

SOCIETY OF ACTUARIES – INDIVIDUAL DISABILITY EXPERIENCE COMMITTEE

DRAFT – December 6, 2012

Development of the 2012 IDEC Claim Termination Rate Table (Version 1.0)

Introduction

The 2012 IDEC Claim Incidence Rate Table and the 2012 IDEC Claim Termination Rate Table were developed by the Individual Disability Experience Committee (IDEC) of the Society of Actuaries (SOA) from policy and claim databases covering industry individual disability income (IDI) experience from 1990 to 2007. These tables along with the suggested adjustments to the rates to distinguish the experience among various business segments have been loaded into the Excel Workbook called *SOA – IDEC IDI 2012 Tables Workbook Version 1.0.xlsm*. The workbook was developed by the IDEC to calculate claim costs, active life reserves and disabled life reserves using the new tables and to compare these values to those based on the 85 CIDA and CIDC tables. This workbook will be available to the industry to assist IDI carriers to understand the financial implications of the 2012 IDEC tables.

The 2012 IDEC tables should be viewed as work in progress. Both tables at this time are labeled Version 1.0. The NAIC Health Actuarial Task Force (HATF) voted on November 28, 2012 to request the American Academy of Actuaries (AAA) to develop valuation tables to replace 85 CIDA and CIDC. The 2012 IDEC tables will be the starting point in the development of new industry valuation tables. In the process of developing the new valuation tables, the 2012 IDEC tables will be reviewed closely by the valuation table committee and a number of changes may be made before the experience tables are finalized. Therefore, the 2012 IDEC tables should not be viewed as final.

This document describes the development of the 2012 IDEC Claim Termination Rate Table (Version 1.0). Revised documents will be prepared when new versions of the IDEC tables are released or additional detail is needed.

Claim Database

Industry claim termination experience was studied from 1990 to 2007. IDEC collected data for the 1990-99 study period in 2002 and for the 2000-07 study period in 2009. Appendix A shows the companies that contributed data. One company's claim data was scaled down to represent only 40% of total exposure over the study period.

It is important to note that this study examines two significant eras in the U.S. IDI industry. The first segment occurred during the first part of the 1990's where IDI carriers in total suffered historically high statutory financial losses. As a result of actions taken by IDI carriers and a favorable economic

environment, positive statutory profits for the industry started to re-emerge during the last few years of the 1990's decade and for the 2000's. This study identifies and quantifies many of the significant trends occurring during this 18-year period.

Only Accident & Sickness (A&S) policies were included in the database used to calculate termination rates. Overhead Expense (OE), Disability Buy-Out (DBO) and Key Person (KP) were excluded due to limited data. The claim termination rates (CTR's) for the select durations of disablement (i.e., the first ten years of disablement) were based on the experience of policies with benefit periods of To Age XX (i.e., To Age 65, 67 or 70), excluding claims with known cost-of-living (COL) benefits. The CTR's for shorter term or lifetime benefit periods and claims with known COL benefits are based on adjustment factors applied to the To Age XX CTRs. These adjustment factors do not apply to durations of disablement in excess of 10 years.

Since not all of the contributors were able to split CTR's between deaths and recoveries, the CTR's in the 2012 IDEC CTR Table combine deaths and recoveries. The 85 CIDA CTR's combine deaths and recoveries, as well.

Table 1 shows the total monthly claim exposure and terminations by yearly duration of disablement, measured in terms of claim count and monthly indemnity used to derive CTR's.

Table 1

Total Monthly Claim Exposure and Terminations by Claim Count Used to Derive CTR's for To Age XX Benefit Periods with No COL Benefits By Duration of Disablement				
Duration of Disablement	By Claim Count		By Monthly Indemnity	
	Monthly Exposure	Terminations	Monthly Exposure	Terminations
Year 1	1,956,124	94,688	3,951,468,449	175,253,144
Year 2	1,330,613	22,025	3,058,882,413	48,197,023
Year 3	1,053,815	9,795	2,434,853,535	22,470,488
Year 4	897,020	4,986	2,049,038,631	11,361,884
Year 5	784,252	3,300	1,754,746,258	7,597,405
Year 6	646,416	2,103	1,451,829,023	7,277,177
Year 7	531,570	1,777	1,204,724,236	3,699,572
Year 8	458,822	1,136	1,032,880,735	2,878,351
Year 9	401,706	1,111	883,291,159	2,473,915
Year 10	347,429	864	739,012,040	1,756,549
Year 11+	1,093,828	2,401	2,173,471,425	4,298,352
All Years	9,501,594	144,187	20,734,197,904	287,263,859

Table 2 shows the total monthly claim exposure and terminations by calendar year of disablement, measured in terms of claim count and monthly indemnity used to derive CTR's.

Table 2

Total Monthly Claim Exposure and Terminations by Claim Count Used to Derive CTR's for To Age XX Benefit Periods with No COL Benefits By Calendar Year of Disablement				
Calendar Year of Disablement	By Claim Count		By Monthly Indemnity	
	Monthly Exposure	Terminations	Monthly Exposure	Terminations
1990-94	968,424	25,205	1,663,343,313	41,920,432
1995-99	1,312,790	24,518	2,840,352,831	47,827,140
2000-03	3,541,276	49,827	7,789,168,024	102,091,621
2004-07	3,679,104	44,637	8,441,333,735	95,424,665
Total	9,501,594	144,187	20,734,197,904	287,263,859

Definition of Occupation Classes

The 85 CIDA table has four occupation classes:

Class 1: White collar and professional occupations

Class 2: Skilled labor occupations

Class 3: Blue collar occupations with light manual duties

Class 4: Blue collar occupations with heavy manual duties

During the 1990's, Individual disability income (IDI) companies learned that the claim experience of medical occupations was significantly different than that of the other white collar and professional occupations. Most IDI carriers have one or more separate occupation classes for the medical occupations. The IDEC claim study of the 1990-07 period supports the need to have all medical occupations included in a separate occupation class. In addition, the IDEC decided to move all sales related occupations to Class 2 because their claim experience was more consistent with that of occupations traditionally included in Class 2.

The IDEC has defined the following five occupation classes:

Class M: All medical occupation classes – doctors, surgeons, dentists, nurses, podiatrists, veterinarians, psychologists, psychiatrists, pharmacists, etc.

Class 1: Same as 85 CIDA except medical occupations have been excluded.

Class 2: Same as 85 CIDA except all sales-related occupations have been assigned to Class 2, e.g., insurance producers, stockbrokers, commodity brokers, other sales

Class 3: Same as 85 CIDA.

Class 4: Same as 85 CIDA.

Structure of 2012 IDEC CTR Table

During the first ten years of disablement (i.e., the select durations), the 2012 IDEC CTR Table varies by age at disablement, gender, the IDEC occupation classes (M, 1, 2, 3, and 4), and elimination period: 7-day, 14-day, 30-day, 60-day, 90-day, 180-day, 360-day and 720-day. CTR's for 0-day accident have not been developed yet. Duration of disablement is separated into weeks 1 to 13, months 4 to 60, and years 6 to 10. Version 1.0 of the 2012 IDEC CTR Table does not distinguish between accident and sickness claims. The final version of the experience CTR table should vary by accident and sickness.

After the first ten years of disablement (i.e., the ultimate durations), the 2012 IDEC CTR Table varies only by attained age and gender, the same as the 85 CIDA ultimate CTR's.

Derivation of the 2012 IDEC Claim CTR Table – Select Durations

The process to derive the 2012 IDEC Claim CTR table for the select durations was separated into three durational periods: (1) Up to Month 24, (2) Month 25-60, and (3) Years 6-10. The graduation was based on CTR experience by claim count. During the validation process, adjustments were applied to the graduated CTR's to reflect experience by monthly indemnity.

CTR's for the First 24 Months

Experience through Month 24 was grouped by occupation class, gender, elimination period, age at disablement and duration of disablement.

The graduation process used Whittaker-Henderson Type B. The raw CTR's (i.e., before graduation) were calculated by applying actual-to-expected CTR ratios from the IDEC claim database using 85 CIDA expected CTR's. In deriving the A/E ratios, experience was grouped as follows:

- Occupation class: Separately for classes M, 1 and 2 and combined for classes 3-4.
- Elimination periods: Separately for elimination periods 30, 60, and 90 days, combined for elimination periods under 30 days and combined for elimination periods of 180 days and longer.
- Age at disablement: Under 30 (pivotal age 27), 30-34 (pivotal age 32), 35-39 (pivotal age 37), ..., 60-64 (pivotal age 62) and 65+ (pivotal age 67).
- Duration of disablement: Separately for monthly durations M1 to M12 and combined durational groupings M13-15, M16-18, M19-21, M21-24, M25-27, and M28-M30. The CTR's representing the mid-points of the combined durational groupings were graduated.

A 3-step process was used to graduate CTR's by duration of disablement and age at disablement:

1. Initially CTR's by duration of disablement with all ages of disablement combined were graduated. The CTR's for weekly durations W1 to W13 were graduated separately from the CTR's for monthly durations M4 to M24.
2. Next, CTR's by age at disablement groupings with all durational groups combined were graduated.
3. The results of steps 1-2 were blended in a way that preserved the total expected terminations for each durational grouping while reflecting differences by age at disablement.

CTR's for Months 25-60

Experience for months 25-60 was grouped by occupation class, gender, age at disablement and monthly duration at disablement. The experience of all elimination periods was combined for these durations.

The process used Whittaker-Henderson Type B. The raw CTR's were calculated by applying actual-to-expected CTR ratios from the IDEC claim database using 85 CIDA expected CTR's. In deriving the A/E ratios, experience was grouped as follows:

- Occupation class: Separately for classes M, 1 and 2 and combined for classes 3-4.
- Age at disablement: Under 30 (pivotal age 27), 30-34 (pivotal age 32), 35-39 (pivotal age 37), ..., 60-64 (pivotal age 62) and 65+ (pivotal age 67).
- Duration of disablement: Combined durational groupings M25-27, M28-30, M31-35, M36-40, M41-45, M46-50, M51-55, and M56-60. The CTR's representing the mid-points of the combined durational groupings were graduated.

A similar three-step graduation process was used to graduate the CTR's for monthly durations M25 to M60 as was used to graduate the CTR's for durations of 24 months or less.

CTR's for Years 6 -10

Experience for years 6-10 was grouped by age at disablement, gender and yearly duration of disablement. The experience for all occupation classes and elimination periods was combined.

The process used Whittaker-Henderson Type B. The raw CTR's were calculated by applying actual-to-expected CTR ratios from the IDEC claim database using 85 CIDA expected CTR's.

A similar three-step graduation process was used to graduate the CTR's for yearly durations Y6 to Y10 as was used to graduate the CTR's for the earlier durations. The resulting graduated CTR's for durations Y9 and Y10 were blended with the ultimate CTR's (described below) using the following weightings:

- a. For Y9: 67% of select CTR plus 33% of ultimate CTR;
- b. For Y10: 33% of select CTR plus 67% of ultimate CTR.

CTR's for the Ultimate Durations (Y11+)

Experience in the ultimate durations of disablement was grouped by attained age and gender. All occupation classes and elimination periods were combined. In order to increase the exposure and terminations in the ultimate durations, experience for all benefit periods and COL benefits was included.

Table 3 shows the annual exposure and claim terminations in the ultimate durations by count for male and female for attained age groupings, along with the ratios of actual terminations to 85 CIDA expected terminations.

Table 3

Attained Age	Annual Exposure (Count)		Terminations (Count)		Actual to Expected (85 CIDA)			
	Male	Female	Male	Female	Male	Female	Combined	Adjusted
30-39	503	680	31	10	166%	85%	166%	140%
40-49	15,254	10,533	535	230	113%	109%	113%	113%
50-59	65,141	25,650	1,417	396	54%	58%	54%	54%
60-64	44,093	10,029	1,259	169	50%	45%	50%	50%
65-69	13,149	1,829	654	94	72%	109%	72%	44%
70-74	5,311	263	215	5	39%	28%	39%	39%
75+	2,437	199	96	2	23%	9%	23%	34%

Because of the low volume of claim data in the ultimate durations of disablement, the combined experience by gender relative to 85 CIDA was used. The following adjustments were made to the results in Table 3:

1. Since there were only 41 terminations for ages 30-39, the A/E ratio for attained ages 30-39 was reduced by one standard deviation to 140%.
2. It was determined that the terminations for attained ages 65-69 reflected benefit expirations. As a result, the A/E ratio for attained ages 65-69 was manually reduced from 72% to 44% to be in line with the pattern of A/E ratios for ages 50-59, 60-64 and 70-74.
3. Due to the low volume of terminations for attained ages 75+, the A/E ratio was increased to 34% to be in line with pattern of A/E ratios for the younger ages.

The following describes the steps taken to develop the ultimate CTR's:

- a. Raw male and female CTR's at pivotal ages 35, 45, 55, 62, 67, 72, 77 were derived by applying the adjusted A/E ratios from Table 3 to the corresponding 85 CIDA ultimate male and female CTR's.
- b. The raw rates were then graduated using Whittaker-Henderson Type B.
- c. Linear interpolation was used to calculate the ultimate CTR's at the non-pivotal ages.
- d. The ultimate CTR's at ages less than 35 were derived by applying the ratio of the graduated CTR to 85 CIDA at age 35 to the 85 CIDA CTR's below age 35.
- e. The ultimate CTR's at ages over 77 were derived by applying the ratio of the graduated CTR to 85 CIDA at age 77 to the 85 CIDA CTR's over age 77.
- f. Since the claim terminations at the ultimate durations were assumed to be mainly from death, the ultimate CTR's were set as the larger of (1) the ultimate CTR's developed from steps a-e and 125% of the 2001 Valuation Basic Table (2001 VBT) ultimate mortality rates.

The 2001 VBT mortality rates used in step f were derived by taking a weighted average of the 2001 Nonsmoker and Smoker VBT ultimate mortality rates. The weightings were 94% nonsmoker and 6% smoker, which approximate the distribution of nonsmokers and smokers in the claim database.

As a result of comparing the ultimate CTR's to the 2001 VBT, the attained ages in the ultimate CTR table are extended to age 119.

Charts 1a (Male) and 1b (Female) show the ratios of the ultimate CTR's as percent of 85 CIDA, before and after the 125% VBT floor.

Chart 1a

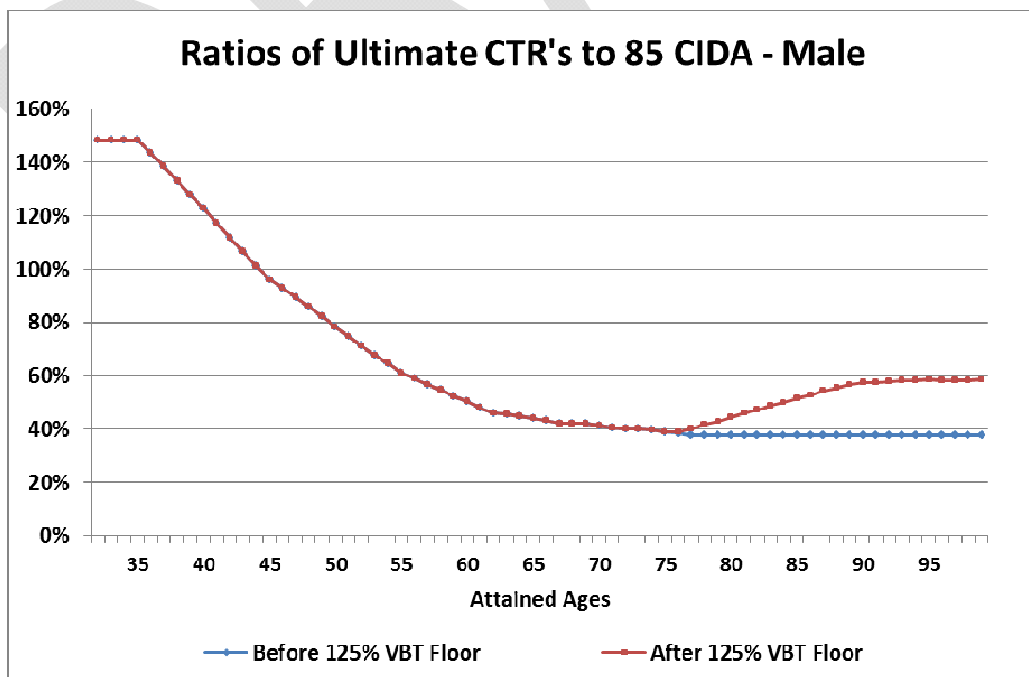
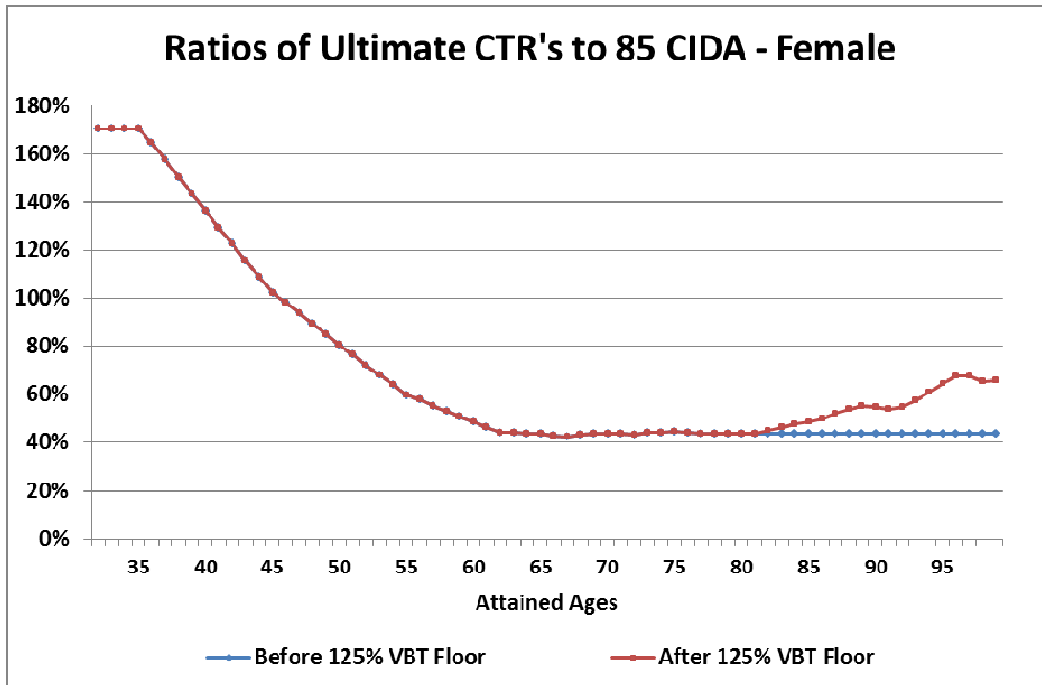


Chart 1b



The 125% VBT floor comes into effect at attained ages 76 for males and 82 for females and older.

Adjustments to the Graduated CTR's

The following describes four adjustments to the graduated CTR's primarily to ensure reasonable relationships by occupation class and elimination period.

- An observed jump in the graduated CTR's for monthly durational groupings M25-27 and M28-30 was smoothed by linearly interpolating between the graduated CTR's for monthly durational groupings M22-M24 and M31-M35. This jump was felt to be caused by claims with a two-year own occupation definition of disability. It was more pronounced for occupation classes 2, 3 and 4, where the two-year own occupation definition is more prevalent. The 2012 IDEC CTR Table does not intend to reflect the impact of changes in the definition of disability on the CTR's.
- In order to produce a reasonable relationship of female 30-day and 60-day CTR's for among occupation classes 1, 2 and 3 at the younger ages at disablement (i.e., under age 35 for 30-day and age 40 for 60-day), the CTR's for occupation class 2 at these ages were calculated as weighted averages of the corresponding occupation classes 1 and 3 CTR's.
- The graduated CTR's for elimination periods under 30 days in durations W1 to W13 were multiplied by 0.75 in order to produce reasonable relationships with the 30-day elimination period.

- Because of the relatively low volume of claims with the 60-day elimination period, the CTR's for the 60-day elimination period were largely inconsistent with the CTR's for the 30-day and 90-day elimination periods for monthly durations M4 to M60. It was decided to set CTR's for the 60-day elimination period equal to the average of the corresponding 30-day and 90-day elimination periods for monthly durations M4-60. The graduated 60-day CTR's for the weekly durations were not changed and reflect actual 60-day experience.

Calculation of CTR's for All Ages at Disablement

As discussed above, the graduation of the CTR's at the select durations were based on pivotal ages. CTR's at the non-pivotal ages between ages 27 and 67 were derived using linear interpolation of the CTR's at the pivotal ages. The CTR's at ages less than 27 were derived by subtracting the differences between the CTR's for age 27 and 28 at each duration. The CTR's at ages greater than 67 were obtained by adding the differences between the CTR's for ages 66 and 67 at each duration.

Please note that at this step in the development of the 85 CIDA table, a 5-point Lagrange interpolation formula was applied. Most likely the linear interpolation will be replaced by a 5-point interpolation formula for the final table.

CTR Experience by Monthly Indemnity

The graduated CTR's up to this point were based on count. By replacing the Expected CTR's in the claim database by the graduated CTR and studying the resulting A/E ratios, we derived adjustments to the graduated CTR's by count to reflect monthly indemnity. These adjustments varied by occupation class (M, 1, 2, 3-4), gender and duration (M1, M2, M3-12, M13-24, Y3 and Y3-5. No adjustments were made for durations over Y6. The adjustments generally decreased termination rates.

Comparison of CTR's

The "CTR Compare" tab of the workbook *SOA-IDEDEC 2012 Tables Workbook Version 1.0.xlsm* allows the user to compare the 2012 IDEC CTR's to the 85 CIDA at all of the durations of disablement and segments of the business.

Validation of the 2012 IDEC CTR Table – Select Durations

This section compares the A/E CTR ratios for the select durations derived from the claim database when the Expected CTR's were changed from 85 CIDA to the 2012 IDEC CTR Table. Durations M25-M27 and

attained ages 65-69 have been excluded from the claim database for this validation because the CTR's at these durations were manually smoothed.

Table 4 compares the A/E CTR ratios (by monthly indemnity) by occupation class (OC) and duration of disablement .

Table 4

Actual-to-Expected CTR Ratios (by Monthly Indemnity) By Occupation Class and Duration of Disablement Expected = 2012 IDEC CTR Table					
Duration of Disablement	OC M	OC 1	OC 2	OC 3-4	All OC's
Year 1	100.0%	100.0%	100.0%	100.0%	100.0%
Year 2	100.0%	100.0%	100.0%	100.0%	100.0%
Year 3	102.7%	103.9%	115.5%	99.9%	104.6%
Years 4-5	100.0%	100.0%	100.0%	100.0%	100.0%
Years 6-10	85.8%	130.6%	117.9%	182.1%	110.5%
Total	99.2%	101.9%	101.6%	101.7%	100.8%

Table 5 compares the A/E by elimination period and duration of disablement.

Table 5

Actual-to-Expected CTR Ratios (by Monthly Indemnity) By Elimination Period and Duration of Disablement Expected = 2012 IDEC CTR Table					
Duration of Disablement	Under 30 Days	30 Days	60 Days	90 Days	180+ Days
Year 1	90.1%	98.5%	99.8%	100.6%	106.3%
Year 2	89.9%	97.8%	114.9%	97.3%	103.8%
Year 3	53.9%	115.4%	114.7%	103.3%	94.5%
Years 4-5	116.3%	98.4%	118.1%	97.0%	100.9%
Years 6-10		119.2%	116.6%	103.2%	108.1%
Total	90.1%	99.7%	104.6%	100.0%	103.8%

Table 6 compares the A/E by age at disablement and gender for all select durations combined.

Table 6

Actual-to-Expected CTR Ratios (by Monthly Indemnity) By Gender and Age at Disablement - All Select Durations Combined Expected = 2012 IDEC CTR Table			
Age at Disablement	Male	Female	Total
Under 30	83.3%	110.8%	98.0%
30-39	95.7%	111.2%	103.8%
40-49	100.3%	94.2%	98.3%
50-59	101.0%	98.5%	100.5%
60+	106.1%	105.9%	106.1%
Total	100.6%	101.4%	100.8%

Overall, the 2012 IDEC CTR Table is a good fit (A/E = 100.8%) to the underlying select claim experience.

Validation of the 2012 IDEC CTR Table – Ultimate Durations

This section compares the A/E CTR ratios at the ultimate durations derived from the claim database where the Expected CTR's are from the 2012 IDEC CTR Table. Attained ages 65-69 have been excluded due to the manual CTR adjustment.

Table 7 shows the Exposure (Years) and A/E CTR ratios by attained age and gender at the ultimate durations. Attained ages 65-69 have been excluded due to the manual smoothing of the CTR experience at these ages.

Table 7

Exposure (Years) and Actual-to-Expected CTR Ratios All Ultimate Durations Combined Expected = 2012 IDEC CTR Table				
Attained Age	Exposure (Years)		A/E Ratios	
	By Count	By Amount	By Count	By Amount
Under 40	1,512	2,113,679	119.9%	70.0%
40-49	25,786	49,671,994	125.5%	109.9%
50-59	90,791	192,214,165	88.5%	83.9%
60-64	54,122	110,555,598	100.1%	87.6%
70-74	5,575	12,860,016	85.4%	74.9%
75+	2,636	3,565,454	43.9%	36.5%
Total	180,422	370,980,907	95.0%	86.3%

The ultimate CTR's were not adjusted by monthly indemnity, and as a result, the A/E ratios by count are a much better fit. The results in Table 7 show that possibly the ultimate CTR's need to be adjusted by monthly indemnity, at least, for attained ages 40 and higher. The low A/E ratios for attained ages 75+

suggest that the 125% of VBT floor may be over-stating the termination experience. However, the exposure is very small lending little credibility to the results.

The ultimate CTR's deserve considerably more attention from the valuation committee. The financial impact of ultimate valuation CTR's particularly for claims with lifetime benefits is disproportionately large relative to the volume of claim date in these ultimate durations.

Trend and Segmentation Analysis

This section discusses trends and segmentation results over the 1990-07 period where the Expected CTR's are from the 2012 IDEC CTR Table. Unless otherwise specified, only benefit periods of To Age XX and claims with no-COLA are included to be consistent with the claims data used to derive the 2012 IDEC CTR's.

Trends by Calendar Year of Disablement

Table 8 compares the overall A/E CTR ratios by calendar year of disablement and yearly durational groupings.

Table 8

Actual-to-Expected CTR Ratios (by Monthly Indemnity)					
By Calendar Year of Disablement and Duration of Disablement					
Expected = 2012 IDEC CTR Table					
Duration of Disablement	Pre-1990	1990-94	1995-99	2000-07	Total
Year 1	106.0%	101.3%	99.1%	99.8%	100.0%
Year 2	116.4%	117.7%	100.3%	95.0%	100.0%
Year 3	136.7%	120.3%	93.9%	104.5%	104.6%
Years 4-5	139.2%	134.1%	96.5%	88.1%	100.0%
Years 6-10	151.8%	100.4%	108.4%	109.7%	110.5%
Years 11+	107.0%	76.6%	93.4%		90.3%
All Durations	121.1%	104.3%	99.8%	98.7%	100.6%

Pre-1990 had the highest CTR's of any of the disablement periods, followed by years 1990-94 for years 1-5. These periods also had considerably higher claim incidence experience, and high incidence typically correlates with high CTR's.

Trends by Calendar Year of Issue

Table 9 compares the overall A/E CTR ratios by calendar year of issue and yearly durational groupings.

Table 9

Actual-to-Expected CTR Ratios (by Monthly Indemnity) By Calendar Year of Issue and Duration of Disablement Expected = 2012 IDEC CTR Table				
Duration of Disablement	Pre-1990	1990-94	1995-07	Total
Year 1	98.3%	96.6%	108.1%	100.0%
Year 2	108.7%	90.4%	95.1%	100.0%
Year 3	104.4%	87.2%	130.0%	104.6%
Years 4-5	103.0%	100.0%	90.9%	100.0%
Years 6-10	109.6%	117.1%	91.1%	110.5%
Years 11+	84.9%	117.3%	159.5%	90.3%
All Durations	100.7%	96.8%	105.2%	100.6%

Observing CTR experience by issue year highlights differences by key underwriting periods. In general, CTR experience by issue year does not vary as much as by year of disablement. Note that A/E ratios for the ultimate durations are higher for the more recently issued business, but this reflects the fact that most attained ages of claims emerging from the more recent periods are considerably younger.

CTR Differences by Benefit Period

Table 10 shows the differences in CTR experience by benefit period groupings.

Table 10

Actual-to-Expected CTR Ratios (by Monthly Indemnity) By Benefit Period and Duration of Disablement Expected = 2012 IDEC CTR Table				
Duration of Disablement	Short Term	To Age XX	Lifetime	Total
Year 1	120.1%	100.0%	87.5%	101.6%
Year 2	136.6%	100.0%	84.7%	100.7%
Year 3	196.5%	104.6%	92.9%	106.2%
Years 4-5	168.3%	100.0%	65.2%	95.3%
Years 6-10	555.1%	110.5%	56.7%	99.6%
Years 11+	82.1%	90.3%	73.3%	85.5%
All Durations	124.6%	100.6%	82.1%	100.8%

The A/E ratios for short term benefit periods are considerably higher during the select durations than the longer term benefit periods. The A/E ratios for the lifetime benefit period are significantly lower than even the CTR's for the To Age XX benefit periods.

Impact of COLA Benefits on CTR's

Table 11 compares the A/E CTR ratios with and without COLA. Claims with unknown COLA benefits and claims with short term benefit periods (because COLA on short term benefit periods are not very prevalent) were excluded from this comparison.

Table 11

Actual-to-Expected CTR Ratios (by Monthly Indemnity) By COLA and Duration of Disablement for To Age XX and Lifetime Benefit Periods Expected = 2012 IDEC CTR Table						
Duration of Disablement	To Age XX		Lifetime		Combined	
	No COLA	COLA	No COLA	COLA	No COLA	COLA
Year 1	100.1%	82.9%	94.3%	83.2%	99.2%	83.0%
Year 2	103.8%	93.2%	92.4%	78.2%	102.2%	89.8%
Year 3	100.2%	87.3%	80.4%	84.0%	97.2%	86.5%
Years 4-5	97.1%	102.7%	69.8%	70.8%	92.5%	94.8%
Years 6-10	111.1%	93.7%	65.6%	55.9%	101.2%	82.2%
Years 11+	87.1%	115.8%	94.4%	54.3%	88.9%	90.6%
All Durations	100.9%	87.3%	89.3%	78.7%	99.0%	85.2%

Table 11 shows that CTR's are measurably reduced when claims have COLA benefits.

Impact of Smoker Status on CTR's

Table 12 compares A/E CTR ratios between nonsmokers and smokers. Claim with unknown smoker status have been excluded from this comparison.

Table 12

Actual-to-Expected CTR Ratios (by Monthly Indemnity) By Smoker Status and Duration of Disablement Expected = 2012 IDEC CTR Table			
Duration of Disablement	Nonsmoker	Smoker	Combined
Year 1	96.4%	88.3%	95.5%
Year 2	103.8%	104.2%	103.8%
Year 3	103.8%	99.1%	103.3%
Years 4-5	105.3%	111.5%	106.0%
Years 6-10	111.3%	119.5%	112.0%
Years 11+	89.2%	154.9%	93.6%
All Durations	99.2%	95.0%	98.7%

In general, smoker claims have lower CTR's during the first three years of disablement and higher CTR's in years 4+. In reviewing the results by smoker status, it should be kept in mind that the exposure of nonsmokers is nine times that of smokers.

Impact of Issue State on CTR's

Table 13 compares the A/E CTR ratios by key issue state (California, Florida and All Others). Claims where the issue state is unknown are excluded.

Table 13

Actual-to-Expected CTR Ratios (by Monthly Indemnity) By Issue State and Duration of Disablement Expected = 2012 IDEC CTR Table				
Duration of Disablement	California	Florida	Other States	Combined
Year 1	87.9%	71.1%	104.0%	98.4%
Year 2	108.3%	95.8%	110.0%	108.4%
Year 3	109.0%	89.3%	108.3%	106.6%
Years 4-5	122.1%	110.4%	110.2%	112.2%
Years 6-10	113.9%	114.0%	124.2%	121.4%
Years 11+	109.8%	100.7%	115.5%	112.5%
All Durations	95.4%	81.9%	106.6%	102.4%

Table 13 shows that Florida's CTR experience is generally lower than either California or the Other States. California CTR experience falls between Florida and the Other States.

Impact of Market on CTR's

Table 14 compares the A/E CTR ratios by market (Employer Sponsored and Individually Sold). The Individually Sold results include claims from Association business and claims where the market is unknown.

Table 14

Actual-to-Expected CTR Ratios (by Monthly Indemnity) By Issue State and Duration of Disablement Expected = 2012 IDEC CTR Table			
Duration of Disablement	Employer Sponsored	Individually Sold	Total
Year 1	97.9%	100.4%	100.0%
Year 2	78.1%	105.7%	100.0%
Year 3	90.8%	108.1%	104.6%
Years 4-5	76.5%	105.3%	100.0%
Years 6-10	86.8%	114.8%	110.5%
Years 11+	86.0%	90.9%	90.3%
All Durations	91.3%	102.6%	100.6%

Table 14 shows that CTR's Employer Sponsored claims are distinctly lower than CTR's for Individually Sold claims. This result most likely due to the significantly lower incidence rates incurred by Employer Sponsored business.

Appendix A

List of Contributors

1990s and 2000s	2000s Only
Ameritas Life Insurance Corporation Berkshire Life Insurance Company of America Illinois Mutual Life Insurance Company Massachusetts Casualty Massachusetts Mutual Life Insurance Company Monarch Life Insurance Company / Penn Mutual Northwestern Mutual Life Insurance Company Paul Revere Life Insurance Company Principal Financial Group Provident Life & Accident Union Central Life Insurance Company Unum Life Insurance Company	Connecticut Mutual Life Insurance Company Guardian Life Insurance Company Mutual of Omaha Insurance Company RiverSource Life Insurance Company Standard Life Insurance Company

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