

Work Disability Duration: A Comparative Analysis of Three Canadian Provinces

Robert A. Macpherson, William Quirke, Jonathan K. Fan, Christopher B. McLeod

Correspondence to:

Dr. Christopher B. McLeod
School of Population and Public Health
University of British Columbia
2206 East Mall
Vancouver, BC Canada V6T 1Z3
Tel: 604-822-0348
Email: chris.mcleod@ubc.ca

Methods and Results Appendix

July 2017

Supported by a grant from the Research and Workplace Innovation Program of the Workers Compensation Board of Manitoba

All inferences, opinions, and conclusions drawn in this report are those of the authors, and do not reflect the opinions of the Data Stewards.

Partnership for **Work,**
Health and **Safety**
www.pwhs.ubc.ca

Table of Contents

1	Introduction	6
2	Data Sources	7
3	Creation of the Harmonized Dataset.....	7
4	Analytical Approach.....	14
4.1	Work disability duration.....	14
4.1.1	Selection of industry, injury type and occupation variables	14
4.1.2	Creation of work disability days program	16
4.1.3	Application of the work disability days program.....	17
4.1.4	Calculation of work disability days paid across comparisons	17
5	Gender Analysis	18
5.1	Survival analysis.....	18
5.2	Cox proportional hazards model.....	18
5.3	Modeling strategy	19
6	Comparability Assessment.....	20
6.1	Outcome measure: work disability days paid	20
6.1.1	Adjustment for partial days paid	20
6.1.2	Adjustment for workweek.....	21
6.1.3	Rehabilitation services.....	24
6.1.4	Health services.....	24
6.2	Additional comparability considerations:.....	24
6.2.1	Scope of coverage.....	24
6.2.2	Self-insurance.....	24
6.2.3	Classification differences between provinces	25
6.3	Gender results.....	40
7	Classification Tables	51
7.1	Injury type classification.....	51
7.2	Industry classification.....	55
7.3	Occupational classification	67

List of Figures

Figure 1 Cumulative work disability days during first year post-injury, 2007-2011 17

Figure 2 Kaplan-Meier survival estimates of work disability duration by province and gender for all injuries in all industries and occupations 40

List of Tables

Table 1 Data preparation stages for creation of the harmonization dataset	8
Table 2 Number of claims with work disability days greater than or equal to threshold values	16
Table 3 Claim workweeks and presence of partial work disability days paid by province.....	26
Table 4 Unadjusted and adjusted average work disability days paid for all injury types in all industries, health care, and health care over time	27
Table 5 Unadjusted and fully adjusted average work disability days paid by injury type for all industries and occupations	28
Table 6 Average work disability days paid by injury type and injury year, by industry.....	29
Table 7 Average work disability days paid and percentage of claims receiving wage-loss at each threshold by injury type in all industries	30
Table 8 Average work disability days paid and percentage of claims receiving wage-loss at each threshold by injury type in the health care industry.....	31
Table 9 Average work disability days paid and percentage of claims receiving wage-loss at each threshold by injury type in the construction industry.....	32
Table 10 Average work disability days paid and percentage of claims receiving wage-loss at each threshold by injury type in the manufacturing industry	33
Table 11 Average work disability days paid by injury type for select occupations in the health care industry.....	34
Table 12 Average work disability days paid by injury type for select occupations in the construction industry	36
Table 13 Average work disability days paid by injury type for select occupations in the manufacturing industry	38
Table 14 Kaplan-Meier survival estimates of work disability duration by gender and province for all injuries in all industries and occupations	41
Table 15 Average work disability days paid for all injury types in all industries and occupations by province and gender, using unadjusted, fractional day adjusted, workweek adjusted, and fully adjusted measures	42
Table 16 Province by gender differences on transitioning off benefits by injury type for all industries and occupations, using unadjusted and fully-adjusted measures	43
Table 17 Relative effect of gender on transitioning off benefits by work disability duration for all occupations in all industries, by all injuries, strain injuries, and back strain injuries	44
Table 18 Relative effect of gender on transitioning off benefits by work disability duration for all occupations in the health care industry, by all injuries, strain injuries, and back strain injuries.....	45
Table 19 Relative effect of gender on transitioning off benefits by work disability duration for nurse aides, orderlies, and other assisting occupations in the health care industry, by all injuries, strain injuries, and back strain injuries.....	46
Table 20 Relative effect of gender on transitioning off benefits by work disability duration for chefs and cooks, by all injuries, strain injuries, and back strain injuries.....	47

Table 21 Relative effect of gender on transitioning off benefits by work disability duration for retail salespersons, by all injuries, strain injuries, and back strain injuries.....	48
Table 22 Relative effect of gender on transitioning off benefits by work disability duration for janitors, caretakers and building superintendents, by all injuries, strain injuries, and back strain injuries.....	49
Table 23 Predicted survival estimates of work disability duration by gender and province for selected occupational groups	50
Table 24 Injury type classification	51
Table 25 Nature of injury coding	52
Table 26 Health care industry coding.....	55
Table 27 Construction industry coding.....	56
Table 28 Manufacturing industry coding	59
Table 29 Occupational codes used by project team.....	67

1 Introduction

The purpose of the methods and results appendix is to describe in detail the process of creation, modification, and analysis of data supporting the findings of the Final Report to the Workers Compensation Board of Manitoba, entitled: '*Work disability duration in three Canadian provinces*'. This project was supported by a grant from the Research and Workplace Innovation Program of the Workers Compensation Board of Manitoba. This document includes a detailed and comprehensive rationale regarding the selection of data and development of jurisdiction-specific derived variables, creation of the harmonized dataset, analytical approach and comparability assessment across jurisdiction data. It also presents in more detail the results summarized or graphically depicted in the report. Finally, it contains listing of the coding tables for injury types, industries, and occupations used in the project.

The analytical approach includes the following steps:

- Measurement of work disability duration
- Selection of injury type, industry, and occupational variables
- Creation of the work disability days program
- Application of the work disability days program
- Calculation of work disability days paid across comparisons
- Gender analysis
 - o Survival analysis
 - o Cox proportional hazards models
 - o Modelling strategy

The comparability assessment includes the following steps:

- Outcome measure
- Adjustment for partial days paid
- Assignment of workweek
- Rehabilitation services
- Health services
- Scope of coverage
- Self-insurance
- Classification differences between provinces

2 Data Sources

This project used claims-level data from WorkSafeBC (Workers' Compensation Board of British Columbia), WCB Manitoba (Workers Compensation Board of Manitoba), and WSIB Ontario (Workplace Safety and Insurance Board of Ontario). In-person and conference call meetings were held with senior analysts from the respective jurisdictions to confirm field availability and facilitate data access. Data storage and access services were provided by Population Data BC. Information sharing agreements were executed between Population Data BC and all three compensation boards. A service agreement was also executed with Population Data BC to house and store the data within their secure research environment (SRE). The SRE is a central server accessible through a firewall via an encrypted Virtual Private Network (VPN) and SecurID token for authentication. Use of the data for research purposes was governed by an agreement between the data stewards and researchers. All personal identifiable information was removed from the data provided to the researchers and replaced with anonymous study identifiers. Ethical approval for the research project was obtained from the Behavioural Research Ethics Board at the University of British Columbia (Certificate #H13-00132).

The data included claims data on all accepted lost-time claims extracted separately for Manitoba (MB), British Columbia (BC) and Ontario (ON) for accident dates 2000 to 2012. The data included information on the injuries accepted for compensation, cost, benefits, health care billings, and employer characteristics. Data used for the analysis included demographic variables (age, gender) employment sector (occupation, industry), injury characteristics (nature of injury, cause, source, part of body, date of injury), benefit payments (benefit type, paid from, paid to, wage-loss days paid) and claim outcome (lost-time claims, work disability duration).

3 Creation of the Harmonized Dataset

To create comparable cohorts of injured workers, the data underwent quality assurance, cleaning and adjustments. The project team developed protocols to assess comparability of data and derived variables. The cohorts were created in five stages:

1. Preparing claims data
2. Preparing benefits data
3. Cohort generation
4. Creation of the harmonized dataset
5. Creation of the work disability duration and gender analytical files

In Stage 1, the project team cleaned the claims data and derived several analytical variables: injury year, gender, age, occupation, industry, and injury types. In Stage 2, the benefits data were cleaned and work disability days paid were summarized across transactional payment periods over one, two and three year windows. In Stage 3, benefit and cost files by province were merged and inclusion/exclusion criteria were applied. In Stage 4, provincial datasets were appended to create the harmonized dataset. In Stage 5, further restrictions were applied to create the final analytical file.

Note: Stage 1 and 2 kept claims and benefits datasets separately for each province, stage 3 merged claims and benefits datasets into one file for each province and stage 4 appended three provincial files into a single harmonized analysis file.

Table 1 Data preparation stages for creation of the harmonization dataset

Stage	Actions	Description and Decisions <i>Merged cells indicate an action is taken uniformly across provinces, Split cells indicate actions differed by province.</i>			Rationale
		BC	MB	ON	
1 Preparing Claims Data	Exploratory analysis	Load claim files separately, describe data structure and codebook			Verification that the requested fields received and populated
	Confirm unique claim database	Consolidate variables across duplicate records or groups of consolidated claims to create dataset with one record per claim			Ensure files within province are linkable on unique identifier
	Investigate variables describing claim status	Tabulate case type, adjudicated date, payment dates, accepted flags, fatal flags			Confirm restriction criteria can be applied under Step 3 Cohort Generation e.g. accepted, time loss claims only
	Inspect and clean relevant analytical variables	Summarize numerical variables, tabulate alphanumerical variables and tag outliers: 'Date of injury', 'date of birth', 'SOC/NOC codes', 'native rate codes', Z795 codes 'Injury type, part, source, event'			Scan for coding errors and ensure entry of logical values
	Apply occupational concordance tables	Merge occupation lookup tables to code each province to NOC 2006 (BC: from SOC 1991, MB from NOC 2001/2006; ON from NOC 2001/2006)			Account for differences in occupation groupings across classification structures
	Assign illogical NOC codes as "unknown"	In BC, no adjustments	In MB, no adjustments	In ON, recode NOC value "0000" as "Unknown"	In ON, NOC "0000" value present in original dataset and not associated with a known NOC value. "0000" could be an unknown value, senior management coded to the 2-digit level "00xx", or a coding error. In the absence of certainty, values assigned "Unknown", separate from missing.
	Generate injury type indicators	Creation of musculoskeletal versus acute injury indicator (strain versus non-strain) from Z795 nature of injury codes in accordance with McLeod C, Sarkany D, Davies H, Lyons K, Koehoorn M. Prevention in dangerous industries: does safety certification prevent tree-faller injuries? Scandinavian Journal of Work, Environment and Health. 2015; 41(5): 478-485. http://dx.doi.org/10.5271/sjweh.3259 .			Injury types defined using CSA Z795 nature of injury codes deemed most reliable. See page 14 for a description of injury type selection. Complete list of injury coding available on page 52.
	Generate industry	Creation of health care, construction, and manufacturing industry groupings from provincial classification units (rate codes)			Using classification units allows for detailed assessment of compulsory coverage and exclusions across groupings including investigation of yearly changes in coverage. Complete list of classification unit groupings available on page 55.

	Generate additional derived variables	Create injury year (from date of injury), 6 category age grouping (from date of injury and date of birth, 15-25, 25-35, 35-45, 45-55, 55-65, 65+); Occupation 1, 2, 3 and 4 digit level codes and descriptions (from NOC 2006 codes)			Variables for use in final analyses
	Save cleaned claims dataset	Save dataset with each row representing one consolidated claim for an injury/illness for a given individual, and containing key identifier and analysis variables in separate columns			Prepare for merging to benefits data
2 Preparing Benefits Data	Exploratory analysis	Load benefit files individually, describe data structure and codebook			Verification that the requested fields received and populated
	Keep only wage-loss benefit payments (Removes vocational rehabilitation (VR) benefit payments)	In BC, keep benefit payments for short term disability (STD) (Removes benefit payments for VR)	In MB, keep benefit payments for “Compensation” (Removes benefit payments for VR)	In ON, keep all benefit payments (Unable to remove benefit payments for VR)	Benefit records that are no time loss or health care only do contribute loss days paid for lost-time and thus do not provide information for the study disability duration measure. Vocational Rehabilitation payments are not wage-loss payments made to workers, as a result these payments are excluded where possible from the outcome measure. See page 24 for a discussion of how the presence of VR payments in the ON data may affect results observed.
	Investigate payment start and end date of transactional records	In BC, transactional records available for specific payment dates	In MB, transactional records available for specific payment periods (e.g. 1 week)	In ON, transactional records available for specific payment periods (e.g. 1 week) but in some cases longer (e.g. 1 year)	Confirm summary of wage-loss days paid is possible with transactional records at various thresholds (e.g. 1, 2 or 3 year)
	Adjust for negative wage-loss payments	In BC, negative days paid present. Assume negative payments are reversals and are entered into data subsequent to the associated positive payment. Attribute negative payments to nearest previous positive payment, cascading to earliest payment. Confirm no remaining negative	In MB, negative days paid present. Assume negative payments are reversals and are entered into data subsequent to the associated positive payment. Attribute negative payments to nearest previous positive payment, cascading to earliest payment. Confirm no remaining negative	In ON, no negative days paid present	Due to the nature of administrative data, reversals are occasionally noted in WCB benefits data. To account for these negative payments and work disability days we sum these payments with the corresponding positive payments to ensure workers do not “owe” any payments.

		payments following netting.	payments following netting.		
	Investigate fractional wage-loss days paid payments	In BC, no fractional days present	In MB, fractional days paid are present. Keep fractional days paid	In ON, no fractional days present	Discussion with MB policy and data experts indicates fractional days may be attributable to health care and treatment payments and not exclusively to wage-loss payments. See page 24 for a discussion of how the presence of potential health care payments in MB may affect results observed.
	Remove lump sum payments	In BC, no presence of lump sum payments	In MB, no presence of lump sum payments	In ON, lump sum payments present. Restrict the time window over which total wage-loss days are summarized to 6 years post injury date.	In ON, an open claim at 6 years may become “Locked In” and a permanent disability payment made in accordance with Bill 99. This lump sum award does not represent wage-loss for temporary disability and is not a present in the BC or MB files. These payments are removed by restricting the ON summary period to 6 years post injury date.
	Generate and apply partial days paid adjustment factor	In BC, no adjustment for partial days payments necessary as both partial and total days paid counted as complete days	In MB, adjustment for partial days is necessary as total work disability days paid are counted as complete days, but partial work disability days paid are counted as partial days or partial weeks. Replace days paid for partial disability benefit payments in accordance with decision rules outlined on page 20.	In ON, no adjustment for partial days payments necessary as both partial and total days paid counted as complete days	For a detailed explanation of the partial days paid adjustment in MB including decision rules please see page 20.
	Generate workweeks variable and adjustment factor	Claims were assigned to 4, 5, 6 or 7 day workweeks based on days paid, weeks paid payment dates and payment period variables. Create a variable containing the corresponding adjustment factors of 5/4 (1.25x) for 4-day workweeks, 5/5 (1.00x) for 5-day workweeks, 5/6 (0.83x) for 6-day workweeks, & 5/7 (0.71x) for 7-day workweeks.			The project team determined the majority of claims are on 5-day workweeks across all provinces, however alternative workweeks were noted, including a larger proportion of claims in BC and MB on 7-day workweeks. For a detailed explanation of the workweek days paid adjustment

					across all provinces, including decision rules, please see page 21.
	Generate wage-loss days paid measure for 1, 2 and 3 year windows post injury	Generate wage-loss days paid based on calendar periods summed over 1, 2 and 3 year (12/24/36 calendar months) windows post-injury, by dropping transactional records that occur after threshold cut-off, and then summarizing remaining transactional records that occur within threshold.			1, 2 and 3 year thresholds provide basis for comparison across provinces
	Apply uniform wage-loss days distribution to payments that straddle threshold period	Where a benefit payment begins within the wage-loss threshold cut-off and ends after the cut-off, a pro-rating factor is applied that assumes a uniform distribution e.g. If a 10 days lost benefit payment starts Jan 1 st and ends Jan 14 th where the 1 year threshold cut-off occurs on Jan 7 th , 5 of 10 days paid will be counted in the measure. NOTE: when summarizing across records, allow for sufficient follow up time depending on threshold (e.g. 1 year from accident date if 1 year threshold)			Pro-rating of days enables uniform estimation of days paid across the varying payment periods where payments straddle the threshold cut-off.
	Censor 1, 2 and 3 year days paid thresholds at 366, 732 and 1098 days paid respectively	Where wage-loss days paid exceed the calendar periods, assign value of calendar period +1, e.g. assign a value of 366 days paid to claims that exceed the total calendar periods, >365 days for the 1 year threshold			Days paid greater than the calendar period are rare and may contain reversals or lump payments, values assumed illogical and replaced with calendar period +1 (e.g. 366)
	Apply workweeks adjustment factor to 1, 2, and 3 year thresholds	Standardize all claims across provinces to a 5-day workweek by applying the adjustment factors for claims on 4, 5, 6 or 7-day workweeks.			For a detailed explanation of the workweek days paid adjustment across all provinces, including decision rules, please see page 22.
	Save cleaned cost dataset	Create dataset with one record per claim, with each row containing key identifiers and variables for summary days and costs in separate columns (total and for 12/24/36 calendar month thresholds)			Prepare for merging to claims file
3 Cohort Generation	Merge benefit and cost files by province	Merge files to create single file for each province on key identifier variable (claim number). One-to-one merge i.e. claim data and merged datasets must be sorted, and claim number must be uniquely identified in the data			Combines wage-loss threshold variables with additional analytical variables
	Inclusion: Injury Year	Keep if injury year occurred between 2002 to 2011			Study data available to 2012. Cohort selected to capture large number of claims while allowing for at least 1 year follow up period.
	Inclusion: Claim Type	In BC, Keep only STD and LTD claims	In MB, Keep only Time Loss Claims	In ON, Keep only Time Loss Claims	Capture all claims with potential wage-loss payments. In BC keep STD and LTD claims to capture wage-loss payments for STD claims that later transition to LTD claims (only STD benefit payments used in 1, 2 and 3 year summary windows)

	Inclusion: Wage-loss	Keep claims with positive, non-zero wage-loss days paid	Claims without wage-loss payments do not contribute to threshold days paid study measure
	Inclusion: Claim Status	Keep accepted claims only	Non-accepted claims do not contribute to wage-loss outcome measure
	Exclusion: Age	Drop if age less than 15 or greater than or equal 90	Claimant ages at extremes were rare, likely to be miscodes, and assumed unrealistic
	Exclusion: Gender	Drop claims with missing gender value	Key explanatory factor variable
	Keep analytical variables only	Key identifiers and analysis variables, drop data management and non-analytical variables	Retain relevant analytical variables only
4 Combining Provincial Datasets	Append provincial datasets	Append BC, MB and ON files to create single harmonized file containing data for each province using ON as master (BC to ON, MB to ON and BC).	Prepare data for analysis across provinces. ON had the largest number of claims and was thus used as the master.
	Generate new claim identifier	Add “BC”, “MB” and “ON” text characters to respective provincial claim numbers to create a new unique alphanumeric claim identifier	Remove coincidental duplication of claim numbers across provinces
	Drop non-analytical variables and save harmonized data set	Save dataset with one record per claim, with each row containing variables for province origin, new claim identifier, summary days, costs and analysis variables in separate columns.	Final step in creation of harmonized data set. Dataset ready for final restrictions.
Harmonized Comparative Dataset The claim-level harmonized data set contains claims and benefit data for 1,525,403 accepted time loss claims for injury/illness between the years 2002 and 2011. Claims totalled 577,752 from British Columbia, 165,693 from Manitoba and 781,958 from Ontario. The data is structured as one record per claim, with each row containing key identifiers and analytical variables in separate columns. Wage-loss days paid following an injury or illnesses are summarized at 1, 2 and 3-year windows. This file provides the base data set from which restrictions are applied to create the final file for the disability duration analyses.			
5 Creation of Disability Duration and Gender Analytical File	Inclusion: Injury Year	Keep if injury year between 2007-2011	Data was available up to 2012 however this year was excluded to allow for a 1-year follow up period. 2007-2011 selected to limit the effect of legislation and data coding changes while including a large selection of claims.
	Wage-loss - Inclusion	Keep if wage-loss days paid is greater than or equal to 1	Disability duration analyses to include only claims with at least 1 full disability day paid.
	Exclusion: Injury Type	Exclude disease claims keeping only traumatic injuries and disorders using the WorkSafeBC definition (see page 52)	Compensable disease schedules and practices vary across provinces (e.g. mental illness). These claims have been removed due to differential capture among jurisdictions, large difference between accident date and claim date

			and differences in the counting of days paid for disease claims versus injury.
<p>Disability Duration Analytical Dataset</p> <p>The disability duration and gender analytical file applies three additional restrictions to the harmonized data set: traumatic injuries only (diseases excluded), injury year between 2007 and 2011, and wage-loss days paid equal to or greater than 1. The final file consists of 624,388 accepted time loss claims (British Columbia: 258,246; Manitoba: 70,208; and Ontario: 295,934) for traumatic injury between 2007 and 2011. The data set contains fields that enable comparative analyses of outcomes by industry, gender, age, occupation, and injury type across the three jurisdictions.</p>			
6 Creation of Gender Analytical File	Exclusion: Occupation	Keep if occupation code is non-missing	Gender models require all analytical variable values to be non-missing.
<p>Gender Analytical Dataset</p> <p>The gender analytical file applies one additional restriction to the final disability duration file: all occupation values non-missing. The final file consists of 615,757 (BC: 258,246; MB: 69,941; and ON: 287,556) for traumatic injury between 2007 and 2011. The data set contains fields that enable the construction of gender models on industry, age, occupation, and injury type across the three jurisdictions.</p>			

4 Analytical Approach

4.1 Work disability duration

4.1.1 Selection of industry, injury type and occupation variables

Injury type

Injury type data were available as CSA Z795 nature of injury (NOI) codes. Injury grouping definitions from McLeod et al. 2015¹ were used, as they only required NOI codes. This definition created mutually exclusive groups of musculoskeletal injuries (strain) and acute injuries (non-strain). Strains injuries included strains and sprains of the back, upper limb, or lower limb, including carpal tunnel syndrome, bursitis, tendinitis, or tenosynovitis. Non-strains included amputations, fractures, dislocations, concussions, cold or heat exposures, burns, abrasions/contusions/lacerations or hernias. The project team further specified strain injuries by back strains and non-back strains using 2-digit CSA Z795 part of body 'back injury' coding (23*, 23000-23999) and non-strain injuries by fractures (NOI: 01200, 08300, 08400), concussions (NOI: 06200), and other non-strain injuries. A full list of injury type codes can be found on page 52.

Industry

The project team developed a classification unit (CU) mapping document that assigned each provincial CU to broad industry groupings of construction, primary resources, manufacturing, transportation and warehousing, trades, health care, services (excluding health care) and self-insurers. Flag variables were used to identify CUs that consisted exclusively of compulsory covered work activities in accordance with publicly available CU policy documentation.² Compulsory status, exemptions, and exclusions of each CU were reviewed. Each CU was assigned a value of 'compulsory' if coverage was exclusively compulsory or 'non-compulsory' if coverage was optional or included exemptions or relevant exclusions. Historic CUs were manually assigned to industry groupings. Industry groupings were assessed for levels of compulsory coverage. Claim counts for industry groupings were tabulated by injury year, occupation, and gender. Health care, construction, and manufacturing were selected for further investigation based on high proportions of current compulsory registration activities, large numbers of claims over the study period, and minimal amendments to classification unit policy, guidelines and restructuring over the study period.

Health care captured a subset of health care defined by the project team as 'Institutional Acute and Long Term Care providing medical, surgical or nursing services'. This definition excluded social services, specialized homes and residential care providing personal care only in order to create a specific set of working conditions and environments for comparison. In MB, three rate codes covered the health care industry '702-02 health services', '702-03 specialized homes' and '702-04 social services'. As the MB CUs represented the broadest groupings across jurisdictions, the MB '702-02 health services' CU was selected as the basis for mapping with the more detailed BC and ON CUs. Ambulance attendants (NOC 2006 code: 3234) were removed from the definition as they did not represent institutional care and were included in the MB CU, but captured separately in the BC and ON CUs. The construction industry grouping captured all construction activities across provinces, further specified by the project team as 'building, heavy, civil engineering and specialty trades construction'. The manufacturing industry grouping captured all manufacturing activities across provinces, further specified by the project team as 'food and beverage, metal and

¹ McLeod C, Sarkany D, Davies H, Lyons K, Koehoorn M. Prevention in dangerous industries: does safety certification prevent tree-faller injuries? *Scandinavian Journal of Work, Environment and Health*. 2015; 41(5): 478-485. <http://dx.doi.org/10.5271/sjweh.3259>.

² MB: <https://www.wcb.mb.ca/industry-codes-and-new-business-rates> [retrieved July 2014]

ON: http://www.wsib.on.ca/WSIBPortal/faces/RateGroupTablePage?fGUID=835502100635000543&_afLoop=5209284286105919&_afWindowMode=0&_afWindowId=null#%40%3F_afWindowId%3Dnull%26_afLoop%3D5209284286105919%26_afWindowMode%3D0%26fGUID%3D835502100635000543%26_adf.ctrl-state%3Dsvnpbho5_4 [retrieved July 2014]

BC: http://worksafebc.com/insurance/premiums/2014_rates/classification/browse_sectors_and_subsectors/default.asp [retrieved July 2014].

minerals, petroleum, coal, rubber, plastic, wood and paper, and miscellaneous manufacturing'. A full listing of CUs included in industry groupings can be found on page 55.

Occupation

The project team selected three occupational groups within each of the health care, construction, and manufacturing industries to investigate the effect of stratification by occupation on industry trends. Three- and four-digit National Occupational Classification (NOC) 2006 codes were tabulated by highest to lowest frequencies within industry groupings over the study period. Frequencies were compared across provinces to investigate similar proportions of groupings. Occupational groups were chosen within the selected industries based on well-defined job tasks with similar risks/hazards, large numbers of claims over the study period, and evidence of similar proportions across provinces. The selected codes were: registered nurses (315), licensed practical nurses and other technical occupations (323), nurse aides, orderlies, and other assisting occupations (3413/3414), truck drivers (7411), heavy equipment operators (742), trade helpers and labourers (761), machine operators (941-947/951), mechanical, electrical and other assemblers (948/949), labourers (961). A full list of NOC 2006 codes and groupings is available on page 67.

Occupations selected to investigate the effect of stratification are shown below. NOC 2006 codes are provided in brackets and brief descriptions are provided.

- Health care
 - Registered Nurses (315) - provide direct nursing care to patients, deliver health education programs and provide consultative services regarding issues relevant to the practice of nursing
 - Technical Occupations except Dental (323) – include opticians, midwives and licensed practical nurses and others who perform various technical therapy and assessment functions
 - Assisting Occupations in Support of Health Services (3413/3414) – provide services and assistance to health care professionals and other health care staff
- Construction
 - Truck drivers (7411) - operate heavy trucks to transport goods and materials over urban, interurban, provincial and international routes
 - Heavy Equipment Operators (742) - operate heavy equipment used in the construction and maintenance of roads, bridges, airports, gas and oil pipelines, tunnels, buildings and other structures
 - Labourers (761) - assist skilled tradespersons and perform labouring activities at construction sites, in quarries and in surface mines
- Manufacturing
 - Machine Operators (941, 942, 943, 944, 945, 946, 947, 951) - operate machinery in metal, mineral, chemical, plastic, pulp, paper, textile, food, beverage and other operations
 - Mechanical, Electrical and Electronic Assemblers (948, 949) – assemble, fit, wire and inspect and install materials and prefabricated parts³
 - Labourers (961) - perform material handling, clean-up, packaging and other elemental activities related to processing and manufacturing

³ The NOC 2006 groups machine operators and assemblers into a single major group '94/95'. The NOC 2011 revises the 2006 definition to separate major group '94/95' into two major groups "94" (machine operators and related production workers) and group '95' (assemblers). The research team combined three-digit NOC 2006 codes to reflect this update in the NOC 2011 as the team judged it a more accurate distinction of job duties and risks.

4.1.2 Creation of work disability days program

The project team developed a program that calculated the average work disability days paid per claim by any combination of province, year, industry, occupation, gender, and type of injury variables. The program stratified the data by the specified variables and generated a secondary dataset for each stratum. For example, running the program entering ‘manufacturing’, ‘strain injuries’, ‘heavy equipment operators’ and ‘2007-2011’ created a secondary dataset summarizing work disability days paid for the specified claims only.

The stratification datasets contained counts of claims with cumulative work disability days paid greater than or equal to threshold values across the entire distribution of work disability. These datasets were structured with each row representing a work disability threshold (e.g. 1, 2, 3 ... 260) and columns counting the number of claims receiving work disability benefits for each province at the respective thresholds. Columns providing counts standardized to 1,000 claims were also included. One week was defined as 5 days paid, one month as 20 days paid and one year as 260 days paid (approximately 1 calendar year). An example of the secondary datasets for the overall comparison (all injuries, all industries, and all occupations) is provided below.

Table 2 Number of claims with work disability days greater than or equal to threshold values

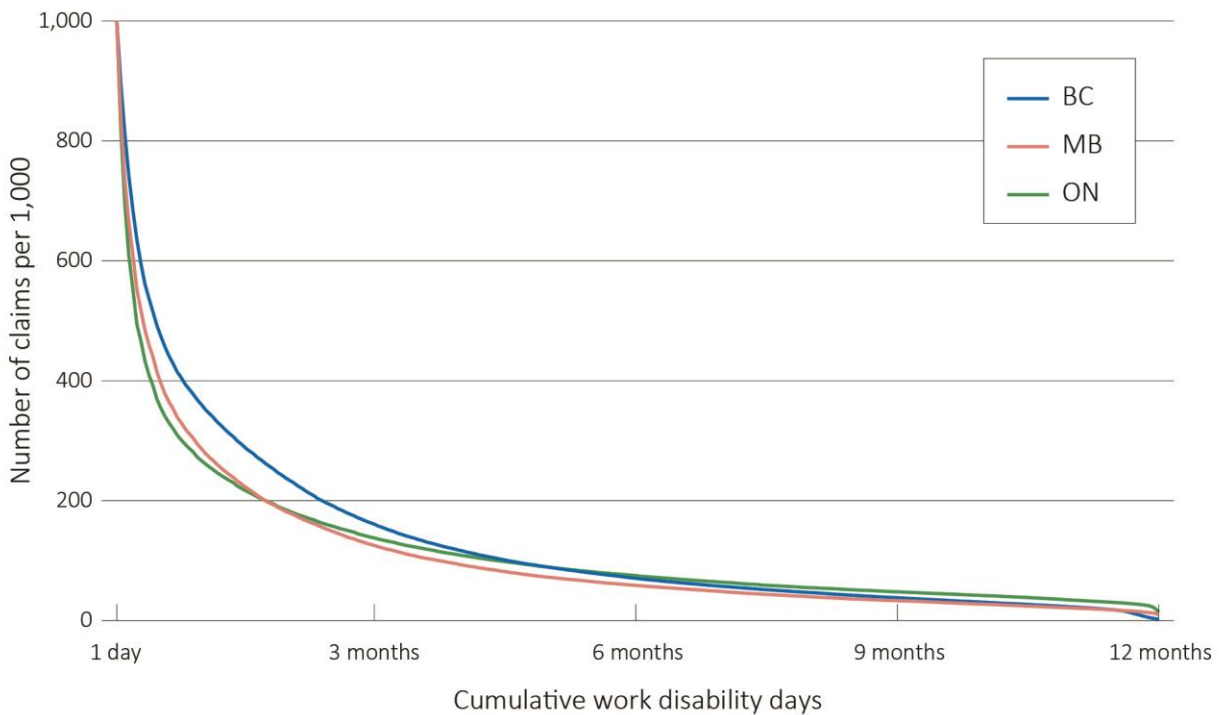
Threshold (work disability days)	Weeks	Months	BC Count	BC Count / 1000	MB Count	MB Count / 1000	ON Count	ON Count /1000
1	<1	<1	258,246	1,000	70,208	1,000	295,934	1,000
2	<1	<1	231,387	896	59,195	843	242,699	820
3	<1	<1	209,666	812	51,608	735	205,785	695
4	<1	<1	191,530	741	46,638	664	180,106	609
5	1	<1	176,828	684	42,825	610	163,623	553
6	<2	<1	163,990	635	38,748	552	146,229	494
7	<2	<1	153,770	595	36,323	517	137,981	466
...
260	52	12	679	2.6	140	10.0	4301	14.5

Note: This table displays results from the fully adjusted measure, see section 6.1 for details.

4.1.3 Application of the work disability days program

This program used the secondary datasets to generate work disability curve graphs and total counts of work disability days paid. The program plotted work disability curves displaying threshold days along the x axis and cumulative work disability days paid along the y axis for specified windows. An example of a work disability curve for days paid between a 0 and 12 month window is provided in Figure 1 below.

Figure 1 Cumulative work disability days during first year post-injury, 2007-2011



4.1.4 Calculation of work disability days paid across comparisons

The final calculation of average cumulative work disability days paid was summed across each threshold by province for the 1-year window, ranging from 1 day to 260 days. This calculation was also made for the 0-<6 months (1 to 129 days) and 6-12 month periods (130 to 260 days) to determine the effect of shorter versus longer-term claims.

The work disability curve program was run to produce secondary datasets, work disability curve graphics, and work disability days paid counts for industry, occupation, injury types and injury year groupings.

Final results are presented in four forms:

1. Cumulative work disability days during first year post-injury, 2007-2011
2. Stacked bar graphs of average work disability days paid per claim summed over 1 year calendar period post injury (0-12 month, 0-<6 months & 6-12 months)
3. Tables with percentage of claims with cumulative work disability days greater than or equal to threshold values (1 day, 1 week, 2 weeks, 1 month, 3 months, 6 months, 9 months, 12 months)
4. Line graphs of average work disability days paid per claim summed over 1 year calendar period

5 Gender Analysis

5.1 Survival analysis

Building on the work disability days analysis (which created only descriptive statistics), the gender analysis used Cox regression models to perform multivariable survival analysis. Survival analysis models the elapsed time until the ‘event’ or ‘failure’ or equivalently, the length of non-event ‘spell’. An injured worker or alternatively a claim has ‘survived’ or is ‘at risk’ until the ‘failure’ which is claim exit or a transition off work disability benefits. The ‘hazard’ rate is, broadly speaking, how likely failure (or claim exit) is to occur given that an injured worker is still on claim.

5.2 Cox proportional hazards model

The Cox proportional hazards model rests on the assumption that the hazard function for each individual claim and all variables are proportional and a constant multiple of a common baseline function. Often regression diagnostics indicate that this key property does not hold for many variables (e.g., the hazard for women is not proportional to the hazard for men) and the basic survival model may provide biased estimates of the effect of those variables. There are three basic approaches to deal with violations of non-proportionality. One, fit a stratified model that allows for the estimation for separate baseline hazards for each strata. Two, fit an extended Cox model that includes time-by-covariate interactions to represent the covariate of interest varies by a parametric function of time (for example, linear, logarithmic, cubic) (Singer and Willett, 2003). Three, fit a piecewise exponential model where time is split into several intervals and the covariate of interest is interacted with each time interval to represent time-varying effects in a step wise function.

Researchers have shown that gender stratification, despite lowering statistical power, can identify gender-specific effects that are not evident when adjusting for gender as a confounder (Lederer et al., 2012; Lederer and Rivard, 2014; Messing et al., 2009; Messing and Mager Stellman, 2006; Silverstein et al., 2009). While stratification can address the violation of the proportional hazards assumption and permit estimating the likelihood of a transition off claim for women and men, separately, it does not permit us to compare the effect of gender on transitioning off work disability benefits for women and men, together (Singer and Willett, 2003). While an extended Cox model with time-by-covariate interaction enables us to estimate the hazard ratio at different time points, an inappropriate choice for the function of time (for example, linear quadratic, cubed) may result in model misspecification and incorrect estimates (Bellera et al., 2010). The piecewise exponential model is based on the idea that the proportional hazards assumption holds at least over short time periods, with separate effects fitted for each period resulting in a step function. Similarly to how the extended Cox model with time-by-covariate interaction requires a correct specification of time, the partitions of time in the piecewise model require sufficient number of events in each interval to produce reliable estimates (Buchholz and Sauerbrei, 2011). Piecewise exponential models were chosen due to a greater level of confidence in the estimates that they produced in comparison to the extended Cox models with time-by-covariate interactions.

The proportional hazards assumption of the models was examined for all variables graphically (Kaplan-Meier survivor plots and log-minus-log plots) and statistically using Schoenfeld residuals tests and time-by-covariate interactions within the Cox models. The tests indicated violations of the proportional hazards assumption, particularly for gender, injury type, and injury year. Due to the analytical focus being on gender effects on work disability duration, only gender was interacted with time in the final models.

5.3 Modeling strategy

The analysis followed three main steps. First, we modelled the effect of gender for all injuries and occupations in each of the separate provinces. Second, we focused on modelling strain injuries (including back strain injuries) because of expected gender differences in these injury types based on previous research. Third, we focused on strain injuries within particular occupations associated with high risks of strain injuries where there were similar proportions and duties of male and female workers. The following occupations were examined: nurse aides, orderlies, and other assisting occupations (NOC 2006: 3413/3414); chefs and cooks (NOC 2006: 624), retail salespersons (NOC 2006: 642); and janitors, caretakers and building superintendents (NOC 2006: 6663).⁴ During the second and third steps, we obtained hazard ratios (HR) and 95% confidence intervals (CI) for gender on a claim transitioning off time loss benefits during the following intervals:

- 0-19 days (0-<1 month)
- 20-64 days (1-<3 months)
- 65-129 days (3-<6 months)
- 130-260 days (6-12 months)

Obtaining HRs at these thresholds enabled us to examine in more detail how the effect of gender on likelihood of transitioning off work disability benefits changed by disability duration (i.e., it enabled us to assess if the effect of gender on the likelihood of transitioning off claim was different for short duration claims compared to long duration claims). HRs were statistically significant at the 95% confidence level when the confidence intervals did not overlap with the value of one.

The HRs can be interpreted as the difference in the relative risk of transitioning off claim for women compared to men. To compare the absolute difference in the likelihood of transitioning off claim by gender and by province we calculated predicted survival estimates based from the underlying estimation models. These estimates were standardized to 1000 claims to make them comparable to the descriptive analysis.

⁴ See section 7.3 for further details.

6 Comparability Assessment

6.1 Outcome measure: work disability days paid

Establishing comparable cohorts of injured workers requires careful consideration of potential biases. The issues below relate to how work disability days, the key study outcome measure, are calculated and accrued across the three provinces. Work disability days paid per claim occurring within one-year post injury were defined using the work disability days paid measures provided by each jurisdiction. Work disability days paid included temporary total disability, temporary partial disability payments, and adjustments. We excluded health care-only and permanent disability benefit payments by restricting our cohort to claims to STD/LTD claims in BC and time loss claims in MB and ON. In the BC measure, LTD claims were included to capture STD claims that accumulated wage-loss payments before transitioning onto LTD. The project team then summarized wage-loss compensation benefit types only for those claims to remove health care and permanent disability payments.

In ON, a selection of lump sum payments (large work disability days paid - e.g. 2000 days, 3000 days) with payment dates in the future remained in the data following restriction. These claims are known as 'locked in' claims in ON, where a final review of Loss of Earning (LOE) benefit at 72 months post injury/illness determines if the benefit continued to be paid to age 65, as per Bill 99, Workers' Compensation Reform Act, 1996. These payments did not represent short-term disability and were not comparable to time-loss claims of BC and MB, potentially inflating the ON measure. As a result, these payments were removed by restricting the ON summary period to six years post-injury (time at which claims become locked-in).

6.1.1 Adjustment for partial days paid

Modified return-to-work (MRTW) occurs when a worker can return to work but is unable to do all of the duties of the pre-accident job without assistance. MRTW includes any modification of the previous job that helps a worker safely return to work. It may involve a modification to the job, task, function, work hours, worksite, or any combination of the above. Other terms used in place of MRTW include graduated return to work, selective/light employment, work accommodation, or work transition. The work disability days paid measure included wage-loss benefits for supernumerary workers on MRTW receiving less than pre-injury earnings. Each province denoted benefit payments for MRTW as 'partial days paid' under various fields in the underlying data. Partial days were indicated in ON by a disability percentage of less than 100%, in MB by a 'temporary partial disability' benefit payment type, and in BC by a Financial Transaction Type of 'Section 29 - partial disability'.

Consultations with data and policy experts in BC and ON confirmed days paid were accrued as complete days irrespective of whether partial or complete days were worked during MRTW. However in MB, partial days paid were accrued as partial days or weeks paid depending on the hours worked during MRTW. For example, a worker may be working 50% time of pre-injury hours over 10 working days (i.e., working 40 hours a week prior injury, and 20 hours a week while in MRTW). In BC and ON, this worker appeared as 10 work disability days paid, but in MB this was counted as 5 work disability days paid. This difference decreased the number of work disability days paid in MB relative to BC and ON. Overall, the bias was not large, but was more pronounced in industries that regularly provide MRTW (e.g. health care, manufacturing) and have a greater proportion of partial disability payments. The project team implemented an adjustment in the MB data for partial days paid. Using the underlying transactional benefit payments data, the calendar period for each benefit record was determined by subtracting the payment end date from the payment start date and adding one (e.g., a start date of June 22nd and an end date of June 28th gives a calendar period of 7 days). Partial disability payments were adjusted for each record within a claim to approximate payments to a worker on temporary total disability.

The partial day adjustment was a conservative adjustment applied only where there was clear evidence days were accrued as complete days in BC and ON but accrued as partial days in MB. For example, no adjustments were made where this was a single benefit record, or the record was the last in the stream of benefit payments within a claim. For these records, an end to the payment period was not be available or a single day may have been accrued over a six-month payment period resulting in a large

upward adjustment. The project team could not confidently apply adjustments to these records without risking over adjustment. As a result, the implemented adjustment accounted for most but not all of the partial days paid bias in the MB data.

The following decision rules were applied:

1. No adjustments were made where this was one benefit record or the record was the last of the stream of records within a claim
2. Assign a value of 1 where the payment period was one day (i.e., assign the number of calendar days where the payment period was 1)
3. Assign the number of calendar days where calendar days were less than or equal to the workweek days (e.g. a claim on a five-day workweek accruing three days over five calendar days was assigned a value of five)
4. Assign a value of 14 or the original days paid value (depending on which was greater) where calendar days were greater than 14 and the workweek was 7
5. Assign a value of 12 or the original days paid value (depending on which was greater) where calendar days were greater than 14 and the workweek was 6
6. Assign a value of 10 or the original days paid value (depending on which was greater) where calendar days were greater than 14 and the workweek was 5
7. For all remaining records where calendar days was 14 or less and the calendar days were greater than the workweek days, assign a value of the total number of assigned workweek days accrued over the calendar period (e.g. a claim on a 4-day workweek accruing 3 days over a 14-day calendar period is assigned a value of 8)

The composite adjustment measure was created by adjusting for partial days at the record level using the decision rules above, and then applying the workweek adjustment factor to the one-year cumulative work disability days paid summary.

6.1.2 Adjustment for workweek

The project team determined the majority of claims were on five-day workweeks across all provinces. However, alternative workweeks were noted, including a larger proportion of claims in BC and MB on seven-day workweeks. A seven-day workweek is more common in industries and occupations with shift work. In practice, this meant a claim in Ontario with a calendar week of lost-time equated to five work disability days paid, while in BC and MB it may have equated to seven days paid. This accounting difference increased the number of work disability days paid over a given calendar period in BC and MB compared to ON. While across all claims the bias was not large, large differences were observed in some sectors (e.g., in health care, where shift work is common).

To adjust for the workweek difference, all claims across provinces were standardized to a five-day workweek (e.g. a claim on a seven-day workweek that accrued seven-days paid over a one-week period was assigned a value of five-days paid). Claims were designated as having four-, five-, six- or seven-day workweeks in the underlying data and the corresponding adjustment factor was then applied to the days paid values.⁵ To implement the adjustment, the project team worked with the underlying transactional benefits data for each province to assign a workweek to each claim.

The benefit datasets contained different fields and levels of specificity between provinces. In MB, a workweek measure was provided and in ON a workweek measure was calculated from the days paid and payment period fields. In BC, workweeks were assigned using days paid and the payment date fields. Different methods were applied to assign each claim to a workweek by provinces.

An adjustment was made where there was clear evidence of a non-five-day workweek, in lieu of clear evidence of a non-standard workweek, a five-day workweek was assumed. For example, in BC, single record claims and claims with less than seven cumulative work disability days paid did not provide enough evidence to assign a non-standard workweek. As a result, a standard five-day workweek was assigned. A small proportion of three-day workweeks or less was observed in the data. These workweeks

⁵ Workweeks appearing to be three or less were considered part-time workers and assigned a default of a five-day workweek.

may have represented part-time workers and were assigned a default five-day workweek to avoid over adjustment. The full workweek days paid adjustment decision rules are outlined below.

Assignment of claim workweek

Claim workweek in BC

Fields available for stream of benefit payments: days paid and payment date only

The underlying BC benefits data did not contain payment start and end dates so an exact payment calendar period could not be calculated for BC. Instead, payment date was available and multiple payment dates within a claim occurred every subsequent two weeks for most claims, and to a lesser extent every one week. The project team assigned workweeks in BC based on patterns of days paid over the typical one- or two-week approximate calendar period between subsequent payment dates (e.g. a seven-day workweek is assigned when an initial payment date is for seven work disability days and a second benefit payment date occurs seven calendar days later).

Decision rules:

1. Assign a 5 day workweek to all claims with less than 7 days cumulative days paid.⁶
2. Assign a 5 day workweek to all claims containing a single non-zero days paid value
3. Assign a 5 day workweek to all claims containing days paid values of 5 or 10 and NOT values of 7 or 14
4. Assign a 7 day workweek to all claims containing days paid values of 7 or 14 and NOT values of 5 or 10
5. Where claims contain both days paid values of 5 or 10 and values of 7 or 14
 - a. Assign a 5 day workweek where the # values for 5 or 10 is greater than the number of values for 7 or 14 within a claim
 - b. Assign a 7 day workweek where the # of values for 7 or 14 is greater than 5 or 10 within a claim.
 - c. Assign a 5 day workweek where the number of records for 5 or 10 is the same as the number of records for 7 or 14
6. Assign a 4 day workweek to claims containing a day's paid value of 8
7. Assign a 6 day workweek to claims containing a day's paid value of 12
8. Assign a 5 day workweek to all remaining claims

Claim workweek in MB

Fields available for stream of benefit payments: days paid, weeks paid, payment start date and payment end date

Decision rules:

1. Generate weekdays variable by dividing the days paid and weeks paid values for each record, group weekdays into observed clusters of 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 6, 6.5, 7 and missing for each record
2. Apply the mode of weekday values for each record in a claim.⁷
3. Generate final weekdays variable that assigns the following at the claim level
 - a. Assign a 5-day workweek to mode values of 1, 1.5, 2, 2.5, 3 and missing
 - b. Assign a 4-day workweek to mode values of 3.5 and 4
 - c. Assign a 5-day workweek to mode values of 4.5, 5 and 5.5
 - d. Assign a 6-day workweek to mode values of 6
 - e. Assign a 7-day workweek to mode values of 7

⁶ Note: Claims with less than seven cumulative work disability days paid did not provide clear evidence of a non-five-day workweek. As a result, they are assigned a five-day workweek.

⁷ Note: the maximum mode is taken where two modes are present

Claim workweek for ON

Fields available for stream of benefit payments: days paid, payment start date and payment end date

Decision rules:

1. At the record level, generate benefit calendar days measure by subtracting payment end date from payment start date
2. At the record level, generate fractional week measure by dividing days paid by calendar days where calendar days is greater than or equal to 7.⁸
 - a. E.g. 5 days paid over a 7-day calendar period corresponds to a fractional week value of 0.71 and a 5-day workweek.
3. At the record level, group fractional week measure into weekday values of 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7 & missing based on mutual exclusive categories of the underlying fractional values.
 - a. E.g., fractional week values between a lower bound of 0.68 $((4.5/7 + 5/7)/2)$ & an upper bound of 0.75 $((5/7 + 5.5/7)/2)$ are grouped into a weekday value of 5, whereas a fractional week value between 0.82 $((5.5/7 + 6/7)/2)$ and 0.89 $((6/7 + 6.5/7)/2)$ is grouped into a weekday value of 6.
4. At the record level, assign a missing workweek to all records resulting in workweek fractions equal to 0, negative or greater than 1.1
5. At the claim level, assign the mode of weekday values across records to each claim⁹
 - a. Assign workweek values of 1, 1.5, 2, 2.5, 3 & missing a default value of 5
 - b. Assign a 5 day workweek to claims with mode values of 1, 1.5, 2, 2.5, 3 & missing workweeks
 - c. Assign a 4 day workweek to mode values of 3.5 & 4 workweeks
 - d. Assign a 5 day workweek to mode values of 4.5, 5 & 5.5 workweeks
 - e. Assign a 6 day workweek to mode values of 6 workweeks
 - f. Assign a 7 day workweek to mode values of 6.5 & 7 workweeks

Application of Adjustment Factor

The project team applied a workweek value to each claim in the harmonized dataset. All claims across provinces were then standardized to a 5-day workweek by applying the following adjustment factors to the outcome measure.¹⁰

- For a 4 day workweek, apply a factor of 1.25x (5/4) E.g., 16 cumulative days paid replaced with a value of 20
- For a 5 day workweek, apply a factor of 1.00x (5/5) E.g., 16 cumulative days paid remains a value of 16
- For a 6 day workweek, apply a factor of 0.83x (5/6) E.g., 16 cumulative days paid replaced with a value of 13.3
- For a 7 day workweek, apply a factor of 0.71x (5/7) E.g., 16 cumulative days paid replaced with a value of 11.4)

⁸ Claims without benefit records greater than or equal to 7 do not provide clear evidence of a non-5 day workweek. As a result, a 5-day workweek is applied

⁹ Note: Take maximum mode where two modes are present

¹⁰Note: Where the weekday correction factor applied decreased the cumulative work disability days paid to less than one, days paid for the claim are assigned a value of one.

6.1.3 Rehabilitation services

Rehabilitation services include benefit payments separate from wage-loss payments to injured workers and employers for work assessments, worksite modifications, and other work transition services. As these were not time-loss payments to workers, the project team removed rehabilitation service payments, including vocational rehabilitation (VR), from the work disability days paid measure where possible. Rehabilitation days were removed from the BC dataset by summarizing 'short-term disability' benefits only, and removed from the MB dataset by summarizing 'compensation' benefits only. Rehabilitation days were not removed from the ON data due to the lack of benefit type IDs in the ON transactional data.

Inclusion of VR payments in the work disability days measure could have inflated claims duration for ON. To investigate the influence of VR day inclusion in the ON data, the project team constructed a measure of work disability days that included VR in the MB data and compared the sensitivity measures to the report results. Overall durations with VR included in MB had a relatively small effect (<1% difference) over the first 260 days of work disability (i.e. the first year), with a larger effect on claims with longer work disability days paid. The project team notes the inclusion of VR payments in ON and does not consider it to have had a substantive effect on the work disability durations observed.

6.1.4 Health services

The project team summarized work disability days paid for wage-loss benefit types only to eliminate health care and permanent disability payments. In ON and BC, discussion with data and policy experts indicated that all health care benefit payments were removed from the work disability days paid measure. However, in MB, days paid for health services may have been included in some circumstances. Specifically, where a worker who may have been on MRTW or have returned to work left a shift to visit a physician or physiotherapist for a portion of a day. This was counted as a fractional day paid in the days lost measure (e.g. a value of 0.5).

Inclusion of health service visits may have introduced some bias to the observed MB work disability durations. All claims with days paid less than one were removed from the final analytical file as the analysis restricted the dataset to claims with one or more full days paid. Fractional days above one still remained in the data following this restriction (e.g. a value of 2.5). Following this action, some bias may have remained in the MB work disability days paid measure resulting from health services payments. The project team notes health service payments may have slightly increased the MB measure but likely did not substantively affect the work disability durations observed.

6.2 Additional comparability considerations:

6.2.1 Scope of coverage

In 2011, ~94% of the BC workforce was captured in the compensation data whereas ~72% and ~73% of the MB and ON workforces were captured respectively. This difference in coverage introduced instances where industry sectors and occupations counted in BC may not have been covered in the other provinces. Work disability durations between provinces may have been influenced by differences in covered versus non-covered workers through industry mix, average injury severities, RTW incentives, and work accommodation opportunities. To address the difference in coverage, the project team targeted industries and occupations where similar coverage was expected across provinces. Classification unit mapping by province was undertaken to identify comparable sectors with high proportions of compulsory coverage. The project team selected health care, construction, and manufacturing to increase confidence in the comparability of work disability durations between provinces.

6.2.2 Self-insurance

Different levels of self-insurance existed between provinces over the study period. Self-insured firms accounted for 3% of claims in BC, 11% of claims in MB, and 19% of claims in ON. These claims were included in the overall comparisons but were not included in the industry groupings as CU information was unavailable (i.e. claims simply assigned 'self-insured' CU). This could affect durations observed if construction, manufacturing and health care industries across provinces differed in level of self-insurance. To investigate, the project team profiled self-insurers in the dataset by employer name, noting similar organizations

across provinces including federal government, airport, postal, liquor distribution, workers' compensation and railway operation services. In MB and ON, self-insuring was more prevalent in local government and large private companies.

Mapping of self-insured claims to North American Industry Classification System (NAICS) coding was possible in ON and BC. In BC, public administration, transportation and warehousing, and retail trade accounted for 95% of self-insured claims with zero presence of claims from study industry groupings included in the study. In ON, the top three groupings of public administration, educational services, and transportation and warehousing accounted for 91% of self-insured claims. Manufacturing and construction claims were extremely limited, however a proportion of health care claims (~2500 claims over the study period) were present in the self-insurer claims. These claims were grouped for further investigation and compared to the study health care work disability durations over a one-year window. Durations for the self-insured health care claims displayed strong similarities to the study health care findings. As a result, the project team noted minor differences in self-insurance between study groupings and concluded that they did not contribute a substantive effect on the disability durations observed.

6.2.3 Classification differences between provinces

Each jurisdiction had variations in how they classified claim characteristics. For example, one province consistently used one occupational classification while another province used a related, but different occupation classification. Provincial preference for specific codes and/or use of different codes may have biased detailed comparisons.

To address potential differential classification between provinces, the project team generated three- and four-digit injury type, source, event, part of body, and occupation frequency tables for each province. Frequencies were assessed across provinces to identify large differences in proportions. We observed differences in the occupation coding (NOC 2006) in some cases at the four-digit level. For example, "6641 - Food Counter Attendants, Kitchen Helpers and Related Occupations" accounted for 11% of all claims in sales and services in BC and MB and 3% of all sales and service claims in ON. Aggregating to the three-digit level "Food Counter Attendants, Kitchen Helpers" proportions became similar across provinces. Where there was evidence of inter-provincial differences in coding at four-digit NOC level, more aggregated levels were selected. Differences in injury type coding were observed in the four-digit Z795 source of injury and event codes between provinces. Large differences in proportions were not observed for nature of injury and part of body coding. As a result, the project team selected the WorkSafeBC musculoskeletal and acute injury definitions that are based solely on nature of injury coding from McLeod et al., 2015.¹¹

¹¹ McLeod C, Sarkany D, Davies H, Lyons K, Koehoorn M. Prevention in dangerous industries: does safety certification prevent tree-faller injuries? *Scandinavian Journal of Work, Environment and Health*. 2015; 41(5): 478-485. <http://dx.doi.org/10.5271/sjweh.3259>.

Table 3 Claim workweeks and presence of partial work disability days paid by province

Claim counts by workweek	BC		MB		ON		Total
	N	%	N	%	N	%	
4-day workweek	6,028	2.3%	4,028	5.7%	19,252	6.5%	29,308
5-day workweek	213,130	82.5%	46,797	66.7%	265,143	89.6%	525,070
6-day workweek	4,069	1.6%	1,398	2.0%	4,546	1.5%	10,013
7-day workweek	35,019	13.6%	17,985	25.6%	6,993	2.4%	59,997
Unassigned workweek	1	0.0%	13	0.0%	0	0.0%	14
Total	258,247	100.0%	70,221	100.0%	295,934	100.0%	624,402

Claim counts with partial work disability days	MB	
	N	%
2007	3,530	23.1%
2008	4,063	26.5%
2009	4,077	29.0%
2010	4,091	32.0%
2011	4,224	33.2%
Total	19,985	28.5%

Note: 13 claims in MB and 1 claim in ON were not assigned an adjusted workweek.

Table 4 Unadjusted and adjusted average work disability days paid for all injury types in all industries, health care, and health care over time

	All industries						Health care					
	Unadjusted			Adjusted for partial days			Unadjusted			Adjusted for partial days		
	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
	(258247)	(70221)	(295934)	(258247)	(70220)	(295934)	(24672)	(10121)	(24519)	(24672)	(10121)	(24519)
0-<6 months	31.0	24.0	24.2	31.0	25.7	24.2	36.0	32.8	19.8	36.0	35.8	19.8
6-12 months	6.5	4.8	6.4	6.5	5.5	6.4	6.6	7.1	3.7	6.6	8.5	3.7
1 y. sum	37.4	28.8	30.6	37.4	31.2	30.6	42.6	39.8	23.5	42.6	44.3	23.5
	Adjusted for weekday length			Fully adjusted			Adjusted for weekday length			Fully adjusted		
	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
	(258246)	(70208)	(295934)	(258246)	(70208)	(295934)	(24672)	(10120)	(24519)	(24672)	(10120)	(24519)
0-<6 months	29.2	22.3	24.2	29.2	24.0	24.2	31.6	28.1	19.7	31.6	31.0	19.7
6-12 months	5.2	3.9	6.5	5.2	4.6	6.5	4.2	4.7	3.7	4.2	5.9	3.7
1 y. sum	34.4	26.2	30.7	34.4	28.5	30.7	35.9	32.8	23.4	35.9	36.9	23.4

Health care, over time										
	Unadjusted					Adjusted for partial days				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
BC	44.4	43.7	42.9	42.6	39.5	44.4	43.7	42.9	42.6	39.5
MB	44.0	43.8	39.1	36.4	34.9	47.7	47.7	43.6	41.3	40.6
ON	27.6	27.0	22.2	20.1	18.4	27.6	27.0	22.2	20.1	18.4
	Adjusted for weekday length					Fully adjusted				
	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
BC	36.5	36.1	36.8	36.3	33.8	36.5	36.1	36.8	36.3	33.8
MB	37.0	36.8	31.6	29.7	28.2	40.4	40.6	35.4	34.0	33.2
ON	27.7	27.3	22.1	19.9	17.9	27.7	27.3	22.1	19.9	17.9

Note: *N* in parentheses. M=months. Y=year. Days paid represents the average work disability days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). Unadjusted=raw data. Partial day adjusted=adjusted for the presence of partial days in the underlying transactional data. Workweek adjusted=adjusted for differences in the number of work disability days paid over a given calendar period depending on the workweek.

Table 5 Unadjusted and fully adjusted average work disability days paid by injury type for all industries and occupations

		All injuries			Strain injuries			Back strain injuries			Non-back strain injuries		
Unadjusted		BC (258247)	MB (70221)	ON (295934)	BC (157073)	MB (46070)	ON (177864)	BC (61296)	MB (18996)	ON (75834)	BC (95777)	MB (27041)	ON (101983)
	0-<6 months	31.0	24.0	24.2	32.8	25.6	24.8	28.2	23.7	22.5	35.7	26.9	26.5
	6-12 months	6.5	4.8	6.4	6.3	4.9	6.1	3.6	3.7	5.3	8.0	5.8	6.6
	1 year sum	37.4	28.8	30.6	39.0	30.5	30.8	31.8	27.4	27.8	43.7	32.7	33.1
Adjusted		BC (258246)	MB (70208)	ON (295934)	BC (157072)	MB (46062)	ON (177864)	BC (61296)	MB (18994)	ON (75834)	BC (95776)	MB (27035)	ON (101983)
	0-<6 months	29.2	24.0	24.2	30.7	25.6	24.8	26.3	23.6	22.6	33.5	27.0	26.5
	6-12 months	5.2	4.6	6.5	5.0	4.7	6.1	2.8	3.6	5.4	6.3	5.5	6.7
	1 year sum	34.4	28.5	30.7	35.7	30.3	30.9	29.1	27.2	28.0	39.9	32.5	33.1
		Non-strain injuries			Fracture			Concussion			Other non-strain injuries		
Unadjusted		BC (101174)	MB (24151)	ON (118070)	BC (18607)	MB (4047)	ON (25679)	BC (6212)	MB (455)	ON (3840)	BC (76355)	MB (19649)	ON (88551)
	0-<6 months	28.2	21.1	23.4	67.2	50.7	50.2	34.3	23.3	29.1	18.3	14.9	15.4
	6-12 months	6.8	4.4	6.9	20.7	12.7	15.9	9.3	5.9	10.1	3.2	2.7	4.2
	1 year sum	35.0	25.5	30.3	87.9	63.4	66.0	43.6	29.2	39.2	21.4	17.6	19.6
Adjusted		BC (101174)	MB (24146)	ON (118070)	BC (18607)	MB (4047)	ON (25679)	BC (6212)	MB (455)	ON (3840)	BC (76355)	MB (19644)	ON (88551)
	0-<6 months	26.8	20.8	23.4	63.6	49.8	50.0	32.7	23.0	29.0	17.4	14.7	15.4
	6-12 months	5.6	4.3	7.0	17.1	12.4	16.0	7.6	5.7	10.3	2.6	2.6	4.2
	1 year sum	32.4	25.1	30.3	80.7	62.2	65.9	40.3	28.7	39.3	20.0	17.4	19.6

Note: N in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months).

Table 6 Average work disability days paid by injury type and injury year, by industry

		All injury					Strain injury					Non-strain injury				
		2007	2008	2009	2010	2011	2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
All industry	BC	30.7	32.2	35.9	37.2	37.6	31.4	33.0	37.3	39.0	39.4	29.6	31.0	33.8	34.4	34.8
	MB	28.8	29.4	28.7	27.5	27.9	32.2	31.8	30.0	28.6	28.5	22.8	25.0	26.2	25.1	26.7
	ON	32.4	33.9	30.9	28.7	25.6	33.8	35.4	31.2	28.0	23.4	30.3	31.7	30.5	29.9	28.8
Health care industry	BC	36.5	36.1	36.8	36.3	33.8	38.9	38.0	39.2	38.9	35.9	25.7	27.5	26.6	25.0	24.7
	MB	40.4	40.6	35.4	34.0	33.2	42.7	42.9	36.7	35.0	34.1	27.8	29.2	29.2	28.6	29.1
	ON	27.7	27.3	22.1	19.9	17.9	29.8	28.3	23.5	20.6	17.2	21.3	24.0	17.3	17.5	19.9
Construction industry	BC	34.6	37.4	45.3	47.6	48.7	32.9	36.6	45.6	47.5	51.0	36.2	38.3	45.1	47.6	46.4
	MB	33.9	36.6	37.3	33.1	34.5	37.0	38.0	37.1	34.9	34.2	29.7	34.7	37.6	30.6	34.9
	ON	52.2	53.7	55.4	49.7	46.6	51.4	55.8	52.0	44.6	39.4	53.0	51.6	58.7	54.2	52.7
Manufacturing industry	BC	28.2	30.8	34.8	36.3	36.7	29.7	32.9	37.1	39.5	39.3	26.8	28.6	32.2	32.9	33.8
	MB	20.8	20.4	20.8	18.4	20.5	23.9	22.4	22.1	18.4	20.5	16.8	17.8	19.0	18.4	20.6
	ON	34.2	37.5	33.5	30.6	26.5	37.3	41.5	34.2	30.0	23.0	30.7	32.5	32.5	31.2	30.4

Note: *N* is not presented. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months).

Table 7 Average work disability days paid and percentage of claims receiving wage-loss at each threshold by injury type in all industries

	All injuries			Strain			Back strain			Non-back strain		
	BC (258246)	MB (70208)	ON (295934)	BC (157072)	MB (46062)	ON (177864)	BC (61296)	MB (18994)	ON (75834)	BC (95776)	MB (27035)	ON (101983)
0-<6 months	29.2	24.0	24.2	30.7	25.6	24.8	26.3	23.6	22.6	33.5	27.0	26.5
6-12 months	5.2	4.6	6.5	5.0	4.7	6.1	2.8	3.6	5.4	6.3	5.5	6.7
1 year sum	34.4	28.5	30.7	35.7	30.3	30.9	29.1	27.2	28.0	39.9	32.5	33.1

	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
1 week	68.5%	61.0%	55.3%	73.4%	65.6%	58.0%	73.1%	67.2%	57.5%	73.6%	64.5%	58.4%
2 weeks	51.5%	44.1%	39.2%	56.1%	47.9%	40.8%	54.1%	47.7%	38.7%	57.4%	48.1%	42.5%
1 month	37.8%	30.5%	28.2%	41.4%	32.9%	29.0%	38.1%	31.2%	26.3%	43.4%	34.2%	31.0%
3 months	16.2%	12.6%	13.9%	16.6%	13.4%	14.1%	12.3%	11.4%	12.2%	19.3%	14.9%	15.5%
6 months	7.1%	6.0%	7.6%	7.0%	6.3%	7.6%	4.1%	5.1%	6.6%	8.9%	7.2%	8.3%
9 months	3.9%	3.4%	4.9%	3.7%	3.5%	4.6%	2.1%	2.6%	4.1%	4.8%	4.1%	5.0%
12 months	0.3%	1.1%	1.5%	0.3%	0.9%	1.1%	0.2%	0.6%	1.0%	0.3%	1.1%	1.1%

	Non-strain			Fracture			Concussion			Other non-strain		
	BC (101174)	MB (24146)	ON (118070)	BC (18607)	MB (4047)	ON (25679)	BC (6212)	MB (455)	ON (3840)	BC (76355)	MB (19644)	ON (88551)
0-<6 months	26.8	20.8	23.4	63.6	49.8	50.0	32.7	23.0	29.0	17.4	14.7	15.4
6-12 months	5.6	4.3	7.0	17.1	12.4	16.0	7.6	5.7	10.3	2.6	2.6	4.2
1 year sum	32.4	25.1	30.3	80.7	62.2	65.9	40.3	28.7	39.3	20.0	17.4	19.6

	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
1 week	60.9%	52.4%	51.3%	91.8%	86.6%	83.3%	65.6%	59.6%	58.7%	53.0%	45.2%	41.7%
2 weeks	44.4%	36.7%	36.8%	85.8%	78.1%	73.0%	49.8%	43.6%	42.3%	33.9%	28.0%	26.1%
1 month	32.3%	25.8%	27.0%	77.1%	65.4%	61.2%	37.0%	26.9%	31.3%	21.0%	17.6%	16.8%
3 months	15.6%	11.0%	13.5%	44.0%	31.7%	32.5%	21.1%	12.4%	17.8%	8.2%	6.7%	7.8%
6 months	7.3%	5.2%	7.6%	21.9%	14.9%	17.5%	10.2%	6.2%	11.6%	3.5%	3.2%	4.5%
9 months	4.2%	3.2%	5.2%	12.9%	9.1%	11.9%	5.7%	4.2%	7.7%	1.9%	2.0%	3.2%
12 months	0.4%	1.4%	2.1%	1.1%	4.2%	5.2%	0.4%	2.0%	2.8%	0.2%	0.8%	1.2%

Note: *N* in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). Percentage of work disability days paid represents the percent of claims with cumulative wage-loss benefits greater than or equal to threshold values (1 day, 1 week, 2 weeks, 1 month, 3 months, 6 months, 12 months).

Table 8 Average work disability days paid and percentage of claims receiving wage-loss at each threshold by injury type in the health care industry

	All injuries			Strain			Back strain			Non-back strain		
	BC (24672)	MB (10120)	ON (24519)	BC (20100)	MB (8467)	ON (18704)	BC (7917)	MB (3708)	ON (8822)	BC (12183)	MB (4753)	ON (9876)
0-<6 months	31.6	31.0	19.7	33.7	32.4	20.6	29.4	31.2	19.1	36.6	33.3	22.0
6-12 months	4.2	5.9	3.7	4.4	6.1	3.8	2.2	5.1	3.4	5.8	6.9	4.2
1 year sum	35.9	36.9	23.4	38.1	38.5	24.4	31.6	36.3	22.5	42.4	40.2	26.2

	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
1 week	74.4%	68.1%	50.4%	78.5%	70.9%	52.8%	77.7%	72.2%	52.6%	79.1%	69.9%	52.9%
2 weeks	58.9%	53.0%	34.5%	63.3%	55.5%	36.3%	61.0%	56.1%	35.1%	64.8%	55.1%	37.3%
1 month	46.2%	40.2%	23.9%	50.4%	42.2%	25.2%	47.4%	42.2%	23.3%	52.4%	42.3%	26.8%
3 months	16.2%	18.0%	10.3%	17.1%	18.8%	10.8%	13.1%	17.2%	9.5%	19.7%	20.1%	12.0%
6 months	6.1%	7.9%	5.0%	6.3%	8.2%	5.2%	3.7%	7.2%	4.7%	8.0%	9.1%	5.6%
9 months	3.2%	4.5%	2.8%	3.2%	4.6%	2.9%	1.4%	3.6%	2.5%	4.4%	5.4%	3.2%
12 months	0.3%	0.9%	0.7%	0.3%	0.9%	0.6%	0.2%	0.8%	0.5%	0.4%	0.9%	0.6%

	Non-strain			Fracture			Concussion			Other non-strain		
	BC (4572)	MB (1653)	ON (5815)	BC (497)	MB (232)	ON (1092)	BC (332)	MB (30)	ON (197)	BC (3743)	MB (1391)	ON (4526)
0-<6 months	22.3	23.9	16.7	64.0	61.9	39.2	29.4	18.8	27.1	16.2	17.7	10.8
6-12 months	3.6	4.9	3.5	13.7	14.5	8.8	5.0	2.0	8.0	2.1	3.4	2.1
1 year sum	25.9	28.8	20.2	77.7	76.4	48.0	34.5	20.8	35.0	18.3	21.1	12.8

	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
1 week	56.4%	54.3%	42.9%	92.0%	92.3%	77.2%	68.1%	56.7%	55.4%	50.7%	47.9%	34.1%
2 weeks	39.4%	39.8%	28.8%	88.6%	87.5%	65.5%	52.8%	50.0%	40.2%	31.7%	31.6%	19.4%
1 month	27.6%	29.6%	20.0%	80.1%	78.1%	51.6%	35.3%	30.0%	31.0%	27.6%	29.6%	20.0%
3 months	12.2%	13.9%	8.6%	44.5%	43.6%	23.6%	18.4%	6.7%	16.3%	7.4%	9.1%	4.7%
6 months	5.2%	5.9%	4.1%	21.0%	18.2%	10.1%	6.1%	3.4%	8.7%	3.0%	3.9%	2.5%
9 months	2.8%	3.7%	2.6%	10.7%	10.8%	6.3%	4.0%	0.0%	6.1%	1.6%	2.6%	1.5%
12 months	0.2%	1.4%	1.0%	1.0%	4.4%	2.6%	0.0%	0.0%	2.6%	0.1%	0.9%	0.5%

Note: *N* in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). Percentage of work disability days paid represents the percent of claims with cumulative wage-loss benefits greater than or equal to threshold values (1 day, 1 week, 2 weeks, 1 month, 3 months, 6 months, 12 months).

Table 9 Average work disability days paid and percentage of claims receiving wage-loss at each threshold by injury type in the construction industry

	All injuries			Strain			Back strain			Non-back strain		
	BC (38052)	MB (8874)	ON (26501)	BC (19241)	MB (5104)	ON (12638)	BC (7412)	MB (2071)	ON (5288)	BC (11829)	MB (3030)	ON (7347)
0-<6 months	33.5	28.8	37.3	33.8	30.0	36.3	28.8	26.0	33.8	36.9	32.7	38.0
6-12 months	8.2	6.4	14.4	7.7	6.3	13.2	4.9	4.0	12.6	9.4	7.9	13.7
1 year sum	41.7	35.2	51.7	41.5	36.3	49.5	33.8	30.0	46.4	46.4	40.6	51.6

	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
1 week	69.0%	67.3%	64.8%	74.0%	72.8%	65.2%	74.1%	74.9%	63.9%	73.9%	71.4%	66.1%
2 weeks	53.0%	50.0%	50.6%	56.6%	53.8%	49.3%	54.5%	52.5%	46.2%	58.0%	54.7%	51.5%
1 month	39.9%	36.3%	40.5%	41.4%	38.0%	38.7%	37.8%	34.4%	35.7%	43.7%	40.4%	40.9%
3 months	20.3%	16.0%	24.3%	19.9%	16.7%	23.7%	15.3%	13.1%	21.7%	22.8%	19.1%	25.2%
6 months	10.4%	8.1%	15.5%	10.1%	8.3%	15.0%	6.5%	5.7%	14.1%	12.3%	10.0%	15.6%
9 months	6.2%	4.7%	10.9%	5.8%	4.7%	10.1%	3.8%	2.9%	9.6%	7.1%	5.9%	10.3%
12 months	0.6%	1.8%	4.1%	0.5%	1.4%	2.9%	0.4%	0.5%	2.6%	0.6%	2.0%	3.0%

	Non-strain			Fracture			Concussion			Other non-strain		
	BC (18811)	MB (3770)	ON (13863)	BC (4415)	MB (833)	ON (4144)	BC (823)	MB (53)	ON (311)	BC (13573)	MB (2884)	ON (9408)
0-<6 months	33.1	27.1	38.2	71.8	58.8	67.5	39.4	28.1	41.5	20.2	17.9	25.2
6-12 months	8.7	6.5	15.5	23.2	17.0	30.3	12.1	3.9	20.2	3.7	3.5	8.9
1 year sum	41.8	33.6	53.8	95.1	75.8	97.8	51.5	32.0	61.8	23.9	21.5	34.1

	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
1 week	63.9%	59.8%	64.5%	94.0%	91.2%	89.2%	68.7%	73.6%	67.9%	53.8%	50.4%	53.5%
2 weeks	49.3%	45.0%	51.9%	89.4%	85.5%	82.7%	53.9%	49.1%	50.9%	36.0%	33.3%	38.4%
1 month	38.4%	34.3%	42.0%	82.2%	75.7%	74.5%	40.3%	34.0%	39.6%	24.1%	22.4%	27.8%
3 months	20.8%	15.2%	24.9%	51.5%	37.6%	47.4%	27.4%	15.1%	28.3%	10.4%	8.7%	14.8%
6 months	10.8%	7.9%	16.0%	28.3%	20.5%	30.6%	14.6%	9.5%	21.9%	4.9%	4.2%	9.4%
9 months	6.6%	4.8%	11.8%	17.8%	12.8%	22.9%	9.3%	1.9%	14.8%	2.7%	2.5%	6.7%
12 months	0.7%	2.3%	5.2%	1.9%	5.9%	10.9%	1.0%	0.0%	6.5%	0.2%	1.3%	2.6%

Note: *N* in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). Percentage of work disability days paid represents the percent of claims with cumulative wage-loss benefits greater than or equal to threshold values (1 day, 1 week, 2 weeks, 1 month, 3 months, 6 months, 12 months).

Table 10 Average work disability days paid and percentage of claims receiving wage-loss at each threshold by injury type in the manufacturing industry

	All injuries			Strain			Back strain			Non-back strain		
	BC (38100)	MB (13947)	ON (50795)	BC (19430)	MB (7719)	ON (27537)	BC (8466)	MB (3497)	ON (12362)	BC (10964)	MB (4217)	ON (15169)
0-<6 months	27.5	17.6	25.7	29.6	19.2	27.1	25.6	17.7	23.7	32.8	20.4	29.9
6-12 months	5.0	2.7	7.5	5.1	2.7	7.5	3.2	2.1	6.8	6.6	3.2	8.1
1 year sum	32.5	20.3	33.2	34.8	21.8	34.6	28.8	19.8	30.5	39.4	23.6	38.0

	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
1 week	65.1%	52.8%	55.6%	70.8%	58.6%	57.7%	70.5%	61.0%	55.9%	71.0%	56.7%	59.1%
2 weeks	48.2%	35.5%	40.6%	53.1%	40.4%	42.2%	51.2%	40.2%	38.0%	54.6%	40.6%	45.5%
1 month	35.0%	22.6%	29.3%	38.8%	25.4%	30.4%	35.7%	24.1%	26.0%	41.2%	26.6%	34.1%
3 months	15.2%	8.0%	15.1%	16.1%	8.5%	16.2%	12.2%	7.1%	13.6%	19.2%	9.7%	18.4%
6 months	6.8%	3.5%	8.7%	7.2%	3.8%	9.3%	4.6%	2.9%	8.0%	9.2%	4.5%	10.4%
9 months	3.8%	2.0%	5.7%	3.9%	2.0%	5.7%	2.4%	1.5%	5.2%	5.1%	2.4%	6.0%
12 months	0.3%	0.7%	1.6%	0.3%	0.5%	1.0%	0.2%	0.5%	1.1%	0.3%	0.5%	1.0%

	Non-strain			Fracture			Concussion			Other non-strain		
	BC (18670)	MB (6228)	ON (23258)	BC (2886)	MB (759)	ON (4867)	BC (714)	MB (65)	ON (530)	BC (15070)	MB (5404)	ON (17861)
0-<6 months	25.3	15.6	24.0	59.1	39.0	47.7	30.3	13.7	30.5	18.5	12.3	17.4
6-12 months	4.9	2.8	7.5	16.1	9.9	15.1	6.8	3.8	12.7	2.7	1.7	5.2
1 year sum	30.2	18.3	31.5	75.2	48.9	62.8	37.1	17.5	43.2	21.2	14.0	22.6

	BC	MB	ON	BC	MB	ON	BC	MB	ON	BC	MB	ON
1 week	59.2%	45.7%	53.1%	90.1%	80.9%	82.2%	62.7%	53.9%	58.2%	53.1%	40.6%	45.0%
2 weeks	43.1%	29.5%	38.8%	83.1%	68.8%	71.1%	49.3%	37.0%	43.1%	35.2%	23.9%	29.8%
1 month	31.1%	19.2%	28.0%	72.5%	53.0%	58.3%	36.2%	13.9%	31.6%	23.0%	14.5%	19.6%
3 months	14.2%	7.3%	13.7%	39.7%	22.6%	30.7%	19.5%	4.7%	18.5%	9.1%	5.2%	8.9%
6 months	6.4%	3.3%	7.9%	20.0%	10.6%	16.5%	8.6%	3.1%	13.1%	3.7%	2.2%	5.4%
9 months	3.7%	2.0%	5.7%	12.3%	7.4%	11.2%	5.0%	3.1%	9.7%	2.0%	1.3%	4.0%
12 months	0.3%	1.0%	2.2%	0.8%	3.6%	5.0%	0.5%	0.0%	3.3%	0.2%	0.6%	1.5%

Note: *N* in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). Percentage of work disability days paid represents the percent of claims with cumulative wage-loss benefits greater than or equal to threshold values (1 day, 1 week, 2 weeks, 1 month, 3 months, 6 months, 12 months).

Table 11 Average work disability days paid by injury type for select occupations in the health care industry

		All injuries			Strain			Back strain			Non-back strain		
		BC (24672)	MB (10120)	ON (24519)	BC (20100)	MB (8467)	ON (18704)	BC (7917)	MB (3708)	ON (8822)	BC (12183)	MB (4753)	ON (9876)
All	0-<6 months	31.6	31.0	19.7	33.7	32.4	20.6	29.4	31.2	19.1	36.6	33.3	22.0
	6-12 months	4.2	5.9	3.7	4.4	6.1	3.8	2.2	5.1	3.4	5.8	6.9	4.2
	1 year sum	35.9	36.9	23.4	38.1	38.5	24.4	31.6	36.3	22.5	42.4	40.2	26.2
315		BC (4643)	MB (1411)	ON (5867)	BC (3874)	MB (1205)	ON (4583)	BC (1704)	MB (575)	ON (2288)	BC (2170)	MB (629)	ON (2295)
	0-<6 months	29.8	32.4	16.5	31.4	32.7	16.8	27.1	30.9	16.0	34.8	34.5	17.5
	6-12 months	3.8	6.1	2.2	3.7	5.9	2.1	1.6	4.9	2.1	5.3	7.0	2.1
	1 year sum	33.6	38.4	18.7	35.1	38.7	18.9	28.7	35.7	18.1	40.1	41.5	19.7
323		BC (4037)	MB (749)	ON (1953)	BC (3498)	MB (665)	ON (1543)	BC (1393)	MB (311)	ON (746)	BC (2105)	MB (354)	ON (797)
	0-<6 months	32.5	33.4	19.4	33.8	33.7	19.8	29.4	32.9	18.6	36.7	34.5	21.0
	6-12 months	4.6	6.7	4.0	4.6	6.7	3.9	2.1	6.9	3.6	6.3	6.5	4.1
	1 year sum	37.1	40.2	23.4	38.5	40.4	23.7	31.5	39.8	22.2	43.1	41.0	25.1
3413/ 3414		BC (9032)	MB (4585)	ON (8812)	BC (7674)	MB (4012)	ON (6954)	BC (2928)	MB (1760)	ON (3301)	BC (4746)	MB (2250)	ON (3652)
	0-<6 months	34.4	32.2	20.9	36.1	33.3	22.1	32.2	32.4	20.4	38.6	33.9	23.7
	6-12 months	4.5	6.0	4.4	4.6	6.1	4.5	2.5	5.1	3.7	6.0	6.9	5.2
	1 year sum	39.0	38.2	25.3	40.7	39.4	26.6	34.6	37.5	24.1	44.5	40.9	28.9

Note: N in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). 315 - Registered nurses; 323 - Licensed practical nurses and other technical occupations; 3413/3414 - Nurse aides, orderlies, and other assisting occupations.

Table 11 Continued

		Non-strain			Fracture			Concussion			Other non-strain injuries		
		BC (4572)	MB (1653)	ON (5815)	BC (497)	MB (232)	ON (1092)	BC (332)	MB (30)	ON (197)	BC (3743)	MB (1391)	ON (4526)
All	0-<6 months	22.3	23.9	16.7	64.0	61.9	39.2	29.4	18.8	27.1	16.2	17.7	10.8
	6-12 months	3.6	4.9	3.5	13.7	14.5	8.8	5.0	2.0	8.0	2.1	3.4	2.1
	1 year sum	25.9	28.8	20.2	77.7	76.4	48.0	34.5	20.8	35.0	18.3	21.1	12.8
315		BC (769)	MB (206)	ON (1284)	BC (99)	MB (42)	ON (258)				BC (608)	MB (158)	ON (980)
	0-<6 months	22.0	30.2	15.7	59.5	63.2	35.1				14.7	21.2	9.9
	6-12 months	4.2	6.7	2.6	12.3	13.4	6.0	Suppressed due to small cell size			2.3	4.8	1.5
	1 year sum	26.2	36.9	18.3	71.8	76.6	41.1				17.1	26.0	11.4
323		BC (539)	MB (84)	ON (410)	BC (54)	MB (13)	ON (87)				BC (449)	MB (69)	ON (311)
	0-<6 months	24.1	31.2	17.9	76.0	71.7	42.1				17.0	24.4	11.4
	6-12 months	4.1	6.8	4.3	14.8	20.6	7.2	Suppressed due to small cell size			2.5	4.3	3.7
	1 year sum	28.3	38.0	22.3	90.8	92.3	49.4				19.5	28.8	15.1
3413/ 3414		BC (1358)	MB (573)	ON (1858)	BC (125)	MB (65)	ON (287)				BC (1121)	MB (493)	ON (1516)
	0-<6 months	24.9	24.6	16.3	70.9	68.7	42.3				19.2	19.0	11.0
	6-12 months	4.0	5.2	3.9	17.4	11.2	10.5	Suppressed due to small cell size			2.6	4.5	2.4
	1 year sum	28.8	29.8	20.2	88.3	80.0	52.9				21.9	23.6	13.4

Note: *N* in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). 315 - Registered nurses; 323 - Licensed practical nurses and other technical occupations; 3413/3414 - Nurse aides, orderlies, and other assisting occupations.

Table 12 Average work disability days paid by injury type for select occupations in the construction industry

		All injuries			Strain			Back strain			Non-back strain		
		BC (38052)	MB (8874)	ON (26501)	BC (19241)	MB (5104)	ON (12638)	BC (7412)	MB (2071)	ON (5288)	BC (11829)	MB (3030)	ON (7347)
All	0-<6 months	33.5	28.8	37.3	33.8	30.0	36.3	28.8	26.0	33.8	36.9	32.7	38.0
	6-12 months	8.2	6.4	14.4	7.7	6.3	13.2	4.9	4.0	12.6	9.4	7.9	13.7
	1 year sum	41.7	35.2	51.7	41.5	36.3	49.5	33.8	30.0	46.4	46.4	40.6	51.6
742		BC (1091)	MB (263)	ON (419)	BC (656)	MB (169)	ON (221)	BC (220)	MB (70)	ON (80)	BC (436)	MB (99)	ON (140)
	0-<6 months	38.9	36.6	49.1	36.8	34.7	46.8	33.9	36.0	39.4	38.2	33.7	50.6
	6-12 months	9.2	8.7	23.0	8.9	9.6	18.6	6.1	9.3	16.6	10.3	9.8	19.9
	1 year sum	48.1	45.3	72.1	45.7	44.3	65.4	40.1	45.3	56.1	48.5	43.6	70.4
761		BC (10689)	MB (3193)	ON (6746)	BC (5430)	MB (1710)	ON (3050)	BC (2026)	MB (670)	ON (1264)	BC (3404)	MB (1039)	ON (1785)
	0-<6 months	31.2	27.3	37.7	32.6	28.8	36.5	29.6	25.6	34.9	34.4	30.8	37.7
	6-12 months	7.0	6.0	14.1	6.7	5.8	13.6	4.5	3.1	12.7	8.0	7.5	14.3
	1 year sum	38.2	33.3	51.9	39.3	34.6	50.1	34.1	28.8	47.5	42.5	38.3	52.0
7411		BC (561)	MB (287)	ON (538)	BC (343)	MB (171)	ON (288)	BC (105)	MB (55)	ON (116)	BC (238)	MB (116)	ON (172)
	0-<6 months	44.6	35.8	49.1	47.0	35.2	45.3	43.0	25.5	44.7	48.8	39.8	45.8
	6-12 months	11.6	10.5	19.5	13.4	10.6	16.2	11.2	7.0	14.2	14.3	12.4	17.5
	1 year sum	56.2	46.3	68.7	60.4	45.8	61.5	54.3	32.5	58.9	63.1	52.2	63.3

Note: N in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). 742 - Heavy equipment operators; 761 - Trade helpers and labourers; 7411 - Truck drivers.

Table 12 Continued

		Non-strain			Fracture			Concussion			Other non-strain injuries		
		BC (18811)	MB (3770)	ON (13863)	BC (4415)	MB (833)	ON (4144)	BC (823)	MB (53)	ON (311)	BC (13573)	MB (2884)	ON (9408)
All	0-<6 months	33.1	27.1	38.2	71.8	58.8	67.5	39.4	28.1	41.5	20.2	17.9	25.2
	6-12 months	8.7	6.5	15.5	23.2	17.0	30.3	12.1	3.9	20.2	3.7	3.5	8.9
	1 year sum	41.8	33.6	53.8	95.1	75.8	97.8	51.5	32.0	61.8	23.9	21.5	34.1
742		BC (435)	MB (94)	ON (198)	BC (149)	MB (31)	ON (81)				BC (244)	MB (60)	ON (110)
	0-<6 months	42.2	40.1	51.7	67.6	50.4	72.5				27.1	36.6	35.1
	6-12 months	9.7	7.1	27.9	19.6	2.2	46.2	Suppressed due to small cell size			3.7	9.9	13.5
	1 year sum	51.8	47.2	79.6	87.3	52.6	118.6				30.8	46.5	48.6
761		BC (5259)	MB (1483)	ON (3696)	BC (1045)	MB (340)	ON (1148)				BC (3956)	MB (1127)	ON (2466)
	0-<6 months	29.8	25.6	38.7	69.0	59.0	65.3				18.7	15.6	26.1
	6-12 months	7.2	6.2	14.6	20.6	17.0	27.3	Suppressed due to small cell size			3.5	3.0	8.4
	1 year sum	37.0	31.8	53.3	89.5	76.1	92.6				22.2	18.6	34.4
7411		BC (218)	MB (116)	ON (250)	BC (68)	MB (34)	ON (100)				BC (130)	MB (80)	ON (139)
	0-<6 months	40.8	36.7	53.4	68.5	62.0	80.6				26.0	26.3	37.2
	6-12 months	8.7	10.3	23.3	18.3	16.0	38.1	Suppressed due to small cell size			1.6	8.1	14.6
	1 year sum	49.5	47.0	76.7	86.9	78.0	118.7				27.6	34.5	51.8

Note: *N* in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). 742 - Heavy equipment operators; 761 - Trade helpers and labourers; 7411 - Truck drivers.

Table 13 Average work disability days paid by injury type for select occupations in the manufacturing industry

		All injuries			Strain			Back strain			Non-back strain		
		BC (38100)	MB (13947)	ON (50795)	BC (19430)	MB (7719)	ON (27537)	BC (8466)	MB (3497)	ON (12362)	BC (10964)	MB (4217)	ON (15169)
All	0-<6 months	27.5	17.6	25.7	29.6	19.2	27.1	25.6	17.7	23.7	32.8	20.4	29.9
	6-12 months	5.0	2.7	7.5	5.1	2.7	7.5	3.2	2.1	6.8	6.6	3.2	8.1
	1 year sum	32.5	20.3	33.2	34.8	21.8	34.6	28.8	19.8	30.5	39.4	23.6	38.0
941-947/ 951		BC (6982)	MB (2039)	ON (11014)	BC (3314)	MB (1068)	ON (5591)	BC (1442)	MB (469)	ON (2539)	BC (1872)	MB (598)	ON (3052)
	0-<6 months	28.9	19.5	26.6	30.0	20.5	28.2	26.0	17.7	23.9	33.0	22.7	31.8
	6-12 months	4.8	3.3	7.9	4.2	3.2	7.9	2.5	1.8	6.8	5.5	4.4	8.7
	1 year sum	33.7	22.7	34.5	34.2	23.7	36.1	28.5	19.5	30.7	38.5	27.0	40.6
949/ 949		BC (2402)	MB (1781)	ON (7874)	BC (1256)	MB (1057)	ON (5233)	BC (538)	MB (464)	ON (2121)	BC (718)	MB (593)	ON (3111)
	0-<6 months	22.8	14.6	25.8	25.0	16.2	28.3	20.9	15.9	24.1	28.1	16.4	31.2
	6-12 months	3.8	1.2	6.9	3.6	1.2	7.4	1.8	1.2	6.5	4.9	1.2	8.0
	1 year sum	26.6	15.8	32.7	28.6	17.4	35.7	22.7	17.1	30.6	33.0	17.6	39.2
961		BC (9139)	MB (2774)	ON (9244)	BC (4606)	MB (1538)	ON (4704)	BC (1969)	MB (713)	ON (2158)	BC (2637)	MB (823)	ON (2543)
	0-<6 months	27.2	17.3	24.4	29.9	19.3	25.8	26.7	18.2	23.3	32.2	20.2	27.9
	6-12 months	5.0	2.8	7.4	5.2	3.1	7.0	3.7	2.8	6.8	6.3	3.3	7.2
	1 year sum	32.2	20.1	31.8	35.1	22.4	32.8	30.4	21.0	30.1	38.5	23.6	35.1

Note: N in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). 941-947/951 - Machine operators; 948/949 – Mechanical, electrical and other assemblers; 961 - Labourers.

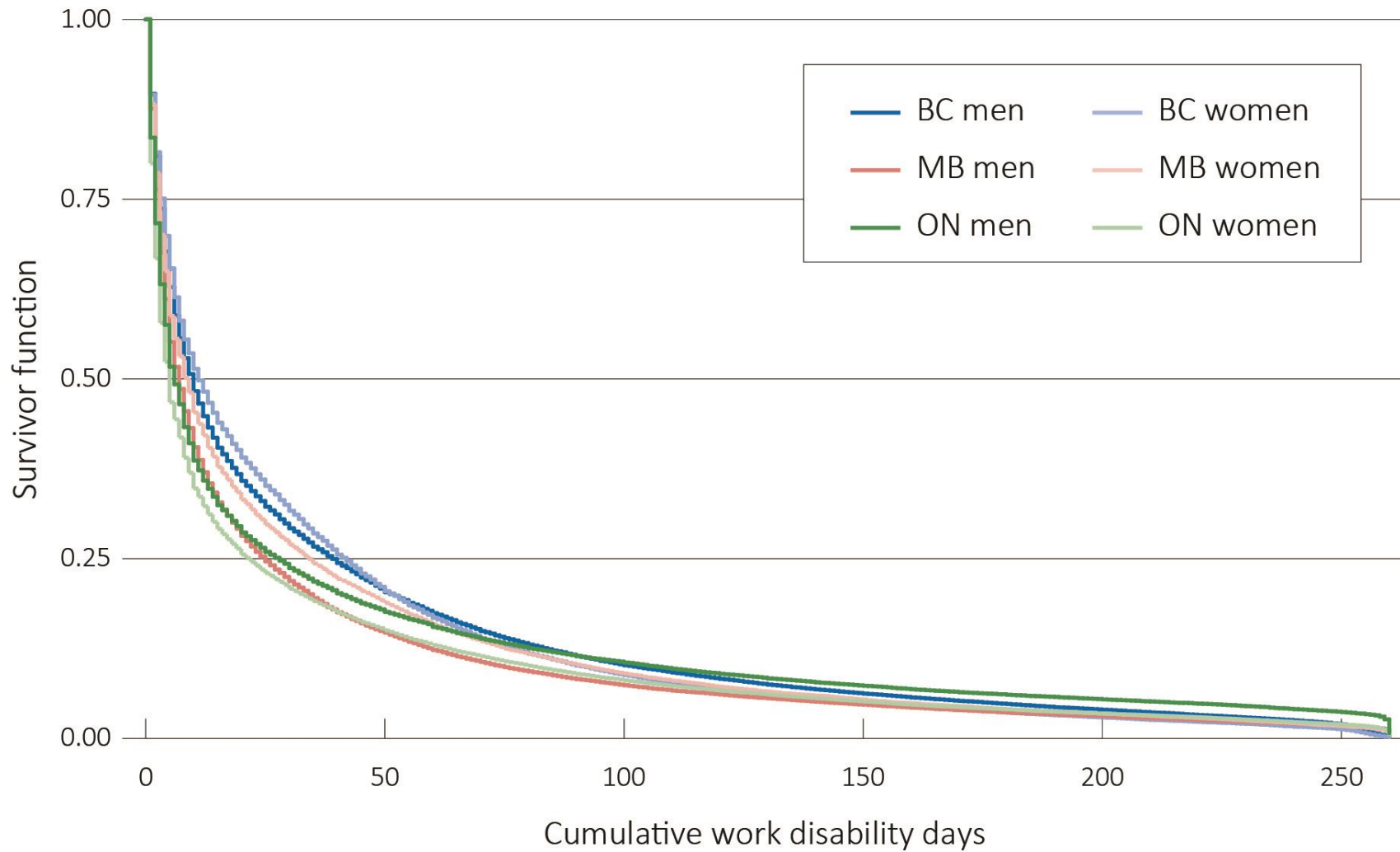
Table 13 Continued

		Non-strain			Fracture			Concussion			Other non-strain injuries		
		BC (18670)	MB (6228)	ON (23258)	BC (2886)	MB (759)	ON (4867)	BC (714)	MB (65)	ON (530)	BC (15070)	MB (5404)	ON (17861)
All	0-<6 months	25.3	15.6	24.0	59.1	39.0	47.7	30.3	13.7	30.5	18.5	12.3	17.4
	6-12 months	4.9	2.8	7.5	16.1	9.9	15.1	6.8	3.8	12.7	2.7	1.7	5.2
	1 year sum	30.2	18.3	31.5	75.2	48.9	62.8	37.1	17.5	43.2	21.2	14.0	22.6
941-947/ 951		BC (3668)	MB (971)	ON (5423)	BC (523)	MB (120)	ON (1091)				BC (3026)	MB (847)	ON (4229)
	0-<6 months	27.9	18.3	25.0	59.0	38.4	48.8				22.3	15.3	18.8
	6-12 months	5.4	3.3	7.9	16.6	7.9	15.1	Suppressed due to small cell size			3.3	2.5	6.0
	1 year sum	33.3	21.6	32.8	75.7	46.4	63.9				25.7	17.8	24.7
949/949		BC (1146)	MB (724)	ON (2641)	BC (144)	MB (65)	ON (484)				BC (956)	MB (649)	ON (2059)
	0-<6 months	20.3	12.4	20.7	50.2	34.6	44.6				15.9	10.1	14.8
	6-12 months	4.1	1.2	6.0	14.8	4.4	12.9	Suppressed due to small cell size			2.5	0.7	4.2
	1 year sum	24.4	13.5	26.7	65.0	39.0	57.5				18.4	10.8	19.0
961		BC (4533)	MB (1236)	ON (4540)	BC (665)	MB (142)	ON (854)				BC (3701)	MB (1078)	ON (3596)
	0-<6 months	24.6	14.8	23.1	60.0	39.5	47.3				18.1	11.6	17.2
	6-12 months	4.8	2.5	7.8	16.8	9.9	16.7	Suppressed due to small cell size			2.7	1.6	5.6
	1 year sum	29.4	17.3	30.8	76.8	49.5	63.9				20.8	13.1	22.9

Note: *N* in parentheses. Days paid represents the average days paid per claim summed over 1 year calendar period post injury (0-<6 months, 6-12 months, and 0-12 months). 941-947/951 - Machine operators; 948/949 – Mechanical, electrical and other assemblers; 961 - Labourers.

6.3 Gender results

Figure 2 Kaplan-Meier survival estimates of work disability duration by province and gender for all injuries in all industries and occupations



Note: Underlying Kaplan-Meier survival estimates can be found in Table 14 on the following page.

Table 14 Kaplan-Meier survival estimates of work disability duration by gender and province for all injuries in all industries and occupations

	Day	Men						Women					
		Beg. Total	Fail	Survivor function	Std. error	Lower 95% CI	Upper 95% CI	Beg. Total	Fail	Survivor function	Std. error	Lower 95% CI	Upper 95% CI
BC	1	170,330	17,617	0.897	0.001	0.895	0.898	87,916	9,197	0.895	0.001	0.893	0.897
	20	62,627	21,247	0.358	0.001	0.356	0.361	35,284	10,856	0.391	0.002	0.388	0.394
	65	28,011	33,569	0.161	0.001	0.160	0.163	13,778	20,895	0.153	0.001	0.151	0.156
	130	12,925	14,722	0.075	0.001	0.074	0.076	5,409	8,128	0.061	0.001	0.059	0.062
	195	7,190	5,625	0.042	0.001	0.041	0.043	2,741	2,626	0.031	0.001	0.030	0.032
	260	644	6,625	0.003	0.000	0.003	0.003	224	2,537	0.002	0.000	0.002	0.002
MB	1	46,972	5,825	0.876	0.002	0.873	0.879	22,969	2,696	0.883	0.002	0.878	0.887
	20	28,714	15,232	0.552	0.002	0.547	0.556	14,927	6,774	0.588	0.003	0.581	0.594
	65	5,446	7,865	0.114	0.002	0.111	0.117	3,428	4,277	0.146	0.002	0.141	0.151
	130	2,639	2,737	0.056	0.001	0.054	0.058	1,508	1,857	0.065	0.002	0.062	0.068
	195	1,518	1,109	0.032	0.001	0.031	0.034	837	665	0.036	0.001	0.034	0.039
	260	604	1,066	0.009	0.000	0.009	0.010	249	658	0.008	0.001	0.006	0.009
ON	1	174,353	28,653	0.836	0.001	0.834	0.837	113,203	22,655	0.800	0.001	0.798	0.802
	20	51,496	17,474	0.286	0.001	0.284	0.289	29,885	10,402	0.256	0.001	0.253	0.258
	65	25,945	24,347	0.147	0.001	0.145	0.148	13,940	15,223	0.121	0.001	0.119	0.123
	130	14,741	11,015	0.084	0.001	0.082	0.085	7,001	6,835	0.061	0.001	0.060	0.062
	195	9,823	4,810	0.056	0.001	0.055	0.057	4,090	2,840	0.036	0.001	0.035	0.037
	260	4,631	8,499	0.007	0.000	0.007	0.008	1,378	3,668	0.004	0.000	0.003	0.004

Note: Beginning total indicates the 'risk set' or claims at risk off transitioning off work disability benefits. Fail indicates the event of a claim transitioning off work disability benefits.

Table 15 Average work disability days paid for all injury types in all industries and occupations by province and gender, using unadjusted, fractional day adjusted, workweek adjusted, and fully adjusted measures

	Unadjusted						Fractional day adjusted					
	BC		MB		ON		BC		MB		ON	
	Men (170331)	Women (87916)	Men (46982)	Women (22972)	Men (174353)	Women (113203)	Men (170331)	Women (87916)	Men (46982)	Women (22971)	Men (174353)	Women (113203)
0-<6 months	30.5	31.9	22.5	27.3	25.8	22.1	30.5	31.9	3.8	29.7	25.8	22.1
6-12 months	6.8	5.9	4.4	5.5	7.4	4.8	6.8	5.9	5.0	6.6	7.4	4.8
1 year sum	37.3	37.8	26.9	32.8	33.2	27.9	37.3	37.8	28.8	36.2	33.2	27.9
	Workweek adjusted						Fully adjusted					
	BC		MB		ON		BC		MB		ON	
	Men (170330)	Women (87916)	Men (46972)	Women (22969)	Men (174353)	Women (113203)	Men (170330)	Women (87916)	Men (46972)	Women (22969)	Men (174353)	Women (113203)
0-<6 months	29.2	29.3	21.4	24.3	25.7	22.1	29.2	29.3	22.7	26.6	25.7	22.1
6-12 months	5.7	4.3	3.9	4.0	7.5	4.9	5.7	4.3	4.4	4.9	7.5	4.9
1 year sum	34.8	33.5	25.3	28.3	33.2	27	34.8	33.5	27.1	31.5	33.2	27

Note: *N* in parentheses. Days paid represents the average work disability days paid per claim summed over 1 year calendar period post injury (0-6 months, 6-12 months, and 0-12 months).

Table 16 Province by gender differences on transitioning off benefits by injury type for all industries and occupations, using unadjusted and fully-adjusted measures

		All injuries (615,757)		Strain injuries (376,328)		Back strain (154,022)		Non-back strain (222,306)	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
	Unadjusted								
	BC women	0.871***	(0.862, 0.879)	0.845***	(0.835, 0.855)	0.810***	(0.794, 0.826)	0.867***	(0.854, 0.881)
	MB men	1.176***	(1.164, 1.188)	1.197***	(1.181, 1.213)	1.166***	(1.142, 1.190)	1.219***	(1.198, 1.241)
	MB women	0.957***	(0.943, 0.971)	0.951***	(0.934, 0.968)	0.844***	(0.820, 0.868)	1.027*	(1.004, 1.051)
	ON men	1.123***	(1.115, 1.131)	1.169***	(1.158, 1.180)	1.144***	(1.128, 1.160)	1.189***	(1.174, 1.203)
	ON women	1.161***	(1.151, 1.171)	1.154***	(1.141, 1.167)	1.089***	(1.069, 1.108)	1.199***	(1.182, 1.217)
		All injuries (615,773)		Strain injuries (376,319)		Back strain (154,020)		Non-back strain (222,299)	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
	Adjusted								
	BC women	0.879***	(0.871, 0.888)	0.858***	(0.848, 0.869)	0.825***	(0.809, 0.841)	0.880***	(0.866, 0.893)
	MB men	1.116***	(1.104, 1.127)	1.132***	(1.117, 1.147)	1.109***	(1.086, 1.131)	1.148***	(1.128, 1.169)
	MB women	0.925***	(0.911, 0.939)	0.920***	(0.904, 0.937)	0.835***	(0.811, 0.859)	0.981	(0.959, 1.004)
	ON men	1.060***	(1.053, 1.067)	1.105***	(1.095, 1.115)	1.095***	(1.080, 1.110)	1.116***	(1.102, 1.129)
	ON women	1.090***	(1.080, 1.099)	1.082***	(1.070, 1.095)	1.032***	(1.014, 1.051)	1.118***	(1.102, 1.135)
		Non-strain (239,429)		Fracture (47,615)		Concussion (10,386)		Other (181,428)	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
	Unadjusted								
	BC women	0.930***	(0.915, 0.945)	0.898***	(0.863, 0.934)	0.955	(0.897, 1.016)	0.936***	(0.919, 0.953)
	MB men	1.145***	(1.126, 1.164)	1.332***	(1.279, 1.387)	1.259***	(1.115, 1.422)	1.118***	(1.097, 1.139)
	MB women	0.983	(0.956, 1.011)	1.122**	(1.044, 1.205)	1.154	(0.977, 1.363)	0.967*	(0.938, 0.997)
	ON men	1.073***	(1.061, 1.084)	1.187***	(1.159, 1.215)	1.075*	(1.016, 1.138)	1.070***	(1.058, 1.084)
	ON women	1.178***	(1.161, 1.195)	1.294***	(1.251, 1.339)	1.091*	(1.019, 1.168)	1.183***	(1.163, 1.203)
		Non-strain (239,424)		Fracture (47,615)		Concussion (10,386)		Other (181,423)	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
	Adjusted								
	BC women	0.930***	(0.915, 0.944)	0.895***	(0.860, 0.930)	0.949	(0.892, 1.009)	0.938***	(0.921, 0.955)
	MB men	1.092***	(1.074, 1.110)	1.178***	(1.131, 1.226)	1.195**	(1.058, 1.349)	1.086***	(1.066, 1.106)
	MB women	0.946***	(0.921, 0.973)	0.977	(0.910, 1.049)	1.072	(0.907, 1.267)	0.954**	(0.926, 0.984)
	ON men	1.010	(1.000, 1.021)	1.021	(0.997, 1.045)	0.984	(0.929, 1.042)	1.035***	(1.022, 1.047)
	ON women	1.108***	(1.092, 1.124)	1.111***	(1.074, 1.149)	1.009	(0.943, 1.081)	1.140***	(1.121, 1.159)

Note: *N* in parentheses. HR (Hazard Ratio). CI (Confidence interval). Reference category is BC men. **P*<0.05; ***P*<0.01; ****p*<0.001. All models adjusted for age, 3-digit occupation, injury type (where relevant) and injury year.

Table 17 Relative effect of gender on transitioning off benefits by work disability duration for all occupations in all industries, by all injuries, strain injuries, and back strain injuries

		All injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N 258,246	0.865***	(0.854, 0.876)	1.049***	(1.029, 1.069)	1.075***	(1.045, 1.106)	1.004	(0.971, 1.038)
MB	Women N 69,941	0.900***	(0.878, 0.922)	0.884***	(0.849, 0.921)	1.092**	(1.027, 1.161)	1.106**	(1.031, 1.187)
ON	Women N 287,556	0.966***	(0.956, 0.976)	0.936***	(0.916, 0.956)	1.019	(0.988, 1.051)	1.073***	(1.041, 1.106)
		Strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N 157,072	0.809***	(0.795, 0.822)	1.057***	(1.034, 1.081)	1.102***	(1.065, 1.141)	1.000	(0.959, 1.042)
MB	Women N 45,925	0.877***	(0.851, 0.903)	0.875***	(0.835, 0.918)	1.097*	(1.020, 1.179)	1.097*	(1.011, 1.190)
ON	Women N 173,322	0.921***	(0.908, 0.933)	0.935***	(0.910, 0.960)	0.993	(0.955, 1.032)	1.027	(0.989, 1.066)
		Back strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N 61,296	0.773***	(0.753, 0.794)	1.003	(0.968, 1.039)	1.159***	(1.093, 1.230)	1.107*	(1.014, 1.209)
MB	Women N 18,946	0.829***	(0.791, 0.868)	0.834***	(0.775, 0.897)	1.134*	(1.008, 1.275)	1.003	(0.872, 1.154)
ON	Women N 73,778	0.871***	(0.853, 0.889)	0.976	(0.936, 1.017)	1.031	(0.968, 1.099)	1.069*	(1.004, 1.139)

Note: HR (Hazard Ratio). CI (Confidence interval). Reference category for each provincial model is men. *P<0.05; **P<0.01; ***p<0.001. All models adjusted for age, three-digit occupation, injury type (where relevant) and injury year.

Table 18 Relative effect of gender on transitioning off benefits by work disability duration for all occupations in the health care industry, by all injuries, strain injuries, and back strain injuries

		All injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.783*** 24,672	(0.744, 0.823)	1.034	(0.955, 1.119)	1.067	(0.936, 1.217)	0.995	(0.844, 1.173)
MB	Women N	0.839*** 10,112	(0.778, 0.905)	0.872*	(0.763, 0.996)	0.926	(0.755, 1.135)	1.026	(0.795, 1.325)
ON	Women N	0.863*** 24,179	(0.823, 0.905)	0.863*	(0.763, 0.976)	0.946	(0.770, 1.162)	1.366*	(1.077, 1.733)
		Strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.751*** 20,100	(0.709, 0.797)	1.028	(0.944, 1.119)	1.059	(0.917, 1.222)	0.970	(0.808, 1.164)
MB	Women N	0.824*** 8,460	(0.756, 0.897)	0.89	(0.770, 1.029)	1.011	(0.805, 1.270)	1.023	(0.784, 1.334)
ON	Women N	0.841*** 18,447	(0.795, 0.890)	0.832**	(0.723, 0.957)	0.865	(0.684, 1.093)	1.294	(0.971, 1.724)
		Back strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.747*** 7,917	(0.685, 0.813)	1.014	(0.893, 1.152)	1.000	(0.795, 1.257)	1.305	(0.891, 1.912)
MB	Women N	0.868* 3,706	(0.766, 0.985)	0.844	(0.693, 1.029)	0.874	(0.630, 1.213)	0.703	(0.460, 1.073)
ON	Women N	0.826*** 8,682	(0.763, 0.894)	0.793*	(0.645, 0.976)	0.946	(0.648, 1.381)	1.328	(0.861, 2.049)

Note: HR (Hazard Ratio). CI (Confidence interval). Reference category for each provincial model is men. *P<0.05; **P<0.01; ***p<0.001. All models adjusted for age, three-digit occupation, injury type (where relevant) and injury year.

Table 19 Relative effect of gender on transitioning off benefits by work disability duration for nurse aides, orderlies, and other assisting occupations in the health care industry, by all injuries, strain injuries, and back strain injuries

		All injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.748*** 9,032	(0.683, 0.820)	0.932	(0.812, 1.070)	1.072	(0.841, 1.366)	1.212	(0.874, 1.680)
MB	Women N	0.869* 4,585	(0.775, 0.974)	0.911	(0.754, 1.102)	0.834	(0.623, 1.115)	0.818	(0.555, 1.206)
ON	Women N	0.820*** 8,812	(0.753, 0.893)	0.884	(0.698, 1.121)	1.016	(0.684, 1.507)	1.105	(0.713, 1.714)
		Strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.734*** 7,674	(0.661, 0.815)	0.945	(0.817, 1.094)	0.974	(0.757, 1.254)	1.167	(0.806, 1.690)
MB	Women N	0.846** 4,012	(0.748, 0.957)	0.887	(0.727, 1.084)	0.929	(0.673, 1.283)	0.949	(0.634, 1.419)
ON	Women N	0.812*** 6,954	(0.737, 0.895)	0.911	(0.697, 1.191)	0.821	(0.548, 1.229)	1.381	(0.810, 2.357)
		Back strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.746*** 2,928	(0.641, 0.869)	0.945	(0.761, 1.174)	1.03	(0.694, 1.530)	1.537	(0.774, 3.052)
MB	Women N	0.928 1,760	(0.773, 1.113)	0.981	(0.749, 1.283)	0.926	(0.603, 1.423)	0.635	(0.367, 1.101)
ON	Women N	0.820** 3,301	(0.718, 0.937)	0.945	(0.648, 1.377)	0.832	(0.473, 1.463)	1.521	(0.712, 3.250)

Note: HR (Hazard Ratio). CI (Confidence interval). Reference category for each provincial model is men. *P<0.05; **P<0.01; ***p<0.001. All models adjusted for age, injury type (where relevant) and injury year.

Table 20 Relative effect of gender on transitioning off benefits by work disability duration for chefs and cooks, by all injuries, strain injuries, and back strain injuries

		All injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.984 6,528	(0.928, 1.044)	0.929	(0.815, 1.059)	0.973	(0.779, 1.215)	1.102	(0.850, 1.430)
MB	Women N	0.927 1,241	(0.810, 1.060)	0.937	(0.674, 1.302)	1.190	(0.667, 2.122)	2.679*	(1.256, 5.715)
ON	Women N	0.969 5,431	(0.909, 1.033)	0.917	(0.771, 1.090)	1.069	(0.811, 1.408)	1.244	(0.952, 1.628)
		Strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.847** 2,008	(0.754, 0.951)	0.931	(0.777, 1.115)	0.937	(0.704, 1.247)	1.040	(0.740, 1.462)
MB	Women N	0.746* 429	(0.584, 0.953)	0.912	(0.577, 1.442)	1.517	(0.679, 3.385)	1.490	(0.627, 3.540)
ON	Women N	0.863* 1,680	(0.768, 0.970)	1.012	(0.784, 1.305)	1.036	(0.713, 1.503)	1.235	(0.872, 1.749)
		Back strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.821* 805	(0.687, 0.981)	0.809	(0.613, 1.068)	1.423	(0.860, 2.355)	0.900	(0.432, 1.876)
MB	Women N	0.532** 171	(0.360, 0.786)	1.336	(0.626, 2.852)	2.020	(0.626, 6.518)	0.185	(0.018, 1.855)
ON	Women N	0.906 709	(0.759, 1.081)	1.101	(0.751, 1.612)	0.978	(0.533, 1.794)	1.004	(0.530, 1.903)

Note: HR (Hazard Ratio). CI (Confidence interval). Reference category for each provincial model is men. *P<0.05; **P<0.01; ***p<0.001. All models adjusted for age, injury type (where relevant) and injury year.

Table 21 Relative effect of gender on transitioning off benefits by work disability duration for retail salespersons, by all injuries, strain injuries, and back strain injuries

		All injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.875*** 8,731	(0.829, 0.924)	0.998	(0.898, 1.109)	0.952	(0.796, 1.138)	1.236	(0.981, 1.558)
MB	Women N	0.911 1,207	(0.797, 1.041)	0.606**	(0.448, 0.820)	0.883	(0.510, 1.528)	1.434	(0.767, 2.681)
ON	Women N	0.939** 11,232	(0.899, 0.980)	0.982	(0.874, 1.104)	0.918	(0.770, 1.095)	1.204	(0.988, 1.467)
		Strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.805*** 5,286	(0.750, 0.865)	0.973	(0.861, 1.099)	1.058	(0.852, 1.314)	1.241	(0.941, 1.637)
MB	Women N	0.882 829	(0.749, 1.037)	0.615**	(0.433, 0.875)	0.804	(0.418, 1.547)	2.067	(0.949, 4.499)
ON	Women N	0.876*** 6,485	(0.827, 0.928)	0.999	(0.863, 1.156)	0.873	(0.704, 1.084)	1.206	(0.942, 1.544)
		Back strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.792*** 2,220	(0.712, 0.881)	1.045	(0.876, 1.247)	1.298	(0.938, 1.798)	1.348	(0.825, 2.202)
MB	Women N	0.771* 369	(0.604, 0.984)	0.559*	(0.337, 0.925)	0.467	(0.162, 1.346)	4.869	(0.610, 38.869)
ON	Women N	0.830*** 3,023	(0.765, 0.901)	1.01	(0.813, 1.256)	1.122	(0.804, 1.566)	1.305	(0.895, 1.904)

Note: HR (Hazard Ratio). CI (Confidence interval). Reference category for each provincial model is men. *P<0.05; **P<0.01; ***p<0.001. All models adjusted for age, injury type (where relevant) and injury year.

Table 22 Relative effect of gender on transitioning off benefits by work disability duration for janitors, caretakers and building superintendents, by all injuries, strain injuries, and back strain injuries

		All injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.835*** 5949	(0.778, 0.896)	0.929	(0.832, 1.038)	1.068	(0.906, 1.259)	1.024	(0.850, 1.234)
MB	Women N	0.782*** 1686	(0.675, 0.905)	1.04	(0.817, 1.325)	1.207	(0.818, 1.781)	1.333	(0.843, 2.107)
ON	Women N	0.891*** 9453	(0.847, 0.938)	1.028	(0.922, 1.146)	1.102	(0.934, 1.300)	1.193	(0.998, 1.426)
		Strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.797*** 3966	(0.730, 0.871)	0.949	(0.836, 1.076)	1.147	(0.946, 1.390)	0.977	(0.779, 1.225)
MB	Women N	0.798** 1206	(0.676, 0.943)	0.979	(0.743, 1.289)	1.062	(0.674, 1.675)	1.029	(0.618, 1.713)
ON	Women N	0.830*** 6199	(0.779, 0.884)	1.003	(0.882, 1.141)	1.059	(0.865, 1.295)	1.094	(0.884, 1.354)
		Back strain injuries							
		0-19 days		20-64 days		65-129 days		130-260 days	
		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
BC	Women N	0.695*** 1490	(0.601, 0.805)	0.939	(0.768, 1.147)	1.300	(0.915, 1.849)	0.996	(0.600, 1.653)
MB	Women N	0.719* 489	(0.543, 0.951)	0.895	(0.579, 1.384)	1.161	(0.542, 2.484)	0.923	(0.343, 2.483)
ON	Women N	0.777*** 2763	(0.705, 0.856)	1.230*	(1.004, 1.505)	1.323	(0.945, 1.852)	1.134	(0.789, 1.632)

Note: HR (Hazard Ratio). CI (Confidence interval). Reference category for each provincial model is men at day one. *P<0.05; **P<0.01; ***p<0.001. All models adjusted for age, injury type (where relevant) and injury year.

Table 23 Predicted survival estimates of work disability duration by gender and province for selected occupational groups

	Day	BC		MB		ON	
		Men	Women	Men	Women	Men	Women
All injuries all in occupations	1	903	915	884	895	834	839
	20	368	421	293	332	278	291
	65	153	139	111	143	129	148
	130	63	51	50	38	67	63
	195	31	31	27	19	41	33
	260	1	1	6	4	3	2
	Day	BC		MB		ON	
		Men	Women	Men	Women	Men	Women
All injuries for nurse aides in health care	1	919	939	900	913	777	813
	20	408	512	380	432	182	247
	65	132	151	151	179	75	101
	130	50	40	55	89	36	34
	195	29	14	27	53	21	14
	260	4	1	3	8	2	1
	Day	BC		MB		ON	
		Men	Women	Men	Women	Men	Women
All injuries for janitors, caretakers and building superintendents	1	920	933	869	896	842	857
	20	397	426	314	405	259	300
	65	166	188	126	116	113	106
	130	72	60	61	34	54	40
	195	33	30	38	13	34	18
	260	1	1	11	2	4	1

7 Classification Tables

7.1 Injury type classification

Table 24 Injury type classification

Traumatic Injuries Restrict to WorkSafeBC definition of 'Traumatic Injuries and Disorders' using CSA Z795 Nature of Injury (NOI) codes				
Strain Injuries <i>Based on NOI coding</i> Back strain Bursitis & related Multiple injuries <ul style="list-style-type: none"> Sprains or strains and bruises Other injuries <ul style="list-style-type: none"> Traumatic injuries to muscles, tendons, ligaments, joints, etc., unspecified Sprains, strains, tears Nonspecific injuries and disorders (back pain, hurt back, soreness, pain, hurt, except the back) Tendinitis, tenosynovitis		Non-Strain Injuries <i>Based on NOI coding</i> Abrasion Amputation Chemical burns Concussion Contusion Dislocation Electrocutation Exposure to Cold Exposure to Heat Fractures Hearing loss Heat burns Infected blisters Laceration Multiple injuries <ul style="list-style-type: none"> Excluding those in the strain injury definition Other injuries <ul style="list-style-type: none"> Excluding those in the strain injury definition Other occupational disease Poisoning Radiation Respiratory inflammation		
Back Strains <i>Based on CSA Z795 Part of Body (PoB) coding</i> 23* Back, including spine, spinal cord (23000-23999)	Non-Back Strains <i>Based on PoB coding</i> All Part of Body codes excluding 23* Back, (23000-23999)	Fractures Fracture Fractures and Burns Fractures and Other Injuries	Concussions Concussions	Other Non-Strain All remaining categories

Table 25 Nature of injury coding

CSA Z795 NOI Code	Injury description	Injury description used by project team
01000	Other Injuries	Non-strain
01100	Dislocation	Non-strain
01200	Fractures	Non-strain (Fracture)
01300	Other Injuries	Non-strain
01400	Other Injuries	Non-strain
01800	Multiple Injuries	Non-strain
01900	Other Injuries	Non-strain
02000	Other Injuries	Strain
02100	Back Strain	Strain
02101	Other Strains	Strain
02102	Other Injuries	Strain
02190	Back Strain	Strain
02900	Back Strain	Strain
02901	Bursitis & Related	Strain
02902	Tendinitis, Tenosynovitis	Strain
02903	Bursitis & Related	Strain
02904	Tendinitis, Tenosynovitis	Strain
02905	Tendinitis, Tenosynovitis	Strain
02906	Tendinitis, Tenosynovitis	Strain
02907	Tendinitis, Tenosynovitis	Strain
02908	Other Strains	Strain
02909	Other Strains	Strain
02910	Other Injuries	Non-strain
02911	Other Injuries	Non-strain
02912	Other Injuries	Non-strain
02913	Other Injuries	Non-strain
02914	Other Injuries	Non-strain
02915	Other Injuries	Non-strain
02916	Other Injuries	Non-strain
02917	Other Injuries	Non-strain
02918	Other Injuries	Non-strain
02919	Other Injuries	Non-strain
02920	Other Injuries	Non-strain
02921	Other Injuries	Non-strain
02922	Other Injuries	Non-strain
02923	Other Injuries	Non-strain
03000	Laceration	Non-strain
03100	Amputation	Non-strain
03110	Amputation	Non-strain
03190	Amputation	Non-strain
03200	Poisoning	Non-strain
03300	Laceration	Non-strain
03400	Laceration	Non-strain
03500	Amputation	Non-strain
03600	Laceration	Non-strain
03700	Laceration	Non-strain
03800	Laceration	Non-strain
03900	Laceration	Non-strain
04000	Contusion	Non-strain
04100	Abrasion	Non-strain
04200	Infected Blisters	Non-strain
04300	Contusion	Non-strain
04400	Abrasion	Non-strain
04500	Abrasion	Non-strain
04800	Contusion	Non-strain
04900	Contusion	Non-strain
05000	Heat Burns	Non-strain
05100	Chemical Burns	Non-strain
05101	Chemical Burns	Non-strain
05102	Chemical Burns	Non-strain
05103	Chemical Burns	Non-strain
05190	Chemical Burns	Non-strain
05200	Electrocution	Non-strain
05201	Electrocution	Non-strain
05202	Electrocution	Non-strain

05203	Electrocution	Non-strain
05290	Electrocution	Non-strain
05300	Heat Burns	Non-strain
05301	Heat Burns	Non-strain
05302	Heat Burns	Non-strain
05303	Heat Burns	Non-strain
05390	Heat Burns	Non-strain
05800	Heat Burns	Non-strain
05900	Heat Burns	Non-strain
06000	Concussion	Non-strain
06100	Concussion	Non-strain
06200	Concussion	Non-strain (Concussion)
06800	Concussion	Non-strain
06900	Concussion	Non-strain
07000	Other Occupational Disease	Non-strain
07100	Exposure to Cold	Non-strain
07110	Exposure to Cold	Non-strain
07120	Exposure to Cold	Non-strain
07130	Exposure to Cold	Non-strain
07180	Exposure to Cold	Non-strain
07190	Exposure to Cold	Non-strain
07200	Exposure to Heat	Non-strain
07210	Exposure to Heat	Non-strain
07220	Exposure to Heat	Non-strain
07230	Exposure to Heat	Non-strain
07240	Exposure to Heat	Non-strain
07280	Exposure to Heat	Non-strain
07290	Exposure to Heat	Non-strain
07300	Other Occupational Disease	Non-strain
07310	Hearing Loss	Non-strain
07320	Respiratory Inflammation	Non-strain
07330	Other Occupational Disease	Non-strain
07380	Other Occupational Disease	Non-strain
07390	Other Occupational Disease	Non-strain
07800	Other Occupational Disease	Non-strain
07900	Other Occupational Disease	Non-strain
08000	Multiple Injuries	Non-strain
08100	Multiple Injuries	Non-strain
08200	Multiple Injuries	Strain
08300	Multiple Injuries	Non-strain (Fracture)
08400	Multiple Injuries	Non-strain (Fracture)
08500	Multiple Injuries	Non-strain
08600	Multiple Injuries	Non-strain
08900	Multiple Injuries	Non-strain
08901	Multiple Injuries	Non-strain
08902	Multiple Injuries	Non-strain
09000	Other Injuries	Non-strain
09100	Other Injuries	Non-strain
09200	Other Injuries	Non-strain
09300	Electrocution	Non-strain
09400	Other Injuries	Non-strain
09401	Other Injuries	Non-strain
09402	Other Injuries	Non-strain
09403	Other Injuries	Non-strain
09490	Other Injuries	Non-strain
09500	Poisoning	Non-strain
09510	Poisoning	Non-strain
09520	Radiation	Non-strain
09590	Poisoning	Non-strain
09590	Respiratory Inflammation	Non-strain
09600	Other Injuries	Non-strain
09610	Other Injuries	Non-strain
09620	Other Injuries	Non-strain
09680	Other Injuries	Non-strain
09690	Other Injuries	Non-strain
09690	Poisoning	Non-strain
09700	Other Injuries	Non-strain

09710	Contusion	Non-strain
09720	Other Strains	Strain
09730	Other Strains	Strain
09780	Other Injuries	Non-strain
09790	Other Injuries	Non-strain
09900	Other Injuries	Non-strain

7.2 Industry classification

Table 26 Health care industry coding

BC	
Rate Group	Rate Group Description
766001	Acute Care
766011	Long Term Care
766019	Short Term Care
MB	
Rate Group	Rate Group Description
70202	Health Services
ON	
Rate Group	Rate Group Description
8611-000	General Hospitals
8612-000	Rehabilitation Hospitals
8613-000	Extended Care Hospitals
8614-000	Psychiatric Hospitals
8615-000	Addiction Hospitals
8617-000	Paediatric Hospitals
8619-000	Other Specialty Hospitals
8621-001	Long Term Care Home Operation
8634-000	Nursing and Other Health Care

Table 27 Construction industry coding

BC	
Rate Group	Rate Group Description
721001	Asbestos Abatement or Mould Remediation
721003	Blasting or Avalanche Control
721005	Building Demolition
721006	Cellular, Microwave, Radar, or Transmission Tower Erection, Installation, Service, or Repair
721008	Commercial Refrigeration or Commercial Air Conditioning Work
721053	Commercial Tank or Boiler Installation or Removal
721009	Concrete Cutting or Coring
721010	Concrete Placing, Finishing, Surfacing, or Repair
721011	Concrete Pumping
721012	Concrete Reinforcing
721013	Construction Labour Supply or General Labour Supply (not elsewhere specified)
721014	Crane Operation
721015	Deck, Railing, or Fence Installation
721016	Decking Application or Waterproofing
721017	Dredging
721018	Drywalling or Acoustic Board Installation
721019	Electrical Work
721031	Excavation, or Private Landfill or Transfer Station Operation
721021	Finishing Carpentry
721022	Fire and Flood Restoration
721023	Floor Covering Installation (not elsewhere specified)
721024	Framing or Residential Forming
721026	Hardwood Floor Laying or Refinishing
721027	House or Other Wood Frame General Contracting, Construction or Renovation Work
721028	Industrial, Commercial, Institutional or Highrise Residential General Contracting or Construction
721029	Insulation Work or Fireproofing
721035	Log Home Construction
721036	Low Slope Roofing
721037	Masonry
721058	Mechanical Insulation
721038	Oil or Gas Pipeline Construction or Repair
721040	Overhead Door Installation
721041	Painting or Wallpapering
721042	Plastering, Lathing, or Stucco Work
721043	Plumbing, Heating, Vent, Residential Air Conditioning, or Central Vacuum System Installation or Repair
721044	Pool, Spa, or Hot Tub Installation or Structural Repair
721046	Power Pole, Powerline, or Transmission Line Installation, Service, or Repair
721020	Pre-engineered Steel Building Construction
721047	Scaffolding, Tent, Staging, or Display Booth Rental and Installation
721049	Siding, Awning, or Gutter Installation, Service, or Repair
721050	Sign Installation, Service, or Repair
721051	Steep Slope Roofing
721052	Structural Concrete Forming
721054	Tile Work or Terrazzo Laying
721056	Water Well, Foundational, or Directional Drilling
721057	Welding Services or Ornamental Metal Installation
722001	Bridge, Overpass, or Viaduct Construction or Repair
722009	Cut and Cover Tunnel Construction
722002	House Raising or Structural Moving of Buildings or Heavy Equipment
722010	Mechanized Tunnel Boring Construction
722003	Pier, Wharf, or Dry Dock Construction or Repair
722004	Pile Driving
722005	Steel Frame Erection or Structural Repair of Steel Frames
722006	Steel Frame Painting, Bridge Painting, or Bridge Cleaning
722007	Structural Concrete Reservoir, Flume, Dam, Dyke, Causeway, or Jetty Construction or Repair
722011	Tunnel Construction (not elsewhere specified)
723010	Earth and Rock Filled Structure Construction
723002	Highway Maintenance (routine maintenance of all aspects of a specific section of highway)
723003	Highway, Road, or Parking Lot Painting
723004	Paving Services or Asphalt Manufacture
723005	Railway Construction, Maintenance, or Demolition
723006	Road Construction (not elsewhere specified)

723007	Snow or Ice Removal
723008	Street Cleaning
723009	Traffic Control
MB	
Rate Group	Rate Group Description
40102	Building Construction
40103	Flooring, Tiling
40104	Metal Install, NEC
40105	Paint & Decorate
40106	Wreck or Move Buildings
40107	Erection of Signs
40108	Drywall, Stucco
40109	Glaze Doors, Windows
40110	Concrete Work
40112	Installation, NEC
40114	Install Pools, Lagoons
40115	Landscaping
40203	Electric Wiring
40204	Plumbing, Mechanical, Insulation
40402	Outside Sheet Metal
40403	Roofing, Eaves
40502	Bridge & Steel Building
40602	Installation of Elevators
40603	Install Heavy Machinery
40702	Construction Sewer Water
40705	Pipeline Construction
40706	Excavation Foundation
40707	Construction Dams, Wharves
40709	Under Water, Piling
40802	Trenching, Drainage
40803	Roadwork
40806	Stone Crush, Gravel
40809	Equipment Operator
40903	Construction Power Lines
40904	Construction of Railways
ON	
Rate Group	Rate Group Description
G-704-01	Electrical Work
G-704-02	Testing, Inspection, and Related Services Amendment/08
G-704-03	Office Furniture Installation
G-707-01	Drain Contractors
G-707-02	Plumbing, Heating, and Air Conditioning, Installation Amendment/08
G-707-03	Sheet Metal and Other Duct Work
G-707-04	Thermal Insulation Work Amendment/06
G-707-05	Industrial Maintenance and Repair Contracting Amendment/06
G-711-01	Gas Distribution Lines
G-711-02	Highways, Streets, and Small Bridges
G-711-03	Park Grounds and Recreational Open Space
G-711-04	Septic System Installation
G-711-05	Excavating and Grading
G-711-06	Equipment Rental (with operator) Amendment/09
G-711-07	Asphalt Paving
G-711-08	Fencing and Deck Installation
G-711-09	Swimming Pool Installation
G-719-01	Plaster, Drywall, and Acoustical Work Amendment/06
G-719-02	Painting and Decorating
G-719-03	Terrazzo and Tile Work
G-719-04	Carpeting and Flooring
G-719-05	Interior Designing Services
G-719-06	Insulation Work Amendment/06
G-723-01	Apartment and Condominium Construction Amendment/07
G-723-02	Industrial, Commercial, and Institutional Construction
G-723-03	Heavy Engineering Construction

G-723-04	Asbestos Abatement Amendment /06
G-723-05	Construction Project Management
G-723-07	Non-structural Interior Demolition Amendment/06
G-728-01	Roof Shingling Amendment/06
G-728-02	Sheet Metal and Built-up Roofing Amendment/06
G-732-01	Gas and Oil Pipelines, Construction
G-732-02	Large Bridge Construction Amendment/06
G-732-03	Waterworks and Sewage Systems
G-732-04	Other Heavy Construction
G-732-05	Piledriving Work
G-737-01	Millwright and Rigging Work Amendment/08
G-737-02	Ornamental and Fabricated Metal Installation
G-737-03	Other Trade Work Amendment/06
G-737-04	Custom Welding Services Amendment/07
G-741-01	Masonry Operations Amendment/06
G-748-01	Wrecking and Structural Demolition Amendment/06
G-748-02	Precast Concrete Installation
G-748-03	Structural Steel Erection
G-748-04	Other Structural Work
G-748-05	Painting of Structures
G-748-06	Above Ground Window Cleaning
G-748-08	Other Services to Buildings and Dwellings
G-748-09	Form Work (high-rise) Amendment/09
G-751-01	Siding Work Amendment/07
G-751-02	Glass and Glazing Work Amendment/07
G-751-05	Caulking and Weatherstripping
G-751-06	Concrete Finishing Amendment/09
G-751-07	Concrete Sealing
G-751-08	Steel Reinforcing Amendment/06
G-751-09	Concrete Cutting and Drilling Amendment/06
G-755-01	Non-Exempt Partners and Executive Officers in Rate Group 704
G-755-02	Non-Exempt Partners and Executive Officers in Rate Group 707
G-755-03	Non-Exempt Partners and Executive Officers in Rate Group 711
G-755-04	Non-Exempt Partners and Executive Officers in Rate Group 719
G-755-05	Non-Exempt Partners and Executive Officers in Rate Group 723
G-755-06	Non-Exempt Partners and Executive Officers in Rate Group 728
G-755-07	Non-Exempt Partners and Executive Officers in Rate Group 732
G-755-08	Non-Exempt Partners and Executive Officers in Rate Group 737
G-755-09	Non-Exempt Partners and Executive Officers in Rate Group 741
G-755-10	Non-Exempt Partners and Executive Officers in Rate Group 748
G-755-11	Non-Exempt Partners and Executive Officers in Rate Group 751
G-755-12	Non-Exempt Partners and Executive Officers in Rate Group 764
G-764-01	Homebuilding Operations Amendment/07
G-764-02	Form Work (low-rise) Amendment/09
G-764-03	Rough and Framing Carpentry
G-764-04	Finish Carpentry
G-764-05	Land Developers
G-764-06	House Raising/Moving
G-764-07	Supply of Labour, Construction Amendment/07
I-929-01	Supply of Non-clerical Labour Operations Amendment/07

Table 28 Manufacturing industry coding

BC	
Rate Group	Rate Group Description
711001	Abattoir
711002	Alcoholic Beverage Manufacture
711003	Animal Feed or Supplement Manufacture or Packaging
711004	Baked Goods Manufacture
711005	Butter, Cheese, or Ice Cream Manufacture
711006	Candy or Chocolate Manufacture
711007	Cereal, Biscuit, Taco or Rice Product, Pasta, or Other Dry Food Product Manufacture (not elsewhere specified)
711008	Coffee, Tea, Herb, or Spice Packaging or Manufacture
711010	Fish Processing, Fish Reduction, or Fish Canning
711011	Flour Mill or Rice Mill
711012	Food Product Manufacture (not elsewhere specified)
711013	Fruit or Vegetable Canning, Bottling, or Processing or Fruit or Vegetable Product Manufacture
711014	Ice Manufacture
711015	Liquid Dairy Product Manufacture
711017	Meat Cutting, Packing, Processing, or Canning
711018	Non-Alcoholic Beverage Manufacture or Water Bottling
711019	Poultry Processing
711020	Sausage or Sausage Casing Manufacture
711021	Smoked, Cured or Prepared Meat Product Manufacture (not elsewhere specified)
711022	Sugar Refining and Packaging
711023	Winery
712001	Aircraft, Automobile, or Truck Assembly
712002	Auto Spring or Chain Manufacture
712045	Automated Wood Processing Equipment Manufacture
712003	Boiler, Tank, or Furnace Manufacture
712004	Cement Manufacture
712005	Ceramic or Terra Cotta Tile, Clay Brick, or other Ceramic or Clay Product Manufacture (not elsewhere specified)
712025	Commercial Marine Vessel Manufacture, Service or Repair
712006	Concrete Product Manufacture
712008	Die Casting or Non-Ferrous Foundry Operations
712009	Electrical Switchgear or Transformer Manufacture, Installation, Service, or Repair
712010	Elevator or Escalator Manufacture, Installation, Service, or Repair
712011	Engine or Cylinder Manufacture or Rebuilding or Automobile Part Manufacture
712013	Ferrous Foundry Operations
712014	Galvanizing, Electroplating, or Protection Plating
712015	Gypsum Product Manufacture
712016	Heavy Equipment, Machinery, or Parts Manufacture or Installation (greater than 500 lb.)
712017	Industrial Saw Blade Manufacture, Sharpening, Service, or Repair
712018	Light Industrial Equipment, Machinery, or Power Tool Manufacture (less than 500 lb.)
712019	Lime Kiln or Lime Manufacture
712020	Machine Shop
712021	Metal Bed, Furniture, or Ladder Manufacture
712022	Metal Can or Tinware Product Manufacture
712024	Metal Door, Screen Door, or Aluminum Window Manufacture
712026	Metal Pipe or Fitting Manufacture
712028	Metal Product Manufacture (not elsewhere specified)
712029	Metal Railing or Gate Manufacture
712030	Metal Recycling
712031	Powder Coating or Metal Enamelling
712032	Precision Instrument or Fishing Tackle Manufacture
712033	Ready Mix Concrete Manufacture and Delivery
712034	Sheet Metal Fabrication
712035	Smelter
712043	Soil, Topsoil, Peat, or Other Similar Gardening Material Packaging
712037	Stone or Marble Cutting, Dressing, Shaping, or Lettering, or Stone or Marble Product Manufacture
712038	Structural Concrete Product Manufacture
712027	Structural Metal Product Fabrication
712039	Tool and Die Making
712040	Truck Body or Trailer Manufacture
712041	Wire, Cable, or Other Wire Product Manufacture (not elsewhere specified)
713001	Acid, Base, Salt, Chemical, or Dye Manufacture (not elsewhere specified)
713002	Asphalt or Tar Roofing Product Manufacture

713003	Battery or Fuel Cell Manufacture
713004	Candle, Polish, or Other Wax Product Manufacture
713006	Compressed or Liquefied Gas Manufacture
713007	Cosmetic Product or Beauty Aid Manufacture
713008	Drug, Vitamin, or Pharmaceutical Manufacture
713009	Explosives, Fireworks, or Munitions Manufacture
713010	Fertilizer Manufacture
713012	Fibreglass Insulation Manufacture
713011	Fibreglass or Cultured Marble Product or Acrylic Household Fixture Manufacture
713013	Foam Product Manufacture
713015	Glue or Adhesive Manufacture
713016	Industrial Rubber Belt Manufacture, Installation, Service, or Repair
713018	Oil or Gas Production
713036	Oil Refining or Recycling
713020	Paint, Putty, Stain, Sealant, Wood Filler, Varnish, or Waterproofing Agent Manufacture
713021	Petrochemical Manufacture
713022	Plastic Colour Concentrate or Ink Manufacture
713023	Plastic Film Extrusion and Flexible Packaging Manufacture
713024	Plastic or Rubber Recycling
713026	Plastic Product Manufacture (by blow moulding)
713028	Plastic Product Manufacture (by profile extrusion)
713027	Plastic Product Manufacture (by rotational moulding or liquid moulding)
713025	Plastic Product Manufacture (by thermoforming, injection moulding, or other moulding processes (not elsewhere specified))
713029	Post Extrusion Fabrication of Plastic Products
713030	Rubber Mat, Mattress, or Life Raft Manufacture
713031	Small Rubber or Plastic Product Manufacture
713032	Soap, Bleach, or Cleaning Compound Manufacture
713033	Synthetic Resin Compound Manufacture
713034	Tire Retreading or Recapping
714001	Cardboard or Paper Container Manufacture
714004	Custom Wood Kiln
714045	Firewood Yard
714007	Flush Door Manufacture
714008	Furniture Refinishing or Restoration
714009	Laminated Wood Structural Support Product Manufacture
714012	Oriented Strand Board Manufacture
714013	Paper Product Manufacture (not elsewhere specified)
714014	Paper Recycling or Cellulose Insulation Manufacture
714015	Planing Mill
714016	Portable Wood Mill
714018	Prefabricated Log Home Kit Manufacture
714017	Pre-Hung Door Assembly
714019	Pressed Board Manufacture (not elsewhere specified)
714020	Printing
714044	Pulp and Paper Mill
714022	Sawmill
714023	Shake or Shingle Mill
714025	Stile and Rail Door Manufacture
714026	Upholstering
714027	Veneer or Plywood Manufacture
714028	Wood Chip Mill
714030	Wood Preserving
714041	Wood Window Manufacture
714031	Wooden Box, Crate, Pallet, or Lath Manufacture
714032	Wooden Component Manufacture (not elsewhere specified)
714033	Wooden Fence or Gate Manufacture
714034	Wooden Furniture Manufacture
714035	Wooden Moulding Manufacture
714037	Wooden Post or Pole Manufacture
714038	Wooden Product Manufacture (not elsewhere specified)
714036	Wooden Toy or Musical Instrument Manufacture
714040	Wooden Truss Manufacture
714042	Woodworking or Carpentry Shop
715001	Art, Craft, or Ornament Manufacture
715002	Awning or Awning Sign Manufacture
715003	Blind or Drapery Track Manufacture
715026	Box Spring or Mattress Manufacture

715004	Brush, Broom, or Mop Manufacture
715005	Canvas or Nylon Product Manufacture (not elsewhere specified)
715006	Carpet or Rug Manufacture
715008	Clothing, Clothing Accessory, or Other Cloth Product Manufacture (not elsewhere specified)
715009	Commercial Sign Manufacture
715010	Cord, Rope, or Net Manufacture
715011	Cushion or Stuffed Toy Manufacture
715012	Custom Tailoring
715013	Drapery Manufacture
715014	Electric or Electronic Product or Component Manufacture (not elsewhere specified)
715016	Fabric Manufacture
715029	Footwear, Luggage, or Leather Product Manufacture or Repair
715035	Gasket or Filter Manufacture
715019	Glass Recycling or Glass Brick, Bottle, or Other Container Manufacture
715020	Glass Shop, Window Installation, or Window Glass Repair or Replacement
715021	Illuminated or Electronic Sign Manufacture
715022	Jewellery, Eyewear, Clock, Watch or Trophy Manufacture
715024	Lighting Fixture Manufacture
715034	Marine Pleasure Craft Manufacture
715033	Modular or Prefabricated Building Manufacture (not elsewhere specified)
715028	Orthotics or Prosthetics Manufacture, Sales, Service, or Repair
715031	Taxidermy or Fur Tannery
715032	Vinyl Window Manufacture
MB	
Rate Group	Rate Group Description
30102	Meat Packing
30103	Wholesale Meat Products
30104	Poultry Processing
30105	Stockyards
30202	Manufacturing Malt
30204	Manufacturing Dairy Products
30205	Manufacturing Food Products
30206	Retail Bakeries
30209	Manufacturing Soft Drinks
30210	Alcohol & Fuel Products
30211	Commercial Bakeries
30212	Mfg. Fries, Etc.
30213	Mushroom Plants
30304	Flour & Feed Mills
30305	Seed Cleaning
30306	Flax Processing
31002	Foundries
31003	Metal Working Plants
31004	Rolling Mills
31008	Scrap Metal & Salvage
31009	Manufacturing Vehicles
31010	Manufacturing Agricultural Equipment
31102	Miscellaneous Wood Products
31103	Miscellaneous Light Manufacturing
31105	Fabricating Signs
31108	Auto Wrecking
31109	Manufacturing Auto Parts
31202	Pulp & Paper Mills
31302	Sawmills & Planing Mills
31403	Manufacturing Doors & Windows
31404	Millwork & Furniture
31405	Mfg. Beams/Trusses
31407	Fibre Asphalt Products
31408	Manufacturing Bricks & Blocks
31410	Tannery (No firms in R/C)
31412	Monument Dealers
31503	Picture Framing
31505	Recycling Fuel Products
31506	Manufacturing Oxygen, Etc.
31508	Knitting, Fabric Mill

31510	Manufacturing Plastic Material
31511	Canvas Products & Window Coverings
31512	Printing, Lettering
31515	Manufacturing Glass Products
31517	Manufacturing Dental & Medical Devices
31518	Manufacturing Jewellery
31519	Manufacturing Clothing& Textiles
31520	Mfg. Sport, Leather Goods
31522	Handling Hides, Furs
31523	Mfg. Foam & Rubber Products
31525	Mfg. Electronics
31526	Taxidermy
31603	Mfg. Beds, Bedding
31604	Mfg. Plaster, Etc.
31607	Mfg. Plastic Articles
31609	Equipment & Devices
31610	Plating , Engraving, Painting, NEC
31612	Mfg. Cement
31615	Mfg. Corrosive Chemicals
31616	Mfg. Fertilizers/Potting Soils
31617	Mfg. Paints, Oils, Ink
31620	Mfg. Soaps, Etc.
31623	Mfg. Feed Supplements
31625	Recycling
31907	Mfg. Drugs, Medicines
31908	Mfg. Noncorrosive Chemicals
31909	Mfg. Brooms & Brushes
31910	Mfg. Paper Boxes/Bags
32002	Mfg. Aircraft
32102	Marble Works, Etc.

ON

Rate Group	Rate Group Description
A-033-01	Shingles and Shakes
A-033-02	Sawmill and Planing Mill Products
A-036-01	Veneer and Plywood Operations
A-036-02	Wood Preservation
A-036-03	Particle Board
A-036-04	Wafer Board
A-039-01	Pulp and Newsprint Operations
A-039-02	Paperboard
A-039-03	Building Board
A-039-04	Specialty Paper Operations
A-039-05	Paper Bags
A-039-06	Paper Consumer Products
A-041-01	Corrugated Box Operations
D-207-01	Meat and Meat Products
D-207-02	Deadstock
D-207-03	Fish Products
D-210-01	Poultry Operations
D-214-01	Canned and Preserved Fruits and Vegetables
D-214-02	Frozen Fruits and Vegetables
D-216-01	Fluid Milk
D-216-02	Other Dairy Products
D-220-01	Other Bakery Operations
D-222-01	Chewing Gum
D-222-02	Sugar and Chocolate Confectionery
D-223-01	Dry Pasta Products
D-223-03	Other Food Operations
D-223-04	Biscuit Operations
D-223-05	Snack Food Operations
D-226-01	Cereal Grain Flour
D-226-02	Prepared Flour Mixes and Cereal Foods
D-226-03	Feed Operations
D-226-04	Vegetable Oil Mills
D-226-05	Cane and Beet Sugar

D-226-06	Tea and Coffee
D-226-07	Leaf Tobacco
D-226-08	Tobacco Products
D-230-01	Distillery Products
D-230-02	Wine
D-230-03	Malt and Malt Flour
D-230-04	Brewery Products
D-230-05	Home Brewing Centres
D-231-01	Soft Drinks
D-238-01	Rubber Hose and Belting
D-238-02	Other Rubber Operations
D-238-03	Tire and Tube Operations Amendment/10
D-238-04	Tire Vulcanizing and Retreading Amendment/10
D-258-01	Foamed and Expanded Plastic Operations
D-261-01	Plastic Film and Sheeting Operations
D-261-02	Fabric Coating Operations
D-263-01	Other Plastic Product Operations Amendment/09
D-263-02	Plastic Bag Operations
D-263-03	Plastic Pipe and Fitting Operations
D-289-01	Natural Fibres Processing and Felt Products
D-289-02	Canvas and Related Products
D-289-03	Narrow Fabrics Amendment /07
D-289-04	Household Products of Textile Materials
D-289-05	Carpet, Mat, and Rug Operations
D-289-06	Contract Textile Dyeing and Finishing
D-289-07	Hygiene Products of Textile Materials Amendment/09
D-289-08	Tire Cord Fabric
D-289-09	Other Processed Textile Products Amendments/08
D-289-10	Wool Yarn and Woven Cloth
D-289-11	Other Spun Yarn and Woven Cloth Operations
D-289-12	Broad Knitted Fabrics
D-289-13	Leather Tanneries Amendment/08
D-289-14	Footwear Amendment/08
D-289-15	Luggage, Purses, and Handbags Amendment/08
D-289-16	Other Leather and Allied Products Amendment/08
D-289-17	Fur Goods Amendment/08
D-301-01	Men's and Boys' Clothing
D-301-03	Women's Clothing
D-301-04	Clothing Contractors Amendment /07
D-301-05	Children's Clothing Amendment/09
D-301-06	Sweaters
D-301-07	Occupational Clothing
D-301-08	Gloves
D-301-09	Hosiery
D-301-10	Foundation Garments
D-301-11	Other Clothing and Apparel Operations
D-301-12	Fibre and Filament Yarn Operations Amendment/08
D-308-01	Prefabricated Wooden Buildings
D-308-02	Other Millwork Products
D-308-03	Other Wood Operations
D-311-01	Wooden Cabinet Operations
D-312-01	Wooden Box and Pallet Operations
D-322-01	Upholstered Household Furniture
D-322-02	Furniture Refinishing and Repair Shops
D-323-01	Metal Household Furniture
D-323-02	Metal Office and Institutional Furniture and Fixtures
D-325-01	Coffins and Caskets
D-325-02	Wooden Household Furniture
D-325-03	Non-metal Office and Institutional Furniture and Fixtures
D-328-01	Bed Springs and Mattresses
D-328-02	Other Furniture Parts and Fixtures
D-333-01	Business Forms Printing
D-333-02	Other Commercial Printing Amendment/09
D-333-03	Platemaking, Typesetting, and Binding Operations
D-335-01	Book Publishing
D-335-02	Other Publishing Operations
D-335-03	Newspapers, Magazines, and Periodicals

D-335-04	Other Combined Publishing and Printing Operations
D-338-01	Paperboard Folding Cartons
D-341-02	Coated and Treated Products
D-341-03	Stationery Products
D-341-05	Other Converted Paper Products
D-352-01	Other Primary Steel Operations
D-352-02	Steel Pipe and Tube Operations
D-352-03	Other Primary Smelting and Refining Operations
D-358-01	Iron Foundry Operations
D-358-02	Ferro-alloys
D-358-03	Steel Foundries
D-361-01	Primary Production of Aluminum
D-361-02	Aluminum Rolling, Casting, and Extruding
D-361-03	Copper and Copper Alloy Rolling, Casting, and Extruding
D-361-04	Other Rolled, Cast, and Extruded Non-ferrous Metal Products
D-374-01	Other Door and Window Operations
D-374-02	Wooden Door and Window Operations
D-375-01	Portable and Other Prefabricated Metal Buildings
D-375-02	Other Ornamental and Architectural Metal Products
D-375-03	Plate Work Amendment/07
D-375-04	Pre-engineered Metal Buildings
D-375-05	Other Fabricated Structural Metal Products
D-375-06	Mobile Buildings Amendment/11
D-375-07	Metal Boat and Ship Building Operations
D-375-08	Metal Tank Operations Amendment/08
D-377-01	Other Metal Coating
D-377-02	Powder Painting
D-379-01	Basic Hardware
D-379-02	Hand Tools and Implements
D-379-03	Other Hardware, Tools, and Cutlery
D-382-01	Metal Die, Mould, and Pattern Operations
D-383-01	Heating Equipment
D-383-02	Commercial Refrigeration and Air Conditioning Equipment
D-385-01	General Machine Shops
D-385-02	Automotive Machine Shops
D-387-01	Metal Plumbing Fixtures and Fittings
D-387-02	Metal Valves
D-387-03	Other Metal Fabricating Operations Amendments /05
D-387-04	Metal Heat Treating
D-387-05	Metal Service Centres, Processing Amendment/08
D-389-01	Metal Closure and Container Operations
D-390-01	Other Stamped and Pressed Metal Product Operations
D-393-01	Upholstery and Coil Springs
D-393-02	Wire and Wire Rope
D-393-03	Industrial Fasteners
D-393-04	Other Wire Products
D-393-05	Buttons, Buckles, and Clothes Fasteners
D-402-01	Major Appliance Operations
D-402-02	Turbine and Mechanical Power Transmission Equipment
D-402-03	Electrical Transformer Operations
D-403-01	Sawmill and Woodworking Machinery
D-403-03	Other Machinery and Equipment Operations
D-406-01	Elevator and Escalator and Parts Manufacturing Amendment/07
D-406-02	Elevator and Escalator Installation, Service, and Repair Amendment/07
D-408-01	Compressor, Pump, and Industrial Fan Operations
D-408-02	Power Boiler and Heat Exchanger Operations
D-411-01	Industrial Machinery Operations
D-411-02	Agricultural Implement Operations
D-417-01	Aircraft and Aerospace Manufacturing Amendment/06
D-419-01	Motor Vehicle Assembly Operations
D-420-01	Motor Vehicle Engine and Parts Operations
D-420-02	Motor Vehicle Electrical Parts
D-420-03	Battery Operations
D-421-02	Motor Vehicle Steering and Suspension Parts
D-421-03	Motor Vehicle Plastic Parts
D-421-04	Other Motor Vehicle Accessories, Parts, and Assemblies
D-421-05	Powder Metallurgy Products

D-421-06	Motor Vehicle Air Conditioners
D-421-07	Other Transportation Equipment
D-421-08	Recreational Vehicle and Trailer Operations
D-424-01	Motor Vehicle Stamping Operations
D-425-01	Motor Vehicle Wheel and Brake Operations
D-428-01	Motor Vehicle Fabric Accessory Operations
D-432-01	Truck and Bus Body Operations
D-432-02	Commercial Trailer Operations
D-442-01	Railroad Rolling Stock Operations
D-460-01	Lighting Fixtures
D-460-02	Lamps and Shades
D-460-03	Small Electrical Appliance Operations
D-460-04	Vacuum Cleaners and Systems
D-460-05	Electric Lamps (bulbs and tubes)
D-466-01	Wiring Harnesses
D-466-02	Communication and Energy Wire and Cable Products
D-466-03	Compact Disc Players, Radios, and Television Receivers
D-468-01	Telecommunication Equipment
D-468-02	Electronic Parts and Components
D-468-03	Precision Miniature Metal Products
D-468-04	Other Communication and Electronic Equipment
D-468-05	Musical Instruments
D-468-06	Electronic Computing and Peripheral Equipment
D-468-07	Electronic Office, Store, and Business Machines
D-468-08	Other Office, Store, and Business Machines
D-468-09	Magnetic and Optical Media
D-477-01	Industrial Electrical Equipment Operations
D-477-02	Electrical Switchgear and Protective Equipment
D-477-03	Non-current-carrying Wiring Devices
D-477-04	Other Electrical Products
D-485-01	Bricks, Tiles, and Clay Products
D-485-02	Refractories
D-485-03	Ceramic, Porcelain, and China Operations
D-485-04	Abrasives Operations
D-496-01	Concrete Pipe
D-496-02	Structural Concrete Products
D-496-03	Other Concrete Products
D-497-01	Ready-mix Concrete Operations
D-501-01	Hydraulic Cement
D-501-02	Lime Operations
D-501-03	Asbestos Products
D-501-04	Gypsum Products
D-501-05	Other Non-metallic Mineral Products
D-501-06	Non-metallic Mineral Insulating Material Operations
D-502-01	Primary Glass and Glass Container Operations
D-502-02	Other Glass Products
D-507-01	Asphalt Roofing
D-507-02	Refined Petroleum Products
D-507-03	Lubricating Oil and Grease
D-507-04	Other Petroleum and Coal Products
D-512-01	Paint and Varnish
D-512-02	Printing Ink
D-512-03	Adhesives
D-512-04	Plastic and Synthetic Resin Operations
D-514-01	Pharmaceutical and Medicine Operations
D-517-01	Soap and Cleaning Compound Operations
D-517-02	Toiletry Operations
D-524-01	Other Chemical Products
D-524-02	Explosives
D-524-03	Industrial Inorganic Chemicals
D-524-04	Compressed Gas
D-524-05	Industrial Organic Chemicals
D-524-06	Chemical Fertilizer and Fertilizer Materials
D-524-07	Mixed Fertilizers
D-524-08	Other Agricultural Chemicals
D-529-01	Indicating, Recording, and Controlling Instruments
D-529-02	Other Instruments

D-529-03	Clocks and Watches
D-529-04	Ophthalmic Goods
D-529-05	Jewellery and Silverware Operations
D-529-06	Arts and Crafts
D-529-07	Precious Metal Secondary Refining
D-529-08	Artists
D-529-09	Dental Laboratories
D-529-10	Other Medical Products
D-529-11	Art Supplies
D-533-01	Sign and Display Operations
D-538-01	Sporting Goods Operations
D-538-02	Toys and Games
D-538-03	Brooms, Brushes, and Mops
D-542-01	Other Manufacturing Operations

7.3 Occupational classification

Table 29 Occupational codes used by project team

NOC 2006 Code			Label and Description	Project team classification
1-digit	3-digit	4-digit		
0			Management Occupations	
1			Business, Finance and Administration Occupations	
2			Natural and Applied Sciences and Related Occupations	
3			Health Occupations	
	315		Nurse Supervisors and Registered Nurses	Registered nurses
		3151	Head Nurses and Supervisors Head nurses and supervisors supervise and co-ordinate the activities of registered nurses, licensed practical nurses and other nursing personnel in the provision of patient care. They are employed in health care institutions such as hospitals, clinics and nursing homes and in nursing agencies.	
		3152	Registered Nurses This unit group includes registered nurses, nurse practitioners, registered psychiatric nurses and graduates of a nursing program who are awaiting registration (graduate nurses). They provide direct nursing care to patients, deliver health education programs and provide consultative services regarding issues relevant to the practice of nursing. They are employed in a variety of settings including hospitals, nursing homes, extended care facilities, rehabilitation centres, doctors' offices, clinics, community agencies, companies and private homes, or they may be self-employed.	
	323		Other Technical Occupations in Health Care	Licensed practical nurses and other technical occupations
		3231	Opticians Opticians fit clients with prescription eyeglasses or contact lenses, assist clients in the selection of eyeglass frames, arrange for the production of eyeglasses or contact lenses and mount lenses in eyeglass frames. They are employed in optical retail outlets or other establishments with optical dispensing departments, or they may be self-employed. Student opticians and opticians who are managers of optical retail outlets are included in this group.	
		3232	Midwives and Practitioners of Natural Healing Midwives are primary care providers who provide full-course care to women and their babies during pregnancy, labour, birth and the post-natal period. They are employed in hospitals, birthing centres and private practice. Practitioners of natural healing provide alternative forms of health care to patients. They are employed by clinics, health clubs, spas or health food stores, or they may work in private practice.	
		3233	Licensed Practical Nurses Licensed practical nurses provide nursing care usually under the direction of medical practitioners, registered nurses or other health team members. They are employed in hospitals, nursing homes, extended care facilities, rehabilitation centres, doctors' offices, clinics, companies, private homes and community health centres. Operating room technicians are included in this unit group.	
		3234	Ambulance Attendants and Other Paramedical Occupations This unit group includes workers who administer pre-hospital emergency medical care to patients with injuries or medical illnesses and transport them to hospitals or other medical facilities for further medical care. They are employed by private ambulance services, hospitals, fire departments, government departments and agencies, manufacturing firms, mining companies and other private sector establishments.	
		3235	Other Technical Occupations in Therapy and Assessment This unit group includes workers, not elsewhere classified, who perform various technical therapy and assessment functions. Some may assist professionals such as audiologists, speech-language pathologists, ophthalmologists and physiotherapists. They are employed in hospitals, clinics, extended care facilities, rehabilitation centres, educational institutions, and in the private practices of the professionals they assist. Massage therapists may also be self-employed.	
	341		Assisting Occupations in Support of Health Services	Nurse aides, orderlies, and other assisting occupations
		3411	Dental Assistants Dental assistants assist dentists during the examination and treatment of patients and perform clerical functions. Dental assistants work primarily in dentists' offices, or they may be employed by government and educational institutions.	
		3413	Nurse Aides, Orderlies and Patient Service Associates Nurse aides, orderlies and patient service associates assist nurses, hospital staff and physicians in the basic care of patients. They are employed in hospitals, nursing homes, and other health care facilities.	
		3414	Other Assisting Occupations in Support of Health Services This unit group includes workers who provide services and assistance to health care professionals and other health care staff. They are employed in hospitals, medical clinics, and offices of health care professionals, nursing homes, optical retail stores and laboratories, pharmacies and medical pathology laboratories.	
4			Occupations in Social Science, Education, Government Service and Religion	
5			Occupations in Art, Culture, Recreation and Sport	
6			Sales and Service Occupations	
	624		Chefs and Cooks	Chefs and cooks
		6241	Chefs	

			This unit group includes various types of chefs who plan and direct food preparation and cooking activities and who prepare and cook meals and specialty foods. They are employed in restaurants, hotels, hospitals and other health care institutions, central food commissaries, clubs and similar establishments, and on ships.	
		6242	Cooks Cooks prepare and cook a wide variety of foods. They are employed in restaurants, hotels, hospitals and other health care institutions, central food commissaries, educational institutions and other establishments. Cooks are also employed aboard ships and at construction and logging campsites. Apprentice cooks are included in this unit group.	
	642		Retail Salespersons and Sales Clerks	Retail salespersons
		6421	Retail Salespersons and Sales Clerks Retail salespersons and sales clerks sell, rent or lease a range of technical and non-technical goods and services directly to consumers. They are employed by stores and other retail businesses, as well as wholesale businesses that sell on a retail basis to the public.	
	666		Cleaners	
		6661	Light Duty Cleaners Light duty cleaners clean the lobbies, hallways, offices and rooms of hotels, motels, resorts, hospitals, schools, office and other buildings, and private residences. They are employed by hotels, motels, resorts, recreational facilities, hospitals and other institutions, building management companies, cleaning service companies and private individuals.	
		6662	Specialized Cleaners Specialized cleaners clean and refurbish building exteriors, carpets, chimneys, industrial equipment, ventilation systems, windows and other surfaces, using specialized equipment and techniques. They are employed by specialized cleaning service companies or they may be self-employed.	
		6663	Janitors, Caretakers and Building Superintendents Janitors, caretakers and building superintendents clean and maintain the interior and exterior of commercial, institutional and residential buildings and their surrounding grounds. Building superintendents employed in large establishments are responsible for the operation of the establishment and may also supervise other workers. They are employed by office and apartment building management companies, condominium corporations, educational institutions, health care facilities, recreational and shopping facilities, religious establishments, and industrial and other establishments.	Janitors, caretakers and building superintendents
7			Trades, Transport and Equipment Operators and Related Occupations	
	742		Heavy Equipment Operators	Heavy equipment operators
		7421	Heavy Equipment Operators (Except Crane) Heavy equipment operators operate heavy equipment used in the construction and maintenance of roads, bridges, airports, gas and oil pipelines, tunnels, buildings and other structures; in surface mining and quarrying activities; and in material handling work. They are employed by construction companies, heavy equipment contractors, public works departments and pipeline, logging, cargo-handling and other companies.	
		7422	Public Workers Maintenance Equipment Operators This unit group includes workers who operate vehicles and equipment to maintain streets, highways and sewer systems and operate garbage trucks to remove garbage and refuse. They are employed by municipal, provincial and federal public works departments and by private contractors under contract with government public works departments.	
	761		Trades Helpers and Labourers	Trade helpers and labourers
		7611	Construction Trades Helpers and Labourers Construction trades helpers and labourers assist skilled tradespersons and perform labouring activities at construction sites, in quarries and in surface mines. They are employed by construction companies, trade and labour contractors, and surface mine and quarry operators.	
		7612	Other Trades Helpers and Labourers This unit group includes trade helpers and labourers, not elsewhere classified, who assist skilled tradespersons and perform labouring activities in the installation, maintenance and repair of industrial machinery, refrigeration, heating and air conditioning equipment, in the maintenance and repair of transportation and heavy equipment, in the installation and repair of telecommunication and power cables and in other repair and service work settings. They are employed by a wide variety of manufacturing, utility and service companies.	
	741		Motor Vehicle and Transit Drivers	
		7411	Truck Drivers Truck drivers operate heavy trucks to transport goods and materials over urban, interurban, provincial and international routes. They are employed by transportation companies, manufacturing and distribution companies, moving companies and employment service agencies, or they may be self-employed. This unit group also includes shunters who move trailers to and from loading docks within trucking yards or lots.	Truck drivers
8			Occupations Unique to Primary Industry	
9			Occupations Unique to Processing, Manufacturing and Utilities	
	941		Machine Operators and Related Workers in Metal and Mineral Products Processing	Machine operators
		9411	Machine Operators, Mineral and Metal Processing Workers in this unit group operate single-function machines or machinery that is part of a larger production process to process mineral ore and metal products. They are employed in mineral ore and	

		metal processing plants such as copper, lead and zinc refineries, uranium processing plants, steel mills, aluminum plants, precious metal refineries and cement processing plants.	
	9412	Foundry Workers This unit group includes workers who make foundry moulds and cores by hand or machine, cast molten metal, and operate furnaces in the foundry industry. They are employed by metal foundries and foundry departments of metal products manufacturing companies.	
	9413	Glass Forming and Finishing Machine Operators and Glass Cutters Machine operators in this unit group operate multi-function process control machinery or single function machines to melt, form, cut or finish flat glass, glassware, bottles, and other glass products. Glass cutters cut flat glass of various thicknesses to specified sizes and shapes by hand. They are employed by glass and glass products manufacturing companies.	
	9414	Concrete, Clay and Stone Forming Operators This unit group includes workers who cast and finish concrete products, operate machines to extrude, mould, press and bake clay products, and operate machines to form, cut and finish stone products. They are employed by concrete, clay and stone products manufacturing companies.	
	9415	Inspectors and Testers, Mineral and Metal Processing Inspectors and testers in this unit group inspect, grade, sample or test raw materials and products from mineral ore and metal processing operations. They are employed in mineral ore and metal processing plants such as copper, lead and zinc refineries, uranium processing plants, steel mills, aluminum plants, precious metal refineries, cement processing plants, clay, glass and stone processing plants and foundries.	
942		Machine Operators and Related Workers in Chemical, Plastic and Rubber Processing	
	9421	Chemical Plant Machine Operators Chemical plant machine operators monitor and operate units and machinery to blend, mix, process and package a wide range of specialty chemicals, pharmaceuticals, cleaning and toiletry products. They are primarily employed in chemical, cleaning compound, ink and adhesive industries, but may also be employed by chemical processing departments in other industries.	
	9422	Plastics Processing Machine Operators Plastics processing machine operators set up and operate plastic mixing, calendering, extruding and moulding processing machines used in the manufacture of plastic parts and plastic products. They are employed by plastic products manufacturing companies.	
	9423	Rubber Processing Machine Operators and Related Workers Workers in this unit group operate rubber processing machinery and assemble and inspect rubber products. They are employed by tire manufacturers and other rubber products manufacturing companies.	
	9424	Water and Waste Plant Operators Water plant operators monitor and operate computerized control systems and related equipment in water filtration and treatment plants to regulate the treatment and distribution of water. Waste plant operators monitor and operate computerized control systems and related equipment in wastewater, sewage treatment and liquid waste plants to regulate the treatment and disposal of sewage and wastes. They are employed by municipal governments, industries and institutions.	
943		Machine Operators and Related Workers in Pulp and Paper Production and Wood Processing	
	9431	Sawmill Machine Operators Sawmill machine operators operate, monitor and control automated lumbermill equipment to saw timber logs into rough lumber; saw, trim and plane rough lumber into dressed lumber of various sizes; and saw or split shingles and shakes. They are employed in sawmills and planing mills.	
	9432	Pulp Mill Machine Operators Pulp mill machine operators operate and monitor various types of processing machinery and equipment to produce pulp. They are employed by pulp and paper companies.	
	9433	Papermaking and Finishing Machine Operators Papermaking and finishing machine operators operate process machinery and equipment and assist papermaking and coating control operators to produce, coat and finish paper. They are employed by pulp and paper companies.	
	9434	Other Wood Processing Machine Operators Machine operators in this unit group operate and tend wood processing equipment and machines to remove bark from logs, produce wood chips, preserve and treat wood, and produce waferboards, particleboards, hardboards, insulation boards, plywood, veneers and similar wood products. They are employed in sawmills, woodrooms of pulp mills, planing mills, wood treatment plants, waferboard plants and other wood processing plants.	
	9435	Paper Converting Machine Operators Paper converting machine operators operate various machines which fabricate and assemble paper products such as paper bags, containers, boxes, envelopes and similar articles. They are employed by paper products manufacturing companies.	
	9436	Lumber Graders and Other Wood Processing Inspectors and Graders Lumber graders and other wood processing inspectors and graders inspect and grade lumber, shingles, veneer, waferboard and similar wood products to identify defects, ensure conformance to company specifications and classify products according to industry standards. They are employed by sawmills, planing mills, wood treatment plants, waferboard plants and other wood processing companies.	
944		Machine Operators and Related Workers in Textile Processing	
	9441	Textile Fibre and Yarn Preparation Machine Operators	

		Textile fibre and yarn preparation machine operators operate machines to prepare textile fibres or to spin, wind or twist yarn or thread. They are employed by textile companies.	
	9442	Weavers, Knitters and Other Fabric-Making Occupations Operators in this unit group operate machines to process yarn or thread into woven, non-woven and knitted products such as cloth, lace, carpets, rope, industrial fabric, hosiery and knitted garments or to quilt and embroider fabric. This unit group also includes workers who perform activities such as reproducing patterns, drawing-in and tying warps and setting up looms. They are employed by textile companies and by garment and mattress manufacturing companies.	
	9443	Textile Dyeing and Finishing Machine Operators Textile dyeing and finishing machine operators operate machines to bleach, dye or finish yarn, thread, cloth or textile products. They are employed by textile manufacturing companies.	
	9444	Textile Inspectors, Graders and Samplers Textile inspectors, graders and samplers prepare samples and inspect and grade textile products. They are employed by textile companies.	
945		Machine Operators and Related Workers in Fabric, Fur and Leather Products Manufacturing	
	9451	Sewing Machine Operators Sewing machine operators operate sewing machines to sew fabric, fur, leather or synthetic materials to produce or repair garments and other articles. They are employed in clothing, footwear, textile products, fur products and other manufacturing establishments and by furriers.	
	9452	Fabric, Fur and Leather Cutters Fabric cutters cut fabric to make parts for garments, linens and other articles. Fur cutters cut fur pelts to make parts for garments and other fur articles. Leather cutters cut leather to make parts for shoes, garments and other leather articles. Fabric cutters are employed by clothing and textile manufacturers and other manufacturers of fabric products. Fur cutters are employed by furriers and fur products manufacturers. Leather cutters are employed by shoe and other leather products manufacturers.	
	9453	Hide and Pelt Processing Workers Hide and pelt processing workers trim, scrape, clean, tan, buff and dye animal hides, pelts or skins to produce leather stock and finished furs. They are employed by leather tanning, fur dressing and leather and fur dyeing establishments.	
	9454	Inspectors and Testers, Fabric, Fur and Leather Products Manufacturing Inspectors and testers in this unit group inspect and grade hides, pelts and leather, or garments and other manufactured fabric, fur and leather products. They are employed by leather tanning and fur dressing establishments or by garment, fur and leather products manufacturers.	
946		Machine Operators and Related Workers in Food, Beverage and Tobacco Processing	
	9461	Process Control and Machine Operators, Food and Beverage Processing Process control and machine operators in this unit group operate multi-function process control machinery or single-function machines to process and package food and beverage products. They are employed in fruit and vegetable processing plants, dairies, flour mills, bakeries, sugar refineries, meat plants, breweries and other food and beverage processing establishments.	
	9462	Industrial Butchers and Meat Cutters, Poultry Preparers and Related Workers Workers in this unit group prepare meat and poultry for further processing, for packaging or for marketing. They are employed in meat and poultry slaughtering, processing and packing establishments.	
	9463	Fish Plant Workers This unit group includes fish plant machine operators, who set up and operate machinery to process and package fish products, and fish plant cutters and cleaners, who cut, trim and clean fish by hand. Fish plant workers are employed in fish processing plants.	
	9464	Tobacco Processing Machine Workers Tobacco processing machine operators operate machines to prepare and treat raw tobacco leaves or to produce and package tobacco products such as cigarettes and cigars. They are employed in leaf tobacco processing and tobacco products plants.	
	9465	Testers and Graders, Food and Beverage Processing Testers and graders in this unit group test or grade ingredients and finished food, beverage or tobacco products to ensure conformance to company standards. They are employed in fruit and vegetable processing plants, dairies, flour mills, bakeries, sugar refineries, fish plants, meat plants, breweries and other food, beverage and tobacco processing plants.	
947		Printing Machine Operators and Related Occupations	
	9471	Printing Machine Operators This unit group includes workers who operate laser printers, computerized high speed colour copiers and other printing machines to print text, illustrations and designs on a wide variety of materials such as paper, plastic, glass, leather, and metal. They are employed in rapid printing services, commercial printing companies and in manufacturing and other establishments that have in-house printing facilities.	
	9472	Camera, Platemaking and Other Prepress Occupations This unit group includes prepress technicians who operate various computer controlled systems to perform prepress activities and workers who operate graphic arts cameras and scanners, assemble film and negatives and prepare, engrave and etch printing plates or cylinders for various types of printing presses. They are employed in firms that specialize in colour graphics or platemaking and cylinder preparation, commercial publishing and printing companies, newspapers, magazines, and in various establishments in the public and private sectors that have in-house printing departments.	
	9473	Binding and Finishing Machine Operators	

		Binding and finishing machine operators set up, operate or oversee the operation of specific machines, equipment or computerized units that bind and finish printed material. Workers who perform finishing operations in the paper, carton and packaging industries, as well as those who encode and stamp plastic cards, are included in this unit group. They are employed by binderies, commercial printing companies, newspapers, magazines, and other publishing companies, and establishments in both the public and private sectors that have in-house printing, binding and finishing departments.	
	9474	Photographic and Film Processors	
		Photographic and film processors process and finish still photographic film and motion picture film. They are employed in film processing laboratories and retail photofinishing establishments.	
951		Machining, Metalworking, Woodworking and Related Machine Operators	
	9511	Machining Tool Operators	
		Machining tool operators set up and operate or tend metal-cutting machines designed for repetitive machining work. They are employed by metal products and other manufacturing companies and in machine shops. This unit group also includes workers who etch or chemically mill metal pieces.	
	9512	Forging Machine Operators	
		Forging machine operators operate forging machines to form and shape metal into various shapes and sizes and impart desired strength, hardness or other characteristics. They are employed primarily in the fabricated metal products, machinery, and transportation equipment industries.	
	9513	Woodworking Machine Operators	
		Woodworking machine operators set up, program and operate one or more woodworking machines to fabricate or repair wooden parts for furniture, fixtures or other wood products. They are employed in furniture, fixture and other wood products manufacturing establishments.	
	9514	Metalworking Machine Operators	
		Light metalworking machine operators operate metalworking machines which shape and form sheet or other light metal into parts or products. They are employed by sheet metal products manufacturing companies, sheet metal shops and other light metal products manufacturing establishments. Heavy metalworking machine operators operate metalworking machines which shape and form steel or other heavy metal into parts or products. They are employed by structural steel fabrication, boiler and platework manufacturing companies, heavy machinery manufacturing companies and in the shipbuilding industry.	
	9516	Other Metal Products Machine Operators	
		This unit group includes metal products machine operators, not elsewhere classified, who operate one or more automatic or multi-purpose machines to produce a variety of metal parts and products, such as wire mesh, nails, bolts and chains. They are employed by a wide variety of metal products manufacturing companies.	
	9517	Other Products Machine Operators	
		This unit group includes all machine operators, not elsewhere classified, who operate machines to cut, press, stamp, mould, treat, finish or otherwise fabricate components or products, such as jewellery, buttons, pencils, crayons, non-prescription lenses, brushes, notions and other miscellaneous products. They are employed by a wide variety of manufacturing companies.	
948		Mechanical, Electrical and Electronics Assemblers	
	9481	Aircraft Assemblers and Aircraft Assembly Inspectors	
		Aircraft assemblers assemble, fit and install prefabricated parts to manufacture fixed wing or rotary wing aircraft or aircraft subassemblies. Aircraft assembly inspectors inspect aircraft assemblies for adherence to engineering specifications. They are employed by aircraft and aircraft subassembly manufacturers.	
	9482	Motor Vehicle Assemblers, Inspectors and Testers	
		Motor vehicle assemblers assemble and install prefabricated motor vehicle parts and components to form subassemblies and finished motor vehicles. Motor vehicle inspectors and testers inspect and test parts, subassemblies, accessories and finished products to ensure proper performance and conformity to quality standards. They are employed in plants which manufacture automobiles, vans and light trucks.	
	9483	Electronics Assemblers, Fabricators, Inspectors and Testers	
		Electronics assemblers and fabricators assemble and fabricate electronic equipment, parts and components. Electronics inspectors and testers inspect and test electronic and electromechanical assemblies, subassemblies, parts and components to ensure conformance to prescribed standards. They are employed in electronics manufacturing plants.	
	9484	Assemblers and Inspectors, Electrical Appliance, Apparatus and Equipment Manufacturing	
		Assemblers in this unit group assemble prefabricated parts to produce household, commercial and industrial appliances and equipment. Inspectors in this unit group inspect and test assembled products. Workers who set up and prepare assembly lines for operation are included in this unit group. Workers in this unit group are employed by electrical appliance and electrical equipment manufacturing companies.	
	9485	Assemblers, Fabricators and Inspectors, Industrial Electrical Motors and Transformers	
		This unit group includes workers who assemble, fabricate, fit, wire and inspect heavy-duty industrial electrical equipment. They are employed by manufacturers of industrial electric motors, transformers, control equipment, railway locomotives, transit vehicles and other heavy electrical equipment.	
	9486	Mechanical Assemblers and Inspectors	
		Assemblers in this unit group assemble a wide variety of mechanical products such as trucks, buses, snowmobiles, garden tractors, automotive engines, transmissions, outboard motors, gearboxes, hydraulic pumps and sewing machines. Inspectors in this unit group check and inspect subassemblies and finished products to ensure proper quality and product specifications. They are employed by machinery and transportation equipment manufacturers and by other manufacturing companies.	
			Mechanical, electrical and other assemblers

	9487	Machine Operators and Inspectors, Electrical Apparatus Manufacturing	
		Machine operators in this unit group operate machinery or equipment to fabricate complete products or parts for use in the assembly of electrical appliances and equipment, and electrical apparatus, such as batteries, fuses and plugs. Inspectors in this unit group inspect and test completed parts and production items. Workers in this unit group are employed by electrical appliance and electrical equipment manufacturing companies.	
	949	Other Assembly and Related Occupations	
	9491	Boat Assemblers and Inspectors	
		Boat assemblers assemble wooden, fibreglass and metal boats, such as sailboats, motorboats, canoes and cabin cruisers. Boat inspectors check assembled boats to ensure proper product quality. They are employed by boat and marine craft manufacturing companies.	
	9492	Furniture and Fixture Assemblers and Inspectors	
		This unit group includes workers who assemble parts to form subassemblies or complete articles of furniture and fixtures. Inspectors in this unit group inspect furniture and fixture subassemblies and finished products to ensure product quality. They are employed by furniture manufacturing companies.	
	9493	Other Wood Products Assemblers and Inspectors	
		Assemblers in this unit group assemble a variety of wood products and millwork, such as window sashes and doors. Inspectors in this unit group inspect wood products to ensure product quality. They are employed by establishments engaged in manufacturing a variety of wood and millwork products.	
	9494	Furniture Finishers and Refinishers	
		Furniture finishers finish new wood or metal furniture to specified colour and finish. They are employed in furniture manufacturing plants, retail furniture stores or refinishing and repair shops. Furniture refinishers refinish repaired, used or old furniture. They are employed in furniture refinishing and repair shops or they may be self-employed.	
	9495	Plastic Products Assemblers, Finishers and Inspectors	
		This unit group includes workers who assemble, finish and inspect plastic parts and finished products. They are employed by plastic products manufacturing companies and plastic parts divisions of aircraft or other manufacturing companies.	
	9496	Painters and Coaters - Industrial	
		Painters and coaters in this unit group tend and operate machines or use brushes and spray equipment to apply paint, enamel, lacquer or other non-metallic protective and decorative coatings to surfaces of various products. They are employed by manufacturing companies, specialized coating shops and refinishing establishments.	
	9497	Plating, Metal Spraying and Related Occupations	
		This unit group includes workers who operate machines or equipment to deposit metallized substances on metal or other articles to provide decorative, protective or restorative coatings. They are employed by metal products manufacturing companies and by customized metal plating and coating shops.	
	9498	Other Assemblers and Inspectors	
		This unit group includes assemblers and inspectors, not elsewhere classified, who assemble and inspect a variety of products, such as jewellery, silverware, clocks and watches, musical instruments, sporting goods, toys, and other miscellaneous products. They are employed by a wide variety of manufacturing companies.	
	961	Labourers in Processing, Manufacturing and Utilities	Labourers
	9611	Labourers in Mineral and Metal Processing	
		Labourers in this unit group perform material handling, clean-up, packaging and other elemental activities related to mineral ore and metal processing. They are employed in mineral ore and metal processing plants such as copper, lead and zinc refineries, uranium processing plants, steel mills, aluminum plants, precious metal refineries, cement processing plants, clay, glass and stone processing plants and foundries.	
	9612	Labourers in Metal Fabrication	
		Labourers in this unit group remove excess metal and unwanted materials from metal parts, castings and other metal products and perform other labouring activities. They are employed in structural steel, boiler and platework fabrication plants, heavy machinery manufacturing plants, sheet metal fabrication shops, shipbuilding and other metal products manufacturing companies.	
	9613	Labourers in Chemical Products Processing and Utilities	
		Labourers in this unit group carry out a variety of material handling, cleaning and routine general labouring activities. They are employed by petroleum and natural gas processing, pipeline and petrochemical, chemical and pharmaceutical companies, and by electrical, water and waste treatment utilities.	
	9614	Labourers in Wood, Pulp and Paper Processing	
		Labourers in this unit group carry out a variety of general labouring and routine wood processing activities and assist pulp mill and papermaking machine operators. They are employed by pulp and paper, and paper converting companies, sawmills, planing mills, wood treatment plants, waferboard plants and other wood processing companies.	
	9615	Labourers in Rubber and Plastic Products Manufacturing	
		Labourers in this unit group assist machine operators, transport materials and perform similar tasks. They are employed by rubber and plastic products manufacturing companies.	
	9616	Labourers in Textile Processing	
		Labourers in textile processing perform a variety of manual duties to assist in processing fibres into yarn or thread, or to assist in weaving, knitting, bleaching, dyeing or finishing textile fabrics or other textile products. They are employed by textile companies.	

		9617	Labourers in Food, Beverage and Tobacco Processing	
			Labourers in this unit group perform material handling, clean-up, packaging and other elemental activities related to food, beverage and tobacco processing. They are employed in fruit and vegetable processing plants, dairies, flour mills, bakeries, sugar refineries, meat plants, breweries and other food, beverage and tobacco processing plants.	
		9618	Labourers in Fish Processing	
			Labourers in this unit group perform clean-up, packaging, material handling and other elemental activities related to fish processing. They are employed in fish processing and packaging plants.	
		9619	Other Labourers in Processing, Manufacturing and Utilities	
			This unit group includes labourers, not elsewhere classified, who perform material handling, clean-up, packaging and other elemental activities in processing, manufacturing and utilities. They are employed by companies that manufacture products such as clothing, footwear, furniture and electrical and electronic products and by printing and packaging companies.	