Brown's Economic Damages Newsletter

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THE DISABILITY CONTINGENCY
(Canada Pension Plan 2015 DATA)

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Prior issues of **Brown's Economic Damages Newsletter** related to this month's topic:[1]

- "Part-Time Contingency: How it is Defined, and How it is Applied", July 2015, vol. 12, issue #7

- "Participation Rates: How they are Defined, and How they are Applied", June 2015, vol. 12, issue #6

- "Unemployment Rates: How they are Defined, and How they are Applied", May 2015, vol. 12, issue #5

- "The Disability Contingency (CPP 2012 data)," November 2013, vol. 10, issue #10

- "How 'triple-counting' negative contingencies can occur when establishing the benchmark salary at the date of incident & date of valuation" October 2013 Vol. 10, issue #9

- "The Disability Contingency (CPP 2009 Data)" November 2010, vol. 7, issue #5

- "The Disability Contingency (2006 CPP data)" July 2008, vol. 5, issue #6

- "Applying & Tailoring negative contingencies in cases when earnings are interrupted" June 2008, vol. 5, issue #5

- "Disability Rates in loss of income calculations" September 2004, vol. 1, issue #108

This newsletter edition updates our November 2013 newsletter issue wherein we presented CPP disability data from the 2012 Canada Pension Plan ("CPP") *Actuarial Report.* This issue relies on the 2015 CPP 27th *Actuarial Report,* dated September 22, 2016.

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[1] To request back issues of our newsletter, go to: www.browneconomic.com > **RESEARCH & PUBLICA-TIONS** > *Brown's Economic Damages Newsletter* > click on "Newsletter index" to view issues extending back to 2000, by topic. To request prior issues, click on the "Back issues" on the left-hand side menu and complete the email request.

> *Damages: Estimating Pecuniary Loss* **UPDATE**
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> Canada Law Book, under the auspices of the Thomson Reuters publishing house, publishes this author's text entitled *Damages: Estimating Pecuniary Loss.* The most recent edition, release #20, was published in November 2016 and distributed late that same month. At www.browneconomic.com > **RESEARCH & PUBLICATIONS** > Canada Law Book, we have a description of the sections of the book that were updated (about 200 pages). To order this text, phone **1-800-387-5164** or visit the website at:
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> http://www.carswell.com/product-detail/damages-estimating-pecuniary-loss/

2015 Canada Pension Plan ("CPP") data

We rely on the Canada Pension Plan ("CPP") disability data to proxy the negative contingency for reasons arising from "disability" when projecting income streams for individuals in injury or fatality cases. This contingency satisfies Cooper-Stephenson's identification of negative contingencies in estimating income loss compensation:

> "…the figure calculated prima facie as special damages to compensate for loss of working capacity may be reduced for contingencies. Whether or not there should in fact be such a reduction will depend on context and circumstances, and will take account of…(2) *statistical evidence as to average loss of time due to injury, illness* and unemployment;" (p. 164, emphasis added)[2]

Notably, Cooper-Stephenson concurred with Holland J.'s application of a –5% contingency for disability in *Buchan v. Ortho Pharmaceutical (Canada) Ltd.,* remarking that it was "approximately the figure that statistical analysis appears to endorse for long-term income loss, and which is now used as a matter of course in numerous cases." (p. 163) This legal scholar is quite correct, as we shall see in the presentation of the disability data below. Cooper-Stephenson also agrees with the use of statistics in measuring such contingencies: "The adoption of the actuarial method of assessment including statistical evidence is of *particular help in the area of contingencies."* (2nd edition, p. 390, emphasis added);[3] note this scholar's comment about assessing these contingencies: "It now seems preferable to hand this matter over to the economists, since Canadian statistics on contingencies are now widely available." (p. 391)

We also include a 'disability' contingency in the loss of housekeeping claims, but it is called a "health contingency" and varies from –10% to –35% (by age 80)[4] and is based on a different source of data. This "health contingency" is more expansive than the disability data from the CPP because it refers to the number of years in which an individual can carry out his or her activities of daily living with no to few restrictions. Judges, when assessing housekeeping claims, have accepted our health contingency.[5]

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[2] Cooper-Stephenson, K. *Personal Injury Damages in Canada,* 2nd edition (Scarborough, Ontario: Carswell Thomson Professional Publishing), 1996. Cooper-Stephenson mentions two older cases in which a "disability contingency" was applied by the court: -5% for "contingencies of sickness and accident" in *Buchan v. Ortho Pharmaceutical (Canada) Ltd.* (1984), 28 C.C.L.T. 233 at 277 (Ont. H.C), affirmed (1986), 35 C.C.L.T. 1 (Ont. C.A.); versus –30% in *Gerow v. Reid* (1988), 88 N.S.R. (2d) 34 at 41 (T.D.). where the contingency was increased substantially "because of the plaintiff's pre-accident medical condition, the nature of his seasonal work, and the lack of stability in his work history."
[3] Note Cooper-Stephenson's use of the term 'actuarial'. There is nothing particularly 'actuarial' about statistical evidence; indeed, economists, accountants and actuaries all use and rely on statistics to various degrees.
[4] This "health" contingency is also incorporated into Brown Economic's *Housekeeping Damages Calculator* ™ available at www.browneconomic.com.
[5] See, for instance, *Mahe v. Boulianne* (2008), ABQB 680, filed Dec. 17, 2008, para. [115]. The author testified on behalf of the plaintiff in this matter.

The **"disability" contingency** reflects the probability that only long-term, permanent injuries or illnesses might have occurred in the absence of the incident in question, *not* short-term absences.[6] Data from the 2015 actuarial report indicates that the average age of disability occurs at age 53.6 (females) and age 54.8 (males); the average total years lost is 1.53 (males) to 1.94 (females); and the combined probability of disability <u>by</u> age 65 (<u>at</u> age 25) is approximately 15 to 17%.[7] This data is similar to the 2012 actuarial data from the CPP.

Nature of Contingency: Voluntary versus Involuntary

The first distinction to make is with regard to the nature of the negative contingencies. Immediately, we can see that three of the five usual negative contingencies (participation, unemployment, part-time work, disability and mortality)[8] are 'involuntary', that is, they happen to the plaintiff whether s/he wishes (or not). Obviously, these are (in order of seriousness): mortality, **disability,** and unemployment. While there are lifestyle choices that can influence the probability of these events occurring,[9] the propensity for them to occur is largely outside the plaintiff's sphere of influence. For this reason, we can safely rely on the statistical estimates published for these contingencies,[10] and do not have to tailor them to the individual, other than to locate the most specific rates according to demographic characteristic (i.e., gender, age, geography). For the disability contingency, we have data available to us based on gender and age, for all of Canada. While it would be useful to access data by occupation (since there are more hazardous and less hazardous jobs), the data is simply not available to construct conditional disability contingencies.[11]

Quantum experts have treated the disability contingency differently. Some ignore it altogether. Others claim that by applying a non-participation contingency, a component for "disability" is already included. The problem with this method is that there are no estimates by agencies who publish participation rates[12] exactly what percentage of this population are choosing not to or are unable to work due to *long-term* injury or illness versus other reasons, like travelling, attending school, caring for relatives, etc. (Non-participants who are out of the work force due to injury or illness on a *short-term* basis, and recover enough to re-enter the workforce, do not need a contingency, since our 52-week salary assumes payment during short-term absences.)[13]

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[6] A contingency for short-term absences from the labour force is not included because such absences are typical for all workers, and usually covered by sick leave pay, STD payments, or EI sickness benefits. Moreover, because experts use a 52-week salary for most labour force participants, this already includes pay for time off. Cooper-Stephenson concurs with this approach in his discussion of 'compensable contingencies': "…although it can be predicted that the plaintiff would have experienced interruptions in work, many of these interruptions might not have affected the plaintiff's income…This is particularly true of short-term disability". (2nd edition, pp. 387-388). (The average number of days lost per full-time worker due to illness or disability, was 7.6 for males and 11.4 for females in 2012 for Canada. Source: Statistics Canada, CANSIM, table 279-0029 – *Absence rates of full-time employees, by sex for Canada, provinces and census metropolitan areas (CMA), annual (percent unless noted otherwise), CANSIM (database).*

[7] This is <u>not</u> an annual contingency, but rather the impact over a working lifetime from age 25. The annual contingency has to be derived from the percentages in the "Ultimate Disability Incidence Rate" from Table 78 in the actuarial report, and made into "conditional" probabilities based on the number of persons who acquired a disability in prior years. See Table 3 in this newsletter issue for annual contingencies by gender and age.

[8] For a more detailed discussion of these negative contingencies, see the October 2013 issue of the **Brown Economic Damages Newsletter** entitled "How 'triple-counting' negative contingencies can occur when establishing the benchmark salary at the date of incident & date of valuation", vol. 10, issue #9.

[9] Even if counsel were to argue that lifestyle choices would significantly affect the mortality or disability contingency, one must remember that the published statistics already include these lifestyle choices in the 'average' percentage. For more significant deviations, medical or actuarial opinions would be needed in order to modify the published rates.

[10] The one exception might be to unemployment, since the plaintiff who quits jobs rather than is terminated can initiate job separation; but this can usually be captured by using average earnings in a scenario, since the average will reflect reductions in income due to time off work.

[11] Investigations into data collected by Workers' Compensation Boards in each province revealed that the existing data relates mainly to the prevalence of injuries by type of occupation (i.e., how many in each occupation are injured in a specific time period) but not to the incident rate.

[12] "Participation" refers to the choice of whether to work and how much to work. The "participation rate" is calculated by dividing the labour force by the population 15 years of age and over (source: Statistics Canada – Catalogue No. 92-566-X, *2006 Census Dictionary* – Print Version (Ottawa, Ontario: Minister of Industry), January 2010, p. 74.)

[13] Even if we are dealing with a plaintiff who works part-time and then misses work due to illness or sickness (in which case a 52-week salary would not be used), we assume the plaintiff is still paid for these short-term absences via gratuitous employer payments, EI sickness benefits, or short-term disability ("STD") payments.

Essentially, quantum experts who claim that their non-participation contingency can be used as a proxy for the disability contingency are using an incorrect method, because the non-participation data cannot be parsed out to know how much of the non-participation is due to disability; nor can the non-participation data be used to derive cumulative incidence rates (CIRs).

Still others attempt to use data from insurance companies, or from the 1991 *Health and Activity Limitation Survey* ("HALS") database. Disability rates that can be applied each year and derived as conditional probabilities *cannot* be computed from the 1991 HALS database. This is because the way in which the questions are asked in the 1991 HALS questionnaire makes it impossible to estimate an incidence rate of disability.[14] One can only estimate the percentage of the Canadian population who identified themselves as having a disability (i.e. "prevalence").

Some experts have indicated that they have obtained data from life insurance companies or the Canadian Life and Health Association. There are numerous drawbacks with such data. First, it is not publicly available, and the data that are occasionally quoted are from a very long time ago (i.e. the 1990s). Second, it typically combines disabled people who recover 90 days after injury (or later) and go back to work, and as a result *substantially overestimates the incidence rate of disability,* because there are more insured people who return to work after short-term injuries or illnesses than there are those who suffer from permanent, long-term absences. Third, this population only covers the insured population; workers without disability insurance would not be represented. In contrast, the **Canada Pension Plan** actuarial data covers the entire Canadian working population.

Table 1 summarizes disability incidence rates, by 5-year age groups, from the last 5 CPP actuarial reports. Table 1 shows that disability incidence rates increase with age (until the 60s), which is what we would expect, since the prospect of encountering an event that causes disability increases as we live longer and have more experiences. Statistics Canada data from the 2006 *Participation and Activity Limitation Survey* ("PALS") emulates this pattern, with an overall rate of 14.3% in the Canadian population reporting a disability (11.5% males, 13.3% females) but only 3.7% of children aged 0 to 14 with disability but 56.3% of seniors aged 75 and over reporting a disability.[15] The CPP data in Table 1, above, show much lower rates of disability than the PALS data because its population is based on those with a long-term disability with no to little prospect for recovery, whereas the PALS survey is cross-sectional and thus records disability as a "snapshot" in Canada for the year 2005. (In other words, many of the people sampled in the PALS will not necessarily be disabled for their entire lifetime.) More importantly, the rates calculated from Statistics Canada's PALS survey simply divide the number of people at a certain age over the total Canadian non-disabled population at the same age. This is what is called a **"prevalence rate":** the proportion of a population that has the disease, injury or health state at a given point in time (in the 2006 PALS survey, the year 2005). In comparison, an **"incidence rate",** commonly expressed as a *cumulative incidence rate* ("CIR"), provides an estimate of the probability or risk that an individual will develop a disease, injury or health state during a specified period of time. When deriving an incidence rate, it is important to exclude persons who have already had the disease, injury or health state under study. In forensic cases, it is the **incidence rate** that quantum experts need to identify in order to properly apply a "disability contingency".

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[14] For a more detailed discussion of why the 1991 HALS database does not permit incidence rates to be calculated, see C.L. Brown, *Damages: Estimating Pecuniary Loss* (Toronto, Ontario: Canada Law Book, a Thomson Reuters business), November 2016 (20th edition), section 4.2.d.i, starting at p. 4-51.
[15] Statistics Canada's *Participation and Activity Limitation Survey 2006: Tables.* Catalogue no. 89-628-XIE – No. 003. (Ottawa, Ontario: Minister of Industry, 2007), Tables 3.1 and 3.1.1, pp. 31-32.

The *Actuarial Reports* for the **Canada Pension Plan** published by the Office of the Superintendent of Financial Institutions Canada are the only ones from which "disability incidence" rates can be calculated for quantum assessments.

Table 1: Reproduction of disability incidence rates, males & females, from the CPP Actuarial Reports, 2000, 2003, 2006, 2009, 2012 & 2015

Age	2000 Report (Table 45) Males	Females	2003 Report (Table 56) Males	Females	2006 Report (Table 74) Males	Females	2009 Report (Table 77) Males	Females	2012 Report (Table 78) Males	Females	2015 Report (Table 76) Males	Females
20	0.030%	0.010%	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
25	0.045%	0.033%	0.037%	0.027%	0.040%	0.040%	0.050%	0.040%	0.039%	0.036%	0.033%	0.027%
30	0.097%	0.083%	0.063%	0.087%	0.070%	0.080%	0.070%	0.100%	0.067%	0.087%	0.051%	0.073%
35	0.142%	0.145%	0.106%	0.166%	0.100%	0.150%	0.110%	0.160%	0.109%	0.156%	0.089%	0.149%
40	0.206%	0.213%	0.157%	0.229%	0.160%	0.240%	0.160%	0.240%	0.158%	0.228%	0.143%	0.232%
45	0.292%	0.308%	0.246%	0.344%	0.230%	0.310%	0.250%	0.330%	0.256%	0.349%	0.207%	0.305%
50	0.449%	0.460%	0.400%	0.528%	0.360%	0.460%	0.390%	0.490%	0.400%	0.492%	0.369%	0.482%
55	0.809%	0.645%	0.877%	0.730%	0.680%	0.760%	0.720%	0.770%	0.712%	0.768%	0.683%	0.728%
60	1.325%	0.812%	1.638%	1.079%	1.100%	1.030%	1.180%	1.100%	1.096%	1.059%	1.076%	1.076%
61	1.374%	0.815%	1.720%	1.174%	1.160%	1.050%	1.220%	1.110%	1.125%	1.073%	1.143%	1.171%
62	1.321%	0.769%	1.764%	1.276%	1.220%	1.060%	1.250%	1.130%	1.154%	1.086%	1.216%	1.274%
63	1.134%	0.656%	1.769%	1.385%	1.270%	1.060%	1.290%	1.150%	1.185%	1.100%	1.292%	1.387%
64	0.796%	0.465%	0.937%	0.747%	1.360%	0.920%	1.330%	1.160%	1.216%	1.114%	1.374%	1.510%
All Ages	Not Avail	Not Avail	0.325%	0.350%	0.310%	0.350%	0.330%	0.360%	0.330%	0.375%	0.310%	0.365%

Data from the **Actuarial Report 27th on the Canada Pension Plan as at 31 December 2015** *(from the Office of the Superintendent of Financial Institutions in Canada, Office of the Chief Actuary)*

The rates in Table 1 above represent a slight *overestimate* of the probability of becoming disabled on a long-term basis since 30% of individuals subsequently cease to receive disability benefits (due to death or recovery).[16] These datasets are considered the most reliable source of data in Canada for deriving disability rates given the large population and the criteria for eligibility to receive long-term disability benefits.[17]

Table 1 shows that there have been some minor variations between the years 2000 and 2015, but they are not significant. The 2000 data show higher rates of disability incidence from ages 25 to 50 for males than in 2003 (but then lower in 2000 than 2003 from age 50 to 65); however, the opposite is true for females – the rates in 2000 are lower than in 2003 for all ages, except for age 25. In 2006, the rates for females lie in between 2000 and 2003 for most ages; for males, the rates are lower in 2006 than in 2000 or 2003. In 2009, the rates for *males* are quite similar to the rates in 2006; but for *females,* the rates in 2009 are slightly higher than in 2006. The 2015 rates are lower than the 2012 rates until age 60, then increase slightly from ages 61 to 64.

We also see that until age 50 (age 55 in 2012 and in 2015), a higher proportion of females become disabled than males, which is a common finding. The authors of the *Actuarial Report (27th) of the Canada Pension Plan as at 31 December 2015* had this to say about the trend in Canadian disability incidence rates:

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[16] Source: Office of the Superintendent of Financial Institutions, *Actuarial Report (18th) on the Canada Pension Plan as at 31 December 2000,* Table 46, page 92.
[17] See the discussion in C.L. Brown, *Damages: Estimating Pecuniary Loss* (Toronto, Ontario: Canada Law Book, a Thomson Reuters business), November 2016 (20th edition), section 4.2.d.iv on the sources of data available for estimating a disability contingency for Canadian workers.

"It can be seen from Chart 11 that the incidence of new CPP disability cases (i.e., the number of new cases as a proportion of the eligible population) generally increased from 1970 to the early 1990s. The annual rate of change in incidence rates was particularly acute between 1989 and the recession of the early 1990s. After reaching a peak in 1992, disability incidence rates then declined rapidly during the 1990s and have remained relatively stable since the early 2000s up to recently. The decline after 1992 reflects the economic recovery that occurred following the 1990-91 recession as well as the administrative changes put in place in the mid-1990s. The following changes to the CPP disability program contributed to the reduction in disability incidence rates:

- beginning in 1994, the CPP administration initiated a range of measures designed to effectively manage the growing pressure on the disability program;

- in September 1995, the guidelines for the determination of disabilities were revised to put the emphasis back on a medical basis and to de-emphasize the use of socioeconomic factors. The guidelines are used at all levels in the determination process, thus greatly increasing consistency in decision-making;

- implementation of more stringent eligibility rules since 1998;

- increased reassessments of the disability status;

- expansion of vocational rehabilitation services; and

- implementation of a formal quality assurance program." (pp. 128-129)

The contingencies factored into our calculation programs[18] transform the disability incidence rates from the CPP data into contingencies to reduce a plaintiff's income each year to reflect the possibility that s/he might become so disabled that s/he could not work again and earn employment income. The fact that the CPP data reports that the incidence rate has declined compared to rates prior to 1990 simply means that the rates we use are *truly* for the permanently disabled (since only they can qualify for disability under the CPP stringent standards): and that is what this contingency should represent. This contingency should <u>not</u> reflect short-term absences due to disability since salaried personnel receive supplements during these absences from Workers' Compensation, sick leave pay, EI sickness benefits, or STD benefits. If the person is a seasonal or part-year worker, absences due to disability are implicitly accounted for in the average earnings estimate, just as income from supplemental sources are too. Recall, too, that most forensic experts also include a negative contingency for "non-participation", which is for the most part the voluntary decision not to work. However, it *also* includes people who are not participating because of the inability to work due to injury or illness. To a small extent then, when we include a non-participation contingency, we capture the impact of disability to some extent *already*. The third mechanism for incorporating reduced work hours is the use of *Census/National Household Survey* data, which many quantum experts heavily rely upon. As noted in the previous edition of **Brown's Economic Damages Newsletter,**[19] *Census* income data defines "full-time" work as 30 hours or more per week. If an individual is working 30 hours per week because s/he has some type of disability, rather than 37.5 or 40.0 hours per week, then again the impact of disability on earnings has already been implicitly captured. Similarly, if a worker is choosing part-time work rather than full-time work (or the quantum expert applies a part-time work contingency) due

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[18] This includes Brown Economic's *Income Damages Calculator* ^{TM} available at www.browneconomic.com.
[19] **Brown's Economic Damages Newsletter,** "How 'triple-counting' negative contingencies can occur when establishing the benchmark salary at the date of incident & date of valuation," October 2013, Vol. 10, Issue #9, p. 3.

to an inability to physically work full-time, then again the impact of disability on earnings has already been implicitly captured. This is why we want our disability contingency to represent only the long-term, permanently injured persons in Canada. The CPP data accomplish this objective.

Table 2 below shows the cumulative probability of receiving a CPP long-term disability (LTD) award and the average years of lost income to age 65. The way to interpret the data from Table 2 below is that a woman's chance for long-term permanent disability at age 25 would mean that her earning capacity from age 25 to 65 should be reduced for 1.94 years of working to reflect this probability. Our *annual* disability contingency – which reduces the annual income projected into the future – accounts for this potential loss of earnings during the 1.94 years (assuming the female plaintiff is 25 at the date of valuation) but it is spread amongst the plaintiff's working years.

Table 2: Cumulative probability of receiving a CPP award over career duration (age 25 to 65), average age of disability, and average years of lost income, males and females, Canada, 2015

Age	Male			Female		
	Cumul Prob of LTD Award (to Age 65)	Avg Age of Disability If it Occurs	Avg Years of Lost Income to Age 65	Cumul Prob of LTD Award (to Age 65)	Avg Age of Disability If it Occurs	Avg Years of Lost Income to Age 65
25	14.894%	54.8	1.53	16.950%	53.6	1.94
30	14.723%	55.1	1.45	16.761%	53.9	1.86
35	14.440%	55.7	1.35	16.329%	54.6	1.70
40	13.965%	56.4	1.20	15.563%	55.6	1.46
45	13.236%	57.3	1.02	14.451%	56.9	1.18
50	12.047%	58.4	0.79	12.826%	58.3	0.86
55	9.839%	60.0	0.49	10.251%	60.1	0.51
60	5.954%	62.1	0.17	6.256%	62.1	0.18

Table 3 shows how we take the CPP data from the 2015 actuarial report and translate it into annual negative contingencies for forensic cases. (For rates at specific ages between the 5-year age intervals, the age-specific rates are shown in a report based on the plaintiff's age and gender). Note that these contingencies should be applied as negative contingencies, for instance if the plaintiff is 40 years old and female, the disability contingency in that year is -5.7%. In other words, compensation is reduced by -5.7% at age 40.

Table 3: Annual Disability Contingencies, Males & Females, 2015 CPP data[20]

AGE	MALES	FEMALES
25	1.32%	1.08%
30	1.78%	2.55%
35	2.66%	4.44%
40	3.54%	5.71%
45	4.06%	6.76%
50	5.36%	5.92%
55	6.45%	6.74%
56	6.43%	6.59%
57	6.25%	6.32%
58	5.93%	5.92%
59	5.47%	5.40%
60	4.87%	4.77%
61	4.09%	4.11%
62	3.23%	3.31%
63	2.26%	2.37%
64	1.19%	1.27%

Until age 55, the 2015 rates in Table 3 are lower than the 2012 rates from the CPP actuarial reports. After age 55, the 2015 rates rise slightly above the 2012 rates.

Some economists expect that the disability contingency should linearly *increase* from age 55 to 64. While the data in Table 1 above show this to be true for the rates at most ages, the rates decline by about 1% per year from age 60 to 64. Recall the definition of an "incidence" rate. The CIR measure must *exclude* persons who *already have* the disease, injury or health state; otherwise the measure will substantially overstate the probability of falling into the proportion of the population who is permanently, severely disabled since we are trying to measure the probability of a healthy individual (in the without-incident state) *becoming* disabled, given that s/he is *not* currently disabled. The derivations

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[20] These rates have been derived by taking the "Ultimate disability incidence rates" from Table 76 in the *Actuarial Report (27th) of the Canada Pension Plan as at 31 December 2015* (p. 128) and making them conditional upon the years of income lost (until retirement) at the specific age at which disability is predicted to occur, given that it has not already occurred.

that are adapted from Table 1 above into annual contingencies represent the probability of *becoming* disabled over one's working life at each age given that s/he has not become disabled yet, but also dependent on the number of years remaining to work.[21] The impact of this is that while someone younger has a lower rate of disability, s/he has more years overall to work whereas an older person with a higher rate of disability has fewer years overall to work. The offsetting impact of these influences leads to a slightly smaller annual disability contingency at older ages,[22] *not* a larger one – but overall the negative contingency per year for males and females is within a narrow band (-1.2 to –6.74%).

This trend is reinforced by data from disability insurers. *The 1985 Commissioner's Disability Table A (Experience Table)* show that the rate of disability for 90 days or more before age 65 declines per 1,000 individuals from age 25 to 60. Again, disability rates for females are shown to be of higher incidence than for males until age 50.

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[21] For instance, when individuals are disabled at an age prior to the age corresponding to the disability rate, the disability rate excludes them from the population exposed to the threat of disability. Thus, where the disability rate at age 20 is 0.030%, 30 of every 100,000 workers become disabled at age 20. Where the rate for age 21 is 0.032%, this means that 31.99 of the remaining 99,970 able workers become disabled at age 21.

[22] The contingency per year at advanced ages is driven down by the dwindling number of remaining work years to retirement. This effect can overwhelm the increasing incidence of disability, at age 56 for males and females.

UPDATING NON-PECUNIARY AWARDS FOR INFLATION (OCTOBER 2016, CANADA)

Year of Accident/	"Inflationary"	Non-Pecuniary Damages - Sample Awards				
		$10,000	$25,000	$50,000	$75,000	$100,000
Year of Settlement or Trial	Factors*					
October 2015-October 2016	1.014	$10,145	$25,362	$50,725	$76,087	$101,449
Avg. 2014-October 2016	1.023	$10,234	$25,585	$51,171	$76,756	$102,341
Avg. 2013-October 2016	1.043	$10,429	$26,073	$52,145	$78,218	$104,291
Avg. 2012-October 2016	1.053	$10,527	$26,317	$52,634	$78,951	$105,268
Avg. 2011-October 2016	1.069	$10,687	$26,717	$53,433	$80,150	$106,866
Avg. 2010-October 2016	1.100	$10,998	$27,494	$54,988	$82,483	$109,977
Avg. 2009-October 2016	1.119	$11,194	$27,984	$55,969	$83,953	$111,937
Avg. 2008-October 2016	1.125	$11,247	$28,117	$56,234	$84,351	$112,468
Avg. 2007-October 2016	1.149	$11,493	$28,733	$57,465	$86,198	$114,930
Avg. 2006-October 2016	1.174	$11,738	$29,346	$58,692	$88,038	$117,385
Avg. 2005-October 2016	1.197	$11,973	$29,933	$59,866	$89,799	$119,733
Avg. 2004-October 2016	1.224	$12,239	$30,597	$61,193	$91,790	$122,387
Avg. 2003-October 2016	1.247	$12,466	$31,165	$62,331	$93,496	$124,662
Avg. 2002-October 2016	1.281	$12,810	$32,026	$64,051	$96,077	$128,103
Avg. 2001-October 2016	1.310	$13,100	$32,750	$65,499	$98,249	$130,998
Avg. 2000-October 2016	1.343	$13,429	$33,574	$67,147	$100,721	$134,294
Avg. 1999-October 2016	1.380	$13,795	$34,488	$68,977	$103,465	$137,954
Avg. 1998-October 2016	1.403	$14,034	$35,085	$70,171	$105,256	$140,342
Avg. 1997-October 2016	1.417	$14,174	$35,435	$70,870	$106,305	$141,740
Avg. 1996-October 2016	1.440	$14,403	$36,009	$72,017	$108,026	$144,035
Avg. 1995-October 2016	1.463	$14,630	$36,576	$73,152	$109,729	$146,305
Avg. 1994-October 2016	1.494	$14,945	$37,361	$74,723	$112,084	$149,446
Avg. 1993-October 2016	1.497	$14,969	$37,423	$74,845	$112,268	$149,690
Avg. 1992-October 2016	1.525	$15,249	$38,122	$76,244	$114,366	$152,488
Avg. 1991-October 2016	1.548	$15,475	$38,689	$77,377	$116,066	$154,754
Avg. 1990-October 2016	1.635	$16,346	$40,866	$81,732	$122,598	$163,464
Avg. 1989-October 2016	1.713	$17,129	$42,822	$85,645	$128,467	$171,289
Avg. 1988-October 2016	1.798	$17,983	$44,956	$89,913	$134,869	$179,826
Avg. 1987-October 2016	**1.870**	$18,705	$46,762	**$93,524**	$140,285	$187,047
Avg. 1986-October 2016	1.952	$19,520	$48,800	$97,600	$146,400	$195,200
Avg. 1985-October 2016	2.034	$20,338	$50,846	$101,691	$152,537	$203,382
Avg. 1984-October 2016	2.114	$21,144	$52,860	$105,720	$158,580	$211,439
Avg. 1983-October 2016	2.205	$22,054	$55,135	$110,270	$165,405	$220,541
Avg. 1982-October 2016	2.335	$23,349	$58,371	$116,743	$175,114	$233,485
Avg. 1981-October 2016	2.586	$25,861	$64,653	$129,305	$193,958	$258,611
Avg. 1980-October 2016	2.909	$29,092	$72,729	$145,458	$218,186	$290,915
Avg. 1979-October 2016	3.204	$32,039	$80,096	$160,193	$240,289	$320,385
Jan. 1978-October 2016	**3.649**	$36,493	$91,232	$182,464	$273,697	**$364,929**

$93,524= $50,000 x 1.870 represents the dollar equivalent in October 2016 of $50,000 based on inflation increases since 1987. Similarly, $364,929 (=$100,000 x 3.649) represents the dollar equivalent in October 2016 of $100,000 in 1978 based on inflationary increases since the month of January 1978.

* Source: Statistics Canada, Consumer Price Index, monthly CPI release, rolling average (except for Jan. 1978).

Consumer Price Index $ Unemployment Rate

From Oct 2015 to Oct 2016*		For the month of October 2016	
(rates of inflation)			
Canada**	1.5%	Canada:	7.0%
Vancouver:	2.5%	Vancouver:	4.9%
Toronto:	2.3%	Toronto:	7.1%
Edmonton:	0.7%	Edmonton:	6.9%
Calgary:	0.4%	Calgary:	10.2%
Halifax:	1.3%	Halifax:	6.0%
St. John's, NF:	4.1%	St. John's, NF:	8.2%
Saint John, NB:	2.8%	Saint John, NB:	7.6%
Charlottetown:	1.9%	Charlottetown (PEI):	11.7%
* Using month-over-month indices. Source: Statistics Canada			
** 12 month rolling average up to October 2016 is 1.4% (see table above).			