Original research

Workers’ compensation claims for COVID-19 among workers in healthcare and other industries during 2020–2022, Victoria, Australia

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ABSTRACT

Objective To identify and characterise COVID-19 workers’ compensation claims in healthcare and other industries during the pandemic in Victoria, Australia.

Methods We used workers’ compensation claims identified as COVID-19 infection related from 1 January 2020 to 31 July 2022 to compare COVID-19 infection claims and rates of claims by industry and occupation, and in relation to Victorian COVID-19 epidemiology. A Cox proportional hazards model assessed risk factors for extended claim duration.

Results Of the 3313 direct and indirect COVID-19-related claims identified, 1492 (45.0%) were classified as direct COVID-19 infection accepted time-loss claims and were included in analyses. More than half (52.9%) of COVID-19 infection claims were made by healthcare and social assistance industry workers, with claims for this group peaking in July–October 2020. The overall rate of claims was greater in the healthcare and social assistance industry compared with all other industries (16.9 vs 2.4 per 10 000 employed persons) but industry-specific rates were highest in public administration and safety (23.0 per 10 000 employed persons). Workers in healthcare and social assistance were at increased risk of longer incapacity duration (median 26 days, IQR 16–61 days) than in other industries (median 17 days, IQR 11–39.5 days).

Conclusions COVID-19 infection claims differed by industry, occupational group, severity and timing and changes coincided with different stages of the COVID-19 pandemic. Occupational surveillance for COVID-19 cases is important and monitoring of worker’s compensation claims and incapacity duration can contribute to understanding the impacts of COVID-19 on work absence.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Several occupational groups are at increased risk of COVID-19 infection, but less is known about claims for workers’ compensation and period of incapacity over different waves of the pandemic.

WHAT THIS STUDY ADDS

⇒ Over the first 2.5 years of the pandemic, healthcare and social assistance workers were more likely to make COVID-19 infection-related workers’ compensation claims than workers in all other industries combined.

⇒ Duration of incapacity, used to assess the severity of COVID-19 infection claims, was increased in healthcare and social assistance workers compared with all other industries.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Workers in healthcare and aged care took longer to get back to work and this emphasises the importance of early rehabilitation services.

⇒ A system for identifying and responding to workplace infections in the current and any future pandemics will be important in the public health response and to minimise impacts on workers and workplaces across industries. Ongoing monitoring of workers’ compensation claims can contribute to occupational surveillance.

INTRODUCTION

Since its emergence in December 2019, the virus causing COVID-19 also known as SARS-CoV-2 has driven a global pandemic1 with ongoing impacts on morbidity and mortality in individuals, communities, workers and industry.

In Australia, COVID-19 case numbers have risen and fallen in distinct ‘waves’. The first wave in March–April 2020 affected all states and territories with most infections being acquired overseas. The second wave in June–September 2020, primarily affecting Victoria, was characterised by outbreaks in essential workplaces (eg, aged care, manufacturing and meat processing) and pockets of community transmission following breaches in hotel quarantine.2 3 Subsequent larger waves were driven by the emergence of the Delta and Omicron variants and subvariants and have resulted in widespread community transmission across all states and territories.

Australia’s federal, state and territory governments implemented a range of public health and social measures1 to reduce virus transmission, the number of cases in workplaces and the overall community, and associated morbidity and mortality from COVID-19. Such measures included

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restrictions on work, through adaption or closure of businesses, schools, travel and gatherings, work-from-home policies and stay-at-home mandates, mandatory hotel quarantine for international arrivals, mask-wearing requirements, case isolation and contact tracing. In addition, social security measures were introduced to ease the financial burden on workers, businesses and industry including the COVID-19 Disaster Payment to individuals whose work or income had been affected by lockdown, JobKeeper wage subsidy payment to sole traders (self-employed persons who own and run their own business) and employers, and social security measures such as the Coronavirus Supplement. Victoria, the second most populous Australian state, experienced the greatest burden of COVID-19 in 2020. Aggressive control strategies implemented in Victoria with a view to achieve local elimination included a series of local and/or state-wide lockdowns, lasting between 5 days and several months (figure 1).

Australasian and international experience indicates that frontline healthcare and social assistance (HCSA) workers are at increased risk for COVID-19 infection and international studies have found that workers from HCSA and public administration industries accounted for most of the COVID-19-related workers’ compensation claims made in 2020. However, the COVID-19 and working environment landscape has evolved since 2020 and less is known about the risks of COVID-19 and impacts on incapacity in workers and industry as the pandemic has continued. Also, as workers’ compensation schemes differ by country in coverage, eligibility and presumptive criteria, the characteristics of COVID-19-related claims in Australia may differ from those seen internationally. Victoria’s workers’ compensation scheme provides compensation insurance for the majority of employers (representing approximately 85% of the working population), and payments for healthcare, income replacement and lifetime care costs for Victorians injured at work. To qualify for workers’ compensation benefits, workers must have their illness or injury certified by an approved medical practitioner and the claim must exceed the financial threshold for healthcare or 10 days or more off work. A presumptive test, whereby workers in certain industries undertaking certain duties who contracted COVID-19 would automatically be eligible for compensation, was not applied in Victoria.

The aim of this study was to identify and characterise COVID-19 infection-related workers’ compensation claims and duration of incapacity in the HCSA industry compared with all other industries in the Australian state of Victoria in the period January 2020 to 31 July 2022. We hypothesised that the rate of COVID-19 infection-related claims and duration of incapacity would be greater in the HCSA industry compared with all other industries.

METHODS
Study data
We used de-identified administrative data from the Victorian workers’ compensation scheme which is administered by the regulator WorkSafe Victoria (WSV) and covers most of Victoria’s 3.4 million working population. Data provided included any and all workers’ compensation claims (accepted, pending, rejected) for COVID-19 or flagged as COVID-19-related and lodged between 1 January 2020 and 31 July 2022.

Two industry/study groups were created: HCSA industry (Australian and New Zealand Standard Industrial Classification (ANZSIC) division Q with subdivisions for hospitals, medical and other healthcare services, residential care services and social assistance services, and classes within these subdivisions) and other industries (all other ANZSIC divisions) based on workplace ANZSIC division code. Claims were filtered in a step-wise process (table 1). Based on data quality and coding of cases, only those claims identified by WSV as ‘direct infection’ and assigned the nature of injury code 855 Novel Coronavirus—COVID-19 were included as direct COVID-19 infection claims. Indirect COVID-19-related claims, for example, for testing for COVID-19 or musculoskeletal disorders from handling a person with COVID-19, were not included.

Workers’ occupation was defined using the Australian Standard Classification of Occupations (ASCO) at either the minor (3-digit) or unit (4-digit) level depending on the outcome.
Table 1  Workers’ compensation claims for COVID-19 by industry group in Victoria, Australia from 1 January 2020 to 31 July 2022

<table>
<thead>
<tr>
<th>Variables</th>
<th>Healthcare and social assistance</th>
<th>Other industries</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (Column % of original)</td>
<td>n (Column % of original)</td>
<td>n (Column % of original)</td>
</tr>
<tr>
<td>All COVID-19-related claims</td>
<td>1318 (100.0)</td>
<td>1995 (100.0)</td>
<td>3313 (100.0)</td>
</tr>
<tr>
<td>Direct COVID-19 infection claims</td>
<td>843 (64.0)</td>
<td>794 (39.8)</td>
<td>1637 (49.4)</td>
</tr>
<tr>
<td>Indirect COVID-19 claims*</td>
<td>475 (36.0)</td>
<td>1201 (60.2)</td>
<td>1676 (50.6)</td>
</tr>
<tr>
<td>Accepted claims only</td>
<td>1124 (85.3)</td>
<td>1491 (74.7)</td>
<td>2615 (78.9)</td>
</tr>
<tr>
<td>Accepted claims for COVID-19 infection or mental disorder</td>
<td>936 (71.0)</td>
<td>1018 (51.0)</td>
<td>1954 (59.0)</td>
</tr>
<tr>
<td>Accepted time-loss claims for COVID-19 infection†</td>
<td>789 (59.9)</td>
<td>703 (35.2)</td>
<td>1492 (45.0)</td>
</tr>
<tr>
<td>Accepted and closed time-loss claims for COVID-19 infection†</td>
<td>504 (38.2)</td>
<td>244 (12.2)</td>
<td>748 (22.6)</td>
</tr>
</tbody>
</table>

*Indirect COVID-19 claims, for example, for testing for COVID-19 or musculoskeletal disorders from handling a person with COVID-19, were not included in the analysis.
†Sample for majority of analysis. All accepted claims for COVID-19 infection were time-loss claims.
‡Sample for continuous outcome measures.

Workers’ sex was defined in binary terms, and age was grouped in bands (15–24, 25–34, 35–44, 45–54, 55+ years). Socioeconomic status was measured using the 2016 Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) based on workers’ residential postal area code. IRSAD deciles were collapsed to quintiles, with the middle three quintiles grouped to enable easier explanation in analysis. Workers’ remoteness was measured by the 2016 Accessibility and Remoteness Index of Australia. A binary flag for hospitalisation during the claim was created. Data on PCR-confirmed COVID-19 cases and lockdown periods were obtained from the Victoria Department of Health website.

The final sample used in the majority of analyses included 1492 accepted time-loss COVID-19 infection claims (45.0% of original sample) (herein referred to as COVID-19 infection claims). A smaller subsample of 748 COVID-19 infection claims were closed at the time of analysis and were used for incapacity duration (22.6% of original sample).

Statistical analysis
Outcomes were defined for the number (n) (%) of COVID-19 infection claims in each industry group, rate of COVID-19 infection claims in each industry group and total incapacity days per claim in each industry group.

The number of claims over the study period was visualised using a histogram (figure 1) with weekly (7 day) stacked bins. Weekly totals of PCR-confirmed COVID-19 cases and time periods for the six Victorian lockdowns were included on the same figure to indicate timing of COVID-19 claims in relation to overall community case numbers and periods of greatest public health restrictions. Cells where the number of claims was < 5 were suppressed to preserve de-identification.

The rate of COVID-19 infection claims was calculated using two different denominators. First, the rate of claims per 1000 standardised Victorian workers’ compensation claims by industry was calculated; the denominator was the publicly available number of claims by ANZSIC division for the 2020/2021 financial year and a standardised claim was one in which weekly benefits exceeded or were expected to exceed the employer excess threshold (ie, 10 days) or in which medical expenses exceeded the healthcare and rehabilitation excess amount. Second, the rate of claims per 10,000 employed persons in Victoria by industry was calculated. The denominator was the number of employed persons in Victoria in May 2021 (an approximate mid-point of the study period) by ANZSIC division.

Duration of workers’ incapacity for COVID-19 infection claims was compared between industry groups for a subsample of closed claims (ie, no further claim activity) that had complete recording of incapacity duration. Median and interquartile range (IQR) of incapacity days and a Cox proportional hazards model, adjusting for covariates (industry group, sex, age group, socioeconomic status, remoteness, hospitalisation) were used to statistically compare incapacity days between the industry groups. In the Cox proportional hazards survival model, the event of interest defined was the cessation of cumulative incapacity days—a proxy for a return to work. An hazard ratio (HR) < 1 should be interpreted as longer time off work than the reference group; that is, less likely to cease incapacity benefits than the reference before the 1 year censor; an HR > 1 is interpreted as shorter time off work than the reference.

RESULTS
A total of 3313 claims were flagged as COVID-19-related and provided by WSV (table 1). Approximately half (49.4%) of all claims were identified as direct COVID-19 infection claims. A greater proportion of claims in the HCSA industry were direct COVID-19 infection claims and were identified as accepted claims than in other industries.

A large peak of claims lodged by the HCSA industry was observed in July–October 2020 during the second lockdown, corresponding to the surge in COVID-19 infections in Victoria (figure 1). Further, smaller peaks of claims lodged over a more sustained period were observed in both the HCSA industry and other industries over the period of November 2021 to July 2022, coinciding with the end of the sixth lockdown and re-establishment of community transmission in Victoria. A prominent peak in COVID-19 case numbers was observed during this period in January 2022.

During the study period, just over half of claims (52.9%) were made by workers in the HCSA industry and almost one-third (31.3%) were made by workers in the public administration and safety industry, with smaller proportions of claims made by workers in other industries (table 2). The highest rate per 1000 standardised workers’ compensation claims and rate per 10000 employed persons were in the public administration and safety industry followed by HCSA industry, with lower rates in several other industries.

The five most common claiming industry classes among HCSA (n=789) were hospitals excluding psychiatric hospitals (45.4%), aged care residential services (37.0%), ambulance services (5.1%) and other social assistance services (4.3%). The five most commonly claiming industry classes among other industries (n=703) were public order and safety services (63.2%), school education (7.3%), meat and meat product manufacturing (2.4%), water transport support services (2.1%) and employment...
The second and third years of the pandemic. HCSA industry compared with other industries, but similar

This study found that more than half of COVID-19 infection claims in the HC SA industry were exposed to early strains, as identified among HCSA workers, exposed to early strains, as identified and closed time-

In HCSA occupations by workplace industry, registered nurses working in hospitals and aged care residential services (n=258, 3.8%) and process workers (3.4%) (online supplemental table 1).

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The majority of closed time-loss COVID-19 infection claims in both the HC SA industry group (n=388, 77.0%) and other industries group (n=170, 69.7%) had complete recording of incapacity duration. In this subsample of claims, the incapacity duration was longer in the HC SA industry group (median 17 days, IQR 11–39.5 days) than in the other industries group (median 17 days, IQR 11–39.5 days) (table 3).

The Cox proportional hazards model revealed that accepted and closed time-loss claims for COVID-19 infection were significantly greater in duration in the HC SA (reference) group than in other industries (HR 1.4 (95% CI 1.1, 1.8), p=0.001). Being in an older age group and having a hospitalisation were also significantly associated with a longer incapacity duration.

The survival curve for incapacity days (figure 2) shows greater duration of incapacity in workers with COVID-19 infection claims in the HC SA compared with other industries.

DISCUSSION

This study found that more than half of COVID-19 infection workers' compensation claims were made by workers in the HC SA industry. Claims peaked earlier in the pandemic for the HC SA industry compared with other industries, but similar patterns of claims were seen for HC SA and other industries in the second and third years of the pandemic. HC SA industry claims were of significantly longer incapacity duration, than other industry claims. Older workers and those who had been hospitalised were also at risk of longer incapacity. Although the rate of claims per 10 000 employed persons was higher in the HC SA industry than in all other industries combined, the highest industry-specific rate of claims was seen in the public administration and safety industry.

Some industries and workplaces in Victoria were permitted to continue operations as essential services and others reduced or ceased operations. The disproportionate number of claims in the HC SA industry in July–October 2020, coinciding with Victoria’s second wave of COVID-19 and second lockdown, likely reflects healthcare workers’ increased risk of SARS-CoV-2 acquisition during this period due to workplace exposure and outbreaks in healthcare settings and their continued operations as essential services. In contrast, the similar distribution of claims in HC SA and other industries later in the study period, that is, November 2021–July 2022 aligns with increased case numbers associated with the emergence of the Delta and Omicron variants, gradual relaxation of restrictions and resumption of operations in other industries following the sixth lockdown period and the ongoing role of healthcare settings as essential services.

The longer duration of incapacity in workers in HC SA industry compared with workers in other industries is an important and novel finding of this study. The longer duration of incapacity in workers in HC SA could reflect a greater risk of severe illness among HC SA workers, exposed to early strains, as identified in the UK in 2020. Closed claims were more likely to have been lodged earlier in the pandemic in 2020 (data not shown) when extra caution in sensitive and high risk settings such as healthcare settings and their continued operations as essential services. In contrast, the similar distribution of claims in HC SA and other industries later in the study period, that is, November 2021–July 2022 aligns with increased case numbers associated with the emergence of the Delta and Omicron variants, gradual relaxation of restrictions and resumption of operations in other industries following the sixth lockdown period and the ongoing role of healthcare settings as essential services.

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### DISCUSSION

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### Table 2

<table>
<thead>
<tr>
<th>ANZSIC division</th>
<th>n (%)</th>
<th>Rate per 1000 workers’ compensation claims</th>
<th>Rate per 10 000 employed persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare and social assistance</td>
<td>789 (52.9)</td>
<td>142.0</td>
<td>16.9</td>
</tr>
<tr>
<td>Other industries*</td>
<td></td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Public administration and safety</td>
<td>467 (31.3)</td>
<td>194.7</td>
<td>23.0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>64 (4.3)</td>
<td>14.8</td>
<td>2.4</td>
</tr>
<tr>
<td>Education and training</td>
<td>56 (3.8)</td>
<td>33.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Transport, postal and warehousing</td>
<td>28 (1.9)</td>
<td>13.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Administrative and support services</td>
<td>23 (1.5)</td>
<td>21.4</td>
<td>2.1</td>
</tr>
<tr>
<td>Professional, scientific and technical services</td>
<td>14 (0.9)</td>
<td>21.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>14 (0.9)</td>
<td>8.7</td>
<td>1.3</td>
</tr>
<tr>
<td>Construction</td>
<td>10 (0.7)</td>
<td>2.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Retail trade</td>
<td>10 (0.7)</td>
<td>7.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Other services</td>
<td>9 (0.6)</td>
<td>11.5</td>
<td>0.7</td>
</tr>
</tbody>
</table>

*Several other industries (agriculture/forestry/fishing, mining; information media/telecommunications; electricity/gas/water/waste; accommodation/food; finance/insurance; rental/leasing/real estate and arts/recreation) had fewer than five claims each and were not reported further.

ANZSIC: Australian and New Zealand Standard Industrial Classification.

### Table 3

Cox proportional hazards model assessing the association between industry, sociodemographic factors and hospitalisation and work incapacity duration

<table>
<thead>
<tr>
<th>Variable</th>
<th>Median incapacity duration, days (IQR)</th>
<th>HR (95% CI)*</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Healthcare and social assistance</td>
<td>26.0 (16.0–61.0)</td>
<td>Reference</td>
<td>–</td>
</tr>
<tr>
<td>Other industries</td>
<td>17.0 (11.0–39.5)</td>
<td>1.4 (1.1 to 1.8)</td>
<td>0.001</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>25.0 (15.0–61.0)</td>
<td>Reference</td>
<td>–</td>
</tr>
<tr>
<td>Male</td>
<td>21.0 (11.0–43.0)</td>
<td>1.2 (1 to 1.5)</td>
<td>0.092</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15–24 years</td>
<td>19.0 (11.0–31.0)</td>
<td>1.2 (0.9 to 1.6)</td>
<td>0.304</td>
</tr>
<tr>
<td>25–34 years</td>
<td>19.0 (11.0–41.0)</td>
<td>Reference</td>
<td>–</td>
</tr>
<tr>
<td>35–44 years</td>
<td>26.0 (14.2–70.5)</td>
<td>0.7 (0.5 to 0.9)</td>
<td>0.003</td>
</tr>
<tr>
<td>45–54 years</td>
<td>30.0 (16.0–88.0)</td>
<td>0.6 (0.5 to 0.8)</td>
<td>0.001</td>
</tr>
<tr>
<td>55+ years</td>
<td>27.0 (16.0–80.5)</td>
<td>0.6 (0.5 to 0.8)</td>
<td>0.001</td>
</tr>
<tr>
<td>Socioeconomic status (n=13 missing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First quintile (most advantaged)</td>
<td>22.0 (14.0–43.0)</td>
<td>1.1 (0.8 to 1.4)</td>
<td>0.697</td>
</tr>
<tr>
<td>Middle three quintiles</td>
<td>23.0 (14.0–63.2)</td>
<td>Reference</td>
<td>–</td>
</tr>
<tr>
<td>Fifth quintile (most disadvantaged)</td>
<td>21.5 (13–43)</td>
<td>1.2 (1 to 1.5)</td>
<td>0.062</td>
</tr>
<tr>
<td>Remoteness (n=9 missing)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Cities of Australia</td>
<td>23.0 (14.0–55.5)</td>
<td>Reference</td>
<td>–</td>
</tr>
<tr>
<td>Regional Australia</td>
<td>21.5 (11.0–50.5)</td>
<td>1.1 (0.8 to 1.5)</td>
<td>0.509</td>
</tr>
<tr>
<td>Hospitalisation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No hospital admission recorded</td>
<td>23.0 (13.0–53.0)</td>
<td>Reference</td>
<td>–</td>
</tr>
<tr>
<td>Hospital admission recorded</td>
<td>86.5 (35.8–258.5)</td>
<td>0.4 (0.2 to 0.7)</td>
<td>0.003</td>
</tr>
</tbody>
</table>

HR is adjusted for covariates (industry group, sex, age group, socioeconomic status, remoteness, hospitalisation). An HR <1 should be interpreted as longer time off work than the reference group. HR, hazard ratio.
hospitals and aged care services, including in isolation periods, enhanced testing and asymptomatic screening, and furloughing of staff as case numbers increased, may have impacted return to work in HCSA workers. The proportion of Victorian healthcare and aged care workers who reported symptoms of burnout, reduced well-being and resilience and who considered leaving their profession increased from mid-2021 to mid-2022. Our findings could reflect the effects of psychological distress on work disengagement, observed overseas although not limited to healthcare workers, reflecting HCSA workers hesitancy regarding return to work in challenging healthcare settings and/or concerns about patient health.

Although for most people COVID-19 is a mild illness with symptoms lasting 1–2 weeks, it can lead to sustained or recurrent symptomatology, commonly termed ‘long COVID’. The survival curve in our study suggests about 20% of HCSA workers were still away from work (receiving income benefits) at 90 days (approximately 13 weeks) and 9%–10% at 180 days (approximately 26 weeks) post claim. A consortium of UK population-based longitudinal studies found long-COVID-19 symptoms lasting between 4 and 12 weeks ranged from 14.5% to 18.1% and >12 weeks ranged from 7.8% to 17%. Although these data are not directly comparable, the incapacity duration identified in our study could suggest an extended illness or long COVID-19 in some workers.

It is not surprising that nurses, personal care assistants and police officers made the most COVID-19 infection claims given their frontline or permitted worker roles throughout the study period. Our findings emphasise the need to ensure that an appropriate workers’ compensation system prioritises these occupational groups, particularly given their key role in protecting the broader community. However, some groups of community facing workers such as retail and food services staff were less represented in the claims data. Workers in industries and occupational groups that had a less structured working environment and/or less workplace or union support to lodge a workers’ compensation claim may be underrepresented in the claims data.

Given the 10-day excess period in Victoria, potential barriers to making a claim, increased challenges relating a COVID-19 infection to work as community prevalence increased, alternative sources of leave and income support, and the fact that Victoria did not introduce presumptive rules for healthcare workers (like some other states), our findings are likely to underestimate the actual number of work-related COVID-19 infections. The workers’ compensation claims identified in our study may represent the more serious end of the spectrum where people had exhausted other leave entitlements (eg, annual, sick or pandemic leave) but were not yet fit to return to work. The largest proportion of injured/ill workers in 2021 who reported that the COVID-19 pandemic had significantly impacted their recovery and return to work was in Victoria (26.4%, nationally 20.2%), although injuries or illnesses specifically due to COVID-19 infections were not reported in that survey. Our finding that healthcare workers and older workers (who may have more comorbid conditions) took longer to get back to work emphasises the importance of early rehabilitation services.

Our finding that a disproportionate amount of COVID-19 infection-related claims made in 2020 were by HCSA workers versus other industries is similar to UK findings indicating increased risk of work-related COVID-19 infection and ill-health in the health/social assistance, public administration/defence and education industries. Moreover, in the USA, healthcare workers were also identified as the population at greatest risk of developing COVID-19 infections and of COVID-19-related workers’ compensation claims (83.8% of COVID-19 accepted claims in January–August 2020). Our study affirmed that the majority of claims were time loss, in contrast with a US study which found that the majority of workers’ compensation claims (61.6%) did not result in any lost time. However, similar to our findings, age at claim was a predictor of prolonged impairment. A study from Italy identified that 19.4% of all COVID-19 infections up to May 2020 were workplace acquired with the majority of compensation claims applications being lodged by the human health and social work sector (71.6%) and public

Figure 2  Survival curve for incapacity days in healthcare and social assistance and other industries.
administration and defence/compulsory social security sectors (10.4%), which also resonates with our findings in the first year of the pandemic. Notably, other specific insurance systems exist for some groups in Italy, including police and firefighters, so their claims experience was not reported. In contrast, our study reported on accepted (rather than applications for) workers’ compensation claims over a more extended period and a greater range of industries.

Hyman et al. identified considerable variation in the use, requirements of, and workers included in presumptive tests in the USA in relation to COVID-19. This suggests that determining work-relatedness, assessing recovery enabling return to work, and impairment is likely to be a contentious area into the future. We did not identify national COVID-19 claims data past December 2020 that would have enabled analysing the effect of presumptive tests on claims in the Australian context, which could be an aspect to consider in future research.

A strength of our study is the inclusion of accepted COVID-19 infection workers’ compensation claims from the beginning of the pandemic to the end of July 2022. Much of the existing published data on COVID-19 workers’ compensation claims from Australia and overseas relates to the first year of the pandemic. We were also able to relate COVID-19 infection claims to the prevailing COVID-19 epidemiology and public health measures applied over time in Victoria by plotting accepted COVID-19 workers’ compensation claims against Victorian COVID-19 case numbers and lockdown periods. Our study highlights the disproportionate impacts seen on HCSC and public administration and safety workers, and emphasised our understanding of the impacts of COVID-19 gained through the Coronavirus in Victorian Healthcare and Aged Care Workers (COVIC-HA) Cohort Study by providing insights into the claims experience of workers, for example in aged care, for whom participation was lower. Also, routine Victorian surveillance data on reported COVID-19 cases did not illustrate industry or occupation-related breakdown. Therefore, our study also provides insights into the COVID-19 infection claims experience of different industries and occupations.

There are several limitations to consider. The worker’s compensation claims database included direct COVID-19 infection-related claims and indirect COVID-19 claims, but at data extraction there was insufficient documentation to be confident on the relevance or reliability of indirect COVID-19 claims. This was mitigated by including only direct infection claims with a ‘Novel Coronavirus’ nature of injury. Barriers to workers’ compensation mean these claims data may underestimate both the actual number of work-related COVID-19 infections and the proportion of occupationally-acquired infections that receive compensation. While incapacity duration is the closest proxy measure of return to work identifiable from workers’ compensation data, end of benefits is an imperfect measure and administrative measures may underestimate the actual return to work date and the duration of work disability self-reported by workers. Our analysis did not enable direct comparison between workplace-transmitted cases and those originating in the community or evaluation of the effectiveness of workplace infection prevention and control measures. Our findings may not be generalisable to jurisdictions with much higher COVID-19 incidence rates or a different balance of public health and workplace control measures. Data included the occupation coding standard ASCO. This did not have a major impact on this study, but minor changes may be observed if occupations were updated to the new ANZSCO coding system.

**CONCLUSIONS**

This research has identified industries and occupational groups with the highest rates of COVID-19 infection-related claims and incapacity duration, which are important aspects of mitigating risks. These findings can help in assessing COVID-19 infection risks in workplaces, monitoring and preventing work-related infection, and managing occupational risk of infection, as well as reducing incapacity and improving return to work rates. The findings emphasise the need to better monitor occupational risk factors in epidemiological surveillance systems. Enhanced data collection and reporting on workers’ compensation claims as a source of information on workplace transmission during an infectious disease pandemic could further inform public health and industry control measures. Understanding workers’ compensation claims has important implications for health and economic policy as well as informing future responses to COVID-19 or other infectious diseases.

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