the group's claims experience are sometimes made to mitigate volatility in rates and improve persistency. For example, catastrophic or large amount claims that are not likely to recur may be reduced or eliminated (either at the discretion of the underwriter or through a formal high amount pooling arrangement—common for high out-of-country medical claims—where a premium is removed from the premium used to determine experience and the covered high claims are also removed). Fully pooled and prospectively rated arrangements are similar in that, having set the premium for the contract period, the policyholder is required to either pay it or forfeit coverage. At the end of the period, the premium for the subsequent period is reset based on the insurer's best estimate of future experience, which takes into consideration the most recent experience. Alternatively, the insurer may choose not to renew the coverage. A fully pooled arrangement may be thought of as being merely a special case of prospective rating, where the credibility of the group is zero.

5.3 Refund Accounting

Under refund accounting arrangements, premiums for a coverage period are based, at least partly, on the group's experience similarly to prospective rating arrangements. The main difference between the two financial arrangements is that, under refund accounting, a determination of the prior period experience surplus or deficit is performed. The policyholder may be eligible to receive a refund if experience is better than that assumed in determining the premium for that period (i.e., there is an experience surplus). If the experience is worse than assumed, a deficit will result. The financial agreement with the policyholder will typically describe the terms for refund accounting and treatment of deficits (for example, deficits are usually carried forward to future periods).

Refund accounting is generally offered only on larger groups, where the group's own past experience is considered to be a good predictor of future experience. Refund accounting is more common on medical and dental benefits although it could be used for all benefits including life, STD and LTD. In refund accounting, the deficit or surplus position is determined with respect to the group for each coverage period

according to the agreed rules. If there is a deficit, renewal premium rates are usually set to recover the deficit over a period of time. If there is a surplus, it is usually refunded to the policyholder as an Experience Rating Refund (ERR).

To help stabilize future premium rates, it is common for insurers to hold back some or all of the surplus up to a limit specified in the financial agreement. This is called a Claims Fluctuation Reserve (CFR) and is described in section 8.5.5. Cross-pooling of experience, where gains on one benefit are used to recover losses on another benefit, is common. The policyholder may negotiate pooling of certain catastrophic claims to reduce the risk of adverse claims and the possibility of having a large deficit that is difficult to repay. Some types of catastrophic pooling that may be reflected in refund accounting include aggregate and individual stop loss or high amount pooling, and out-of-province/country medical claims pooling. Stop loss is a term used to describe a risk-sharing arrangement where claims in excess of a stipulated amount, for either the group as a whole or by individual, are pooled. In addition to catastrophic pooling, partial pooling of LTD claims is often negotiated on a durational pooling (where disability payments beyond an initial period are pooled, usually the first two or five years of disability) or percentage basis (sometimes referred to as quota share). When pooling exists, the insurer charges the policyholder a pool charge for the benefits pooled and removes pooled claims from the refund accounting calculation.

In the rate-setting process, discretionary adjustments to the group's claims experience are sometimes made to mitigate volatility in rates and improve persistency. For example, catastrophic or large amount claims that are not likely to recur may be reduced or eliminated from the rate-setting process even in the absence of pooling in the financial agreement with the policyholder. In this situation, these claims would generally continue to be included in the determination of the deficit/surplus position for policyholder refund accounting.

The valuation basis that is used for the policy liabilities in determining the group's deficit/surplus is typically specified in the financial agreement and, in this educational note, is referred to as the policyholder valuation basis. The policyholder valuation basis (which may reflect specific and unique characteristics of the group) is often different from the statutory basis, which is used for the valuation of policy liabilities in the insurer's financial statements (which typically represents an average of experience across all groups). Refund accounting rules are negotiated between the group policyholder and the insurer and occasionally the policyholder valuation basis is included in the negotiation for large groups. The basis is specified in the financial agreement or the contract.

For groups with refund accounting, the establishment of appropriate GAAP valuation assumptions would normally be independent of the policyholder valuation basis used for prospective rate setting and ERRs. However, the policyholder valuation basis might have a bearing on the appropriate statutory liability to be held, particularly the liability for future experience rating refunds and the liability for future claims. It could also affect the recoverability of deferred acquisition expense or deficit recovery assets.

5.4 Retrospective Premium Arrangement

In retrospective premium arrangements, the group policyholder and the insurer agree on the payment of a specified premium, "x", which is less than the insurer would normally require for the coverage provided. If x falls short of defined requirements for claims plus expenses and profit, "y", then the policyholder agrees to reimburse the insurer for y minus x after an accounting period has been completed. These arrangements are used when the policyholder believes that claims will fall below those anticipated by the insurer, but is willing to pay the required amount if the insurer turns out to be correct.

Retrospective premium arrangements are offered only on an exceptional basis and are usually restricted to policies with refund accounting and to policyholders who are creditworthy.

5.5 Administrative Services Only (ASO)

In purely ASO arrangements, the group policyholder pays for all benefits and expenses, and the insurer acts as an administrator and/or claims adjudicator only. ASO contracts are most commonly used with group medical and dental coverage. They are generally not offered with group life insurance coverage because of adverse tax consequences for the beneficiary, and are also not typically offered on LTD plans.

5.6 Split Funded Arrangements

"Split funded" is used to describe funding arrangements that involve a combination of insured and ASO coverage. An example is a minimum premium arrangement, where the policyholder pays for all claims up to a specified maximum and then coverage is insured (subject to refund accounting) beyond that maximum.

Sometimes a form of risk sharing on ASO plans occurs beyond certain maximum claim amounts either at an individual or combined group (aggregate) level. This can be referred to as stop loss coverage, catastrophic claims pooling, or high amount pooling. The insurer charges a premium for the risks assumed in this coverage. When stop loss or other pooling is provided with an ASO plan, the excess claims could be fully pooled or may involve refund accounting, depending on the financial agreement with the policyholder.

5.7 Hold Harmless Agreements

Under hold harmless agreements, the policyholder agrees to pay certain outstanding liabilities, such as incurred but not reported (IBNR) claims, upon termination of the policy. In addition, the hold harmless agreement typically would require payment of any accrued deficits on termination. As "hold harmless" can be used to refer to a policyholder's agreement to pay for only limited periods or limited parts of the liability for any specific group, it is very important that the actuary understands the precise details of the hold harmless agreement for each contract.

The policyholder valuation basis for the liabilities is defined in the contract. Insurers typically only provide these agreements on short-term liabilities since there are significant additional risks and higher capital requirements associated with longer-

term liabilities. Hold harmless agreements are most commonly offered on medical and dental benefits and are contingent on the creditworthiness of the policyholder.

In the case of hold harmless agreements, the insurer actually holds the liabilities but establishes an offsetting asset for the policyholder's promise to take responsibility for the specific liabilities as defined in the agreement. The insurer would also establish an asset for the amount of recoverable deficits.

6. THE CANADIAN ASSET LIABILITY METHOD

The Canadian Asset Liability Method (CALM), as described in subsection 2320 of the Standards of Practice, is the appropriate method of valuation for group life and health policy liabilities. Paragraph 2320.02 states that "*The amount of policy liabilities by that method for a particular scenario is equal to the amount of supporting assets at the balance sheet date that are forecasted to reduce to zero at the last liability cash flow in that scenario*". Effective January 1, 2007, the statement value of assets is determined under CICA Handbook Section 3855, whereby the insurer designates each asset into one of several categories, and determines the statement value of the asset based on these designations.

Valuation of group life and health business poses many challenges for the actuary for a number of reasons.

Group insurance encompasses employer group, association, creditor and what in some companies is referred to as "special risks", which is typically a form of group insurance with emphasis on accidental injury and death. Contract features, underwriting and claims experience, reporting systems, compensation and other expenses, benefit provisions and reinsurance will usually differ among these different lines.

There is a wide variety of benefits and financial arrangements.

For groups beyond a certain size, contracts are usually the result of negotiation and thus involve customization to meet the client's specific needs. This customization creates additional complexity in the valuation. Valuing the liabilities for these policies requires familiarity with the specific contract terms. There may be a main contract and one or more side agreements, usually for refund accounting. Sometimes, the documentation of these agreements is poor. Terminology varies greatly.

Third party administrators (TPAs) are common and their record keeping and administration practices do not always meet the actuary's needs.

Large groups are commonly subject to refund accounting, which adds an additional degree of complexity to the valuation work. Because the actuary's valuation is prospective in nature, the liability for future experience rating refunds reflects the refund accounting rules or bases, and may not be simply equal to the group's surplus at the valuation date. This is particularly true where the statutory and policyholder valuation bases differ.

There is a wide variety of benefit types, contract provisions and rating practices. Reliable and consistent experience data are often scarce.

While group contracts are traditionally of a short-term nature, the term of the liability for some of these coverages ("group business that behaves like individual business") would be determined on a seriatim basis and related to the ages or lifetimes of the individual participants, similar to individual insurance (see section 7). Group administration practices apply even to groups that, for valuation purposes, behave like individual business. As a result, policy data and valuation systems may not be readily available for the actuary's valuation purposes. Moreover, while the seriatim valuation basis of the future claims liability is well accepted for some coverage (e.g., paid-up life and creditor insurance), it is not common practice for others like association group business. If refund accounting applies in such cases, the refund accounting rules may not include a future claim liability of this nature. This may complicate the actuary's valuation of the liability for future experience rating refunds.

There are often data issues affecting the valuation of group life and health plans. Some of the common data issues are discussed in Appendix B.

Materiality is a factor that may mitigate some of this complexity. Subsection 1340 of the Standards of Practice sets out the general standards for materiality. The actuary may view materiality differently depending on the circumstances of each company. The most rigorous condition is to establish materiality guidelines for each group or case that meets certain criteria (for example, large size). A less rigorous condition is that materiality is defined for the overall line of business. The least rigorous condition is where only the overall company or branch materiality is defined. Immaterial deviations tend to add up. Some actuaries, like accountants, keep a "scoresheet" to ensure that a number of immaterial deviations do not in aggregate have a material impact relative to the company's overall materiality standard.

This educational note describes a theoretical approach to the valuation. There are many situations where approximations may be appropriate, due to the materiality of the liability and/or complexity of the calculations. A few such situations are identified in this note.

6.1 Implications of CICA Handbook Section 3855

A discussion of the implications of the Accounting Standard Board (AcSB) Section 3855 can be found in the educational note, CALM Implications of AcSB Section 3855 Financial Instruments – Recognition and Measurement (http://www.actuaries.ca/members/publications/2006/206077e.pdf). Some specific considerations are described below.

Because of the linkage under CALM between the value of the policy liabilities and the accounting value of the supporting assets, much of the period-to-period change in the accounting value of the assets under Section 3855 would be expected to be balanced by a corresponding change in the value of the liabilities, provided asset and liability cash flows are well matched and the held for trading designation is used.

The insurer may have the situation where policy liabilities are determined to have very short-term duration, but management has chosen to purchase longer-term assets. For example, IBNRs (see section 8.3) for medical coverages, which usually turn over

during a short number of months while remaining at a consistent level over long periods of time, may be backed by assets with a term of maturity of several years. Under the CALM valuation, the value of the policy liabilities would not respond completely to changes in the value of the underlying assets. Further considerations regarding the term of the liability are shown in section 7.

Another consideration relates to the balance sheet presentation of certain liabilities that have a mandated presentation on a separate line, such as liabilities for deferred tax. Under these circumstances the actuary would determine the appropriate CALM liability using the considerations outlined above. This liability would be presented by showing the mandated separate provision on the balance sheet with the balance of the CALM liability shown as part of the provisions for future policy benefits line in the balance sheet.

For experience rated business, the requirement to report the statutory liabilities at market value may cause additional complications in determining the appropriate liability for future experience rated refunds. As described more fully in section 8.5.3, the liability for future ERRs is theoretically determined by projecting the future experience rating refund cash flows to the end of the liability for all claims including those incurred during the term of the liability. In practice, some actuaries apply approximations in this calculation, based on the relationship between policyholder and statutory liabilities. The linkage between statutory liabilities and the market value of the supporting assets results in a more volatile relationship between statutory and policyholder liabilities than may have previously existed, prior to the introduction of AcSB 3855. For example, it may be useful to continue approximating the ERR liabilities based on the statutory liabilities determined using the amortized cost basis (including the impact of deferred realized gains) of invested assets, and then adjusting for the difference between fair value and amortized cost values, to ensure that the insurer's income statement is not affected by fluctuations that will accrue to the policyholder. In any event, the actuary would consider the appropriateness of any approximations used in light of these considerations. It is very important for such cases that the actuary takes into account which parties will eventually benefit from favourable (or take the loss from unfavourable) fluctuations—the policyholder or the insurer—and ensure that the effect on the insurer's income arises only from those fluctuations that are the company's responsibility.

In pooling or reinsurance situations, where the insurer has accepted liabilities from another insurer or reinsurer, or where co-insurance arrangements have been assumed, it may be necessary to coordinate the development of liability cash flows among the various parties. It is possible that the liability resulting from these cash flows will differ among the various parties, based on asset-specific considerations for each insurer or differing views of liability assumptions (e.g., termination rates). In the case of modified co-insurance, it may be appropriate to rely on the lead reinsurer for liability information since that entity is also holding the assets, provided that the actuary has no reason to disagree with the appropriateness of the liability assumptions used by the lead reinsurer.

7. TERM OF THE LIABILITY

Paragraph 2320.03 of the Standards of Practice states that

> "The term of the liabilities should take account of any renewal, or any adjustment equivalent to renewal, after the balance sheet date if
>
> > *the insurer's discretion at that renewal or adjustment is contractually constrained, and*
> >
> > *policy liabilities are larger as a result of taking account of that renewal or adjustment."*

Paragraphs 2320.16 to 2320.27 provide additional guidance on the term of the liabilities.

When applying the CALM, the actuary would consider the need to differentiate between the term of the liability of the underlying group contract ("term of the active life liability") from the term of current claims liabilities associated with the group ("term of the claim liability"). Cash flows arising from active lives and current claimants would be projected separately to the end of their respective term of the liability.

7.1 Active Life Liabilities

Active life liabilities are liabilities for future claims that have not been incurred as at the valuation date. For employer-sponsored group life and health policies, the term of the active life liability usually extends to the next date at which premium rates can be adjusted, called the next "rate adjustment date". This is, typically, the next policy renewal date except in the case of longer term rate guarantees, where the next rate adjustment date is the end of the rate guarantee period (this will usually be most significant for LTD benefits, where the impact of long premium rate guarantees can be very material). Typically, pricing for a renewal is done in advance. When the insurer has committed prior to the valuation date to the rates for a future renewal, the term of the future claim liability extends to the end of the next renewal period. For example, for a March 1 renewal where the insurer has committed to rates for the next policy year prior to year-end, the term of the liability is 14 months for the year-end valuation. Further, an insurer may have agreed rates for a new group whose effective date is after the date of the valuation; such groups would also be included as the insurer is committed until the end of the guarantee period or the next renewal date. Practically, such groups are rarely entered into the insurer's administrative systems ahead of the effective date and so the actuary usually has no reliable data to calculate such liabilities and only includes estimates for such groups if they are material to the insurer's group business.

The actuary is reminded of paragraph 2320.20 of the Standards of Practice which states,

> "If the term of the liabilities is not evident, and if selection of a longer term would reduce policy liabilities, then the actuary would be cautious in making such a selection. On the other hand, if

> selection of a longer term would increase those liabilities, then the actuary would usually select the longer term."

Typically, group contracts will specify the next policy renewal date and will make clear whether rate guarantees exist beyond the renewal date. However, situations may arise where the insurer might not exercise his or her rights to modify the contract at the next opportunity (e.g., for marketing reasons). In this situation, the insurer may be exposing itself to continuing losses beyond the renewal date, and the actuary would consider extending the term of the liability to provide for this. For example, the actuary might assess the amount of lag that would reasonably be required to adjust premiums to the necessary level.

A longer term of the active life liability may be appropriate for certain group life and health coverages. Optional group life and health coverage may operate more like individual policies than a traditional group contract, so a seriatim valuation may be appropriate when premium rates are guaranteed beyond the next renewal date or for paid-up coverages. This may include creditor, association and optional coverage offered to employees of an employee group. Paragraph 2320.21 of the Standards of Practice indicates that the actuary would treat a certificate of a group contract as an individual contract, if the group policy is, in effect, a collection of individual policies.

Certain contract provisions that are commonly present may reduce or eliminate the need to consider a seriatim approach. These features include step-rated premiums, policyholder subsidization and refund accounting. The presence of step-rated premiums that increase by attained age in line with claims costs will often result in a minimal liability determined on seriatim basis, even after providing for anti-selective lapsation at the step points by individual members of the group. Premium subsidization by employers or other parties can temper individual choice and reduce the impact on the insurer of individual anti-selection. This may also be the case if the financial arrangements with the group involve refund accounting. In these cases, a simpler, aggregate approach to the valuation can usually be justified. However, regardless of the financial arrangement, the long-term financial consequences of the premium structure and policyholder accounting should be considered in the valuation. For example, if the premium is relatively level by attained age while claims costs increase with age, and the refund accounting ignores the seriatim liability, costs could significantly increase over time and a simple aggregate approach to the valuation would generally not be appropriate.

If a seriatim valuation is utilized, there may be significant practical challenges in obtaining employee data, particularly with large employer groups where the business is self-administered. The actuary may need to develop some approximations to account for this.

7.2 Claim Liabilities

Regardless of whether the underlying group contract renews, the insurer is liable for claims incurred prior to the renewal date, such as continuing LTD claims or waiver of premium claims. These claim liabilities usually include both reported claims and IBNRs. The term of the claim liability in these cases would extend to the end of the

claim paying or benefit period. Similarly, in the case of IBNRs, the term of the liability would reflect the period over which the claims are expected to run-off. For example, the term of the IBNR for a dental or health benefit would be close to zero, reflecting the short expected claim run-off pattern. However, an LTD IBNR would have a much longer term, consistent with the expected timing of claim terminations.

8. METHODS AND ASSUMPTIONS FOR DEVELOPING CASH FLOWS

Section 2300 of Standards of Practice provides general guidance in selecting cash flow assumptions, including margins for adverse deviations (MfAD). Further guidance is available in the educational note Margins for Adverse Deviations (http://www.actuaries.ca/members/publications/2006/206132e.pdf).

Group life and health liability cash flows may have significant inherent uncertainty due to volatility of claims experience, difficulties in projecting the future best estimates related to plan variations, the lack of appropriate experience studies, differences between the policyholder and statutory valuation bases, and variations in interest crediting practices. As well, there is often volatility in premiums due to changes in the number of people insured.

The following subsections discuss considerations for selecting liability cash flow assumptions for group life and health products with specific considerations for certain coverages and financial arrangements. Because there is significant variation in the benefits and financial arrangements offered by different insurers and negotiated with different policyholders, it is not possible to describe the selection of liability cash flow assumptions for all situations. However, the principles discussed in this educational note should be applicable to all group life and health benefits and financial arrangements.

When considering a benefit or financial arrangement that is not specifically discussed in this educational note or in the Standards of Practice, the actuary would review the principles discussed herein for similar situations and adopt a consistent approach. The discussion of liability cash flows below is divided into commonly used categories of liabilities. While insurers may categorize liabilities differently, it is the actuary's responsibility to ensure that the valuation provides adequately for all risks, without omission or double counting of any future liability cash flows.

8.1 Liability for Reported Claims

Liability cash flows associated with the liability for reported claims include all future benefit payments and expenses associated with claims that are reported prior to the valuation date, but exclude cash flows for amounts that are due and unpaid (see section 8.2). For claims that are still in the elimination period, it is common practice to include the claims liabilities in the IBNR instead of setting up disabled life reserves (DLRs). The actuary needs to coordinate the setting up of DLRs with the approach used to develop the IBNR (see section 8.3).

The following sections describe considerations in selecting assumptions for the liability cash flows. Given the complexity and interdependency of different assumptions, the actuary may find it useful to validate the overall reasonableness of

the resulting liabilities by performing adequacy testing at future dates. An example of such a process is given in Appendix D.

8.1.1 Long-Term Disability

In most cases, LTD benefits for reported claims continue to be paid by the insurer after a group terminates. Therefore, cash flows for LTD claims are normally projected until the end of the benefit period. Claims administration expenses would generally be projected in a manner consistent with the projected benefit payments.

Termination Rates

Paragraphs 2350.14 to 2350.18 of Standards of Practice examine considerations in determining best estimate assumptions and MfAD for LTD termination rates.

In setting termination rate assumptions, it is important to consider factors, such as partial disability, COLA benefits, unusual contract provisions (e.g., longer own occupation periods) or recent changes to the standard definition of disability or own occupation period, claim administration practices, that influence the extent to which past experience or industry experience is a guide to future experience.

The 1987 Basic GLTD table is often used as a starting point for establishing the valuation termination assumptions for LTD. Since it is based on U.S. experience from 1962 to 1980, the table will require modification to be appropriate for use in valuing Canadian LTD benefits. Most companies modify the 1987 GLTD table based on their own experience. The CIA published a study of Canadian group LTD experience covering the years 1988 to 1994 in May 1998 that provides helpful information for use in establishing LTD termination assumptions.

For experience rating purposes (i.e., policyholder liabilities), many groups have historically been valued using a modified version of the older CDT64 table. For valuation purposes, the CDT64 table is outdated and is not appropriate without very significant modification.

For business that is individually underwritten, including most association and creditor plans, it is common for actuaries to use an individual disability table. The 1985 CIDA table is often used as a starting point. This is also a U.S. table and modifications to the termination rates are commonly used to establish valuation assumptions. Since there is no employer/employee relationship in association or creditor plans, the pressures and other influences to return to work may be different from those of employee groups. This could affect the choice of appropriate termination assumptions.

Actuaries often vary termination rate assumptions by different factors including gender and definition of disability (e.g., own occupation versus any occupation). In assessing trends in termination assumptions, a number of factors are usually considered. Examples of some factors that may affect trends are

- changes in the mix of disabilities by cause (psychological disabilities have been increasing since 1990),

changes in the mix of disabilities by severity (for example, if the percentage of partial disabilities is changing, termination rates may be affected),

changes in the mix of disabilities by geographical region (for example, Québec experience is often very different from the experience of other provinces),

changes in the level of benefits provided, (for example, if benefits are a high percentage of the insured's compensation, termination rates may be lower than otherwise),

changes in claims administration practices,

current phase of the economic cycle, which may affect both the incidence and termination of disability rates (the level of disability incidence rates and termination rates may vary during the phases of the economic cycle, and normally vary in the same direction),

material change in inflation or benefit indexation, and

changes in government plan definition of disability, which will affect benefit offset experience.

The Standards of Practice identify additional significant considerations that are taken into account when determining the level of MfAD. Since the termination rates at later durations are often very low, a single termination may represent a high percentage of expected terminations. As a result the standard deviation of later duration termination rates is substantially greater than that of early duration termination rates, so it may be appropriate to increase the MfAD with increasing claim duration. In this case, if the MfAD used for certain duration are outside of the recommended MfAD range, the actuary would ensure that the resulting provision for adverse deviations (PfAD) is reasonable.

Benefit Offsets

To avoid overinsurance, LTD contracts typically provide that contractual benefits will be reduced by the amount of any benefit payments from government plans like CPP/QPP, SSDI, and workers' compensation. It is appropriate for the projected benefit payments to reflect the impact of any benefit offsets that are stipulated in the contract. These include expected future benefit reductions both for government benefits that have already been approved and for those that are expected to be approved in future, sometimes with retroactive effect.

The assumption for expected future approvals for government benefits would vary by time elapsed since disability (and may vary by age and gender as well), and would generally be based on prior experience modified for any material trends or changes that are expected. For example, if the government is applying stricter criteria in approving claimants for government benefits, the actuary would consider the applicability of this trend to the projected liability cash flows.

Another possible source of information for setting this assumption is the claims adjudicator's assessment of the probability of each claimant being approved for government benefits. Moreover, the criteria for acceptance for government benefits

will vary by government plan and could change over time. The actuary would project benefit offsets consistent with the government benefit plan and trends, with an appropriate MfAD for uncertainty. The actuary would need to consider changes in government benefits and claim adjudication practices.

Another consideration would be the probability that a claimant receiving government benefits would be terminated by the government plan (in particular, workers' compensation) while still satisfying the definition of disability under the insured LTD plan. The liability cash flows would also include any anticipated future recovery of offsets associated with past benefit payments (for example, a lump sum payment for prior periods may be anticipated from the government or from a third party). Further, especially when looking at claims with short durations, it should be remembered that those claimants that will be approved for CPP/QPP are less likely to terminate (meeting a more stringent definition of disability when approved by CPP/QPP). This should either be reflected in the assumed benefit offset or by using a different set of termination rates on the amount of the offset.

COLA Provisions

Projected benefit cash flows are affected by COLA provisions. In projecting COLA increases, the actuary reflects the contract provisions related to the timing of increases and how the rate of increase is determined. Though some plans have a fixed rate of increase, COLA increases are usually defined as a certain percentage (typically 100%) of the rate of increase in the consumer price index (CPI) up to a stated maximum. The maximum could be applied for each year separately or have a cumulative catch-up provision. In most plans, the COLA increase is applied to the benefit amount net of offsets. For plans where the COLA increase is based on the CPI, the assumptions for future CPI increases would be consistent with the valuation interest rate scenario. Subject to materiality considerations, for simplicity some actuaries do not vary the CPI assumption by interest rate scenario, since COLA increases are capped at the maximum in many interest scenarios.

Pending/Resisted/Suspended Claims and Claims under Appeal

The valuation should make sufficient provision for any claims that are pending, resisted, suspended, or under appeal, including associated legal costs. Pending claims are recently reported claims for which the claims administration area has not yet received sufficient information to approve the claim. Resisted claims and claims under appeal are claims that the insurer has declined or terminated where the claimant is appealing the decision or has undertaken a lawsuit against the insurer. Suspended claims are claims where the insurer has temporarily stopped benefit payments, often while waiting for the claimant to provide more information.

A reasonable approach to provide for these claims is to determine the percentage of claims in each category that will become approved claims, and apply this percentage to the liability cash flows that would be applicable if the claimant were currently receiving benefits, including an allowance for accumulated past payments that would become payable should the claim become approved. The percentage of claims that will become approved claims would generally be based on past experience, modified for any relevant trends or changes in claims approval practices. For resisted claims,

the actuary would benefit from consulting with the legal area periodically when establishing the appropriate assumption, including an assumption for legal expenses. The assumptions of the percentage of claims that will become approved claims would be increased to provide an appropriate MfAD. Also, recent terminations and declines may give an indication of appeals that have not yet been reported. These could be reflected in the valuation in a manner similar to the above, or as part of the IBNR (see section 8.3). Finally, in projecting cash flows, the actuary would consider that resisted claims are often settled on a lump sum basis, replacing the normal monthly payment schedules. Other approaches may be used to provide for these claims.

Recurrence of Disability

In some cases, disability claimants who have recovered from disability will have a recurrence of the same disability. The contract provisions will normally define the criteria for a disability to be viewed as a recurrence as opposed to a new claim. If the claim is deemed to be a recurrence, the claimant would not be required to satisfy the elimination period before receiving benefits. Typically, provision for recurring disabilities is made as part of the IBNR, but other methods may be used. For example, the provision might be included with the liability for reported claims by reducing the disability termination rates to adjust for recurrences. The actuary would ensure that provision is made for recurrence on both currently open claims and recently closed claims.

When profitability issues arise, existing LTD claims are often closely scrutinized for validity and terminations increase for a period of time. This may change the probability of claim decisions being reversed upon appeal or increase recurrence of disabilities. Actuaries generally take into account the effect of changes in claims practices in establishing assumptions for recurrence of disability and the liability for LTD claims under appeal.

Claims Terminated But Not Reported

Some actuaries give consideration to claims that have terminated where notification has not yet been received or processed by the insurer.

Rehabilitation/Partial Disability

Often disability claimants suffering partial disability and/or undergoing rehabilitation will be able to perform some portion of their previous position or to work part-time during their recovery. In these cases, LTD plans typically continue to pay benefits at a reduced level that reflects an offset for salary earned. Most LTD plans allow partial benefits for the rehabilitation period and some plans allow partial disability benefits for much longer periods of time. The liability cash flows would reflect net benefit payments related to rehabilitation and partial disability. The actuary would exercise caution before assuming that the most recent net benefit is representative of longer term net benefit payments. The actuary might assume that some form of average monthly amount over the past few months would be a better estimate.

Unusual Financial Arrangements

LTD plans can have unusual financial arrangements affecting the valuation. For example, the plan could be ASO for a period of time (e.g., two years) after disability, and insured thereafter. If reliable information on claimants receiving LTD benefits under the ASO plan is available (the insurer may be providing the claims administration during the ASO period or have access to the information from the administrator), the actuary would use the information about claimants receiving ASO benefits to determine liability cash flows for benefits and expenses after the insured period begins.

Depending on materiality, it may be reasonable to treat the plan like an insured plan with an elimination period equal to the period during which the contract is ASO (e.g., two years) and calculate an appropriate IBNR based on premiums received during the ASO elimination period.

8.1.2 Short-Term Disability (STD)

STD benefits are typically used in conjunction with an LTD plan to provide income replacement benefits during the LTD elimination period. STD valuation is much simpler than LTD due to the short benefit period, though for STD plans with long benefit periods, the methods used for LTD valuation may apply. For STD plans with short benefit periods, a seriatim projection of benefit payments for each claim is normally not used, so the liability for reported claims is determined with the IBNR (see section 8.3). Judgment is used to determine the appropriate approach for each plan.

8.1.3 Waiver of Premium or Extended Death Benefits

Waiver of premium benefits under group insurance contracts typically require the insurer to continue to provide life coverage without further premium to disabled lives after the group terminates. In these cases, when a group moves from one insurer to another, only the active employees would be covered in the group life benefit with the new insurer. Group waiver of premium liability cash flows are the projected death benefits that the insurer expects to pay on disabled lives as well as related expenses. Waiver of premium coverage typically includes options to convert to individual life insurance policies when benefits terminate or reduce, and the cost of such conversions is reflected in the liability cash flows.

Considerations for setting expected termination rate assumptions for waiver of premium benefits are similar to those for setting expected termination rate assumptions for LTD benefits, although the effect of the termination assumptions is different. For waiver of premium benefits, the claim terminates on recovery from disability but the death benefit is paid upon the death of the insured. Usually separate assumptions are developed for recovery and mortality rates.

Since groups now typically use a common definition of disability for both waiver of premium and LTD claims, the best estimate assumptions would usually be the same for both coverages. However, since many groups have coverage for only one of LTD or waiver of premium benefits, and groups with both benefits may have different definitions of disability than groups with only one coverage, the insurer's termination

experience may be different for LTD and waiver of premium benefits. In these cases, it would be appropriate to use different termination rate assumptions for LTD and waiver of premium benefits based on the experience of each benefit.

Where the LTD termination rates are not appropriate, the 1970 Kreiger table (based on U.S. experience in the 20 years prior to 1970) has traditionally been used as the basis for setting expected assumptions for waiver of premium termination rates. Since this table is significantly out of date, most insurers modify the Kreiger table to reflect their own experience. The modification typically involves substantially reducing the mortality rates and increasing the recovery rates (at least for durations 1 to 10) of the Kreiger table, both of which have the effect of reducing the liability.

In some situations, the actuary may not have sufficient credible information to modify the Krieger table. It may be appropriate in this situation to use the insurer's LTD experience to determine the adjustment. The actuary might also consider whether the use of the most recent industry disability termination tables, such as the graduated mortality and recovery rates in Appendix A of the Research Paper: Group Life Waiver Study Based On 1988–1994 Canadian Group LTD Termination Experience (http://www.actuaries.ca/members/publications/2001/20184e.pdf) is a more appropriate base. The actuary would exercise caution before applying such adjustments to groups that have different waiver of premium definitions than their LTD plan. For example, if the group has a more stringent waiver of premium definition than the LTD plan, then the resulting LTD termination rates could be higher than appropriate for valuing the waiver of premium claim.

Special consideration should be given to any potential claim liability for dependent life coverage associated with disabled employees if such coverage is included under the waiver of premium benefit. In this case, the expected mortality assumption would be based on the dependent individual rather than the disabled employee, while the expected recovery assumption would continue to be based on that of the disabled employee.

MfAD for waiver of premium claim termination is usually expressed as a percentage of expected termination rates for both death and recovery. MfAD would usually reduce recovery rates and increase mortality rates on waiver of premium benefits. This is usually the opposite direction to the LTD mortality MfAD. The actuary would ensure that the aggregate PfAD is appropriate.

8.1.4 Survivor Income Benefits (SIB)

SIB plans typically pay an annuity to the surviving spouse or children after an insured member of a group life plan dies. Some SIB plans include a minimum guaranteed period for payments. Some vary payments by number of children and may change by age of child.

SIB plans may include a COLA provision and considerations similar to those described in section 8.1.1 (LTD) could be used to project COLA increases on SIB plans.

For plans where SIB benefits terminate or reduce on remarriage, it is difficult to develop an appropriate remarriage assumption for the valuation. Industry data are

scarce, and remarriage rates can be affected by claims practices. Subject to materiality considerations, many actuaries assume no remarriage for simplicity.

When SIB benefits have a life contingent element, annuitant mortality tables are typically used as the basis for establishing the expected mortality assumption. Paragraphs 2350.09 to 2350.13 of the Standards of Practice contain guidance for choosing annuitant mortality assumptions.

Mortality assumptions for SIB are typically based on group annuitant mortality tables, although in some cases, individual annuitant mortality tables or another basis, such as population mortality tables are used. Some considerations influencing the choice of mortality assumption are

group tables are based on employee mortality rather than mortality of widowed spouses,

various options available to the beneficiary (e.g., option to take a commuted value) may cause anti-selection, and

the age range at which benefits are paid (most SIB beneficiaries are at younger ages where there is little experience for most group annuity tables).

8.1.5 Other Benefits

There are a number of other benefits provided under group life and health policies that may require a reported claim liability. These include total and permanent disability benefits and settlement annuities (i.e., where death benefits are paid in the form of an annuity at the request of the beneficiary). These types of benefits are not commonly offered today, but may exist on older plans. Since the benefits differ among insurers and among groups, understanding the contract provisions is necessary in order to project the appropriate liability cash flows.

8.2 Liability for Claims Due and Unpaid

Claims due and unpaid include payments due on claims admitted but not paid, but do not include claims reported but not admitted. The liability for claims due and unpaid is an accounting liability since it represents an exact recognition for a known amount owing but not paid. Hence, it requires neither an actuarial valuation nor a provision for adverse deviations. The liability for reported claims is coordinated with the liability for claims due and unpaid; to ensure that there is no double counting or omission of liabilities.

8.3 Incurred But Not Reported Liabilities

IBNRs arise from lags in, for example,

reporting of claims to the insurer,

recording by the insurer of claims which have been reported (e.g., some insurers delay recording of disability claims incurred or establishment of disabled life reserves until the end of the elimination period), and

claims that have been terminated or denied but that may be reopened, or may be appealed or litigated in the future.

IBNRs provide for benefits and expenses on claims that may have benefits paid in the future and where the claims have already occurred but due to a reporting lag is not recorded on the insurer's books in any other category.

For benefits without interest rate risk (for example, medical, dental, term life, STD), the actuary may project IBNR cash flows using a simple approach or perform the CALM testing ignoring the IBNR and then add the IBNR to the result. To the extent that the supporting assets have a materially longer duration than the liabilities, the company may be exposed to interest rate volatility, since the market value of the assets would be more sensitive to interest rate movements than the liabilities, as described in section 6.1.

For benefits with significant interest rate risk on new claims (for example, LTD and waiver of premium), the IBNR cash flows will likely materially affect CALM testing and the resulting provision for interest rate risk. The liability cash flows related to IBNR could be estimated by examination of the liability cash flows on corresponding reported claims, with modifications as appropriate. For example, the liability cash flow pattern for LTD IBNRs may be similar to the liability cash flow pattern on existing disabled lives, perhaps restricted to early duration claims.

Although practices vary, generally the IBNRs for LTD, STD and waiver of premium benefits are included with the actuarial liabilities (as defined for the financial statement), and for the other benefits (e.g., supplementary health, dental, AD&D, SIB and life), the IBNRs are included with claims due and unpaid. For benefits where the IBNR is included with claims due and unpaid, the change in IBNR will flow through benefits paid on the income statement. In situations where a hold harmless agreement exists on the IBNR, the insurer is, nonetheless, responsible for paying incurred claims. Therefore, the full IBNR should be held, with a corresponding receivable asset to recognize the terms of the hold harmless agreement.

8.3.1 Considerations in Developing the IBNR

Since lags affecting the amount of IBNR claims vary by plan and benefit type, the actuary would exercise caution when estimating IBNR claims from grouped historical data. For example, it is inappropriate to group electronically adjudicated drug claims with reimbursement drug claims since the claim settlement patterns (lags) are different.

Specific factors that can affect claim lags, some of which may be unique to the current reporting period, include:

level of claim processing backlog,

variations among claims administrators,

changes in benefit definitions or mix or exposure,

seasonal variations,

severe weather conditions,

disruptions in the postal service,

corporate reorganizations that impact the processing of claims,

economic conditions (recessions will impact reporting of claims for elective treatments),

varying claim submission practices among group policyholders,

length of time the contract has been in force,

inclusion of reported claims that have not yet satisfied the elimination period and the level of these claims,

inclusion of closed claims that will reopen, as well as the level of recently closed claims,

changes in the insurer's claims practices, and

other external events.

Trends in factors such as inflation, utilization, and technology (such as provider utilization of electronic claims transmissions) may influence estimated IBNR claims. If in force premiums are used to estimate the IBNR claims, adjustments may be necessary to reflect shorter lag periods as in the case of new or terminated plans; one approach to deal with this is through the use of rolling average premiums. The effect of changes in the adequacy of pricing levels would also be considered when the estimated IBNR claims are based on premiums.

8.3.2 Approaches to Establish the IBNR

Subject to periodic testing of appropriateness (including the impact on interest rate risk), several approaches, as follows, are commonly used to develop the IBNR (prior to the application of an MfAD).

Factor Method: This method is generally used for benefits where there is a short lag or run-off period (e.g., group term life insurance). The liability is usually established as a percentage of premium in force at the valuation date (or decreasing percentages of in force premiums at the end of several prior months), based on past experience modified as appropriate for any anticipated changes in experience. Other variations in the formula include the use of a percentage of paid claims, percentage of the reported claims liability, or percentage of the face amount.

Loss Ratio Method: This method is a refinement of the factor method, and may be suitable for cases where the recording of LTD claims is delayed until after the elimination period. This method uses the sum of the average elimination period and the average reporting lag, measured in months, multiplied by a loss ratio multiplied by monthly premiums in force. If the information is available, valuation could be done on seriatim basis considering for each group its own elimination period and premiums paid.

Lag or Development Method: This method involves the development of paid claims by period of incurral and payment, which is used to develop a claim run-off chart. The claim run-off chart displays claim completion percentages for each

month of incurral. The completion percentages would be adjusted as appropriate for any pricing inadequacy.

Care should be taken when applying an approximation approach in special circumstances such as significantly growing or declining blocks of business. For example, a factor method based on the premium in force at the valuation date would understate the IBNR for a declining block. The actuary would understand the implicit assumptions underlying each approach and its limitations, and be cognizant of changes in circumstances to ensure that the IBNR established by the approximation is appropriate.

8.4 Liability for Future Claims

Liability cash flows associated with the liability for future claims include expected benefit payments, MfAD and expenses associated with claims that have not been incurred as at the valuation date but will be incurred before the end of the term of the active life liability. Future premiums up to the end of the term of the active life liability are also projected as asset cash flows. Under CALM, a liability should be held equal to the present value (during the term of the claim liability) of future claims including MfAD and claim expenses less the present value (during the remaining term of the active life liability) of future premiums reduced for commissions and expenses including MfAD for all groups.

This will be a negative liability for those benefits where the premiums less expenses and commissions exceed the liabilities for future claims, i.e., profits in premiums exceeding those deferred by the MfAD (conversely, losses if loads in premium rates are less than MfAD[1]) are front-ended.

For benefits where the term of the claim liability is short (life without waiver of premium, medical, dental and short-term disability), the liability for future claims is usually approximated as the unearned premium reserve in practice, unless a large group (or a number of groups due to pricing, marketing or discount practices) is expected to produce a material deficiency.

For those benefits where interest rate mismatch risk is a significant factor (e.g., waiver of premium and LTD benefits), liability and premium cash flows are usually projected to determine a CALM liability. This is even more significant if the premium rate guarantees are longer than one year.

8.4.1 Liability Cash Flow Considerations

It is common practice to offer discounts to the premium rates on new business with a view to recover the discounts through margins in future renewal premiums. This significantly increases the likelihood of losses in the valuation as the offsetting gains from the margins in future renewal premiums cannot be assumed in valuation. Since

[1] The MfAD defers earnings. The amount of deferral may exceed the profit load built into premium rates generating an immediate strain. Since the level of PfAD resulting from the MfAD applied to incidence and termination rates and potential exposure to C3 interest rate risks for LTD and waiver of premium benefits (and PfAD on IBNRs for other benefits) may be significant, the present value of future premiums may be less than the present value of future claims with MfAD and claim expenses.

the premiums cannot be changed before the next rate adjustment date, it is important to select assumptions for the claims (for example, incidence rates, termination rates for LTD), expense and other risks to ensure that benefit payments are appropriately reflected in the future claim liability cash flows.

The longer the premium rate guarantee, the more material is the exposure to risk of inadequate pricing and to interest rate risk (premiums will be received for investment further into the future). For example, an LTD benefit with three years remaining on its rate guarantee may have been priced with inadequate incidence rate assumptions. The benefit cash flows will reflect the currently expected incidence rates with MfAD, while the premium cash flows reflect the inadequate pricing inherent in those premiums and, hence, the liability will reflect a continuation of this rate inadequacy for the remainder of the rate guarantee period.

In the context of group life and health benefits, LTD benefit liabilities are usually the most sensitive to interest rate changes during the rate guarantee period. The interest rate assumed in the premiums applies to all premiums until the next rate adjustment date, so the insurer is at risk if interest rates fall below that level. Provision for this risk is incorporated in the liabilities by including projected cash flows associated with future claims in the interest rate scenario testing of the CALM.

The valuation only reflects commitments made as at the valuation date and, hence, does not include cash flows for new coverage or new groups for which no commitment has been made. However, where the insurer has no choice or little choice but to accept coverage on new lives at guaranteed premium rates, future claims on those lives may affect the valuation. However, if new employees are just replacing terminated employees, or if guaranteed premium rates are adequate, new entrants may not be a material consideration.

Projection of benefit and expense cash flows for long-term disability claims associated with a group with premium rate guarantees theoretically requires assumptions for both incidence rates and termination rates. Benefit and expense cash flows for future claims would usually be projected using assumptions consistent with those used in the liability for reported claims of the same benefit type.

Expected incidence rates used to project future claims may be developed from past experience modified for any trends or anticipated changes; however, in practice, incidence rate assumptions are difficult to develop, and so approximate methods are often used to generate cash flows for the future claims liability. The longer the term of the active life liability, the more difficult it is to develop an approximation that does not use explicit incidence rates. Therefore, if the term of the liability is long, it is usually necessary to develop explicit incidence assumptions. The following section examines some approximate approaches that are used.

The considerations described above are also pertinent where the actuary determines that the current premium rates for the non-interest sensitive products are not sufficient to cover future expense allowances and claims (including MfAD). As a practical matter, the common practice is to apply approximations with considerations of the above, rather than having a valuation process that captures and uses all the data.

For example, to reflect new business discounts, one would use a higher factor to calculate IBNR on new business premium than for renewal business, which is priced to recover new business strains. In practice, it may not be possible to distinguish premiums between new business and renewals. IBNR factors are determined as factors of combined premiums from new business and renewals. By doing so, the reserve strains on new business are spread over the entire business in force.

Similarly, actual renewal dates by policy may be difficult to obtain if not entirely infeasible. Some actuaries may assume a certain renewal pattern, for example, one-twelfth of the in force every month, or assume higher weighting to January renewals.

Further, marketing discounts and rate guarantees by policy may also be difficult to obtain. The actuary would at least look closely at actual practices and determine the extent to which review of only large cases or a larger group of cases is appropriate.

8.4.2 Use of Approximations

In using any approximation for the projection of future claims, the actuary would assess whether the approximation appropriately provides for all risks.

For benefits without any material interest rate risk (e.g., short-term benefits such as medical and dental) and for which pricing is adequate, the liability associated with future claims funded by future premiums is usually immaterial and the CALM liability may be approximated. In these situations, the unearned premium may be a reasonable approximation to the future claims liability. The actuary would ensure that the pricing basis closely approximates the expected claims and expenses plus MfAD.

In particular, for LTD benefits, it is important to consider whether the approximation makes appropriate provision for interest rate risk through the rate guarantees. Similarly, it is important to consider whether the approximation accounts for incidence rate risk particularly that arising from marketing discounts. (This would be important for other benefits also). For refund accounting cases or unusual financial arrangements, the additional complexities of the financial arrangement can affect the appropriateness of an approximation.

One example of an approximate method (that uses implicit assumptions for incidence rates) for projecting benefit and expense cash flows for LTD future claims that can be used in CALM testing when the term of the liability is the next rate adjustment date is presented below.

a) Determine a “valuation benefit factor” that is the percentage of premium required to provide for future benefits (including interest and termination MfAD) and claims administration expenses (including MfAD) that will be incurred between the valuation date and the next rate adjustment date (i.e., remove provisions for general administration expense and profit margins, to the extent that they exceed the profit deferral due to interest rate risks and termination MfAD, from the premium).

b) Adjust the valuation benefit factor as appropriate to provide for any pricing inadequacies in the block of business (e.g., if pricing changes are being implemented but have not yet been applied to the entire block, the factor would be increased or there are systematic marketing discounts).

c) Increase the valuation benefit factor to add MfAD for incidence rates. This method only involves adding a margin for incidence rates to the valuation benefit factor since termination rate and claims administration expense MfAD are already included in the percentage of premium required to provide for future benefits and expenses in a) above. The MfADs applied to incidence rates are usually at the low end of the prescribed margin since the term of the active life liability is generally short. A 5% MfAD would generally be sufficient unless rate guarantees are longer than one year, in which case a higher percentage MfAD would be considered.

d) Using a reasonable projection of premium income, develop the cash flow stream for these new LTD claims such that the present value of that stream at the average pricing interest rate, which includes pricing margins, on the insurer's block of business is equal to the premium multiplied by the valuation benefit factor from c).

For groups where the term of the liability is determined on seriatim basis, the size of the group may be small in comparison to the materiality standard, or the premiums may be step-rated, which tends to reduce the future claim liability. Even without detailed participant data, the actuary may be able to carry out some broad testing for representative ages and durations that demonstrates that the aggregate future claim liability is small or negative and can safely be ignored.

8.4.3 Paid-Up Life

Most paid-up life insurance provides coverage on retirees. Cash flows for future benefits and expenses are projected for all future years until expiry of the benefit period or death of the insured member.

Available group insurance mortality tables do not have as much experience in the post-retirement period as at working ages. Therefore, the expected mortality assumption generally includes consideration of the insurer's own experience, industry group life mortality experience and population mortality. Typically, considerations leading to a higher margin for future mortality experience apply.

8.4.4 Creditor Insurance

Since each creditor group has its own unique features, it is important for the actuary to review the contract provisions to determine how to appropriately value the liabilities. Creditor plans with disability coverage will have liabilities for reported claims (see section 8.1) and IBNR (see section 8.3) as well as liabilities for future claims.

Premiums are typically guaranteed at the time a loan is insured for the term of the loan, but premium rates can normally be changed for future loans after the next rate adjustment date. In such cases, the term of the active life liability is to the end of the loan for insured loans. Subject to materiality, future loans to the "next rate adjustment date" would be included in the valuation if the insurer must accept them at

guaranteed rates. The degree of interest rate risk and potential pricing inadequacy affect the materiality of the impact of future loans and the appropriateness of any approximations.

Mortality and morbidity assumptions for creditor insurance cash flows are typically different from other group life and health insurance because of differences in evidence of insurability requirements, pre-existing exclusions, characteristics of members, etc. For large creditor groups, it may be appropriate to determine mortality and morbidity assumptions based on the experience of the particular group. For smaller creditor groups, the experience of similar creditor groups may be useful in setting assumptions.

When there is no reliable experience upon which to base assumptions, the actuary could review the contract provisions and characteristics of members to determine whether individual or group industry tables form a reasonable basis for expected assumptions. Creditor insurance often has characteristics of both individual and group insurance and, therefore, a combination of individual and group industry experience may be appropriate. Depending on the evidence of insurability requirement, select and ultimate assumptions may be appropriate.

Since creditor benefits are typically tied to the amount of the loan outstanding, a number of additional assumptions are required to project the liability cash flows, such as the interest rate on the loans, partial prepayments, and payment in full (lapses). These assumptions would be determined in a reasonable manner consistent with the valuation interest rate scenario, where material. If there is a partial refund of premium under single premium creditor coverage when a loan is repaid or moved to another institution, this benefit, if material, would affect the projected liability cash flows through the lapse rates.

Typically, experience is limited on creditor plans and high margin considerations often apply.

8.5 Liability for Experience Rating Refunds (ERRs)

The ERR liability makes provision for groups with refund accounting, taking into consideration the financial agreement with policyholders. This ensures that past and future margins that arise from a policy do not generate a temporary profit for the insurer when such margins are ultimately returnable to the policyholder. When such margins are negative, a loss may not be recoverable from the policyholder and, therefore, the margin would not reduce the liabilities.

Creating appropriate ERR cash flows requires the actuary to have a good understanding of the specific details of the arrangement with each policyholder; will necessitate calculations for each agreement separately and involves careful thought by the actuary to ensure that the objective has been achieved and items are not double counted. Due to the wide variety of such arrangements and the different possible financial positions of each policy, this section cannot offer an approach that is applicable to every case and so will address key principles and areas for consideration.

The liability for experience refunds would typically be determined in two parts.

First, an accounting liability would be established on past experience. This liability is based on the experience surplus (if any) of the group accrued from the last renewal date up to the valuation date, taking account of the financial arrangement specified in the contract. This is described in 8.5.1.

Second, a liability for refund based on projected future experience. These are ERRs that will arise during the remaining term of the claim liability from existing claims, and new claims incurred in the remaining term of the active life liability. It also includes other margins during any guarantee (e.g., premium, interest) periods. This is described in 8.5.2, which is further subdivided into several subsections due to the numerous considerations involved.

Section 8.5.3 describes the use of approximations as alternatives to applying 8.5.2. Section 8.5.4 describes the consideration in valuation with respect to deficit recovery. Section 8.5.5 describes the valuation considerations for CFR.

There may be differences between the statutory valuation basis and the policyholder valuation basis used to calculate policy surplus/deficit, as defined in the financial agreement. For Yearly Renewable term (YRT) business (typically employee groups), only differences in incurred claim liabilities at the date of valuation (or that will arise in the remaining term of the premium guarantee) are considered. Level premium or single premium business (mostly creditor business) may give rise to longer terms of the liability and so future claim liabilities must be considered for a longer period. Many of the differences between policyholder and statutory liabilities arise naturally because these two bases satisfy different functions.

The statutory liability basis is the reporting basis for the insurer and is subject to accepted actuarial practice. This is equal to the statement value of the assets required to support the obligations of the insurer's group life and health business as determined under the CALM. The policyholder liability basis is established by the insurer to meet pricing requirements and does not necessarily follow GAAP standards. It may reflect policyholder-specific risk characteristics, financial arrangements and experience. The policyholder liability basis may strive to attain equity between generations of policyholders, and may reflect the company's view of the risk it bears on behalf of the policyholders. An example of this would be using an "investment year" approach to policyholder valuation interest rates versus a fair value interest rate based on the CALM for statutory reporting.

The most common situation is for policyholder liabilities to be at least as large as statutory liabilities. This is done to reduce the insurer's downside risk from the refund accounting process. One way this could be accomplished is by using larger MfAD for policyholder liabilities than for statutory liabilities to reflect, at least partially, the additional uncertainty in the expected assumptions at the policyholder level. Since the statutory liability and policyholder liability are based on different methods and assumptions, the difference between the two liabilities can change over time giving rise to changes between deficit and refund by future duration.

8.5.1 Accrued ERR Liabilities

The financial arrangements will typically specify, for example, the policyholder valuation basis (i.e., method and assumptions), interest crediting mechanisms on policyholder funds, and the like.

This part of the liability is usually held as a distinct accounting liability and reflects the actual amount due to the policyholder that arose over the period between the last renewal date and the valuation date. Determining this liability involves no assumptions because it looks at past experience only and so may not even be part of the actuary's responsibilities.

8.5.2 Future ERR Liabilities

These projected ERR cash flows would be included within the CALM testing. The statement value of the additional assets needed to support these cash flows would be reported as the ERR liability.

8.5.2.1 Considerations in Developing the Cash Flows

Actual payments to the policyholder for future ERRs will arise from

the release of margins in the policyholder basis liabilities,

experience that is better than anticipated in the liabilities and premiums,

interest credited greater than needed, and

margins in the premiums (premiums charged in excess of expense & profit charges and policyholder basis liabilities for new claims).

However, the determination of the future ERR cash flows for CALM reserving purposes actually gives rise to a different calculation of ERR and will likely not match what is actually expected to be paid out to the policyholder. The liability cash flows are based on expected assumptions plus MfAD, so to avoid double counting neither of the first two items will affect the determination of the liability for the future ERR.

A further difference arises because, under the Standards of Practice, the premium margins are only relevant for the term of the active life liability and the interest margin for the duration of the interest rate guarantee (this may be long-term if the crediting basis, even if not the actual rate, is guaranteed). This means that various components are not all projected for the same period into the future.

Additionally, to the extent that the cash flows, based on expected assumptions plus MfAD, differ from those assumed in the policyholder liabilities used to determine the accounting liability for the ERR at the valuation date, there may be future ERR cash flows arising for the remainder of the term of the claim liability for claims incurred prior to the valuation date (or within the remaining rate guarantee period).

So the ERR component parts for determining the future experience refund liability cash flows can be broken down (refer to Appendix C for a derivation of this formula) as

margins (over the term of the claim liability) from the benefit cash flow difference between the policyholder and statutory liabilities (the "policyholder margin") on existing claims and future claims incurred before the end of the rate guarantee period (see 8.5.2.3),

guaranteed interest credited less interest required[2] on the policyholder liabilities to the end of the interest guarantee period[3] (see 8.5.2.4),

policyholder valuation expense less claims administration charges (see 8.5.2.5), and

differences between premiums and expected policyholder charges for retention (excluding risk charge) and claims (using policyholder liability bases) to the end of the premium rate guarantee period (see 8.5.2.6).

Future ERR cash flows would be calculated separately for each policy since cash flows from one policy cannot be offset by cash flows from another policy. Within a policy, the future ERR cash flows derived from each of the four sources described above would be netted together at each policy duration. When accumulating cash flows across policy durations, any accumulated deficit or CFR (including interest) and maximum CFR would be considered at each duration.

Net positive contributions to ERR cash flows in a particular duration would be first applied to deficit reduction before becoming refund cash flow for addition to a CFR or refunding to the policyholder.

Net negative contributions to ERR cash flows may only be recognized to the extent they reduce the CFR, unless the policy has a hold harmless agreement in which case all net negative contributions can be recognized. Where negative contributions do not reduce ERR cash flows, they will be carried forward in the form of increasing the accumulated deficits.

An additional liability may be set up if the actuary believes that the risk charges to the end of the risk charge guarantee period are inadequate (see 8.5.2.7). Some actuaries may consider this liability on a policy by policy basis. If so, the cash flows so projected can be netted together with the four sources above.

8.5.2.2 The Term of the Future ERR Liability

In determining ERR cash flows the different components in 8.5.2.1 would be projected for different periods, consistent with the corresponding terms of the claim liabilities of the components. Section 7.2 stated that the term of claim liabilities would extend to the end of the claim paying period. Since the future ERR cash flows from the various components would be netted together, the effective term of the ERR liability is the longest of all the component terms of liabilities, which would be that of

[2] Interest credited would be based on the financial agreements in place with the policyholder. Interest required would be based on the policyholder valuation basis.

[3] If the formula for determining the interest crediting rate is clear and guaranteed then the period referred to is for the term of the claims. If it is just the interest rate that is guaranteed then this is just that guarantee period.

the future claim liability.[4] If the policyholder has the right to terminate the financial agreement without terminating the contract, potential anti-selection by the policyholder may affect the liability.

8.5.2.3 Release of Policyholder Margins

If the assumptions for benefit cash flows in the policyholder basis are the same as the statutory basis, the actuary would not expect a contribution to future ERRs arising from this component. Otherwise, the policyholder margin can be determined by projecting future cash flows using statutory assumptions (including MfAD), and comparing it with corresponding projected cash flows using policyholder liability assumptions (including any MfAD), to the end of the term of the claim liabilities. The resulting policyholder margin may be positive or negative at each duration.

Where the policyholder margin at any duration is positive, this excess margin may be expected to flow back to the policyholder as a future refund.[5] If particular groups have any existing deficits at the valuation date, these could reduce the amount of future ERR payable on those specific groups, to a minimum of zero.

Where policyholder margins at any duration are negative, they would be covered first by any CFR and then carried forward. Experience refunds at any date would not be necessary until any then accumulated deficit is covered off. The margins contained within the statutory liabilities would be assumed to be required to pay for adverse claims experience, but to the extent that experience is more favorable, then these margins would instead be refunded to the policyholder as a refund. It would not be necessary to provide for both adverse claims experience and future refunds, as this would be double counting in this scenario.

8.5.2.4 Guaranteed Interest Credited less Interest required on Policyholder Liabilities

If interest credited equals interest required on existing policyholder liabilities, for each future financial period, the actuary would not expect a contribution to future ERRs arising from this component.

If the interest-crediting does not exactly match the policyholder valuation interest rate at all future durations, the actuary would determine whether interest crediting can generate future ERRs.

Interest crediting is frequently done using Guaranteed Investment Contracts (GICs) of various terms, possibly affecting ERRs in the future.

[4] On termination of a refund accounting group, the ERR usually only carries on for a fixed period, not the full length of the term of the claim liability. Most companies have too few LTD refund accounting cases to have statistically meaningful lapse rates and so ERRs usually are considered to continue the full term of the claim liability, i.e., assuming the refund accounting arrangement continues forever.

[5] Unless there is a deficit accumulated by that duration in which case it will be a true profit to the insurer at that duration to recover a loss taken by the insurer at a previous duration.

If interest crediting is done using GICs that do not match the policyholder valuation required interest rates in the future, then the GIC interest cash flows would be projected in the future to the end of the guarantee period for each GIC. The difference between guaranteed interest credited and policyholder valuation interest for each GIC principal amount would contribute to future refund cash flow.

Typically, the GIC liabilities are shorter than the claim cash flows, resulting in reinvestment risk. The actuary may consider extending the term of the interest crediting cash flow to recognize any reinvestment risk when interest crediting guarantees imply that reinvestment would not match the policyholder valuation interest rate. This would require deriving scenario dependent cash flows (i.e., future GIC rates would be dependent on future interest rates that vary for each CALM scenario). In modeling the reinvestment of these GIC liabilities, the actuary would assume that the group policy and the experience rating will remain in force until all existing claims have run-off.

The reinvestments would assume the continuation of the current GIC interest-crediting process to the extent that is guaranteed.

Interest charged on deficits would also be considered when calculating the total interest credited.

8.5.2.5 Policyholder Valuation Expense less Claims Administration Charges

If the valuation expenses assumed in calculating the policyholder liabilities are based on the retention charges for claims administration, the actuary would not expect a contribution to future ERRs arising from this component. To the extent they differ, it creates future ERR cash flows that may be positive or negative.

8.5.2.6 Premium Margins in Excess of Expected Policyholder Charges

The liability for future claims (active life reserve) projects future claim, expense and premium cash flows to the end of the premium rate guarantee period. For a refund policy, the difference between future expected premiums and future expected policyholder retention charges and charges for new claims (using policyholder bases) will contribute to ERR cash flows. A simple percentage of premium is usually used which would represent the difference between the loads in the premium for profit and the expected strain on new liabilities in excess of that allowed for in the premium adjusted for any expense inadequacy.

8.5.2.7 Additional Liability Payable due to Inadequacy of the Risk Charges to the End of the Risk Charge Guarantee Period

For non-refund policies, it is normally assumed that statutory liability assumptions will be realized in aggregate only, and any variations are offset between policies. However, for refund policies, favourable experience for one policy results in ERR cash flow so it would not be used to offset unfavourable experience for another policy. This is the reason for the existence of risk charges.

When premium rates are set to adequately cover expected claims and retention charges, the "required" aggregate annual risk charge across all policies equals the

expected aggregate annual increase in deficits, taking into consideration volatility by case. Cases with greater volatility (higher standard deviation of experience) have a greater expectation of a refund or deficit and thus require a higher risk charge. For example, smaller refund life cases normally have proportionally greater volatility than larger refund health cases.

If risk charges are set too low, there is an expectation of additional cash flow due to volatility. This can be measured by the difference between the required risk charge and actual risk charge to the end of the risk charge guarantee period for a particular policy. A PfAD would be added to the required risk charge used in the calculation of the future ERR liability.

The actuary would assess the adequacy of risk charges to cover future deficits and determine whether an additional future ERR liability is needed. This could entail, for example, a comparison of historical aggregate deficit increases to historical risk charges, or a stochastic simulation of future increases in deficits, or other methods as appropriate. However, for most companies the statistical data to do such an analysis is unavailable due to the relatively few cases on refund accounting and an assumption is made that risk charges are adequate if the actuary considers the potential inadequacy to be immaterial.

8.5.2.8 Adjustment for Expected Policy Persistency

If the refund arrangement terminates when the policy terminates, cash flows determined above may be discounted by the expected annual policy persistency rate. Surpluses arising after termination and any run-off period revert to the insurer rather than the policyholder. However, great care would be taken in determining such a rate due to the likely anti-selection by those in deficit and the impact of the run-off periods for each policy. In practice, most companies do not have enough experience to determine an appropriate persistency and so make no assumption for termination.

8.5.3 Use of Approximations to Determine Future ERR Liability

Approximations are commonly used to determine the future ERR liability.

Frequently the remaining rate guarantee is short, the interest crediting promises rates similar to the interest assumption in the policyholder liabilities and the risk charge is assumed to be adequate, in which case, the future ERR liability boils down to the margin between the policyholder basis and the statutory basis. In such cases some actuaries will hold the excess of the policyholder liability over the statutory liability as the ERR liability, adjusted for deficits policy by policy existing at the time of valuation. To the extent that the policyholder liability is less than the statutory liability, the resulting future deficits are ignored as these are already provided within the statutory liability. In both cases there is a risk that the actuary ignores the fact that the liabilities may not have the same relationship at all durations and so refunds may be paid at earlier durations to give rise to deficits later on.

Actuaries using these approximations would be aware of the following limitations, and decide whether the approximation still makes appropriate provision within materiality.

Differences between policyholder and statutory liabilities due to differences in the valuation interest rate or valuation expenses do not contribute to nor offset ERR cash flows.

This approximation does not account for the differences between guaranteed interest credited and the interest required on the policyholder liabilities.

It does not account for any differences between premiums and expected policyholder charges for retention and claims to the end of the premium rate guarantee period.

It does not account for any inadequacy of the risk charges to the end of the risk charge guarantee period.

If the actuary has used an approximation to determine the ERR liability, for example, as described above, and if the resulting ERR cash flows are not explicitly included in the CALM testing, then it may be necessary to adjust the resulting liability to a fair value (3855[6]) basis. This could be accomplished by approximate techniques. An example would be to multiply the ERR liability by the ratio of the statement value to pre-3855[7] book value of the assets supporting the group portfolio. As another example, the actuary could allocate specific assets to support the ERR liability, whose pre-3855 book value equals the determined liability, and then report the fair value of those assets.

8.5.4 Deficit Recovery

At any point in time, a policy with refund accounting may have an accrued deficit. The accrued deficit is defined as the negative policyholder experience balance net of any funds the insurer has a contractual right to offset. Most actuaries do not hold a recoverable for such deficits[8] recognizing that groups may terminate at any time and the deficit would not be recoverable. With so few cases, it is unlikely that the actuary has any relevant statistical data on persistency (see 8.5.2.8) of groups in deficit or can apply such statistics to such a small block of policies.

There is one exception to this, where policyholder margins are positive, as described in section 8.5.2.3, they will generate future surpluses. Such margin release will pay down accrued deficits. So a negative ERR liability (i.e., assumed deficit recovery) may be held to the extent it is covered by such a margin.

If the actuary is to take credit for future recoveries other than for this exception, there are a number of considerations.

Paragraph 2130.29 of the Standards of Practice states that where the insurer holds an asset for accrued experience rating deficits, the actuary would test the appropriateness and recoverability of the receivable amount using valuation assumptions and methodology for experience rating refunds. The actuary would make an adjustment

[6] Reserve values based on assets valued in accordance with CICA Handbook Section 3855.
[7] Asset valuation based on book value of assets, not the value in accordance with CICA Handbook Section 3855.
[8] For example, when there is no contractual agreement for repayment (a hold harmless agreement) or any accrued CFR.

to the liabilities, if necessary. The criteria for recognition of recoverable deficits should be discussed and reviewed with the accountant.

Paragraph 2130.28 of the Standards of Practice further specifies that the experience rating refund element of the policy liabilities would not be negative, except to the extent that in settlement, it may be offset against another liability or recovered from policyholders. In practice, insurers, generally, have not established recoverable deficit assets on the balance sheet (setting probabilities is usually not possible due to the relatively small number of such cases and particularly allowing for the potential anti-selection by those who have deficits in certain economic scenarios), beyond collateral amounts such as CFRs or hold harmless agreements.

8.5.5 Claims Fluctuation Reserves

Most refund accounting arrangements require some, or all, of a policy's surplus to be held back in a CFR until the CFR reaches a defined level, and actual ERR payments are adjusted accordingly. The CFR represents deposits that the policyholder is required to maintain with the insurer to cover future adverse claim fluctuations, and upon which the insurer can draw at the termination of the financial agreement if there is a deficit, or on other occasions as the contract permits. The required funding level is normally based on the size of the policy, the coverage insured, and other aspects of the risk profile. The CFR is credited with interest and the CFR would never be negative. The fund is not usually owing to the policyholder until the group policy terminates or fails to be renewed. The fund is increased (reduced) by any new experience surplus (deficit) at the final accounting. There are limitations on the amount of CFR that is deductible for tax purposes, and these are described in section 12. The CFR may be included in the actuarial liabilities or treated as part of amounts on deposit. The valuation considerations are similar to those for amounts on deposit, with appropriate recognition of any interest rate risk.

8.6 Hold Harmless Policies

The claim and ERR cash flows normally used for the CALM valuation can be replaced by the policyholder interest crediting cash flows, as well as asset cash flows from outstanding premiums and hold harmless receivables.

8.7 Liability for Amounts on Deposit

Amounts on deposit typically represent policyholder surplus owing but not paid, including interest to the valuation date. The insurer usually does not have contractual access to these funds to cover claim fluctuations. If the account is credited with market short-term interest rates and backed with short-term assets with higher yields, interest rate scenario testing is not generally necessary and the account balance is usually the appropriate value of the liability. Otherwise, or where interest rate guarantees exist, the cash flows associated with amounts on deposit would be incorporated in the CALM valuation to determine the appropriate provision for interest rate risk. If the policyholder can withdraw these deposits without a market value adjustment, this option would be considered in determining the overall level of interest rate risk.

8.8 Expense Considerations

Paragraphs 2350.31 to 2350.39 of the Standards of Practice contain general considerations for the development of expense assumptions. Also, the educational note Best Estimate Assumption for Expenses provides guidance in developing best estimate assumption for expenses.
(http://www.actuaries.ca/members/publications/2006/206134e.pdf)

Claims expenses include the cost of administering and paying claims and are projected to the end of the term of the claims liability. This includes the cost of ongoing medical practitioner and rehabilitation costs, and associated overhead charges. General administrative expenses include the cost of underwriting, administration, sales compensation and overhead, and are projected to the end of the term of the active life liability.

Inflation consistent with the interest rate scenario would generally be applied to expenses in the future cash flows.

For some groups, third-party administrators (TPAs) perform some administrative services. In such cases, the services performed by the insurer may vary over time, and this can have an effect on the unit costs. Unit expenses are sometimes determined by type of administration (insurer administered, self-administered or TPA) and sometimes averaged over all policyholders.

There may be discrepancies between the actual expenses incurred by the insurer and those reflected explicitly in the retention charges (the expense charges to the customer for a refund case) or reserved for in the future claims expense cash flows. Retention charges are normally subject to marketing and competitive considerations and, therefore, the valuation assumptions are developed separately from the retention charges.

Claims administration expenses expressed as a percentage of the benefit amount may vary by duration and this could be recognized in the liability cash flows for disabled lives. Generally, the expenses related to new disability claims are much higher than for claimants who have been disabled for a number of years. It is also important to ensure that the valuation unit expenses reflect actual expected expenses because the basis used may not be related to the actual expense drivers. For example, if the claims administration expense assumption were expressed as a percentage of the benefit amount net of benefit offsets, then a change in the level of benefit offsets would affect the amount of claim expenses in the valuation.

8.9 Asset Considerations

Asset cash flows for group life and health valuation generally follow assumptions and methods consistent with those used for other products. Unlike most other products, however, outstanding premiums are often a significant (though short-term) asset, and the valuation recognizes the associated interest rate risk.

In performing CALM, the actuary would consider the invested assets available to support the policy liabilities. With group insurance, there are a number of non-invested assets that may be quite material, and may also be appropriate to support the

CALM testing. These may include such assets as outstanding premiums or recoverable deficits.

Outstanding premiums are typically large for group insurance portfolios. Some actuaries would consider that the outstanding premiums are similar to cash, and would treat it as cash for CALM testing purposes.

Similarly, deficit recoveries may be considered as a form of cash. The actuary would consider the likely timing and expected amount of payout before considering this within the CALM testing.

Although the invested assets are available to support the group life and health liabilities, generally, the actuary may need to further allocate the assets by benefit type to understand any Asset-Liability Management (ALM) issues that may arise. For example, companies may have a practice of backing short-term IBNRs with longer term fixed income assets. This could result in additional volatility in the surplus of the company. The actuary would understand and consider each company's ALM philosophy and practices, in allocating assets to support the various actuarial liabilities.

9. ADMINISTRATIVE SERVICES ONLY (ASO)

According to paragraph 2320.27 of the Standards of Practice, the term of the liability for an ASO contract without expense guarantee would end at the balance sheet date. The liability would be zero because premiums are equal to claims paid. However, if expense charges have been guaranteed by the insurer, the actuary would test the liability with the term equal to the remaining duration of the guarantee, and if higher liability value results, then the term of the liability would be extended. That is, to the extent that the guaranteed expense charges are insufficient to provide for expected future expenses plus MfAD, a liability would be established for future expense shortfalls.

Section 10 presents considerations for determining the liability where ASO business is written with stop loss insurance.

Even in cases where the liability is greater than zero, there is usually minimal interest rate risk involved in ASO contracts and if so, the cash flows may usually be ignored in the interest rate scenario testing of the CALM.

10. STOP LOSS

Stop loss coverage is generally written to limit a policyholder's exposure to losses on an underlying policy administered by the insurer, policyholder or third party. The terms of the coverage may include liabilities for future experience rating refunds and deficit recoveries.

A future claim liability would reflect the extent to which the expected cost of stop loss claims incurred during the term of the liability (including claim payments that may occur after the term of the liability) plus provision for adverse deviations exceeds the present value of guaranteed premiums for the stop loss coverage. An

IBNR might also be required to provide for claims associated with premiums already received.

There is usually minimal interest rate risk involved in stop loss contracts and so the cash flows can be safely ignored in the interest rate scenario testing of the CALM.

Given the nature of stop loss coverage, the actuary may consider the appropriateness of performing stochastic analysis or simulations to determine the expected costs associated with the benefit, for the purposes of establishing policy liabilities. This would produce a more realistic assessment of the liability (and the MfAD) than would arise by applying the deterministic valuation mortality scenario.

11. DEFERRED ACQUISITION COST (DAC)

Deferral of acquisition expenses, described in paragraphs 2320.23 and 2320.24 of the Standards of Practice, allow the actuary to extend the term of the liability (i.e., active life liability) to recover the DAC. Generally, DAC is established to recognize that certain expenditures already incurred may be recoverable from future revenue. In the case of long-term insurance policies, all future revenue is already reflected in the policy liabilities, so a separate DAC asset would not be appropriate. However, where the term of the liability is short, as is typically the case for group insurance, there may be expected future revenue that is not reflected in the policy liabilities and, hence, a DAC asset may be appropriate. Whether to establish a DAC asset and how much to set up requires some thought and discussion with the accountant. Many companies do not establish a DAC for employer/employee groups since acquisition expenses are significantly lower than general maintenance expenses and would be amortized over only a very few years since groups can easily transfer coverages to other insurers. For creditor, association and similar groups where the coverages are similar to individual life policies, the DAC may be more realistic.

The starting point for determining the DAC asset is the acquisition expense incurred. The DAC is amortized as available revenue is received. The actuary would test the recoverability of the DAC asset explicitly. Though GAAP does not narrowly limit the type of revenue that can be used for this purpose, the actuary's judgment about recoverability is applied in the context of the valuation. For example, the anticipated release of provisions for adverse deviations is not an appropriate source of recovery.

Generally, there would be some connection between the source of recovery and the original expenditure; for example, only future revenue with respect to the same group case is normally considered available for recovery of a group policy DAC. In circumstances where it is appropriate to set up a DAC asset, some considerations are:

the extent to which DAC recovery is already reflected in the future claim liability (the longer the term of the future claim liability, the less remaining margins there will be to recover any DAC),

profit margins available in future premiums after provisions for adverse deviations (care would be taken to ensure that there is no double counting of future premium margins, for example, margins used to recover deficits or reduce future ERR liabilities), and

anticipated policy persistency.

12. TAX CONSIDERATIONS

Paragraphs 2320.42 to 2320.48 of the Standards of Practice describe the treatment of income taxes in the valuation. When projecting asset and liability cash flows, the actuary would make explicit assumptions as to future taxes in those situations where permanent future differences or existing and future temporary differences between statement and tax values exist. The combination of the accounting future tax liabilities and/or assets with the policy liabilities appropriately provides for future taxes.

The actuary is reminded that the best estimate assumption for income taxes is a continuation of the current tax regime, i.e., substantially enacted tax legislation. The actuary would be mindful of potential changes to tax legislation and their impact on policy liabilities (as occasioned, for example, by the adoption of AcSB 3855), but would not reflect such proposals until they became substantively enacted.

In Canada, tax regulations may give rise to differences between tax and statement values. For example,

the taxation of certain asset classes may differ from statement accounting,

for LTD and other health benefits, tax liabilities are generally 95% of statutory liabilities,

Canada Revenue Agency imposes limitations on the amount that can be deducted to the extent

in general, the deductible amount for a CFR is limited to 25% of the annual premium under the policy, and

to be deductible, ERR has to be payable in the year following the taxation year (ref : Canadian Income Tax Act 138(3) a) iv), and

Investment Income Tax (Part XII taxes) that is not deductible for income tax purposes in Québec may be payable on certain group benefits (e.g., SIB, paid-up life, certain creditor life policies or individual life policies written on an association basis).

In addition, differences between tax and statutory liabilities may arise on acquisitions, and permanent future differences or existing and future temporary differences between Canadian GAAP and foreign tax values may exist in respect of assets and liabilities arising from business issued out of Canada.

The actuary would refer to the educational note on Future Income and Alternative Taxes (www.actuaries.ca/members/publications/2002/202065e.pdf).

13. REINSURANCE

Reinsurance is common in group life and health business. While many reinsurance transactions are highly specialized, most include some elements of co-insurance, modified co-insurance and excess of risk reinsurance.

Under co-insurance arrangements, the insurer cedes a portion of the business to one or more reinsurers. Each reinsurer holds the policy liabilities on its portion of the business. The primary insurer is liable for the payment of contractual benefits to the policyholder.

Under modified co-insurance, the insurer cedes a portion of the liabilities to other insurers, but retains the assets backing the policy liabilities (as an amount owing to reinsurers) on its own books.

Under excess of risk reinsurance, the coverage of amounts above the insurer's retention limit is ceded to a reinsurer who holds the policy liabilities related to the coverage.

Paragraph 2130.16 of the Standards of Practice provides guidance on the treatment of reinsurance in the valuation. Recoveries from a reinsurer depend upon the continuing solvency of the reinsurer. The actuary would, therefore, take account of the financial condition of the reinsurer in assessing the future cash flows arising from reinsurance recoveries. Furthermore, paragraphs 2130.30 to 2130.32 of the Standards of Practice state that the reinsurer would be assumed to act to their advantage, in exercising recapture provisions or other contractual features of the reinsurance contract.

Under co-insurance arrangements, the insurer does not maintain assets backing the excess of gross liabilities over net liabilities. In this situation, CALM cannot be strictly applied. Various methods that produce results that are reasonable in relation to net liabilities may be used to value the gross liability.

14. INTERNATIONAL ISSUES

Group policyholders may operate in several territories, and coverage may be issued in Canada to employees of group policyholders who reside in another territory. Multinational pooling of risk (i.e., pooling of risk on lives insured in different territories) may exist. The Standards of Practice provide guidance in respect of many international issues. For example, subsection 2330 discusses foreign interest rates, and subsection 2340 discusses issues in determining foreign exchange rates.

Permanent future differences or existing and future temporary differences between Canadian GAAP and foreign tax values may exist in respect of assets and liabilities arising from business issued out of Canada (see section 12).

Other considerations include

the limited volume of experience on out-of-Canada residents,

the social/political risks that may exist outside of North America,

the differing legal and tax environment in the insured's country of residence, and

for medical coverage, the availability of local government-sponsored medical insurance programs.

APPENDIX A – GLOSSARY OF TERMS

ASO

Administrative services only – refers to an arrangement whereby the policyholder is liable for claim costs and for agreed charges.

Catastrophic Pooling

See Stop Loss section below.

Claims Fluctuation Reserve (CFR)

Also known as Claim Stabilization Reserve or Fund, Premium Stabilization Reserve or Fund.

This note uses the terminology "Claims Fluctuation Reserve (CFR)." CFRs are described in section 8.5.5.

Credibility

A measure of the validity of the past experience of the group as a predictor of future experience, usually used in prospective rating. It is related to the size of the group and frequency of claims.

Disabled Life Reserve (DLR)

Another name for the LTD and waiver of premium reported claims liability.

Elimination Period

It is defined as the period of time between the date of disability and when the first LTD benefit payment is effective or when the waiver of premium becomes effective.

Experience Rating Refunds

This note uses the terminology "experience rated refunds (ERRs)".

ERRs are payments of surplus to a policyholder with refund accounting, where the surplus is determined according to the financial agreement between the insurer and the policyholder.

Experience Rated

Is used to describe policies where the experience of the group is used to determine premiums or refunds.

This note uses the terminology "Prospectively Rated" to describe groups that are experience rated in the premium-setting process but are not necessarily eligible for refunds.

This note uses the terminology "Refund Accounting" for groups that are eligible to receive ERRs based on their experience determined retrospectively.

Experience Surplus (Deficit if negative)

Refers to the excess of:

- premiums, plus interest on policyholder liability balances and cash flow, over

- claims paid, plus expense and other charges, plus the increase in policyholder liability (for incurred claims and sometimes future claims).

All items would be determined according to the refund accounting rules in the financial agreement. For example, if there is pooling, the claims paid and policyholder liability would exclude the pooled amounts and pool charges would be included in the "other charges".

Financial Agreement

Also known as Refund Accounting Agreement, Underwriting Agreement, or ERR Agreement.

Document specifying the financial terms of the refund accounting arrangement between the insurer and the policyholder. The agreement may also specify practices to be used for renewal rate determination. This is typically a supplementary agreement to the insurance contract but may be included in the insurance contract. The term "Financial Agreement" is used in this educational note.

Hold Harmless

Hold harmless is used to describe an agreement whereby the policyholder "holds" specific liabilities (generally IBNR), or an agreement for the repayment of any future deficits.

Minimum Premium

Also known as split funded ASO and stop loss experience rated.

Claims are reimbursed on an ASO basis up to a certain limit, and claims in excess of the limit are experience rated.

Risk Charge

An explicit charge in the policyholder financial statement before determining any ERR or deficit. It is common practice to add this amount to the premium.

The risk charge is normally set in aggregate such that the sum of charges made by the insurance company in all financial agreements is intended to cover the aggregate increase in policyholder deficits (not guaranteed by a hold harmless agreement) across all refund policyholders, since these cannot be offset by surpluses from other refund policies.

Stop Loss

Also known as Catastrophic Pooling and in the case of individual stop loss is known as High Amount Pooling.

Terminology used to describe various types of pooling available to reduce the policyholder's risk on an insured contract with refund accounting or an ASO contract (discussed in section 5 and section 10).

Aggregate stop loss pools the aggregate amount of claims for the group whereas individual stop loss pools the amount of each claim that is in excess of a specified amount.

TPA – Third Party Administrator

Another party who administers the contract provisions and perhaps pays benefits.

Insurer has additional risk of data integrity issues and timeliness of receiving information.

Tax Liabilities

Tax values of liabilities as defined by Income Tax Act (Canada) and Québec Taxation Act.

Unearned Premium

Premiums received prior to the valuation date in respect of a period after the valuation date.

APPENDIX B – DATA ISSUES

Data integrity is often an issue in the valuation of group life and health policy liabilities. Some common data issues include:

LTD claims assessors or adjudicators sometimes suspend claim payments while waiting for medical evidence of continued disability (it is common practice to continue to hold liabilities during this suspension period, however, if it lasts for more than three or four months, the claims assessor may have neglected to terminate the claim),

for large group policies, most insurers give their underwriters significant leeway in the design of funding arrangements, and often administrative systems do not have the flexibility to record the exact nature of the arrangements,

LTD or waiver of premium claims may not be added to the administrative system in a timely fashion, or not closed promptly upon termination,

future LTD benefit amounts may be incorrectly interpreted for the impact of offsets or COLA provisions,

many LTD contracts allow for offset of all or a portion of amounts earned by the claimant while they are undergoing rehab (the net benefit payable may vary widely month-by-month. The claim file will probably show the most recent payment only and hence the cash flow projection, and hence liability, will likely vary wildly from month-to-month unless the actuary uses some form of averaging of such rehab offsets,

for group creditor cases there are some unique data issues (for example, the outstanding balance on loans insured, varying face amounts of insurance over time, etc.), and

documentation of financial agreements may be deficient and care would usually be taken in interpreting agreements in valuing ERR liabilities and establishing assets for deficit recovery.

Some suggestions for validating data integrity and issues for the actuary to consider are,

if there is an LTD claimant and the group has both waiver of premium and LTD coverage, one would verify that there is a corresponding waiver of premium claim, if appropriate (i.e., if the elimination period and definition of disability are the same or if the definition is weaker for the waiver of premium benefit then there would typically be a corresponding waiver of premium claim if the company also insures the Group Life),

the actuary would compare the death claims register with the waiver of premium/LTD claim files to ensure that there is not a disability claim in payment on a life for which a death claim has been paid and also would verify that there is not a paid up life liability being held for lives on which a death claim has been paid,

one would check that a liability is not being held for any claim where a lump sum settlement has been made,

one would meet regularly with the underwriters of large cases to review recent sales and renewal financial agreements made,

a comparison of claim payments assumed in the liability calculation to claim payments made for the month can identify inconsistencies,

routine review of outstanding premiums can identify potential issues where, for conservation purposes, normal practices are not being followed, e.g., claims may continue to be paid past the end of the grace period,

one would check that dates are realistic, for example, that the date of birth is prior to the date of disability and the date of birth does not result in the member being too young or too old,

the actuary would check that the date used for recurrent disabilities is the original disability date,

one would check for payment amounts in excess of a specified amount to catch incorrectly coded large amounts that could have a large impact upon the liability,

if LTD payments are temporarily suspended, or the payments are temporarily different from the future expected payments, then the expected future payments would preferably be recognized in the liability calculation rather than a continuation of the current payment,

the actuary would review data integrity checks done by administrative areas, accounting department, internal audit department and/or external auditors,

for self-administered groups, one would verify that the data are complete, accurate and timely,

one would review audit premium and claim information received from third party administrators,

one would ensure the date of incurral is correct, particularly for its effect on lag studies and stop loss coverage,

one would check that LTD benefit offsets are being coded and handled correctly,

one would check that the growth in premiums is reasonable relative to the change in valuation records and is consistent with the change in IBNR,

with respect to movement of business validations, one would compare changes in valuation data to cash flows in the financial statements,

periodically, one would review paid up listing for individuals in excess of maximum ages (one would expect a limited number beyond age 100),

one would perform analysis of actual to expected ratios to determine whether results are reasonable (for example, if you have 500 paid-up life certificates over age 75 and no deaths in a six-month period, the integrity of the data would be questioned),

for pending waiver of premium claims, one would periodically review how long they have remained pending (if too long, they may have been approved or declined but not coded),

the actuary would compare the ERRs reported to the client with estimates prepared over the year to determine whether there are any data issues affecting the valuation or administrative issues affecting the refund accounting calculations, and

one would check that any ERR payments actually made have been released from the ERR liabilities accrued.

APPENDIX C – LIABILITIES FOR FUTURE EXPERIENCE RATING REFUNDS

Accrued ERR Liabilities

The accounting ERR formula [1] below is a typical contractual experience rating formula used to determine a policyholder's experience rated refund (ERR) or deficit for any policyholder financial reporting period. This is how accrued ERR liabilities (section 8.5.1) are calculated.

[1] Premium – Retention – Claims + Interest Credited – Increase in PH (policyholder) Liabilities

= Increase in ERRs – Increase in Deficits

Notes:

1. The experience rating formula can result in either a change to the accrued ERR liability or a change in the deficit.
2. The left-hand side of formula [1] is the aggregate experience of the block of refund policies.
3. The right-hand side of formula [1] aggregates the ERRs separately from the deficits, recognizing that some policies will develop refunds and others will develop deficits, even though the aggregate experience of the refund block might be as predicted[9]. Watch the signs carefully. A deficit is a negative surplus. For example,
   Increase in ERRs = +$4M, Increase in Deficits = +$3M, so Increase in ERRs – Increase in Deficits = +$1M.
4. This formula holds in multiple situations: cross-rating of benefits, hold harmless agreements, or recoveries from CFRs. The Increase in ERRs includes changes in accrued recoveries from CFRs or from hold harmless agreements.
5. When applied at a policy level, the right-hand side would either be a change in ERRs or a change in Deficits, or both.

Noting that

[2] Retention = Charges on Premiums + Charges on Claims

= (Expense Premium + Risk Charges + Profit Charges) + (Claims Admin Charges)

[3] Increase in PH Liabilities = (PH Liabilities on New Claims) + (Change in PH Liabilities on Existing Claims)

= (PH Liabilities on New Claims) + (Interest Required on Existing PH Liabilities – PH Valuation Claims – PH Valuation Expense)

where:

[9] Normally Increase in ERRs will be positive. ERRs on a block of refund policies tend to increase over time. Normally Increase in Deficits will be negative. Aggregate deficits on a block of business tend to grow over time. This includes deficits written off.

PH Valuation Claims denotes claims based on policyholder valuation assumptions, and

PH Valuation Expense denotes expenses based on policyholder valuation assumptions.

Substituting [2] and [3] into [1], we have

[4] Increase in ERRs – Increase in Deficits = Premium – Expense Premium – Risk Charges – Profit Charges – Claims Admin Charges – Claims + Interest Credited – PH Liabilities on New Claims – Interest Required on Existing PH Liabilities + PH Valuation Claims + PH Valuation Expense

Therefore, by rearranging [4],

[4A] Increase in ERRs – Increase in Deficits

= PH Valuation Claims – Claims

+ Interest Credited – Interest Required on Existing PH Liabilities

+ PH Valuation Expense – Claims Admin Charges

+ Premium – Expense Premium – Profit Charges – PH Liabilities on New Claims

– Risk Charges

Moving the Increase in Deficits from the left-hand side of [4A] to the right-hand side,

[4B] Increase in ERRs

= PH Valuation Claims – Claims

+ Interest Credited – Interest Required on Existing PH Liabilities

+ PH Valuation Expense – Claims Admin Charges

+ Premium – Expense Premium – Profit Charges – PH Liabilities on New Claims

+ Increase in Deficits – Risk Charges

Future ERR Liabilities

The liability for future refund is the present value of projected ERR for each future period. However, premiums and the associated retention will not be projected beyond the end of the rate guarantee period.

In the context of Canadian GAAP valuation, the term Claims would be expected claims plus MfAD, call this GAAP Valuation Claim. To the extent the claim cash flows assumed in the policyholder basis exceed the GAAP basis, it creates future ERR cash flow. Call the present value of this difference PH Margin on Existing Claim Liabilities.

[5] PH Margin on Existing Claim Liabilities = PV(PH Valuation Claims – GAAP Valuation Claims)

Similarly, within the PH Liabilities on New Claims, the claims assumed on the policyholder basis may be different from that on the GAAP basis. Although the policyholder liabilities on new claims are charged to the experience against the premium,

the difference would be refunded as future ERR, thus, its present value should be part of ERR liability. Call this PH Margin on New Claim Liabilities.

The future ERR liability (section 8.5.2) is the present value of all future ERRs,

[6] PV(ERRs)

= PH Margin on Existing Claim Liabilities + PH Margin on New Claim Liabilities (8.5.2.3)

+ PV(Interest Credited – Interest Required on Existing PH Liabilities) (8.5.2.4)

+ PV(PH Valuation Expense – Claims Admin Charges) (8.5.2.5)

+ Premium – Expense Premium – Profit Charges – PH Liabilities on New Claims (8.5.2.6)

+ Increase in Deficits – Risk Charges (8.5.2.7)

APPENDIX D – LTD CLAIM LIABILITY ADEQUACY TEST EXAMPLE

Claim Duration	Reserve at 2007-01-01	Actual Payments	Valuation Interest	Reserve at 2007-12-31	Gain at 2007-12-31
11+	375 000	65 000	17 125	330 000	-2 875
10	94 000	17 000	4 275	85 000	-3 725
9	105 000	20 000	4 750	92 000	-2 250
8	110 000	22 000	4 950	100 000	-7 050
7	125 000	25 000	5 625	110 000	-4 375
6	150 000	24 000	6 900	135 000	-2 100
5	160 000	22 000	7 450	140 000	5 450
4	180 000	24 000	8 400	160 000	4 400
3	225 000	31 000	10 475	200 000	4 475
2	290 000	52 000	13 200	235 000	16 200
1	380 000	81 000	16 975	300 000	15 975
All Prior Durations	2 194 000	383 000	100 125	1 887 000	24 125
Current Year Claims		23 000		400 000	
Total		406 000		2 287 000	

This analysis exhibits the adequacy of the claim liability open at the beginning of the period, by claim duration. It tests whether or not enough liability was established at the beginning of the period to fund both the associated benefit payments over the period, and the ending liability balance. It recognizes that interest at the valuation interest rate is also available to fund these amounts.

The analysis requires that claim reserves are separated by year of disability and that claim payments are linked to their associated liability. Current year claims are shown in the example above so that a reconciliation to total payments and ending liabilities can be completed.

By excluding the PfAD from both the beginning and ending liability amount, the appropriateness of the expected experience assumptions can be tested (i.e., the expected gain is zero).

In the particular example above, the liability initially appears to be adequate because the total run-off gain is greater than zero. However, upon closer inspection, it can be seen that there are losses in later durations. Judgment may be required to determine whether these are experience losses or insufficiency in the liabilities. Based on the pattern in this example, it is more likely that the assumptions in later durations are insufficient. Conservative assumptions in the earlier durations are masking the later duration insufficiency.

IBNR adequacy can also be studied using this method.