

Occupational COVID-19: can we claim that compensation is causation?

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Since the beginning of the COVID-19 pandemic, it became immediately clear that the so-called ‘essential’ workers, forced to continue their jobs to provide vital society services despite the infection risk, would have paid the highest health price. This was gloomily confirmed globally, especially for healthcare workers (HCWs) who became involuntary ‘heroes’ of the pandemic.¹

Since then, several epidemiological studies, mainly based on record linkage of large population survey data, have identified occupations beyond HCWs at increased COVID-19 risk, such as in social service, education, food manufacturing, and public transport.²⁻⁴

After 4 years in the current pandemic, do we know the real occupational COVID-19 burden? Sadly, not yet. The reason lies in the complex dynamics of occupational risk determinants: from the workplace itself (eg, indoor, ventilation, contact with the public), to its risk mitigation strategies (eg, access to personal protective equipment (PPE), occupational health, COVID-19 testing) or to the societal context (eg, governmental lockdowns, health and safety regulations). Also, the socioeconomic status of the worker may impact on the commute mode and home living conditions. Furthermore, all these factors are place and time-dependent and affected by changes in population natural and acquired immunity and on virulence of virus variants across pandemic waves.⁵

In this challenging scenario, can occupational COVID-19 compensation claim data help to shed some light? Usually, these data are used to monitor trends of COVID-19 cases and indirectly the effectiveness of preventive strategies, plan workplace mitigation policies, identify vulnerable groups and define the priorities in vaccination strategies.⁶

Smith *et al*⁷ originally combined COVID-19 compensation claims from the Workplace Safety & Insurance Board of Ontario with data from Statistics Canada’s Labour Force Survey to estimate

work-related infection rates in 2020–2022. Occupational exposures were estimated applying to Labour Force Survey data a previously validated job exposure matrix (JEM) and graded into low, medium and high-level risk, according to three workplace dimensions: public facing, work location, and proximity to co-workers.

Important decisions were made by the authors: analyses were restricted to workers operating outside home and to accepted COVID-19 claims because they were assumed to be true occupational COVID-19 cases.

All occupational exposures were associated with increased COVID-19 risks, with positive trends for level of exposure. Unsurprisingly, indoor work and very close proximity to co-workers were the most important risk determinants, and HCWs suffered the highest infection rates. COVID-19 risk estimates differed across waves of the pandemic, being weakest in March 2021–June 2021, and highest at the start of the pandemic and during the more virulent Omicron variant wave (Dec 2021–April 2022).

The use of compensation data is not new,^{6,8} but this study has the merit to use an integrated approach based on the combination of Workplace Safety & Insurance Board and Labour Force Survey data with JEM-derived exposures to estimate work-related COVID-19 infections rates, and trends over pandemic waves. Also, the exclusion of remote home workers and the restriction to accepted compensation data make the occupational causal association more likely. Further, analyses stratified by occupational exposure, age, sex, wave of survey and industry were performed; female workers emerged at increased COVID-19 risk likely due to their higher prevalence in the healthcare sector.

There are some weaknesses to acknowledge: first the assumption that only accepted claims were undoubtedly true occupational cases can be questionable, and it is likely an underestimation of the real work-related COVID-19 burden. In particular, for trends over time, comparisons can be difficult due to changes between pandemic waves in criteria for compensation, individual risk perception at work, access to COVID-19 testing and

PPE use. The applied JEM was developed in a pre-pandemic era, and so it did not include COVID-19 workplace mitigation strategies. Also, lack of information on the underlying specific jobs at risk and on extra-occupational determinants, such as work commute and living conditions. Finally, no information on migrant status and ethnic background was available; likely the most vulnerable and exploited workers were not adequately represented in the occupational compensation claim data.

To address present knowledge gaps, we need, ideally, a systematic epidemiological surveillance of work-related risk factors in COVID-19 patients that would require dedicated time and trained healthcare staff. In the meantime, we could adopt an integrated approach: to exploit with agnostic approach the ‘breath’ of large occupational compensation claim and labour survey data combined with the ‘depth’ of epidemiological studies focused on a priori high-risk occupations, especially in the so-called informal sector that would not emerge otherwise. Regrettably, so far only a few studies have investigated COVID-19 risks within specific occupational cohorts, likely for challenges in accessing workforces.⁹⁻¹²

Furthermore, we need real-world scenario intervention studies to demonstrate what works in terms of COVID-19 prevention to support identification of evidence-based control measures and evaluation of their effectiveness. This is especially important to inform efficient mitigations strategies to protect the most susceptible individuals in any occupational sector, for this and future pandemics.

To conclude, occupational COVID-19 compensation claim data can be useful as a piece of a complex puzzle but only integrated with focused epidemiological studies. Most importantly, we should all call for a global recognition and compensation of occupational COVID-19 and its long-term health consequences (the so-called ‘long-COVID-19’) that is still lacking.¹³ We would especially need large longitudinal studies on occupational long-COVID-19 whose public health impact in terms of costs for the individuals (morbidity and disability) and for the society (unemployment and medical costs) is expected to increase in the years to come.

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