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Educational Note

Valuation of Group Life and Health Policy Liabilities

Document 200067

EDUCATIONAL NOTE

Educational notes do not constitute standards of practice. They are intended to assist actuaries in applying standards of practice in specific matters. Responsibility for the manner of application of standards in specific circumstances remains that of the practitioner.

VALUATION OF GROUP LIFE AND HEALTH POLICY LIABILITIES

COMMITTEE ON LIFE INSURANCE FINANCIAL REPORTING

NOVEMBER 2000

Document 20067

Ce document est disponible en français

Canadian Institute of Actuaries Institut Canadien des Actuaires

MEMORANDUM

TO: All Members and Students of the CIA Interested in Life and Property and Casualty Issues

FROM: Simon Curtis, Chairperson of Committee on Life Insurance Financial Reporting

DATE: November 27, 2000

SUBJECT: **Educational Note on the Valuation of Group Life and Health Policy Liabilities**

Attached is an educational note on the "Valuation of Group Life and Health Policy Liabilities" prepared by the Committee on Life Insurance Financial Reporting (CLIFR).

This educational note is a companion piece to the May 31, 2000 Exposure Draft of Life Standards of Practice (SOP), and provides illustrative information on the application of the SOP for group life and health policies.

Once effected, the Life SOP will supercede all earlier life standards of practice. This educational note contains the educational content of several draft valuation technique papers in the Group area that were previously under development by CLIFR. In drafting this educational note, CLIFR has obtained extensive input from experts practicing in the group life and health area.

Educational notes do not constitute standards of practice. They are intended to assist actuaries in applying standards of practice in specific matters. Responsibility for the manner of application of standards in specific circumstances remains that of the practitioner.

Material covered in this educational note includes the following:

- An overview of the common benefits provided to members of group life and health plans, (e.g., long-term disability, short-term disability, medical, dental, term life, creditor, and association) and the various financial arrangements involved in group insurance (e.g., fully pooled, prospectively rated, refund accounting, and ASO).
- Illustrations of the application of the Life SOP's Canadian Asset Liability Method (CALM) in determining group policy liabilities. The note studies the "term of the liability" concept for group insurance, describing the projection of incurred claims, premiums, and general administrative expenses. Benefit and expense cash flows for claims are projected to the end of the benefit period. Supplementary information is also provided in several areas that involve special considerations (e.g., deficit recovery, deferred acquisition costs, tax considerations, and data issues).
- Experience rating refunds (ERR) and factors that impact the term of the ERR liability. This includes the treatment of the difference between the Canadian GAAP liability and policyholder liability, a discussion on interest rate risk, and a review of other refund accounting issues.
- Other areas covered include unearned premium valuations, and future claim liability considerations (implicit versus explicit methods, interest rate risk, incidence and termination assumptions, and expenses).

Comments and suggestions should be forwarded to the attention of Simon Curtis, Chair of CLIFR (Simon_Curtis@manulife.com) or Denise Lang, Chair of CLIFR's Group sub-committee (Denise.Lang@clarica.com) at either their *Yearbook* or e-mail address.

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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 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 for the Valuation of Policy Liabilities of Life Insurers ("draft life standards"). This note is intended to follow the principles described in that document.

This note draws on the work done previously by the Committee on Life Insurance Financial Reporting and reflects input from a number of actuaries currently practicing in this area. The Bibliography in Appendix 4 lists some reference sources.

For the definition of certain terms used in this note, please see the Glossary in Appendix 1.

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", which 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 group life and health reinsurance received.

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. Each insured member typically receives a certificate of insurance. The term "group insurance" includes:

- employee groups sponsored by their employers,
- employee or professional groups sponsored by their union or professional group, and
- creditor groups sponsored by the creditor of a group of debtors,

where membership in the group qualifies the insured (although individual underwriting may apply under certain conditions) and may also cover their dependents.

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 an association of individuals or groups for group coverage. Benefits are provided to a group of people with a common link such as a profession or a collection of small groups to form one large group. In the former case, premiums are generally paid for by the members and the latter, generally by a combination of employer and employee contributions.

Creditor group insurance is coverage provided to a collection of participants who have 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 except 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 or paid-up creditor.

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 each contract, so that all the risks are appropriately reflected 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 coverages typically offered. The purpose of these descriptions of benefits is to provide a framework for the discussion in this educational note, and not to limit the possible interpretation. The best source for benefit descriptions is the contract.

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. LTD benefits are typically 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 during the first two years and any occupation for which they are reasonably fit thereafter. Benefits are typically 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, which include Canada Pension Plan (CPP), Québec Pension Plan (QPP), workers' compensation, and U.S. Social Security Disability Insurance (SSDI).

Many 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/her abilities.

Short-Term Disability (STD)

STD insurance provides disability coverage for a short period of time immediately upon disability or after a short elimination period. 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.

Medical

Covered expenses include reasonable charges incurred for medically necessary services, medicines and supplies for the treatment of injury or disease, as described in the contract. Coverage is typically subject to internal limits such as deductibles, coinsurance and/or various maximums, and is coordinated with the medical coverage provided by provincial health insurance plans.

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

Dental

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

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).

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. Group conversion benefits apply to term life insurance and may apply to other coverages as well.

Waiver of Premium or Extended Death

Waiver of premium insurance provides continued group life insurance coverage without premiums for insured members who satisfy the definition of disability for the elimination period. Typically, waiver benefits end at a specified age (65), but can continue as a lifetime benefit. The definition of disability for waiver of premium is typically the same as or more stringent than for LTD. Also, the waiver elimination period would typically 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.

Accidental Death and Dismemberment

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

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 typically step-rated and rates may be very competitive with individual term insurance. Risk characteristics and liabilities may be more similar to individual insurance than group insurance. Individual selection (underwriting) rules may apply, becoming more demanding as the amount of insurance increases.

Paid-up Life

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.

Survivor Income Benefits (SIB)

Upon the death of an insured member, survivor income benefits (an annuity) are paid to the beneficiary. The period for which the annuity is payable depends on the contract provisions, and may be until the date at which the deceased member would have become age 65, the date at which the beneficiary attains age 65, until the remarriage of the beneficiary, or the death of the beneficiary. Lump sum death benefits 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.

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 6 to 24 months).

Total and Permanent Disability

Like 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 based on 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.

Creditor Insurance

Creditor life insurance typically pays the outstanding balance of a loan, mortgage or credit card upon death of the group life insured (debtor). Creditor disability insurance covers regular loan payments while 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. Technically, life insurers are not licensed to offer such coverages but multi-line insurers, with separate life and property and casualty companies, may do so.

Association Plans

Association business refers to group insurance for an association of individuals covering the members of that association that is 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, an STD coverage is offered that will pay a professional's office expenses for a limited period of time while the person is disabled.

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

Flex Benefits

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 such as cost sharing, limits on changing benefit levels, and evidence requirements when increasing benefit levels are used.

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 have 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 nor to limit the possible interpretations, but rather provides a framework for the discussion in this educational note. The best source for description of the financial arrangements is the contract and any supplemental financial agreement with the policyholder.

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), sex, 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.

Prospectively Rated

Under prospectively rated arrangements, the group policyholder's premiums 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.

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, or 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.

Refund Accounting

Under refund accounting arrangements, premiums for a coverage period are based at least partly on the group's experience, similar 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, and is more commonly available on medical/dental benefits, where the group's own past experience is usually considered to be a good predictor of future experience.

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 as an Experience Rating Refund (ERR) to the policyholder. To help stabilize future premium rates, it is common for insurers to hold back surplus up to a limit specified in the financial agreement. This is called a Claims Fluctuation Reserve (CFR) and is described in section 7.5.2. 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 is called the policyholder valuation basis in this educational note. The policyholder valuation basis is often different from the basis used for the valuation of policy liabilities in the insurer's financial statements. 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 statement liability to be held, particularly the liability for future experience rating refunds and the liability for future claims. It could also impact the recoverability of deferred acquisition expense or deficit recovery assets.

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 coverages provided. If x falls short of defined requirements (claims plus expenses and profit, say "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 credit worthy.

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 coverages. They are generally not offered with group life insurance coverage because of adverse tax consequences for the beneficiary.

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.

Hold Harmless Agreements

Under hold harmless agreements, the policyholder agrees to pay certain outstanding liabilities, such as incurred but not reported claims, upon termination of the policy. The 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/dental benefits and are contingent on the credit worthiness 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.

No Risk Agreements

Under no risk agreements, the policyholder agrees to reimburse the insurer for any deficit arising under the policy either annually or upon termination of the contract.

6. THE CANADIAN ASSET LIABILITY METHOD AND MATERIALITY CONSIDERATIONS

The Canadian Asset Liability Method (CALM) as described in section 6 of the draft life standards is the appropriate method of valuation for group life and health policy liabilities.

Valuation of group life and health business poses many challenges for the actuary. There are several reasons for this.

- 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 benefit 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 retrospective rating in the form of 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 value of a future refund, and may not be simply equal to the experience surplus at the valuation date. This is particularly true where the statement and policyholder valuation bases differ.
- Because of the wide variety of benefit types, contract provisions and rating practices, reliable experience data is often scarce.

- While group contracts are traditionally of a short-term nature, the theoretical term of the liability for future claims for some of these coverages ("group business that behaves like individual business") is determined life by life and is related to the ages or lifetimes of the individual participants, as it would be in individual insurance (see section 7.4.1). 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 to serve the actuary's valuation purposes. Moreover, while the valuation of the future claims liability life by life is well accepted for some coverages (e.g., paid-up life and creditor insurance), it is not common practice for others like association group. 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 3.

Fortunately, there are factors that will mitigate this complexity and materiality is one that plays an important role. Section 4.11 of the draft life standards sets out the general standards for materiality. There is little guidance there in terms of quantitative norms, as materiality is a matter of judgment applied in specific circumstances. Companies will view materiality differently depending on their circumstances. The most rigorous condition is that a company establishes materiality guidelines for each group or case that meets certain criteria (for example, large size). A less rigorous condition is that materiality is only defined for the overall line of business. The least rigorous 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 don't add up to 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.

7. ASSET AND LIABILITY CASH FLOWS

Section 7 of the draft life standards provides general guidance in selecting cash flow assumptions.

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 asset, and the valuation recognizes the associated interest rate risk.

Group life and health liability cash flows may have significant inherent uncertainty. This may be due to volatility of health claims experience and differences between the policyholder and statement valuation bases, or interest crediting practices. (See section 7.5.4 for elaboration on the risk associated with interest crediting approach.)

The following subsections discuss considerations for selecting liability cash flow assumptions for group life and health products with some 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 note or in the draft life standards, it is recommended that the actuary review the principles discussed for similar situations and follow a consistent approach.

The following discussion of liability cash flows is divided into commonly used categories of liabilities. While categorization practices vary by insurer, it is the actuary's responsibility to ensure that the valuation adequately provides for all risks, without omission or double-counting of any future liability cash flows.

7.1 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 7.2).

7.1.1 Long-Term Disability (LTD)

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

Section 7.2.3 of the draft life standards discusses considerations in determining assumptions, including margins for adverse deviations (MADs), 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, 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 may 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 which provides helpful information for use in establishing LTD termination assumptions. Work to update the study for 1995, 1996 and 1997 experience is underway.

For business which 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 impact the appropriate termination assumptions.

Actuaries often vary termination rate assumptions by different factors including sex and definition of disability (e.g., own occupation versus any occupation). In assessing trends in termination assumptions, a number of factors are usually considered. The following list provides examples of some factors that may impact trends:

- changes in the mix of disabilities by cause
- 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 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
- changes in the impact of anticipated benefit offsets on termination rates, (some actuaries may vary the termination rate assumptions between claimants with benefit offsets and those without offsets).

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 since disability, and would generally be based on prior experience modified for any material trends or changes that are expected to take place. 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 adjudicators' 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 projects benefit offsets consistent with the government benefit plan and trends, with an appropriate MAD for uncertainty. It would normally be assumed that there is no likelihood of future approvals for a given claim after a few years of disability. In fact, recent CPP changes have significantly reduced the probability of a claim being approved after two years from the date of disability.

The amount of benefit offset assumed for any claimant would generally be based on prior experience modified for any material trends or expected changes. 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).

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.

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 typically 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 claimants were currently receiving benefits. 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. The assumptions of the percentage of claims that will become approved claims would be increased to provide an appropriate MAD.

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 liability (see section 7.3).

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 liability, 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 impact 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 hasn't yet been received or processed by the insurer.

Rehabilitation/Partial Disability

Often disability claimants with partial disability and/or undergoing rehabilitation will be able to perform some portion of their previous position or 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.

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. In this case, it might be reasonable to treat the plan like an insured plan with an elimination period equal to the period during which the contract is ASO (two years in the example). Depending on materiality, a more precise approach may be warranted. For example, 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 could:

- calculate an appropriate IBNR liability for the ASO elimination period, and
- use the information about claimants receiving ASO benefits to determine liability cash flows for benefits and expenses after the insured period begins.

7.1.2 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 might apply. For STD plans with short benefit periods, a seriatim projection of benefit payments for each claim is normally not necessary, and the liability for reported claims is sometimes included with the IBNR liability (see section 7.3). Judgement is used to determine the appropriate approach for each plan.

7.1.3 Waiver of Premium or Extended Death Benefit

Waiver of premium benefits under group insurance contracts typically require the insurer to continue to provide life coverage 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 and related expenses. Waiver coverages typically include 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.

The 1970 Kreiger table is commonly used as the basis for setting expected assumptions for waiver termination rates. Since this table is out of date and there is now a more recent study of industry experience, most insurers use a modification of the Kreiger table based on their own experience. The modification typically involves reducing the mortality rates and perhaps increasing the recovery rates of the Kreiger table, both of which have the effect of reducing the liability.

Considerations for setting expected termination rate assumptions for waiver benefits are similar to those for setting expected termination rate assumptions for LTD benefits, although the impact of the termination assumptions is different. For waiver, benefits terminate on recovery from disability but on mortality the death benefit is paid. Typically, different termination assumptions are used for LTD and waiver based on the experience of each benefit. Since many groups will have only one of LTD or waiver, and groups with both benefits may have different definitions of disability, the insurer's termination experience may be significantly different on an aggregate basis for waiver and LTD. Typically, recovery rates are lower for waiver than LTD, since claims assessors put more effort into managing LTD claims and the typical waiver definition of disability is more stringent than LTD.

Typically, margins for adverse deviation for waiver termination are expressed as a percentage of expected termination rates for both death and recovery. MADs would reduce rates of recovery and usually increase mortality rates on waiver. This is usually the opposite direction to the LTD mortality MAD since most insurers do not distinguish terminations on LTD between death and recovery. The actuary would ensure that the aggregate PFAD is appropriate.

7.1.4 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. SIB plans may include a COLA provision and considerations similar to those described in section 7.1.1 (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. Section 7.2.2 of the draft life standards contains 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 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 tables).

7.1.5 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.

7.2 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 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.

7.3 Incurred But Not Reported (IBNR) Claim Liabilities

IBNR claims arise from lags in:

- reporting of claims to the insurer, and
- recording by the insurer of claims which have been reported. For example, some insurers delay recording of disability claims incurred until the end of the elimination period.

The IBNR liability provides for benefits and expenses on claims that have been incurred but not reported as at the valuation date. It may also provide for other things, such as claims that have temporarily closed but will reopen and denied claims that will be litigated at some future date.

For benefits without interest rate risk (for example, medical, dental, term life, STD), a simple approach to projecting IBNR cash flows is usually used, or the actuary may do interest rate scenario testing ignoring the IBNR for these benefits and then add the IBNR liability to the result.

For benefits with significant interest rate risk on new claims (for example, LTD and waiver), the IBNR liability cash flows might materially affect the interest rate scenario testing and the resulting provision for interest rate risk. The liability cash flows related to IBNR claims 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 IBNR claims may be similar to the liability cash flow pattern on existing disabled lives, perhaps restricted to early duration claims.

Although practices vary, generally the IBNR liabilities for LTD, STD and premium waiver benefits are included with the actuarial liabilities (as defined for the financial statements) and for the other benefits (e.g., supplementary health, dental, AD&D, SIB and life), the IBNR liabilities 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 liabilities, the insurer is, nonetheless, responsible for paying incurred claims. Therefore, the full IBNR liability should be held, with a corresponding receivable asset to recognize the terms of the hold harmless agreement.

Considerations in Developing the IBNR Claims

Lags affecting the amount of IBNR claims vary by plan and benefit type and, therefore, the actuary should exercise caution when estimating IBNR claims from grouped historical data. For example, it may be inappropriate to group electronically adjudicated with reimbursement drug claims if 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 benefits or exposure,
- seasonal variations,
- severe weather conditions,
- disruptions in the postal service,
- corporate reorganizations which 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 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 impact of changes in the adequacy of pricing levels would also be considered when the estimated IBNR claims are based on premiums.

Approaches to Establish the IBNR Liability

Subject to periodic testing of appropriateness (including the impact on interest rate risk), approximations are commonly used to develop the IBNR liability. The approaches described below are some examples of approximations used.

a) factor method – The factor 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, 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.

b) 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, multiplied by a loss ratio multiplied by premiums in force.

c) 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.

7.4 Liability for Future Claims

Liability cash flows associated with the liability for future claims include benefit payments 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 liability. Future premiums up to and including the end of the term of the liability are also projected as negative liability cash flows.

7.4.1 Term of the Future Claim Liability

In establishing the term of the liability, which delineates those insured events to be included in the valuation of future claims, the specific contract provisions for each policy should be considered. The actuary should refer to section 4.8 of the draft life standards for general guidance on the term of the liability, and to section 4.10, which discusses special considerations applicable to group contracts.

For traditional employer group life and health policies, the term of the liability 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.

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.

A different term of the liability from the next rate adjustment date may be appropriate for certain group life and health coverages. Optional group life and health coverages may operate more like a block of individual policies than a traditional group contract, and a life by life valuation is often appropriate for optional coverages, including creditor, association and optional coverages offered to employees of an employee group. In some cases, the actuary may have no choice but to value the liability for these members as if the coverage were individual and establish the term of the liability on a life by life basis as discussed in section 4.10.2 of the draft life standards. Fortunately, certain contract provisions are commonly present that may reduce the liability to an immaterial level, or eliminate altogether the need to consider a life by life approach. These features include step-rating, refund accounting and policyholder subsidization.

The presence of premiums that increase in attained age steps in line with claims costs will often result in a minimal liability determined life by life, even after providing for anti-selective lapsation at the step points by individual members of the group. Employer or other subsidization 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 life by life liability, costs could significantly increase over time and a simple aggregate approach to the valuation would generally not be appropriate.

Once the term of the future claim liability is established, the valuation should then include all liability cash flows associated with claims incurred up to the end of the term of the liability. The projection of asset and liability cash flows extends to the date the last liability cash flow occurs, for example, benefit payments and claims expenses are projected to the end of the benefit period. Premiums and general administrative expense cash flows are projected to the end of the term of the future claim liability.

7.4.2 Liability Cash Flow Considerations for Rate Guarantees

When future premium rates are guaranteed, it is important that the guarantees on all benefits be reflected in the valuation. Since the interest rates, expenses and other assumptions built into the premiums will not be changed before the next rate adjustment date, it is important to understand the interest rate, claims, expense and other risks to ensure that any inadequacies in the premiums and any material interest rate risk are appropriately reflected in the future claims liabilities. The longer the term of the premium rate guarantee, the more material is the exposure to risk of inadequate pricing and to interest rate risk.

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 coverages or new groups. 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 some types of future claims theoretically requires assumptions for both incidence rates and termination rates. Benefit and expense cash flows for future claims are usually projected using consistent assumptions as those used in the liability for reported claims of the same benefit type. Section 7.2.3 of the draft life standards contains relevant guidance. 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 future claim liability, the more difficult it is to develop an approximation that does not use explicit incidence rates. Therefore, if the term of the future claim liability is long, it is usually necessary to develop explicit incidence assumptions. The following section discusses some approximate approaches that are used.

Use of Approximations

In using any approximation for the projection of future claims, the actuary assesses whether the approximation appropriately provides for all risks. In particular, for LTD benefits, it is important to consider whether the approximation makes appropriate provision for interest rate risk. 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 (which uses implicit assumptions for incidence rates) for projecting benefit and expense cash flows for LTD future claims which can be used in the interest rate scenario testing when the term of the liability is the next rate adjustment date is as follows:

a) Determine a "valuation benefit factor" which is the percentage of premium required to provide for future benefits and claim administration expenses for claims that will be incurred between the valuation date and the next rate adjustment date (i.e., remove provisions for general administration expenses and profit margins 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).

c) Increase the valuation benefit factor to add a margin for adverse deviations for incidence. This method only involves adding a margin for incidence to the valuation benefit factor since termination rate margins and claims administration expense margins are already included in the percentage of premium required to provide for future benefits and expenses in a) above. The incidence margin does not need to be very large since the term of the future claim liability is short. Many actuaries would feel that a 5% margin is sufficient.

d) Using a reasonable cash flow pattern including margins for new LTD claims, develop the cash flow stream 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) (which includes the incidence margin).

Simpler approximations may be appropriate in some circumstances. One example would be to determine the present value of the premium shortfall under current interest rates adjusted by a margin to provide for adverse deviations in interest rates. This approximation is unlikely to be appropriate if there is a high degree of interest rate risk.

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 associated cash flows can be ignored. Moreover, for monthly premium business where there is no material interest rate risk or pricing inadequacy, the unearned premium is a reasonable approximation to the future claims liability. This approximation effectively assumes that the pricing basis closely approximates the expected claims and expenses plus PFAD.

For groups where the term of the liability is determined life-by-life, the size of the group may be small in comparison to the materiality standard, or the premiums may be stepped, 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.

7.4.3 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.

7.4.4 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 7.1) and IBNR liabilities (see section 7.3) 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 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 on 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.

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

7.5 Liability for Future Experience Rating Refunds (ERRs)

The ERR liability makes provision for future ERRs on groups with refund accounting, taking into consideration the financial agreement with policyholders.

The term of the ERR liability is the same as that of the corresponding future claim liability since the impact of future claims, expenses and premiums on one liability will have a mirror effect on the other. ERR liability cash flows include all payments anticipated with respect to insured events incurred prior to the end of the term of the liability, whether those payments are anticipated to be made before or after the term of the liability. 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.

Appendix 2 contains several examples of situations that a hypothetical insurer may face and demonstrates approaches for determining the ERR liability that are consistent with the principles in this note.

7.5.1 Policyholder Versus Statement Liabilities

There may be differences between the statement liability basis and the policyholder liability basis used to calculate policy surplus/deficit, as defined in the financial agreement. For employee groups, only differences in incurred claims liabilities are normally considered in this context since policyholder reporting typically does not reflect future claims. For creditor or association groups, future claims liabilities may be considered in policyholder refund accounting. Many of the differences between policyholder and statement liabilities arise naturally because these two bases satisfy different functions.

The statement liability basis is the reporting basis for the insurer and is subject to accepted actuarial practice and OSFI guidelines, and is typically the GAAP liability basis. The GAAP liability 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 an average interest rate based on the CALM for statement reporting.

The most common situation is for policyholder liabilities to be at least as large as statement 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 margins for adverse deviation for policyholder liabilities than for statement liabilities to reflect, at least partially, the additional uncertainty in the expected assumptions at the policyholder level.

Since the statement liability and policyholder liability are based on different methods and assumptions, the difference between the two liabilities can change over time.

7.5.2 Claims Fluctuation Reserves (CFRs)

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 ERR payments are adjusted accordingly. The CFR represents deposits that the policyholder is required to maintain with the insurer to cover adverse claim fluctuations, and which the insurer can draw on 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 coverages 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, which 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 (see section 7.6).

7.5.3 Considerations in Developing the ERR Liability

The starting point for the ERR liability is the estimated value of accrued experience surplus on the valuation date.

Accrued Experience Surplus

The financial agreement with the policyholder outlines the policyholder valuation basis (methods and assumptions) and other refund accounting assumptions (including interest crediting arrangements) for determining the amount of surplus or deficit. The definition of experience surplus in the glossary describes how it is calculated. The financial agreement will also outline the treatment of emerging surplus, which includes:

- the extent to which any surplus is shared between the policyholder and insurer,
- allowable cross-rating among coverages, where surpluses on coverages are first applied against deficits on other coverages,
- requirements to hold a CFR before any refunds to the policyholder are made, and
- the accrued experience surplus is then the remaining amount available for refund to the policyholder.

The experience surplus for a policy is normally determined at the policy renewal date, so when that date does not coincide with the valuation date, an estimate is made of the experience surplus for the expired portion of the policy year. This might be done by updating the experience surplus to the valuation date, based on policy activity (e.g., premiums, claims) and the financial agreement with the policyholder (including interest credits on policyholder liabilities and accrued surplus).

If the accrued experience surplus has been reduced by an amount that is expected to be added to the CFR, this anticipated addition to the CFR would be included in the liabilities (either as an additional ERR liability or as an adjustment to the CFR).

Adjustments to the Accrued Experience Surplus

Theoretically, the ERR liability takes into consideration all anticipated ERR payments to the end of the term of the liability, plus ERR payments after the term of the liability resulting from claims incurred prior to the end of the term of the liability. In practice, the ERR liability is often approximated by the retrospectively determined accrued experience surplus with adjustments as appropriate to reflect the financial agreement with the policyholder. A number of considerations apply in determining the appropriate adjustments, including:

- the impact of projecting experience to the end of the term of the ERR liability,
- the difference between policyholder and statement liabilities,
- the impact on future ERR payments of any post-termination accounting in the financial agreement,
- whether the policyholder has the option to demand payment of the accrued experience surplus at any time,
- whether the policyholder has the option to terminate the financial agreement without terminating the insurance contract,
- whether the policyholder has the option to move the incurred claims liability to another insurer on termination of the contract, and
- any additional risks created by the financial agreement with the policyholder (such as interest crediting risk described in section 7.5.4).

Some of the above considerations involve potential anti-selection by the policyholder associated with options in the financial agreement (e.g., the right to move the incurred claims liability to another insurer at termination of the contract). To the extent material, this potential anti-selection would affect the ERR liability and may also affect the overall interest rate risk.

For groups that have terminated, it is appropriate to make provision for future ERR payments anticipated under the final accounting terms in the financial agreement.

When the policyholder liability is greater than the statement liability for incurred claims, the difference may generate expected ERR payments that occur after the term of the liability and a corresponding adjustment to the ERR liability. Typically, approximate methods are used to project these future ERR payments due to the materiality of the liability and the complexity of doing an accurate calculation. Conceptually, the projected ERR payments would reflect the run-off of the difference between the two liability bases and the probability that an ERR payment would result from each reversal. This probability would depend on lapse rates for similar groups and whether the group is expected to be in a surplus or deficit position. In practice, the projection may be done in aggregate for all groups or different assumptions may be used by group or for different segments of the block of business.

To the extent the difference between policyholder and statement liabilities is due to using an average assumption for statement reporting and an assumption reflecting certain characteristics of the group for policyholder reporting, the future run-off of the difference would not typically create a future ERR payment. For example, policyholder IBNR factors could vary by elimination period on LTD while an average factor is used for statement reporting. This difference alone would not typically result in an adjustment to the ERR liability.

If the statement liability for the incurred claims is greater than the policyholder liability, it is usually not appropriate to make a corresponding adjustment to the ERR liability, except to the extent that the run-off of the difference is recoverable from a CFR.

For most groups, future claim liabilities are not considered in the refund accounting process and so differences in the future claim liability can be ignored in determining the ERR liability. However, for some groups with significant future claim liabilities, the future claim liabilities may be an element of the financial agreement. A typical example is single premium creditor plans with refund accounting. For these groups, the impact on future ERRs of the differences between the policyholder and statement future claim liabilities would be reflected in a similar manner to that described above for differences in the incurred claims liabilities.

A negative ERR liability is appropriate only to the extent that the insurer is holding another liability for the group and has a contractual right to reduce that liability to offset the deficit. This would include CFRs, or amounts on deposit for which the policyholder has signed an agreement to give the insurer access to such deposits to recover deficits and the policyholder has a limited right to withdraw the amount.

7.5.4 Interest Crediting for Refund Accounting Groups

In some financial agreements for refund accounting groups, the interest credited on the policyholder basis liability is associated with an external interest rate that differs from the valuation interest rate appropriate to the policyholder basis liability itself. For example, interest may be credited as a function of a five-year bond rate whereas the typical duration of an LTD claim liability is longer than the duration of a five-year bond. This difference in interest rates would affect ERR payments in the future whenever the interest credited on the policyholder basis liability is different from the interest component of the change in the policyholder basis liability.

If the current rate of interest credited on liabilities in the policyholder refund accounting exceeds the valuation interest rate used for policyholder liabilities, an additional ERR liability may be required. For example, if the interest crediting basis for refund accounting is a one-year GIC rate which changes every policy year, assets are invested to match the benefit cash flows, and interest rates have risen in the last few years, the policyholder interest crediting could be at a higher rate than the valuation interest rate. The ERR liability projected to the end of the term of the liability would directly take this cost into account.

Situations exist where there is a guarantee of interest crediting rates that extends beyond the term of the liability, for example, a policy that is renewed annually but which has interest crediting rates guaranteed in five-year rollover cells. In this case, if the guaranteed interest rates for the next five-years exceed the valuation interest rate used for policyholder liabilities, provision for the cost of the interest guarantee would be made in the ERR liability.

In addition, when the interest crediting rates change in a different manner than changes in the interest rates earned on the assets, this creates an interest rate risk after the term of the liability related to claims included in the valuation (i.e., claims incurred before the end of the term of the liability). If material, provision for this risk would be incorporated directly as part of the interest rate scenario testing of the CALM, or approximated in a reasonable manner.

In the situation where the risk has been mitigated by crediting an interest rate on the claims liability that moves in tandem with the interest rate earned on the assets backing those liabilities, this element of the interest rate risk may be immaterial. Similarly, if the valuation interest rate used for policyholder liabilities and the interest crediting rate are varied by date of incurral, and policyholder liabilities match GAAP liabilities in total then this aspect of interest rate risk would likely be immaterial.

7.6 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 of a higher yield and similar duration, 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 interest rate scenario testing to determine the appropriate provision for interest rate risk. If the policyholder can withdraw these deposits without market value adjustment, this option would be considered in determining the overall level of interest rate risk.

7.7 Expense Considerations

Section 7.2.6 of the draft life standards contains general considerations for the development of expense assumptions.

Claims expenses include the cost of administering and paying claims and are projected to the end of the benefit period. 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 liability.

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

For some groups, 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). 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. 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. All or a portion of the accrued deficit may be recoverable. The future claims liability and the ERR liability include all amounts available within the term of the liability for recovery of deficits. According to GAAP, the portion of the deficit recoverable from margins in premiums beyond the term of the liability should be shown as an asset on the balance sheet, not as a reduction to the policy liabilities.

Although as an asset, the recoverable deficit is not part of the policy liabilities, the actuary is accountable for testing the recoverability of the asset from future margins. The criteria for recognition of recoverable deficits should be discussed and reviewed with the accountant.

Specific considerations in determining the amount of deficit deemed recoverable are:

- the insurer may have a contractual right to recover deficits, annually or on plan termination. Even with this right, the creditworthiness of the policyholder comes into play, unless there is a letter of credit or other guarantee upon which to draw,
- there may be agreements to allow explicit deficit recovery charges in future premiums. Even without explicit deficit recovery charges, there may be excess premium margins available to recover some or all of the deficit. Testing the adequacy of the premium would be done to ensure that these margins would be available to recover deficits.
- anticipated policy persistency of groups in a deficit position,
- to assume deficit recoveries from anticipated future rate increases or lump sum payments requires clear and demonstrated intent by the policyholder to accept such charges. The strength of relationship with the policyholder could be a consideration,
- past experience regarding amounts initially established as recoverable and subsequent actual recoveries. However, the concentration of deficits to a few cases may mean that past experience is an unreliable indicator of future experience,
- the size of the deficit relative to the premium base and the likely recovery period required,
- the anticipated release of provisions for adverse deviation is not an appropriate source for deficit recoveries under GAAP,
- if the accrued deficit on the policyholder basis is smaller than the loss realized to date on the statement basis, the recoverable deficit would generally be limited to the deficit on the policyholder basis,
- care should be taken to ensure that there is no double counting of future premium margins, for example, margins used to recover deferred acquisition cost (DAC) assets, and
- reinsurance recoveries may affect the net recoverable deficit.

Appendix 2 provides some examples of how an asset for deficit recovery might be determined in various situations. In these examples, the recoverable deficit is expressed as a percentage of the experience deficit. A potential weakness of this approach is that it does not directly take into consideration the size of the deficit relative to the premium base and the likely recovery period required. A more direct approach is to establish a recoverable portion expressed as a percentage of the annual premium on the case. This method places a more realistic limit on the recoverable amount, particularly in cases with large deficits.

9. ADMINISTRATIVE SERVICES ONLY (ASO)

According to the draft life standards, the term of the liability for an ASO contract would generally be zero and, hence, the liability would be zero. However, if expense charges have been guaranteed by the insurer, the actuary should test the liability with the term extended for the duration of the guarantee, and if higher liability value results, then the term of the liability should be so extended. That is, to the extent that the guaranteed expense charges are insufficient to provide for expected future expenses plus a MAD, a liability would be established for future expense shortfalls.

If ASO business is written with stop loss insurance or other arrangement where there is a transfer of risk to the insurer, there could be a non-zero policy liability to the extent that the expected cost of benefits plus provision for adverse deviations exceeds the guaranteed premiums for the coverage.

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 can safely be ignored in the interest rate scenario testing of the CALM.

10. STOP LOSS

Stop loss coverage is generally written to limit the policyholder's exposure to losses on an underlying policy administered by the insurer, policyholder or third party. The terms of the coverage may include provisions 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 liability 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.

11. DEFERRED ACQUISITION COSTS (DAC)

Deferral of acquisition expenses is described in section 4.9 of the draft life standards. GAAP allows for DAC 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 future claim 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.

The starting point for determining the DAC asset is the acquisition expense incurred. The DAC is amortized as available revenue is received. According to the draft life standards, the actuary should explicitly test the recoverability of the DAC asset. Though GAAP does not narrowly limit the type of revenue that can be used for this purpose, the actuary's judgement about recoverability takes place in the context of the valuation. For example, the anticipated release of provisions for adverse deviation is not an appropriate source of recovery.

Generally, there should 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 should be taken to ensure that there is no double counting of future premium margins, for example, margins used to recover deficits;
- anticipated policy persistency;
- a simple, cautious approach is normally sufficient.

12. TAX CONSIDERATIONS

Section 7.2.8 of the draft life standards describes the treatment of income taxes in the valuation. When projecting asset and liability cash flows, the actuary makes 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.

For LTD and other health liabilities, where Canadian tax liabilities are generally 95% of statement liabilities, substantial future tax losses may be expected to arise as the difference between tax and statement liabilities runs off. According to the draft life standards, the actuary should use future tax losses to reduce the liability only to the extent that benefits of those tax losses are recoverable (on the valuation basis) from within the insurer based on the projected tax position of the company overall. To the extent there is uncertainty about the ability to realize the benefit of future tax losses, a margin for adverse deviations would be appropriate.

In addition, in Canada, tax regulations may give rise to differences between tax and statement values, for example:

- The taxation of certain asset classes differs from statement accounting. Examples include the current mark-to-market taxation of equities, and the tax versus statement accounting for bond and mortgage gains realized prior to 1995.
- The liabilities for paid-up life insurance and creditor insurance issued prior to 1996 have a defined tax liability basis which is typically different than the statement basis.
- The liabilities for survivor income benefit or waiver of premium claims incurred prior to 1996 have a defined tax liability basis.
- The liabilities for individual life insurance policies issued prior to 1996 pursuant to an association policy have a defined tax liability basis.
- Canada Customs and Revenue Agency imposes limitations on the amount that can be deducted for a CFR. In general, the deductible amount for a CFR is limited to 25% of the annual premium under the policy.

In addition, differences between tax and statement 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.

13. REINSURANCE CEDED

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

Under coinsurance 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 coinsurance, the insurer cedes a portion of the business to other insurers, but retains the policy liabilities and related assets on its own books.

Under share ceded business, several insurers separately underwrite the business and each insurer establishes the liability separately for the business it underwrites.

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.

Sections 6.4.5 and 7.2.11 of the draft life standards provide guidance on the treatment of reinsurance in the valuation.

Recoveries from a reinsurer depend upon the continuing solvency of the reinsurer. Section 6.4.5 of the draft life standards describes considerations in assessing the reasonableness of taking full credit for reinsurance recoveries.

Under coinsurance arrangements, the insurer does not maintain assets backing the excess of gross liabilities over net liabilities. The draft life standards recognize that in this situation, the CALM cannot be strictly applied. Any method may be used to value the gross liability that produces results that are reasonable in relation to net liabilities. For example, a series of interest rates derived to reproduce the net liability by the Policy Premium Method (PPM) may be used to produce the gross liability by the PPM.

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 draft life standards provide guidance in respect of many international issues, for example, section 6.3 discusses foreign interest rates, and section 7.3 discusses some issues in projecting foreign asset cash flows.

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

15. ACQUISITION OF A BLOCK OF BUSINESS

An insurer may acquire another insurer's block of business with material policy liabilities. The acquired block of business may have very different characteristics (e.g., employee demographics, contractual guarantees, tax values, distribution channel, investment policy, underwriting approach, expense structure) from the insurer's current business. Consequently, the valuation assumptions and methods the insurer uses to value its current business may not be appropriate in valuing the acquired business.

The terms of the acquisition agreement, prior statutory and tax filings, actuarial studies, financial agreements, policy contracts, investment reports and the insurer's plan for the acquired business provide appropriate context in developing valuation assumptions and methods.

The previous insurer's valuation methods and assumptions form a reasonable starting point for the valuation basis. However, the change in control may affect future expectations, for example:

- Under the terms of some acquisition agreements, policy benefits may change.
- The acquiring insurer may expect to realize long-term unit expense reductions if systems, administration and staff supporting the acquired business are integrated with their own. Guidance for reflecting expected trends in the valuation is provided in the draft life standards.
- The change in control may affect the retention of clients. This will also influence the recoverability of deficits and DAC.
- Generally, the change in control will affect tax values.
- Changes occurring as systems and procedures are integrated may affect claims experience. For example, the lag in approving claims may change as various systems and administration procedures are integrated. As another example, LTD and waiver of premium termination rates may change if the insurer adopts different administration and adjudication procedures, or the acquired block shrinks and the mix of business changes.
- Changes in investment policy and asset and liability matching procedures may affect the expected investment returns and required margins.

It may be appropriate to start with the acquiring insurer's methods and assumptions with adjustment as appropriate for differences in the blocks of business. Some considerations are:

- The mix of groups in the two blocks by industry or other characteristics may affect experience.
- The acquired business may have been underwritten on a different basis from the insurer's own business. For example, the impact on the ERR liability of the difference between policyholder and statement liabilities may change.
- The acquired business may have been sold through a distribution channel the insurer is not familiar with. The different characteristics of the distribution channel could affect the expected experience assumptions.

As systems and administration procedures change, the valuation data may become incomplete or inaccurate. The actuary is encouraged to implement special audit procedures to monitor valuation data during the acquisition and for as long as administration procedures and systems are being integrated.

APPENDIX 1 – 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 or Fund, Claims Stabilization Reserve or Fund, Premium Stabilization Reserve or Fund:
- this note uses the terminology "Claims Fluctuation Reserve (CFR)." CFRs are described in section 7.5.2

Credibility
- a measure of the validity of the past experience of the group as a predictor of future experience. It is related to the size of the group and frequency of claims

Disabled Life Reserve (DLR)
- another name for the LTD reported claims liability

Elimination Period
- also referred to as waiting period or qualifying period
- in this note it is defined as the period of time between the date of disability and when the first payment is due or when the waiver of premium becomes effective

Experience Rating Refunds or Dividends
- this note uses the terminology "experience rated refunds (ERRs)"
- ERRs are payments of surplus to a policyholders 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 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, Refund Accounting Agreement, Underwriting Agreement, 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 or No Risk

- many insurers use these terms interchangeably but in this note hold harmless is used to describe an agreement whereby the policyholder "holds" specific liabilities (generally IBNR), and no risk is used to describe an agreement for the repayment of any future deficits

Incurred Claims Liability

- sum of the reported claims liability and the incurred but not reported claims liability
- represents the liability for all claims incurred prior to the valuation date

Incurred Loss Ratio

- the loss ratio is a ratio of claims incurred (claims paid plus increase in the incurred claims liability) adjusted for interest when the liabilities are interest bearing (e.g. LTD waiver of premium) divided by the earned premiums (paid premiums minus increase in the unearned premium)
- the definition may vary among companies but this represents an approach that is often used

Medical, Extended Health, and Supplementary Health

- various names used to describe medical insurance coverages

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

Non-Refund Accounting

- fully insured or prospectively rated business

Self-Administered Plans

- groups where the policyholder maintains records and submits the premium based on its own census data

Spousal Income Benefits

- another name for survivor income benefits

Stop Loss Pooling, Catastrophic Pooling, 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 Reserves
- tax values of liabilities as defined by Income Tax Act (Canada) and Québec Taxation Act

Unearned Premium
- premiums paid prior to the valuation date in respect of a period after the valuation date

Waiting Period
- may also be referred to as qualifying period
- in this note it is defined as the period of time before a plan member is covered by group life and health benefits

Weekly Indemnity
- another name for short-term disability

APPENDIX 2 – EXAMPLES

NB: in all examples below, the statement liability for the insurer is equal to the GAAP liability.

Experience Rated Refund Accounting

Example 1a) Canadian GAAP liability less than policyholder liability with an accrued surplus

Information

The following information applies to a fully experience rated medium sized group. For ease of presentation, the group is an LTD-only case, with no special arrangements or guarantees.

	December 31, 1999
LTD Incurred Claims Liability – Policyholder Liability Basis	600,000
LTD Incurred Claims Liability – Canadian GAAP basis	500,000
Claims Fluctuation Reserve (CFR)	400,000
Accrued Surplus at December 31, 1999	100,000

Resulting Canadian GAAP Balance Sheet

Using the information above, the following balance sheet entries would result:

Balance Sheet	*Item*	*December 31, 1999*
Liability	Claims Fluctuation Reserve (See Note 1)	400,000
Liability	LTD Incurred Claims Liability (See Note 2)	500,000
Liability	Experience Rating Refund (See Notes 3, 4, 5)	175,000
NET	NET BALANCE SHEET LIABILITY	1,075,000

Notes:

1. The CFR is recorded as a liability at December 31, 1999.
2. The LTD incurred claims liability is the GAAP liability for reported claims plus the IBNR liability.
3. The surplus at December 31, 1999 of $100,000 generates a component of the ERR liability.
4. The ERR liability would be adjusted for the impact of the $100,000 difference between the policyholder and GAAP liabilities for incurred claims. The insurer expects to pay disabled lives a total of $500,000, including a provision for adverse deviation. The remaining $100,000 of the $600,000 policyholder liability is expected to emerge as future surplus, a portion of which will be returned to the policyholder in future ERRs. Based on aggregate testing of groups in a surplus position, the present value of future ERRs that is expected to emerge is 75% (including margins) of the difference between policyholder and GAAP liabilities. Therefore, the ERR liability is increased by $75,000, for a total of $175,000.
5. The portion of the liability difference that is estimated to emerge as ERRs depends on the reason for the difference (see section 7.5.3). For example, if the difference was largely related to using policyholder-specific termination rates for policyholder reporting and average termination rates for GAAP reporting, then the appropriate ERR liability adjustment would be much smaller. Similar considerations apply to the remaining examples of this section.

Example 1b) Canadian GAAP liability less than policyholder liability with an accrued deficit exceeding the total of the CFR and the excess of policyholder liabilities over GAAP

Information

This is the same as example 1a, except that the group is currently in a deficit position rather than surplus.

	December 31, 1999
LTD Incurred Claims Liability – Policyholder Liability Basis	600,000
LTD Incurred Claims Liability – Canadian GAAP basis	500,000
Claims Fluctuation Reserve (CFR)	400,000
Accrued Deficit at December 31, 1999	(584,000)
Estimated deficit recovery for unsecured amounts (see Note 3)	50%

Resulting Canadian GAAP Balance Sheet

Using the information above, the following balance sheet entries would result:

Balance Sheet	*Item*	*December 31, 1999*
Liability	Claims Fluctuation Reserve	400,000
Liability	LTD Incurred Claims Liability	500,000
Liability	Experience Rating Refund (See Notes 1, 2)	(400,000)
Asset	Recoverable Deficits (See Notes 3, 4)	33,600
NET	NET BALANCE SHEET LIABILITY (net of assets)	466,400

Notes:

1. A negative ERR liability is established to the extent that the deficit can be recovered from the CFR. Since the insurer has full recourse to the CFR, an initial ERR liability of $(400,000) is established.
2. The ERR liability is adjusted for the impact of the $100,000 difference between the policyholder and GAAP liabilities for incurred claims. The run-off of the difference is expected to emerge as future surplus, and will be available to recover a portion of the accrued deficit. Based on aggregate testing of all groups in a similar deficit position (i.e., current year deficit exceeds the total of CFR plus excess of policyholder over GAAP liabilities), it is estimated that the run-off of the difference in liabilities will not generate future refunds, but rather will reduce the accrued deficit. Therefore, no adjustment to the ERR liability is required, and the total ERR liability is $(400,000).
3. In this example, $400,000 of the accrued deficit is expected to be recovered by the CFR (Note 1) and $100,000 is expected to be recovered by the run-off of the difference between policyholder and GAAP liabilities (Note 2). A portion of the remaining $84,000 "unsecured" deficit may be recoverable from future pricing margins on the group, and set up as an asset on the balance sheet.

   Based on experience for groups in a similar situation and expected future premium margins, the actuary has estimated that 50% of the outstanding, unsecured deficit is recoverable. This is reduced by 20% to provide a margin for adverse deviations. Therefore, an asset of $33,600, equal to 40% of the outstanding unsecured deficit, is set up on the balance sheet.
4. The size of the margin would depend on the circumstances of the case and could be higher or lower than the 20% shown in this example. One key factor in establishing this margin is the reliability and applicability of the historical information used to determine the likelihood of deficit recovery. Past experience may not be a reliable indicator of future experience.

	Secured by CFR	*Secured by Differences in P/H & GAAP Liabilities*	*Unsecured Deficit*	*Total*
(1) Outstanding Deficit	400,000	100,000	84,000	584,000
(2) Likelihood of recovery	100%	100%	50%	
(3) Expected Recoverable Deficit = (1) x (2)	400,000	100,000	42,000	442,000
(4) Margin for adverse deviation (see Note 4)	0%	0%	20%	
(5) Provision for adverse deviation = (3) x (4)			8,400	8,400
(6) Difference between P/H and GAAP liabilities		100,000		
(7) Funded portion of P/H versus GAAP liabilities		0		
(8) ERR Liability	(400,000)	0		(400,000)
(9) Recoverable Deficit Asset = (3) – (5)			33,600	33,600

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Example 1c) Canadian GAAP liability less than policyholder liability with an accrued deficit less than the total of the CFR and the excess of policyholder liabilities over GAAP

Information

This is the same as example 1b, except that the current year deficit is smaller.

	December 31, 1999
LTD Incurred Claims Liability – Policyholder Liability Basis	600,000
LTD Incurred Claims Liability – Canadian GAAP basis	500,000
Claims Fluctuation Reserve (CFR)	400,000
Accrued Deficit at December 31, 1999	(460,000)

Resulting Canadian GAAP Balance Sheet

Using the information above, the following balance sheet entries would be result:

Balance Sheet	*Item*	*December 31, 1999*
Liability	Claims Fluctuation Reserve	400,000
Liability	LTD Incurred Claims Liability	500,000
Liability	Experience Rating Refund (See Notes 1, 2)	(376,000)
NET	NET BALANCE SHEET LIABILITY	524,000

Notes:

1. A negative ERR liability is established to the extent that the deficit can be recovered from the CFR. Since the insurer has full recourse to the CFR, an initial ERR liability of $(400,000) is established.
2. The ERR liability is adjusted for the impact of the $100,000 difference between the policyholder and GAAP liabilities for incurred claims. The run-off of the difference is expected to emerge as future surplus, part of which will be available to recover the portion of the deficit not secured by the CFR (i.e., $60,000). The remaining $40,000 of the excess of policyholder liabilities over GAAP has effectively been funded by the policyholder and a percentage of this will flow back to the policyholder in future ERRs. Based on testing of groups in a similar situation, the present value of future ERRs that is estimated to emerge is 60% (including margins) of the remaining difference. As the difference runs off, it will first be used to reduce the deficit and therefore the refunds that result will be farther in the future and the probability that they will be paid is lower than for groups currently in a surplus position (see example 1a). Therefore, the adjustment to the ERR liability is $24,000, for a total of $(376,000).

	Secured by CFR	*Secured by Differences in P/H & GAAP Liabilities*	*Unsecured Deficit*	*Total*
(1) Outstanding Deficit	400,000	60,000 *	0	460,000
(2) Likelihood of recovery	100%	100%		
(3) Expected Recoverable Deficit = (1) x (2)	400,000	60,000		460,000
(4) Difference between P/H and GAAP liabilities		100,000		
(5) Funded portion of P/H versus GAAP liabilities		40,000		
(6) PV future refunds as % of excess liability difference		60%		
(7) ERR Liability	(400,000)	24,000		(376,000)
(8) Recoverable Deficit Asset			0	0

Example 2a) Canadian GAAP liability greater than policyholder liability with an accrued surplus

Information

This example is similar to 1a except the policyholder liability is smaller than the GAAP liability.

	December 31, 1999
LTD Incurred Claims Liability – Policyholder Liability Basis	500,000
LTD Incurred Claims Liability – Canadian GAAP basis	600,000
Claims Fluctuation Reserve (CFR)	400,000
Accrued Surplus at December 31, 1999	100,000

Resulting Canadian GAAP Balance Sheet

Using the information above, the following balance sheet entries would result:

Balance Sheet	*Item*	*December 31, 1999*
Liability	Claims Fluctuation Reserve	400,000
Liability	LTD Incurred Claims Liability	600,000
Liability	ERR Liability (See Notes 1, 2)	40,000
NET	NET BALANCE SHEET LIABILITY	1,040,000

Notes:

1. An ERR liability would be established on the balance sheet to recognize the amount of surplus owing to the policyholder. This results in an initial ERR liability of $100,000.
2. The ERR liability is adjusted for the impact of the $100,000 difference between the GAAP and policyholder liabilities for incurred claims. The run-off of this difference is expected to generate deficits (or smaller refunds) in future policyholder reporting periods. Since the insurer has full recourse to the CFR, it is appropriate to establish a negative ERR liability for the portion of the run-off that will be recoverable from the CFR. Based on aggregate testing of groups in a similar position, the present value of the recoverable amounts is estimated to be 60% (including margins) of the liability difference and therefore reduces the ERR liability by $60,000.
3. The 60% estimate depends on the circumstances of the case (see section 7.5.3). For example, if the financial agreement allows the policyholder to terminate the financial agreement and demand payment of the CFR and accrued surplus at any time, a smaller percentage might be appropriate in recognition of the potential antiselection.

Example 2b) Canadian GAAP liability greater than policyholder liability with an accrued deficit

Information

This example is similar to 1b except the policyholder liability is smaller than the GAAP liability.

	December 31, 1999
LTD Incurred Claims Liability – Policyholder Liability Basis	500,000
LTD Incurred Claims Liability – Canadian GAAP basis	600,000
Claims Fluctuation Reserve (CFR)	400,000
Accrued Deficit at December 31, 1999	(584,000)
Estimated deficit recovery for unsecured amounts (See Note 3 of example 1b)	50%

Resulting Canadian GAAP Balance Sheet

Using the information above, the following balance sheet entries would result:

Balance Sheet	*Item*	*December 31, 1999*
Liability	Claims Fluctuation Reserve	400,000
Liability	LTD Incurred Claims Liability	600,000
Liability	ERR Liability (See Notes 1, 2)	(400,000)
Asset	Recoverable Deficits (See Note 3)	73,600
NET	NET BALANCE SHEET LIABILITY (net of assets)	526,400

Notes:

1. A negative ERR liability is established to the extent that the deficit can be recovered from the CFR. Since the insurer has full recourse to the CFR, an initial ERR liability of $(400,000) is established.
2. In this example, the policyholder liability is less than the GAAP liability, and the run-off of the difference is expected to generate future deficits. However, the CFR is not available to recover these future deficits, because the CFR is expected to be fully utilized to recover the accrued deficit. Therefore, no adjustment is made to the ERR liability in respect of the difference between policyholder and GAAP liabilities.
3. In this example, $400,000 of the accrued deficit is expected to be recovered by the CFR (Note 1). A portion of the remaining $184,000 "unsecured" deficit may be recoverable from future pricing margins on the group, and set up as an asset on the balance sheet.

   Based on experience for groups in a similar situation and expected future premium margins, the actuary has estimated that 50% of the outstanding, unsecured deficit is recoverable. This is reduced by 20% to provide a margin for adverse deviations (see Note 4 of example 1b). Therefore, an asset of $73,600, equal to 40% of the outstanding unsecured deficit, is set up on the balance sheet.

	Secured by CFR	*Unsecured*	*Total*
(1) Outstanding Deficit	400,000	184,000	584,000
(2) Likelihood of recovery	100%	50%	
(3) Expected Recoverable Deficit = (1) x (2)	400,000	92,000	492,000
(4) Margin for adverse deviation	0%	20%	
(5) Provision for adverse deviation = (3) x (4)	0	18,400	18,400
(6) ERR Liability = -1 x (3 – 5) for deficits secured by the CFR	(400,000)		(400,000)
(7) Recoverable Deficit Asset = (3) – (5) for unsecured deficits	0	73,600	73,600

Note:

If these examples, it is assumed that the information is available to study groups in a deficit position separately from groups in a surplus position, and different assumptions have been used to adjust the ERR liability for the run-off of differences between policyholder and GAAP liabilities.

In some cases, the same assumptions might be used for groups in a deficit position and for groups in a surplus position, based on aggregated information. For example, when policyholder liabilities are greater than GAAP liabilities, the corresponding adjustment to the ERR liability might be 30% of the liability difference on all groups, rather than 75% for groups in a surplus (example 1a) and 0% for groups in a deficit (example 1b,1c). This percentage would vary by company depending on the circumstances.

APPENDIX 3 – 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.
- Because claims volumes tend to fluctuate considerably, it is important to understand the relationship of the claims in process to the actuarial liabilities.
- LTD or waiver claims may not be added to the administrative system in a timely fashion, or not removed promptly upon termination.
- Future LTD benefit amounts may be incorrectly interpreted for the impact of offsets or COLA provisions.
- 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.
- 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.

The following suggestions for validating data integrity and issues for the actuary to consider may be useful.

- If there is an LTD claimant and the group has both waiver and LTD coverage, verify that there is a corresponding waiver claim if appropriate (i.e., if the elimination period and definition of disability is the same or if the definition is weaker for the waiver benefit then there would typically be a corresponding waiver claim).
- Compare the death claims register with the waiver/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. Also, verify that there is not a paid up life liability being held for lives on which a death claim has been paid.
- 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. For example, claims may continue to be paid past the end of the grace period.
- 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.
- Check that the date used for recurrent disabilities is the original disability date.
- Check for payment amounts in excess of a specified amount to catch incorrectly coded large amounts that could have a large impact on 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.
- Review data integrity checks done by administrative areas, accounting department, internal audit department and/or external auditors.
- For self-administered groups, verify that the data are complete and accurate.
- Audit premium and claim information received from third party administrators.
- Ensure the date of incurral is correct, particularly for the impact on lag studies and stop loss coverages.
- Check that LTD benefit offsets are being coded and handled correctly.
- For creditor insurance it may be difficult to obtain declining loan balances, and so approximations may need to be made.
- Check that the growth in premiums is reasonable relative to the change in valuation records and consistent with the change in IBNR liabilities.
- Movement of business validations – compare changes in valuation data to cash flows in the financial statements.
- Analyse trends of changes in various liabilities.
- Periodically review paid up listing for individuals in excess of maximum ages (there should be a limited number beyond age 100).
- 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 should be questioned).
- For pending waiver claims, periodically review how long they have remained pending (if too long, they may have been approved or declined but not coded).
- Compare the ERRs reported to the client with estimates prepared over the year to determine if there are any data issues affecting the valuation or administrative issues impacting the refund accounting calculations.

APPENDIX 4 – BIBLIOGRAPHY

1. Bluhm, William, "Group Insurance, Second Edition," 1996, Actex Publications
2. VTP 7, 12, 13, 14 Discussion Drafts
3. Draft Standards of Practice for the Valuation of Policy Liabilities of Life Insurers, April 2000