

Supplementary Material:

Variation in occupational exposure risk for COVID-19 workers' compensation claims across pandemic waves in Ontario

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Additional details on the analytical method

In order to calculate a rate of WR-C19 infection we require information on both events (WR-C19 infections) and hours of exposure (time at risk of WR-C19 infection). Event information comes from workers' compensation claims for COVID-19 infections, while exposure information comes from Statistics Canada's Labour Force Survey. These two data sources allowed estimates for events and exposure to be generated by month of the pandemic between April 1, 2020 and April 30, 2022, and further stratified by age group, sex, occupational exposure and healthcare industry (yes or no). To ensure events and hours of exposure are comparable compensation claims and exposure estimates from industries that do not have complete coverage with the Workplace Safety & Insurance Board in Ontario are removed. Events and exposure information are then combined into an aggregate level data set, that is used for both calculation of crude estimates and for the calculation of adjusted estimates using a negative binomial model, where the number (count) of events within a particular strata of occupational exposure, by age, by sex by healthcare industry by wave of the pandemic is the outcome, and the associated full-time-equivalent (exposure) information is included in the model as an offset.

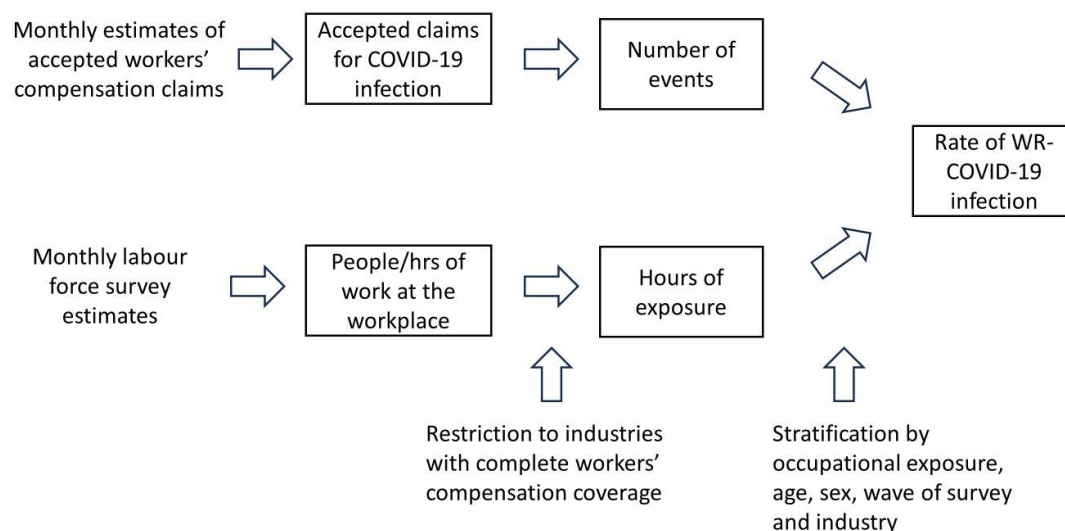


Table A1: Common 4-digit occupational titles within each of the exposure groupings

Public Facing Occupations	
No	Yes
Material Handlers	Retail Salespersons and Sales Clerks
Truck Drivers	Registered Nurses
Kitchen and Food Service Helpers	Retail Trade Supervisors
Grocery Clerks and Store Shelf Stockers	Cashiers
Sales Representatives - Wholesale Trade (Non-Technical)	Elementary School and Kindergarten Teachers

Work location			
Primarily Outdoors	Mixed-Often Outdoors	Mixed-Often Indoors	Primarily Indoors
Construction Trades Helpers and Labourers	Construction Millwrights and Industrial Mechanics (Except Textile)	Truck Drivers	Retail Salespersons and Sales Clerks
Carpenters	Contractors and Supervisors, Mechanic Trades	Home building and renovation managers	Registered Nurses
Heavy Equipment Operators (Except Crane)	Contractors and Supervisors, Carpentry Trades	Automotive Service Technicians, Truck and Bus Mechanics and Mechanical Repairers	Material Handlers
Landscaping and Grounds Maintenance Labourers	Residential and Commercial Installers and Servicers	Electricians (Except Industrial and Power System)	Retail Trade Supervisors
Plasterers, Drywall Installers and Finishers and Lathers	Contractors and Supervisors, Heavy Construction Equipment Crews	Security Guards and Related Occupations	Kitchen and Food Service Helpers

Proximity to others			
Not Close	Somewhat Close	Close	Very Close
Material Handlers	Grocery Clerks and Store Shelf Stockers	Retail Trade Supervisors	Retail Salespersons and Sales Clerks
Truck Drivers	Sales Representatives - Wholesale Trade (Non-Technical)	Supervisors, Recording, Distributing and Scheduling Occupations	Registered Nurses
Automotive Service Technicians, Truck and Bus Mechanics and Mechanical Repairers	Construction Trades Helpers and Labourers	Manufacturing Managers	Kitchen and Food Service Helpers
Shippers and Receivers	Retail Trade Managers	Construction Managers	Cashiers
General Office Clerks	Contractors and Supervisors, Electrical Trades and Telecommunications Occupations	Community and Social Service Workers	Home building and renovation managers

Combined Risk		
Low	Medium	High
Material Handlers	Grocery Clerks and Store Shelf Stockers	Retail Salespersons and Sales Clerks
Truck Drivers	Sales Representatives - Wholesale Trade (Non-Technical)	Registered Nurses
Automotive Service Technicians, Truck and Bus Mechanics and Mechanical Repairers	Home building and renovation managers	Retail Trade Supervisors
Shippers and Receivers	Construction Trades Helpers and Labourers	Kitchen and Food Service Helpers
General Office Clerks	Construction Millwrights and Industrial Mechanics (Except Textile)	Cashiers

Table A2: Adjusted* estimates for occupational exposures and risk of COVID-19 workers' compensation claim across different waves of the COVID-19 pandemic, Ontario, April 2020 to April 2022. Reference group is unexposed group in wave one.

	Wave One (April 2020 to August 2020)			Wave Two (Sept 2020 to Feb 2021)			Wave Three (March 2021 to June 2021)		
Occupational Exposure	RR	Low CI	High CI	RR	Low CI	High CI	RR	Low CI	High CI
Public Facing Occupation									
No	ref *			1.29	0.96	1.72	0.84	0.60	1.18
Yes	0.59	0.43	0.81	1.63	1.22	2.17	1.12	0.82	1.54
Primary work location									
Primarily Outdoors	ref *			5.49	2.55	11.90	6.37	2.92	13.89
Mixed-Often Outdoors	1.37	0.62	3.04	9.35	4.52	19.23	5.59	2.60	12.05
Mixed-Often Indoors	11.49	5.95	22.22	12.50	6.25	25.00	7.52	3.66	15.38
Primarily Indoors	8.55	4.15	17.86	14.93	7.52	29.41	9.90	4.95	20.00
Proximity of other workers									
Not Close	ref *			2.10	1.50	2.92	1.80	1.25	2.59
Somewhat Close	0.34	0.22	0.52	1.49	1.05	2.11	1.76	1.20	2.57
Close	0.62	0.39	0.98	2.40	1.67	3.45	1.58	1.04	2.39
Very Close	4.50	3.23	6.29	5.71	4.15	7.81	3.41	2.42	4.81
Combined risk									
Low	ref *			1.88	1.34	2.64	1.49	1.02	2.18
Medium	3.03	2.05	4.48	2.23	1.55	3.21	1.28	0.84	1.94
High	2.08	1.48	2.93	4.41	3.18	6.10	2.79	1.96	3.95

* Adjusted for age, sex and healthcare industry

Table A2 (cont): Adjusted estimates for occupational exposures and risk of COVID-19 workers' compensation claim across different waves of the COVID-19 pandemic. Ontario. April 2020 to April 2022. Reference group is unexposed group in wave one.

	Wave Four (July 2021 to Nov 2021)			Wave Five (Dec 2021 to April 2022)		
Occupational Exposure	RR	Low CI	High CI	RR	Low CI	High CI
Public Facing Occupation						
No	0.10	0.07	0.14	1.33	0.98	1.80
Yes	0.16	0.12	0.22	3.30	2.45	4.44
Primary work location						
Primarily Outdoors	1.44	0.64	3.22	14.93	7.04	32.26
Mixed-Often Outdoors	0.89	0.39	2.00	17.54	8.55	35.71
Mixed-Often Indoors	1.68	0.81	3.47	25.64	12.82	52.63
Primarily Indoors	1.22	0.61	2.43	19.61	9.80	38.46
Proximity of other workers						
Not Close	0.19	0.13	0.28	2.00	1.42	2.81
Somewhat Close	0.21	0.13	0.32	3.07	2.14	4.41
Close	0.14	0.08	0.24	9.43	6.58	13.70
Very Close	0.53	0.38	0.74	8.85	6.41	12.35
Combined risk						
Low	0.17	0.12	0.26	1.60	1.13	2.27
Medium	0.21	0.14	0.33	2.20	1.50	3.22
High	0.39	0.28	0.55	7.58	5.43	10.53