Canadian Institute of Actuaries / Institut canadien des actuaires

Study

Group Long-term Disability Termination Study

Research Council – Experience Research Committee

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INTRODUCTION

This study of termination experience under Canadian group long-term disability (LTD) policies was conducted by the Research Council of the Canadian Institute of Actuaries (CIA).

The most recently published graduated tables reflect the experience of the 2004–2008 period.

This project was initiated to produce tables based on more recent experience. The specific objectives were to provide:

- Termination rates (separately by death and recovery) by gender, age at disability (by age bands), and duration since disability, as well as an analysis of variations by region;
- Tables suitable for use in the pricing and valuation of Canadian group LTD insurance;
- A comparison of experience for claimants receiving Canada/Québec Pension Plan (CPP/QPP) benefits to claimants not receiving these benefits;
- Determination of ultimate approval rates for CPP/QPP Group LTD benefit offset; and
- An analytic comparison to the previous study.

The CIA retained Fraser Group and Denis Garand & Associates to act as the study managers. Their mandate was to:

- Collect and validate data submissions;
- Analyze the merged data;
- Produce termination tables using accepted actuarial methods; and
- Prepare appropriate documentation including this report.

PROJECT GOVERNANCE

Chair of the Research Council:

Keith Walter

The Project Oversight Group (POG) responsible for this project consisted of:

Frank Reynolds (Chair)
Stephanie Banfield (later replaced by Kateri Laneuville)
François Cloutier
Erin Crump
Tim Griffen
Lina Forner
Pierre-Philippe Carle-Mossdorf
Keith Walter (liaison to the Research Council)

PROJECT ACTIVITY

Timeline

The initial data request for the study was issued in April 2016 with a data deadline of September 30, 2016. The initial data collection was completed by December 2016.

During the data validation process, several carriers provided supplemental data submissions to address certain deficiencies. In more than one case, it was necessary for the carrier to provide a completely new submission. The final merging of all validated data submissions was completed in early 2017.

Based on the initial analysis by the study managers, the POG determined that the evolution of industry experience since 2004–2008 warranted the creation of a new graduated table. This activity was conducted in late 2017 and early 2018.

Insurance Companies Contributing Data

- Assumption Life;
- Blue Cross Life;
- Co-operators Life;
- Desjardins Financial;
- Empire Life;
- Equitable Life;
- Great-West Life;
- Industrial Alliance;
- Humania;
- La Capitale;
- Manulife;
- Pacific Blue Cross (BC Life);
- RBC Life;
- SSQ;
- Sun Life; and
- Wawanesa Life.

These 16 companies represent approximately 99% of the Canadian market for group LTD insurance during the study period.[1]

Project Team

The CIA retained Fraser Group and Denis Garand & Associates to act as the study managers.

The project leaders were Ken Fraser and Denis Garand.

[1] Although most carriers contributed data on their entire portfolio, a few carriers excluded certain blocks due to various technical constraints. The most notable exception was Manulife, which did not include the Standard Life block of business that it had recently acquired.

The project team also included Donna Swiderek, who was the primary liaison with contributing companies and handled the data validation, and John Wipf, who handled the computation of exposures and terminations from the database, developed the analytical tables, and finalized the graduation of rates.

Finally, the project team was fortunate to have the assistance of Peter Muirhead, who played a major role in the production of the earlier CIA LTD termination studies.

Special Thanks

A special note of thanks is offered to Michel Montambeault and the Office of the Chief Actuary in the Office of the Superintendent of Financial Institutions Canada, and to Philippe Guèvremont in the Service de l'évaluation et de l'administration provisoire, Direction du régime public de rentes at Retraite Québec, for providing the CPP and QPP termination tables respectively for comparison purposes.

TERMINOLOGY

This section discusses several key terms used throughout this study.

A/E means *Actual to Expected* and normally refers to a ratio between the number of actual claim terminations and the number of expected terminations computed from a reference table applied to the exposure.

Any Occ and *Own Occ* refer to the definitions of disability being used in the LTD contract. *Own Occ* defines disability as the inability of the claimant to perform the essential duties of his *own* occupation while *Any Occ* defines disability as the inability of the claimant to perform the duties of *any* occupation for which the employee is qualified by training, education, or experience.

ASO means *Administrative Services Only*, referring to arrangements where insurance companies administer benefit programs but do not assume any financial liability for the benefits that are self-insured by the plan sponsor (employer).

Change in Definition (CiD) refers to the provision in most LTD contracts that shifts the definition of disability from Own Occ to the more stringent Any Occ basis after an initial period of disability (usually two years). Thus, an individual may qualify for disability benefits for a certain period and then be ineligible for benefits even though there has been no change in the medical or vocational evidence.

Earlier Study refers to the CIA study on LTD termination experience for the years 2004–2008 (Document 211103).

Exposure has its usual actuarial sense and refers to claims which are active and thus "exposed" to a contingent termination event. In this study, exposure quantities are expressed in "life-years"[2] where a life-year represents a disability claim active for 12 months. Exposure is quantified as the number of claims (rather than amount of benefit). As discussed later in this document, the quantum used in the computation of exposure may be months, years, or fractions thereof.

[2] Other disability termination studies have used "life-months" as a measure of exposure.

LTD means *long-term disability insurance*. In this study, it exclusively refers to coverage provided on a group basis. This is discussed in greater detail in the next section, SCOPE OF STUDY.

Mortality refers to terminations that result from the death of the claimant. There is a subtle but important difference between the use in this study and elsewhere. In most actuarial studies, a mortality event in a period means the insured person has died in that period. That is not necessarily so in the case of LTD terminations. In contracts with survivor benefits, the claim will continue to be active for several months after the claimant has died. Thus, *mortality* should be interpreted to mean that the claim has met two conditions: it is terminated and the reason for termination is death (two separate and not necessarily contemporary events).

POG refers to the Project Oversight Group established by the Research Council of the CIA for this project.

Recovery is used in this study to refer to any termination that is not due to mortality. While this includes the plain-language meaning (i.e., claimants have made a medical recovery from their injury or illness and have returned to work), *recovery* in this study also includes any situation a claim was terminated by an insurance company other than for death. Notably, this includes changes in definition scenarios where the claimant no longer qualifies under a more stringent definition of disability. It would also include situations where claimants abandon a claim by not submitting required information and situations where the insurance company determines that the evidence does not support the continued payment of benefits.

Rest of Canada means Canada excluding the province of Québec. Depending on context, it may or may not include the three northern territories.

Study database refers to the entire set of claims data that was accepted into the study. For various technical reasons, most analyses including construction of the termination tables used subsets of this database. In most cases, however, any exclusions were negligible.

Termination refers to any contingent event that terminates an otherwise active claim. Thus, a claim that ends due to the attainment of a maximum benefit period (e.g., age 65) is not a termination. In this study, *termination* is used to include both mortality and recovery (see above).

SCOPE OF STUDY

This section sets out the conceptual framework for the study.

Policyholders

- Only Canadian employer–employee groups, excluding ASO[3] cases.
    - This includes:
        - Trade association or multiple-employer business; and
        - Union welfare trust cases.
    - To be excluded are:
        - Creditors business;
        - Affinity group business; and
        - Groups covering non-Canadian employees.

Coverage Provisions

- Exclude policies with benefits payable for two or five years. Include benefits payable for 10 or more years and benefits payable to a defined age (usually 65).[4]
- Definition of *disability*, *Own Occupation* or *Any Occupation*.

Reportable Claims

All claims with a date of disability prior to December 31, 2015, and that were "in payment" for any period between January 1, 2009, and December 31, 2015.

A claim is "in payment" during a period if it has been approved by the carrier and the claimant is entitled to receive a payment in respect of disability during that period. This definition includes situations:

- Where the actual payment is reduced to zero because of integration with other benefits; and
- Where payments are withheld to offset earlier overpayments.

Recurrent Claims

Where a claim is "recurrent" as defined in the policy, several periods of disability may be considered as a single claim. Typically, the policy will require that the periods of disability are from the same cause and are not separated by more than six months' return to work.

The study protocols required that such recurrent claims should be reported as a single claim record using the original date of disability and the most recent termination date.

[3] Although the initial conceptual framework for the study included ASO business, methodological considerations ultimately led to the exclusion of ASO claims. See DATA VALIDATION on page 13.

[4] Notwithstanding this element in the Data Request, policies with two- or five-year benefits were included in the Study Database, but exposure was terminated one year prior to benefit termination. See TABLE CONSTRUCTION on page 19.

On the other hand, if an individual had several periods of disability that are not defined as "recurrent" (e.g., different causes), then a separate claim record was to be submitted for each claim.

Claims under Partial or Residual Benefits

Under the data collection instructions, claimants were to be included if they initially satisfied an Any Occ or Own Occ definition of total disability.

GUIDING CONCEPTS

Intended Uses

The construction of a table from raw data requires decisions on many practical issues and often there is some tension among competing technical objectives. For this reason, it is useful to articulate the expected uses that guided the project team.

These uses are identified as:

- Valuation by insurance companies of Canadian LTD open claim liabilities in financial statements;
- Calculation by insurance companies of claim liabilities in the experience-rated accounting for specific policyholders;
- Use by insurance companies in the development of manual rates for group LTD benefits; and
- Valuation by self-funded plan sponsors of Canadian LTD open claim liabilities in financial statements.[5]

It is appropriate to acknowledge that the table may also be used in other contexts that were not explicitly addressed in the project.

For instance, we note that the mortality rates provided here might be useful in the pricing and reserving of a group life waiver provision where the definition of disability follows the provisions of a group LTD contract. We have no reason to dissuade users from this effort but do caution that this use was not in the formal mandate of the study.

Model Contract

We believe users should be able to interpret the published tables as the expected value of an identifiable real-world scenario. One implication of this concept is that table values should not represent an average of a bimodal distribution.

We therefore set out the following description of the scenario for which the table can be considered an optimal fit. The elements of this model include:

[5] However, as noted elsewhere in the report, claims from self-funded (ASO) cases were not used in the development of the tables.

- Employee benefits plan;
- Written on an insured basis (i.e., not ASO);
- Canadian employees;
- Groups of varying size;
- High levels of enrolment;
- Primarily guaranteed issue with individual underwriting of excess amounts;
- Elimination periods of four to six months;
- Benefits payable to age 65;
- High replacement ratios but less than 100%;
- Two-year Own Occ definition of disability;
- Industry-standard provisions for recurrent disability, all sources limits, rehab, etc.; and
- Industry-standard claim management practices such as early intervention.

To be very precise, we also need to specify that claims management in this model scenario does not include the practice of lump sum settlements, since such claims were removed from the study.

Users are alerted that there may be a need for adjustments if they face a situation that is widely variant from the model scenario; for instance, long waiting periods or variant contract provisions.

This is not to suggest that all exposure within the study was fully consistent with the model plan design, but the project team took care to manage exposure to avoid skews from the model. For instance, while we included exposure on plans with benefits to age 60, we only used the exposure up to age 59 to avoid anomalies associated with the last few months of benefit.

The major practical area of concern was the definition of disability. The difference between Own Occ and Any Occ benefits is significant, as evidenced by the obvious spikes in the raw data for terminations at months 24 and 28 and other periods.

Up to month 24, there is strong evidence that virtually all the underlying experience is on Own Occ.

Beyond 30 months, Any Occ is the prevailing industry standard but there are exceptions.

These include groups with 12- and 24-month waiting periods followed by two years' Own Occ coverage.

DATA VALIDATION

ASO Claims

Claims from ASO contracts were included in the initial study design and in the data collection.

There were two significant concerns with the ASO data:

- The available exposure was limited; and
- The majority of the exposure came from one carrier.

As well, it was considered inappropriate to publish even speculative conclusions that might tend to reveal proprietary data from an individual contributor.

Consequently, the POG decided to exclude ASO claims from the study.

However, a supplemental analysis was conducted on the ASO claims, which is provided on page 36.

Table 1 ASO Statistics

	Initial Data Submissions
Number of carriers reporting ASO business	10
ASO as % of the total claims submitted	14%
Proportion of total ASO business held by the largest reporting carrier	56%

Other Validation Activities

The project managers reviewed all data submissions for completeness and for consistency with expected norms. In many cases, additional or supplemental data were requested from the participants. In at least one case, it was necessary for the carrier to provide a completely new submission.

Certain submitted claims were not included in the study database, i.e., claims:

- That terminated prior to the study period;
- With a date of disability after the end of the study period;
- With no cash payment and no indication of integration;
- In litigation; and
- Closed through lump sum settlement.

DATA CHARACTERISTICS

Claims Counts

There were 483,794[6] claim records accepted into the study. Of these, 158,606 (33%) were from Québec and 325,188 (67%) from the Rest of Canada.

Québec is overrepresented in the claims count relative to its share of the general Canadian population. It has 33% of the claims versus approximately 23% of the Canadian population. However, Québec's proportion of exposure and deaths is similar to its share of population.

Table 2 Study Database Statistics

	Claims	Exposure (life-years)	Terminations	Deaths	Recoveries
Québec	158,606	203,427	112,537	6,651	105,886
Rest of Canada	325,188	734,901	166,969	21,197	145,772
Total	**483,794**	**938,328**	**279,506**	**27,848**	**251,658**
Québec	33%	22%	40%	24%	42%
Rest of Canada	67%	78%	60%	76%	58%

Age and Gender

The average age at disability for the entire study was 47.4 years old (46.6 for females and 48.4 for males). Québec claimants were slightly younger than Rest of Canada claimants.

Table 3 Average Age by Gender and Region

	Québec	Rest of Canada	Total
Female	45.8	46.9	46.6
Male	47.9	48.6	48.4
Overall	46.8	47.7	47.4

[6] After applying various filters (e.g., litigated claims), 478,879 claims were used in the primary construction of termination tables. Supplemental analyses may have been based on slightly smaller subsets.

Table 4 Gender Distribution by Region

	Québec	Rest of Canada	Total
Female	45%	46%	46%
Male	55%	54%	54%

The table below shows the average age at disability for claimants who became disabled during the study period. It indicates an increasing age trend among new claimants. This was also evident in the Earlier Study (years 2004–2008) and is consistent with the aging of the Canadian labour force.

Table 5 Average Age of New Claims by Year of Incidence

Year	Female	Male	Overall
2009	46.3	48.2	47.2
2010	46.6	48.6	47.5
2011	46.7	48.7	47.6
2012	46.9	48.8	47.7
2013	47.1	48.9	47.9
2014	47.3	49.0	48.1
2015	47.3	49.2	48.2

Concentration

The largest single data contribution accounted for 23% of the claims. The smallest was significantly less than 1%.

The top three carriers accounted for 66% of the claims in the study. The largest eight carriers (50% of the participant group) accounted for 93% of the submitted claims.

Definition of Disability

Approximately 99% of the claims were under an initial Own Occ definition, with the balance being Any Occ.

Benefit Duration

Benefit duration To Age 65 accounted for 95% of the claims. To Age 60 accounted for 1.6% of the claims. The remaining records were scattered over a wide range of values, none of which exceeded 1% of the total.

Elimination Period

The distribution of elimination periods is shown in the following table. The most common elimination period is four months (53%) followed by six months (26%). These two options account for 79% of the total compared to 69% in the Earlier Study.

Table 6 Distribution of Claimants by Elimination Period

Elimination Period (days)	Proportion of Claims	Proportion in Earlier Study	Change
<90	3%	6%	-3%
91–111	4%	10%	-6%
112–133	53%	47%	+6%
134–165	2%	1%	+1%
166–195	26%	22%	+4%
196–375	10%	10%	0%
>375	2%	3%	-1%
Total	100%	100%	

Due to rounding, values may not sum to 100%.

Year of Incidence

The following table presents the distribution of claims by year of incidence. Note that the most recent year is under-reported due to claims still in the waiting period at the end of the study period.

Table 7 Distribution of Claimants by Year of Incidence

Year of Incidence	Proportion of Claims
Pre 2006	15%
2006	3%
2007	4%
2008	8%
2009	9%
2010	10%
2011	11%
2012	11%
2013	11%
2014	11%
2015	7%
Total	100%

Termination Status

Of the claims used in table construction, 57.8% terminated during the study period (5.8% by death and 52.0% by recovery).

Provincial Distribution

The table below compares the distribution of claims by province with the 2011 distribution of the full-time labour force in Canada.[7]

This table is distorted by the overrepresentation of Québec, a consequence of the higher claim incidence rate in Québec. The second table following, which excludes Québec, indicates that the distribution of claims is similar to the full-time labour force with minor variations. The variations may reflect differences among provinces in benefit penetration, age distribution, and industry mix. The exclusion of ASO claims might also explain some of the observed variations.

[7] Statistics Canada. Table 14-10-0294-01 Labour force characteristics by census metropolitan area, three-month moving average, seasonally adjusted and unadjusted, last five months.

Table 8 Distribution of Claims by Province Compared to Full-time Employment

Province	Distribution of Claims	Employed Canadians*
Newfoundland and Labrador	1.6%	1.3%
Prince Edward Island	0.4%	0.4%
Nova Scotia	2.9%	2.6%
New Brunswick	2.1%	2.1%
Québec	32.9%	23.2%
Ontario	33.6%	38.6%
Manitoba	3.0%	3.6%
Saskatchewan	2.8%	3.1%
Alberta	10.8%	12.0%
British Columbia	10.0%	13.0%
Total	100.0%	100.0%

*Statistics Canada, 2011 data. Due to rounding, the individual provincial values may not sum to 100%.

Table 9 Distribution of Claims by Province Compared to Full-time Employment (Excluding Québec)

Province	Distribution of Claims	Employed Canadians
Newfoundland and Labrador	2.4%	1.7%
Prince Edward Island	0.7%	0.5%
Nova Scotia	4.3%	3.4%
New Brunswick	3.1%	2.7%
Québec	—	—
Ontario	50.0%	50.3%
Manitoba	4.4%	4.7%
Saskatchewan	4.1%	4.1%
Alberta	16.0%	15.6%
British Columbia	14.9%	17.0%
Total	100.0%	100.0%

*Statistics Canada, 2011 data. Due to rounding, the individual provincial values may not sum to 100%.

Monthly Benefit

The distribution of insured monthly benefit (before integration) in the claim file is shown below.

Table 10 Distribution of Claims by Gross Monthly Benefit

Gross Monthly Benefit	Percent of Claims
Less than $1,000	6%
$1,000 but less than $1,500	12%
$1,500 but less than $2,000	20%
$2,000 but less than $2,500	19%
$2,500 but less than $3,000	14%
$3,000 but less than $3,500	10%
$3,500 but less than $4,000	6%
$4,000 but less than $4,500	4%
$4,500 but less than $5,000	3%
$5,000 but less than $5,500	2%
$5,500 but less than $6,000	1%
$6,000 and over	2%
No data	1%

TABLE CONSTRUCTION

Basis for Construction

- The tables are based on claimants exposed as opposed to the amount of benefit exposed.
- The source data consisted of the combined data from all contributors after the remediation efforts described earlier in this report.
- Claims contributed to exposure from the first day of benefit (provided it was within the study period).
- For insured benefit durations other than to age 65, exposure was credited only until the earlier of 12 months before benefit termination or age 65. For instance, for benefit duration to age 60, exposure beyond age 59 was dropped. A similar approach was used with fixed-term benefits, such as 10 years. Observation was terminated 12 months prior to benefit termination unless the maximum duration would be age 65 or more. This approach was based on the assumption that claimant and carrier behaviour may change as a claim approaches its maximum duration.
- Any Occ claims, although a small fraction of the claims, were included in the exposure from the end of the elimination period.

- Exposure was computed for each month for the first five years (60 months) and for each year thereafter.
- For terminating claims (death or recovery), a full period of exposure (month or year) was credited for the period in which the termination occurred.
- For other claims, exposure was terminated at the specified end points and the appropriate fractional period of exposure was credited. These end points included the end of the study period, the limiting age (e.g., age 65), or termination of exposure for methodological reasons. The latter category includes claims where the benefit duration was not to age 65. Exposure for these claims was credited to the earlier of one year before benefit termination or age 65.
- Similarly, when a claim occurred prior to the beginning of the study period, a fraction of an exposure period was credited when the claim entered the study period on January 1, 2009.
- Crude termination rates were computed for five-year age brackets by dividing claim terminations in the observation period by the exposure credited for the period.
- The first age band (central age 22) is based on data from individuals aged 24 or less.
- Age is based on age last birthday.
- The tables begin with the fifth month of exposure (i.e., after a 120-day waiting period) as opposed to the fourth month in the Earlier Study. The change was prompted by the limited number of claims with shorter waiting periods.

Isolating CiD Activity

In the normal course of events, an LTD claim is considered to terminate[8] when the claimant has a change of status and no longer meets the definition of disability in the policy. The claimant may die or recover.

However, a claim is also considered to terminate when the definition of disability contained in the policy changes after a certain duration and the claimant's condition does not meet a more stringent definition of disability.

Conceptually, the analytical process involved separating the termination experience into two categories and creating separate mechanisms to account for each:

- Base terminations due to death or recovery; and
- Terminations due to CiD.

[8] Claim payments also cease at the maximum benefit duration, such as age 65, but such events are not included in the definition of a termination for this study.

In practice, while it was possible to approximately identify claims that were exposed to CiD termination at a given point in time, there was no way to identify specific terminations as CiD terminations. Consequently, splitting raw termination rates in Base and CiD components relied on statistical comparisons that identified and removed spikes in the data.

Compared to the Earlier Study, this study provides a more sophisticated mechanism for projecting CiD terminations. The recommended structure in this report provides adjustments for age, gender, region, and duration. In addition, the data clearly indicated that the additional CiD terminations did not occur at a single point of time but were spread over approximately six months. They began about three months before the CiD point, increased to a peak near the contractual CiD point, and then declined. This is reflected in the recommended CiD mechanism.

Graduation of Base Termination Rates

The rates in the published tables have been smoothed for presentation.

Briefly, our methods were:

- Separate tables were developed for Total Terminations and for Deaths.
- For the first 10 years, separate graduations were done by gender and by Québec/Rest of Canada. Within each, rates were based on quinquennial age and duration of disability.
- Beyond 10 years, graduations were done by gender and attained age only.
- Exposure and terminations were computed at a monthly resolution for the first 60 months and at an annual resolution thereafter.
- Smoothed Death rates were developed by starting with population mortality rates and adding an allowance for the excess mortality due to disability. The additional allowance was a combination of two exponential curves that recognize that LTD includes disabilities that have a minor impact on mortality and disabilities that have a significant impact on mortality.
- A similar approach using a combination of two exponential curves was attempted for Total Terminations[9] but it did not produce a satisfactory fit to the raw data. Consequently, the Total Termination rates were smoothed using a different approach.[10]
- The process for Total Terminations began with an initial curve determined by minimizing the sum of squared errors between actual termination rates and points on the assumed curve.
- The process was iterative until a solution that optimized smoothness and fit was achieved.
- Within each graduation of Total Terminations rates, there are at least four different splines spliced together, which was necessary to get a reasonable fit to the data for each pivot.

[9] This technique was used successfully in the Earlier Study (2004–2008 experience).

[10] Following the methods described in *Graduation: The Revision of Estimates*, Dick London, Actex, 1985.

- These splines often change convexity, i.e., from concave down to concave up and vice versa.
- We imposed a constraint that the Total Termination rate curves by pivot age should not overlap.

This approach enabled us to get a good fit with reasonably good smoothness. However, it should be noted that some smoothness was lost due to changes in convexity when splicing adjacent arcs, i.e., there are some inflection points and some fit was lost due to the constraint of no cross-over.

Testing the Graduation

Developing the graduated rates was an iterative process.

At each iteration several methods were used to assess the appropriateness of the fitted rates. These included:

- Visual examination of the graduated rates graphed against the crude rates;
- Comparing the Expected terminations (in aggregate and by mortality/recoveries) to Actual terminations. This was done for the study overall, by age/gender/regions sections and by duration.

Recommended Tables

As with the 2004–2008 table, final termination values are developed by adding factors from two component tables:

- Base Table; and
- CiD Adjustment.

Rates are provided separately for:

- Total Terminations;
- Terminations due to death (Mortality); and
- Terminations for other reasons (Recovery).

The tables provided are in four sections segmented by:

- Québec versus Rest of Canada; and
- Female versus Male.

Each section contains:

- Select values for the first 120 months of disability. These provide monthly resolution for five-year age groups (age at disability) from months five to 60. Annual resolution is provided for the final five.
- Ultimate values for durations beyond 10 years. These are by gender and by attained age and are not differentiated by Québec/Rest of Canada.

Rates are shown as monthly values for the first 60 months and annual thereafter.

The Base table has essentially the same structure as the 2004–2008 table except that it now extends beyond 10 years. The ultimate rates (computed based on attained age) have been converted to age at disability for presentation.

The recommended tables are provided in a separate document, available in Excel format.

For most applications, the CiD Adjustment would be added to the Base rates to produce a working table.[11] The Appendix contains instructions and a sample computation.

COMPARISON TO PREVIOUS TABLE

In 2011, the CIA published an LTD Termination table based on 2004–2008 experience. As with this current study, the contributing carriers to the Earlier Study represented 99% of industry revenues. The following tables compare the Base rates in the two tables using survival values. This comparison does not include the impact of CiD.

The survival function value (in the context of disability claims termination rates) indicates what proportion of the originally disabled claimants is still active at a given duration.[12]

The reported ratios consist of:

$$\frac{\text{Survival function value for the table in this study}}{\text{Survival function value for the table in the Earlier Study}}$$

A ratio less than 100% indicates that the new table has lower survival rates (i.e., higher termination rates) than the comparison table and vice versa.

In the mortality comparison, the value at a given duration represents the proportion of the initial population that would be still active if mortality was the only decrement.

Because a different methodology was used in this study to identify and measure the impact of CiD, the reader should be aware that the values in Table 11 may include changes due to methodology as well as changes in the underlying experience.

[11] No CiD Adjustment is required for the mortality portion of the Base Rates.

[12] For example, if the termination rate in duration 1 is 0.10 and in duration 2 is 0.20, then the value of the survival function at the end of duration 1 is 0.90 (1.00-0.10) and at the end of duration 2 is 0.72 (1.00-0.10)(1.00-0.20).

Table 11 Ratio of Base Rate Survival Function Values: 2009–2015 Table versus CIA 2004–2008 – Total Terminations

Québec

Female

	Month 12	Month 24	Month 36	Year 5	Year 10
Under 25	161%	196%	228%	289%	346%
25–29	131%	140%	147%	162%	170%
30–34	115%	114%	114%	116%	113%
35–39	105%	100%	97%	93%	91%
40–44	107%	100%	98%	96%	97%
45–49	104%	96%	91%	90%	91%
50–54	100%	89%	86%	86%	85%
55–59	94%	85%	84%	84%	81%
60–64	97%	89%	87%	86%	86%

Québec

Male

	Month 12	Month 24	Month 36	Year 5	Year 10
Under 25	101%	122%	144%	167%	244%
25–29	103%	108%	114%	114%	130%
30–34	103%	103%	102%	95%	101%
35–39	104%	98%	96%	88%	93%
40–44	104%	99%	95%	95%	102%
45–49	102%	92%	88%	89%	92%
50–54	95%	84%	78%	76%	77%
55–59	96%	87%	83%	81%	79%
60–64	95%	86%	81%	78%	78%

Rest of Canada

Female

	Month 12	Month 24	Month 36	Year 5	Year 10
Under 25	106%	133%	155%	156%	149%
25–29	95%	101%	107%	113%	112%
30–34	94%	97%	100%	104%	101%
35–39	100%	100%	99%	101%	101%
40–44	101%	98%	97%	99%	99%
45–49	99%	95%	93%	94%	95%
50–54	96%	92%	91%	91%	91%
55–59	95%	94%	95%	97%	96%
60–64	93%	96%	99%	103%	103%

Rest of Canada

Male

	Month 12	Month 24	Month 36	Year 5	Year 10
Under 25	88%	89%	93%	97%	102%
25–29	98%	100%	108%	121%	128%
30–34	104%	109%	116%	124%	130%
35–39	102%	104%	108%	117%	124%
40–44	100%	99%	102%	110%	116%
45–49	98%	95%	96%	102%	105%
50–54	97%	92%	92%	94%	94%
55–59	99%	95%	95%	96%	95%
60–64	100%	100%	101%	101%	101%

Table 12 Ratio of Base Rate Survival Function Values: 2009–2015 Table versus CIA 2004–2008 – Mortality

Québec

Female

	Month 12	Month 24	Month 36	Year 5	Year 10
Under 25	99%	99%	98%	97%	98%
25–29	99%	98%	97%	96%	96%
30–34	99%	98%	97%	96%	97%
35–39	99%	99%	98%	98%	99%
40–44	100%	100%	100%	99%	103%
45–49	101%	101%	100%	99%	100%
50–54	102%	102%	100%	98%	98%
55–59	102%	101%	100%	97%	96%
60–64	102%	101%	98%	95%	95%

Québec

Male

	Month 12	Month 24	Month 36	Year 5	Year 10
Under 25	99%	98%	97%	97%	99%
25–29	99%	98%	96%	96%	98%
30–34	99%	98%	96%	96%	99%
35–39	99%	98%	98%	98%	103%
40–44	100%	100%	99%	100%	104%
45–49	100%	101%	99%	99%	101%
50–54	101%	101%	99%	97%	98%
55–59	101%	100%	99%	96%	96%
60–64	102%	102%	101%	98%	98%

Rest of Canada

Female

	Month 12	Month 24	Month 36	Year 5	Year 10
Under 25	100%	99%	99%	100%	101%
25–29	99%	99%	98%	98%	99%
30–34	99%	99%	99%	100%	100%
35–39	99%	99%	99%	99%	100%
40–44	99%	99%	99%	100%	101%
45–49	100%	100%	100%	101%	102%
50–54	100%	100%	100%	101%	103%
55–59	100%	101%	100%	101%	103%
60–64	100%	100%	100%	102%	102%

Rest of Canada

Male

	Month 12	Month 24	Month 36	Year 5	Year 10
Under 25	100%	99%	99%	100%	101%
25–29	100%	99%	99%	99%	101%
30–34	99%	99%	99%	99%	101%
35–39	99%	99%	98%	99%	101%
40–44	100%	99%	99%	100%	102%
45–49	100%	100%	100%	100%	102%
50–54	101%	101%	100%	101%	102%
55–59	101%	101%	101%	101%	102%
60–64	101%	101%	100%	101%	101%

The mechanism used to adjust for CiD in the recommended table varies by duration while the Earlier Study provided the same rate for all durations. Consequently, an exact comparison is not feasible. However, in Table 13 below, we have compared the rates at 28 months, which is the most common duration for CiD. The ratios would be slightly lower when CiD occurs later than 28 months.[13] We believe that most of the change between the two tables should be ascribed to an improvement in the methods used to identify CiD terminations.

Table 13 Ratio of Change in Definition Rates: 2009–2015 Table versus CIA 2004–2008

	Québec		Rest of Canada	
Duration	**Female**	**Male**	**Female**	**Male**
Under 25	185%	126%	139%	137%
25–29	167%	115%	123%	158%
30–34	191%	127%	125%	175%
35–39	188%	128%	131%	164%
40–44	221%	132%	143%	167%
45–49	258%	138%	127%	180%
50–54	284%	107%	150%	189%
55–59	279%	83%	131%	218%
60–64	177%	68%	79%	229%

COMPARISON TO POPULATION MORTALITY

The tables below compare the mortality experience in the study database against the expected mortality from the Canadian Life Tables 2011–2013, published by Statistics Canada. An A/E methodology is used.

The Canadian Life Tables do not differentiate between Québec and Rest of Canada. The relative mortality is highest in the earliest durations and diminishes as the claims continue. Mortality in the ultimate period after 10 years is approximately 350% of Canadian population mortality.

By age at incidence, relative mortality is highest for under age 30 and then declines as the claimants become older.

[13] The actual formula provides for a reduction of 1.5% for each month after month 28 and a corresponding increase for each month before month 28.

Table 14 Actual 2009–2015 Mortality Compared to Canadian Life Tables By Duration

	Québec		Rest of Canada		
Duration	**Female**	**Male**	**Female**	**Male**	**Total**
1st year	1149%	1165%	1466%	1474%	1379%
2nd year	1740%	1199%	1536%	1163%	1330%
3rd year	1536%	1039%	1169%	767%	986%
4th year	1362%	793%	836%	592%	743%
5th year	868%	565%	613%	488%	560%
6th year	617%	411%	474%	425%	450%
7th year	622%	325%	439%	428%	430%
8th year	587%	382%	393%	379%	396%
9th year	477%	348%	326%	376%	362%
10th year	500%	350%	320%	314%	332%
Over 10 years	355%	388%	323%	346%	342%
Total	1035%	774%	768%	685%	679%

Table 15 Actual Mortality Compared to Canadian Life Tables
By Age at Incidence

Age at Incidence	Québec		Rest of Canada		
	Female	Male	Female	Male	Total
Under 25	1266%	1285%	1350%	1220%	1263%
25–29	1154%	798%	1252%	1127%	1189%
30–34	1135%	974%	817%	799%	808%
35–39	860%	875%	705%	749%	728%
40–44	956%	768%	694%	658%	675%
45–49	1072%	790%	734%	709%	720%
50–54	1110%	803%	813%	693%	742%
55–59	1010%	726%	772%	650%	694%
60 and over	973%	745%	757%	644%	679%
Total	1035%	774%	768%	685%	679%

CPP/QPP

Most LTD plans integrate benefits with the CPP and QPP.

Because of coding issues, data from two carriers representing approximately 12% of the data had to be excluded from the analyses presented in this section.

Two analyses relating to CPP/QPP approvals have been conducted to answer the following questions:

1. How does the termination experience of CPP/QPP claimants who are also insured for group LTD compare to the total universe of CPP/QPP claimants?
2. How many LTD claims will ultimately be approved for CPP/QPP?

To answer the first question, an A/E analysis was carried out using the expected terminations rates developed by the CPP and QPP actuaries for the valuation of their plans.[14] Only LTD claimants who have been approved for benefits under the CPP or QPP are used in this analysis.

The QPP table did not provide separate mortality values. Consequently, the CPP mortality table was used for both Québec and the Rest of Canada. The results are presented below. As

[14] For the CPP, the table is designated CPP25 2007 Base rates (1999–2008). For the QPP, the table is described as Évaluation actuarielle du RRQ 2015 – Tableau 39.

expected,[15] termination rates for LTD claimants approved for the CPP/QPP were generally higher than the CPP expected values (217% overall). However, mortality was also higher than the CPP expected value (109%).

The CPP termination table provides select rates that vary by age, gender, and duration for the first five years of disability. Beyond five years, ultimate rates vary by age and gender only.

The detailed results for total terminations are presented below. The values shown should be considered to be approximations since there are methodological differences in the computation of exposure between this study and the CPP/QPP data (this study uses monthly resolution for the first 60 months).

Table 16 Actual Terminations Compared to Canada Pension Plan Table

By Age at Incidence

Québec
Female

Age	**1st yr**	**2nd yr**	**3rd yr**	**4th yr**	**5th yr**	**Ultimate**	**Total**
Under 25		Inadequate data					
25–29	1533%	752%	527%	116%	159%	95%	472%
30–34	1873%	785%	263%	125%	121%	89%	433%
35–39	1473%	562%	303%	161%	127%	79%	358%
40–44	720%	411%	309%	155%	134%	94%	286%
45–49	515%	291%	245%	171%	131%	144%	266%
50–54	324%	247%	302%	221%	172%	150%	245%
55–59	239%	219%	220%	173%	128%	126%	201%
60 and over	177%	121%	196%	158%	149%	—	154%
All Ages	485%	285%	264%	177%	141%	115%	263%

[15] LTD claimants are expected to have better experience because group LTD underwriting processes screen out a portion of the population eligible for CPP/QPP benefits.

Table 16 continued

Québec
Male

Age	1st yr	2nd yr	3rd yr	4th yr	5th yr	Ultimate	Total
Under 25		Inadequate data					
25–29	1622%	390%	508%	228%	238%	89%	385%
30–34	1162%	839%	734%	204%	165%	104%	541%
35–39	930%	667%	515%	336%	258%	137%	432%
40–44	599%	365%	403%	177%	203%	162%	311%
45–49	388%	293%	323%	123%	108%	135%	236%
50–54	292%	200%	265%	165%	114%	119%	191%
55–59	139%	132%	178%	136%	100%	83%	131%
60 and over	124%	123%	166%	113%	136%	—	131%
All Ages	301%	210%	249%	150%	120%	121%	203%

Rest of Canada
Female

Age	**1st yr**	**2nd yr**	**3rd yr**	**4th yr**	**5th yr**	**Ultimate**	**Total**
Under 25	1651%	549%	319%	159%	127%	51%	208%
25–29	1549%	522%	375%	115%	104%	76%	207%
30–34	1437%	569%	388%	194%	128%	87%	228%
35–39	892%	524%	457%	178%	146%	99%	237%
40–44	585%	424%	375%	187%	159%	116%	241%
45–49	432%	334%	283%	190%	161%	139%	245%
50–54	368%	302%	297%	198%	174%	157%	255%
55–59	287%	244%	291%	174%	132%	154%	230%
60 and over	281%	236%	254%	136%	96%	—	242%
All Ages	443%	323%	315%	181%	148%	117%	239%

Table 16 continued

Rest of Canada
Male

Age	1st yr	2nd yr	3rd yr	4th yr	5th yr	Ultimate	Total
Under 25	1013%	455%	308%	107%	40%	71%	215%
25–29	918%	455%	332%	93%	76%	77%	217%
30–34	937%	513%	358%	164%	108%	114%	252%
35–39	752%	474%	385%	187%	120%	125%	236%
40–44	497%	361%	377%	214%	121%	126%	223%
45–49	345%	267%	272%	155%	136%	140%	207%
50–54	234%	209%	255%	165%	122%	137%	185%
55–59	173%	169%	215%	144%	128%	130%	164%
60 plus	179%	171%	199%	157%	143%	—	177%
All Ages	282%	228%	259%	158%	123%	127%	194%

To examine the question of what is the ultimate likelihood that an LTD claim will receive CPP/QPP approval, an analysis was completed using only claims incurred in 2009. These claims were then followed for up to seven years until the end of the study period at December 2015. The following table indicates the number of records used in this analysis and those still active towards the end of the study period.

Table 17 Number of Initial and Surviving Claims in 2009 Cohort

Number of Active Records	Québec	Rest of Canada
At Date of Disability	12,887	28,036
At 48 months	1,382	7,033
At 60 months	1,185	6,214

The analysis was conducted separately for Québec and Rest of Canada.[16]

The tables below should be interpreted with care. It must be remembered that the study database does not capture the date of CPP approval or the date when the approval was recorded

[16] The assumption is made that claimants in Québec are covered by the QPP while other claimants are covered by the CPP.

on the claim file. Because this is a retrospective analysis, we now have information that would not have been known in the early days of the claim. Thus, the percentage of CPP/QPP approvals reported for disabilities lasting six months, for instance, does not indicate how many claims had been approved at six months. It means how many still open at the six-month duration were ultimately approved.[17]

Table 18 Percentage of 2009 Active Claims Ultimately Approved, by Duration, for CPP/QPP (Québec)

Claims still active at	Females	Males	Total
6 months	5%	6%	6%
12 months	7%	8%	8%
18 months	10%	19%	13%
24 months	7%	14%	11%
30 months	9%	27%	18%
36 months	8%	39%	20%
42 months	33%	42%	37%
48 months	25%	83%	60%
54 months	50%	43%	45%
60 months	75%	89%	85%

[17] "Ultimately" means until data were extracted for submission to this study. This results in perhaps six or seven years of observation for many claims.

Table 19 Percentage of 2009 Active Claims Ultimately Approved, by Duration, for CPP/QPP (Rest of Canada)

Claims still active at	Females	Males	Total
6 months	12%	11%	11%
12 months	15%	19%	17%
18 months	23%	28%	25%
24 months	23%	36%	29%
30 months	28%	40%	33%
36 months	48%	49%	48%
42 months	48%	49%	48%
48 months	58%	71%	65%
54 months	70%	73%	72%
60 months	69%	75%	73%

As a sensitivity test, the cohort from 2010 was also analyzed. The results from both cohorts are reasonably consistent.

Table 20 Percentage of 2010 Active Claims Ultimately Approved, by Duration, for CPP/QPP (Québec)

Claims still active at	Females	Males	Total
6 months	9%	8%	9%
12 months	9%	12%	10%
18 months	11%	11%	11%
24 months	8%	21%	14%
30 months	18%	20%	19%
36 months	18%	32%	26%
42 months	41%	35%	38%
48 months	62%	44%	55%
54 months	80%	50%	58%
60 months	83%	75%	78%

Table 21 Percentage of 2010 Active Claims Ultimately Approved, by Duration, for CPP/QPP (Rest of Canada)

Claims still active at	Females	Males	Total
6 months	10%	14%	12%
12 months	18%	18%	18%
18 months	23%	27%	25%
24 months	28%	30%	29%
30 months	27%	38%	32%
36 months	40%	42%	41%
42 months	60%	55%	58%
48 months	56%	68%	62%
54 months	64%	55%	59%
60 months	72%	83%	78%

For claims where the date of disability was prior to 2004 and which were still active within the 2009–2015 study period, the CPP/QPP approval rate was 89%.

The results of all the analyses suggests that upwards of 80% of long-term claims (those over five years) will ultimately be approved for the CPP/QPP.

ASO ANALYSIS

ASO claims were excluded from the study database for reasons discussed on page 133. However, a supplemental analysis was conducted on the ASO claims, which is summarized as follows:

- ASO claims made up 14% of the contributed claims.
- 10 out of 16 carriers reported ASO claims.
- Only five of 16 carriers reported more than 500 ASO claims.
- In aggregate, the A/E termination experience for all ASO claims was 98% of the new recommended table versus 101% for insured claims.
- Within each of the five carriers with more 500 claims, the A/E for ASO claims differed significantly from 100%. In every case the variance was greater than 10%, either higher or lower.
- Within each of the five carriers with more 500 claims, the A/E for ASO claims also varied widely from that carrier's own A/E for insured claims. In every case the variance was greater than 10% either higher or lower.

To summarize the last two points, neither the industry table nor the individual carrier's own experience on insured business provided useful predictive value for the A/E for ASO business within that carrier.

VARIATIONS

This section of the study provides A/E ratios in termination behaviour along dimensions not accounted for in the structure of the tables, i.e., other than age, gender, and Québec/Rest of Canada.

Methodology

The data used for the variations analyses are a subset of the entire study database. Since the termination table begins at duration five months, claims that terminated before five months were excluded. For claims with elimination periods of less than 120 days, exposure was credited beginning with the fifth month. Consequently, a number of raw data tables do not balance exactly to 100% but these have been standardized to show Totals equal to 100%.

Province

The following table shows the variation in termination experience by province. The analysis excludes a small amount of data where provincial information was unavailable. Québec is excluded from the analysis since it has its own table.

Terminations tend to be higher in the west and lower in the Atlantic provinces.

Table 22 Variation of A/E Experience by Province (excluding Québec)

Province	Terminations	Mortality
Newfoundland and Labrador	80%	73%
Prince Edward Island	78%	84%
Nova Scotia	81%	88%
New Brunswick	95%	83%
Québec	—	—
Ontario	93%	103%
Manitoba	112%	118%
Saskatchewan	127%	110%
Alberta	120%	114%
British Columbia	98%	85%
Terr.	111%	129%
Total	100%	100%

Benefit Amount

The A/E experience by the amount of monthly benefit is presented below. The following table excludes approximately 1% of the database where the amount of monthly benefit was not available.

Table 23 Variation of A/E Experience by Gross Monthly Benefit

Gross Monthly Benefit ($)	Terminations	Mortality
Under 1,000	110%	95%
1,000 to 1,499	97%	103%
1,500 to 1,999	101%	100%
2,000 to 2,499	103%	102%
2,500 to 2,999	102%	102%
3,000 to 3,499	96%	90%
3,500 to 3,999	95%	95%
4,000 to 4,599	97%	106%
4,500 to 4,999	96%	98%
5,000 to 5,499	96%	106%
5,500 to 5,999	99%	111%
6,000 to 6,999	91%	106%
7,000 to 7,999	101%	143%
8,000 and over	91%	142%
Total	100%	100%

Salary

The A/E experience by monthly salary is presented below. This analysis was not provided in the earlier study.

The data quality in this analysis was less than ideal. Nearly 30% of the records had missing data or suspect entries.

Table 24 Distribution of Claims by Monthly Salary

Gross Monthly Benefit ($)	Claims	Distribution
Under 1,500	7,332	1.5%
1,500 to 1,900	17,119	3.6%
2,000 to 2,499	30,443	6.4%
2,500 to 2,999	43,314	9.0%
3,000 to 3,499	50,251	10.5%
3,500 to 3,999	45,475	9.5%
4,000 to 4,499	39,893	8.3%
4,500 to 4,999	28,805	6.0%
5,000 to 5,499	20,727	4.3%
5,500 to 5,999	16,229	3.4%
6,000 to 6,999	22,686	4.7%
7,000 to 7,999	11,491	2.4%
8,000 to 9,000	5,859	1.2%
9,000 to 14,999	7,676	1.6%
15,000 to 24,999	888	0.2%
Missing/Unreliable	130,691	27.3%
Total	478,879	100.0%

Table 25 Variation of A/E Experience by Monthly Salary

Gross Monthly Benefit ($)	Terminations	Mortality
Under 1,500	93%	105%
1,500 to 1,900	91%	101%
2,000 to 2,499	92%	97%
2,500 to 2,999	95%	95%
3,000 to 3,499	95%	93%
3,500 to 3,999	97%	94%
4,000 to 4,499	95%	89%
4,500 to 4,999	94%	87%
5,000 to 5,499	96%	96%
5,500 to 5,999	97%	102%
6,000 to 6,999	95%	100%
7,000 to 7,999	99%	110%
8,000 to 9,000	98%	119%
9,000 to 14,999	101%	145%
15,000 to 24,999	92%	173%
Missing/Unreliable	115%	109%
Total	100%	100%

Year of Disability

The following table shows the variation in termination experience by year of disability. The reader is reminded that study period covers only the years 2009–2015. Consequently, the mix of claims by duration will vary significantly from row to row in the table. For instance, claims in the "Before 1986" row will have a *minimum* duration of 22 years.

Table 26 Distribution of Claims by Year of Disability

Year of Disability	Claims	Distribution
Before 1986	1,589	0.3%
1986–1990	3,924	0.8%
1991–1995	9,559	2.0%
1996–2000	15,129	3.2%
2001–2005	33,018	6.9%
2006–2010	169,115	35.3%
2011–2015	246,545	51.5%
Total	478,879	100.0%

Table 277 Variation of A/E Experience by Year of Disability

Year of Disability	Terminations	Mortality
Before 1986	107%	123%
1986–1990	93%	102%
1991–1995	94%	98%
1996–2000	95%	98%
2001–2005	99%	103%
2006–2010	98%	103%
2011–2015	102%	96%
Total	100%	100%

Taxability

The data request for this study included, for the first time, the taxability status of the claim.

The number of records where data was unavailable warrants caution, particularly in Québec. See Table 28 below.

Table 288 Distribution of Claims by Taxability Status

Cause of Disability	Québec	Rest of Canada	Total
Not taxable	43%	47%	46%
Taxable	31%	46%	41%
Unknown or blank	26%	7%	13%
Total	100%	100%	100%

The A/E values are shown in the following table. In Québec, taxable claims appear to have a lower termination rate than non-taxable claims. However, the fact that over one quarter of the data had missing data and that the A/E ratio for the missing data segment is much higher than for the rest of the experience suggests that methodological factors may account for the difference. Outside Québec, there is no significant difference between taxable and non-taxable claims.

Table 299 Variation of A/E Experience by Taxability Status

Cause of Disability	Québec	Rest of Canada	Total
Not taxable	99%	99%	99%
Taxable	91%	98%	96%
Unknown or blank	117%	119%	118%
Total	100%	100%	100%

Benefits in the Waiting Period

The data request for this study included, for the first time, an attempt to determine what income replacement benefits were paid to the claimant prior to the inception of the LTD claims. The list of coding options provided in the data request appears below.

Table 30 Short-Term Disability Income Sources in Data Request

Coding Options

"OurSTD" = a Short Term Disability [STD] plan that was adjudicated by you (the submitting company).

"OtherSTD" = a Short Term Disability plan adjudicated by another insurance company or a third party administrator.

"SickLeave" = a plan administered by the employer directly, including full salary continuance.

"EI" = federal Employment Insurance.

"WC" = Workers Compensation.

"Auto" = Automobile Insurance.

The quality of the data submitted fell short of expectations. No data were provided by six companies representing 29% of the data records. The other 10 companies identified claims where they also provided short-term benefits (32% of their claims) but were unable to provide information on other claims as to whether they received income replacement from another source or had no interim benefits.

Notwithstanding these limitations, an analysis of the available data does suggest that administering short-term income replacement during the LTD waiting period may affect termination rates. A more robust study would be required to confirm this.

It is useful to note that the market penetration of STD benefits is substantially higher in Québec versus the Rest of Canada, which is confirmed by the number of claims in Québec where insured STD provides income replacement during the LTD waiting period.

Table 31 Distribution of Claims by Benefits in the Waiting Period

Coding Option	Québec	Rest of Canada	Total
"Our STD"	35%	21%	26%
Other or None	65%	79%	74%
Total	100%	100%	100%

The A/E values for termination experience are shown in the following table. There is much better experience when the carrier also provides STD during the waiting period.

Table 322 Variation of A/E TERMINATION Experience by Benefits in the Waiting Period

Coding Option	Québec	Rest of Canada	Total
"Our STD"	120%	125%	122%
Other or None	93%	94%	94%
Total	100%	100%	100%

In assessing the significance of Table 32, the reader should also consider the A/E mortality experience as well. In Québec, the mortality is essentially the same. In the Rest of Canada, mortality experience is lower than expected when the carrier also provides STD during the waiting period. The most obvious explanation is that the underlying risk profile differs between those policyholders who purchase STD from a carrier versus others (who may provide no benefits or who may self-insure short-term benefits).

Table 333 Variation of A/E MORTALITY Experience by Benefits in the Waiting Period

Coding Option	Québec	Rest of Canada	Total
"Our STD"	101%	93%	96%
Other or None	98%	102%	101%
Total	100%	100%	100%

Year of Experience

The following table shows the variation in termination experience by study year. Total termination experience appears to be flat while the mortality component is declining.

Table 34 Variation of A/E Experience by Study Year

Study Year	Terminations	Mortality
2009	99%	104%
2010	100%	102%
2011	99%	103%
2012	100%	100%
2013	102%	97%
2014	99%	99%
2015	100%	95%
Total	100%	100%

Cause of Disability

This analysis looks at the termination experience for major causes of disability. The first table show the distribution of claims in the study database. Québec constitutes 33% of the total database (45% of Mental Disorder claims and 27% of all other claims).

Table 355 Distribution of Claims by Cause of Disability

Cause of Disability	Québec	Rest of Canada	Total
Mental Disorders	41%	25%	30%
Musculo-skeletal	18%	22%	21%
Neoplasms (mostly cancers)	11%	14%	13%
Circulatory	5%	8%	7%
Nervous System	4%	8%	7%
Accidents	9%	10%	9%
All Other Identified Causes	11%	12%	12%
Not Stated or Unknown	1%	1%	1%
Total	100%	100%	100%

The A/E values are shown in the following two tables.

Table 366 Variation of A/E Experience by Cause of Disability, Total Terminations

Cause of Disability	Québec	Rest of Canada	Total
Mental Disorders	112%	88%	100%
Musculo-skeletal	87%	94%	91%
Neoplasms (mostly cancers)	90%	143%	122%
Circulatory	78%	90%	87%
Nervous System	52%	54%	53%
Accidents	117%	129%	124%
All Other Identified Causes	106%	110%	109%
Not Stated or Unknown	125%	87%	101%
Total	100%	100%	100%

Table 37 Variation of A/E Experience by Cause of Disability, Mortality Only

Cause of Disability	Québec	Rest of Canada	Total
Mental Disorders	24%	29%	28%
Musculo-skeletal	18%	24%	23%
Neoplasms (mostly cancers)	511%	503%	505%
Circulatory	67%	68%	68%
Nervous System	64%	66%	65%
Accidents	21%	25%	24%
All Other Identified Causes	99%	104%	103%
Not Stated or Unknown	68%	61%	62%
Total	100%	100%	100%

Although the Neoplasms category (primarily cancers) constitutes only 13% of claims, it accounts for 60% of all deaths. To better present the variation in mortality among the other causes of disability, the following table excludes the Neoplasms category.

Table 388 Variation of A/E Experience by Cause of Disability, Mortality Only – EXCLUDING NEOPLASMS

Cause of Disability	Québec	Rest of Canada	Total
Mental Disorders	59%	62%	61%
Musculo-skeletal	46%	52%	51%
Neoplasms (mostly cancers)	—	—	—
Circulatory	167%	145%	150%
Nervous System	159%	139%	144%
Accidents	52%	53%	53%
All Other Identified Causes	245%	221%	226%
Not Stated or Unknown	170%	129%	137%
Total	100%	100%	100%

Carrier

The variation in termination experience by carrier ranges from a low of 84% to a high of 122%. The variation among the largest eight carriers is from 89% to 122%.

For mortality only, the variation in termination experience by carrier ranges from a low of 91% to a high of 161%. The variation among the largest eight carriers is from 95% to 128%.

CAVEATS

Users of this study should take note of the following comments.

1. This study is based on lives, not benefit amount.
2. This study uses experience from eight calendar years and may not be representative of experience over a full business cycle.
3. The tables are most suitable for the valuation of liabilities under contracts that resemble the model contract described on pages 11–12. Users should exercise appropriate caution in situations that deviate from this model, such as:
    a. Non-Canadian risks;
    b. Non-employee populations;
    c. Elimination periods exceeding six months;
    d. Durations beyond 65;
    e. Unusual policy provisions; and
    f. Unusual claim management practices.
4. Although the valuation of ASO claims by plan sponsors is an intended use for the study tables, users should be aware that ASO claims were excluded from the study database and that the A/E values of individual ASO portfolios varied significantly from those expected.
5. Users of the mortality values should be cognizant that the underlying data rely on the accurate coding of termination cause by the contributing carriers. While these data are considered fairly robust by the project team, any deficiency is likely to understate mortality rates.
6. Reported mortality rates (and, to a much lesser extent, total termination rates) may be slightly distorted by the impact of survivor benefits in some policies. The provision of survivor benefits would result in the deferral of terminations resulting from the death of the claimant. The greatest impact is likely to be in the first year of disability where rates may be slightly understated.

CONCLUSIONS AND RECOMMENDATIONS

1. The termination tables developed in this study are derived from experience of virtually the entire Canadian market in the 2009 to 2015 period (ASO cases being the only major exclusion).

2. Over the study period (2009–2015) total termination experience appeared to be flat while the mortality component declined slightly.
3. However, the distribution of terminations by age, gender, region, and duration was significantly different from the previously published tables (2004–2008 experience).
4. Given the changes observed relative to the Earlier Study, it is recommended that this study be updated at regular intervals.
5. The following recommendations are offered with respect to the planning of future studies:
    a. No major revisions to the Data Request are required; and
    b. Consideration should be given to capturing information on survivor benefits and assessing their impact on the reporting of mortality terminations.

APPENDIX

This report includes an appendix published as an Excel workbook. Included in this workbook are:

- Basic Termination Table values;
- An Adjustment Mechanism for Change in Definition;
- Mortality Table values;
- Recovery Table values; and
- An A/E comparison of the raw data to the final tabular values.