Safe Work Australia

Review of data used
to calculate injury rates

September 2023

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# Introduction

In 2022-23, the Australian Bureau of Statistics (ABS) undertook a review of the methodology and data sources used for producing estimates of the working population covered by workers’ compensation schemes in Australia.

These estimates are used by Safe Work Australia (SWA) as the denominator to calculate injury frequency and incidence rates. The numerator is the count of work-related injuries and illnesses sourced from workers’ compensation claims. Together, these statistics enable comparisons to be made across key demographic and workforce characteristics, as well as over time.

The purpose of the review was to confirm the appropriateness and data quality of the information used to estimate ‘injury rate denominators’, given recent developments in the availability of labour market information and improvements to the measurement of workers in different forms of employment.

Based on the review, SWA has made updates to the process used to calculate the injury rate denominators. This includes refining how labour hire workers are enumerated for different industries, and removing independent contractors from the scope of the injury rate denominators since people in this working arrangement are not typically covered by workers’ compensation schemes.

These changes are implemented for the 2021-22 National dataset for compensation-based statistics (NDS) release (September 2023) onwards.

This paper explores the impact of these adjustments for key workforce and demographic breakdowns.

# Changes to the injury denominators

## Independent contractors

Independent contractors are generally not considered employees of a business, and thus are not generally eligible for workers’ compensation[[1]](#footnote-1).

While variations in coverage exist across workers’ compensation schemes, for the purpose of the NDS, which is by definition a national dataset, it is most logical for these workers to be excluded from the population of interest.

The impact of this exclusion is modest. As part of its review, the ABS determined that there would be a reduction of around 3.1% in the number of employee jobs from removing independent contractors in the estimate of the working population covered by a workers’ compensation scheme (referred to as ‘injury rate denominators’ following). The magnitude of this adjustment is approximately half the magnitude of the multiple job holder adjustment applied in the injury rate denominators estimation process, which results in an increase to the number of employee jobs of around 5.8%.

Analysis of ABS *Working Arrangements* data[[2]](#footnote-2) shows that the independent contractors are not evenly distributed across age groups and sex. Men (11%) are more likely to be working as an independent contractor than women (5%), and workers in older age groups are increasingly likely to be working as independent contractors. However, independent contractors are distributed equally in relative terms across the states and territories.

Differences are more pronounced for certain occupation groups and industry divisions. At the occupation major group level, Technicians and trade workers, Labourers, Machinery operators and drivers and Professionals have higher proportions of their workforce as independent contractors, whilst at the industry division level, Construction, Administrative and support services, and Professional, scientific and technical services had the highest proportions of their workforce as independent contractors.

These characteristics reflect where impacts from the change to the injury denominator process may be more pronounced.

## Labour Hire Adjustment

For workers who are employed through labour hire agencies, but undertake their work in other industries, an adjustment needs to be made to ensure that the injury rate denominators reflect the industry of the claim in which the work-related injury or illness occurred.

Recent developments in ABS labour market statistics have enabled improved capturing of employment in this form of working arrangement. The injury rate denominators process has been updated to account for this quality gain.

Analysis of ABS *Working Arrangements* data shows that labour hire workers are more likely to be employed in the Administrative and support services, Mining, Public administration and safety and Education and training industries.

# Impact Analysis

The combined impact of these changes on the injury rate denominators is discussed in this section. The figures quoted represent the difference between the work-related injury frequency and incidence rates calculated using the historical process, and the injury rates resulting from adjustments to the scope to remove independent contractors and improve labour hire worker estimation. Parallel estimates were provided for the most recent four years of data only, covering the key breakdowns of industry, occupation, state, age groups and sex. This was due to data availability and the complexity of the adjustment process implemented.

## Key findings

Implementing the changes to the injury denominators process has a minor overall impact on the frequency and incidence rates for work-related injuries and illnesses.

Injury frequency rates are impacted by 3.7% overall, the average figure across the four years of data for which comparisons can be made.

This difference is reasonably consistent across states and territories (see table 1) and occupation major groups.

Table 1 - Average difference over four years in injury frequency rate, by state or territory

|  |  |
| --- | --- |
| New South Wales | 3.6% |
| Victoria | 3.1% |
| Queensland | 3.9% |
| South Australia | 2.8% |
| Western Australia | 4.1% |
| Tasmania | 3.2% |
| Northern Territory | 3.6% |
| Australian Capital Territory | 4.9% |

Larger differences are observed in breakdowns where there are concentrations of workers engaged by labour hire firms or working as independent contractors.

For example, men are much more likely than women to be working as independent contractors and for labour hire firms, and as a result the average impact on injury frequency rates for men (5.3%) is larger than for women (1.4%).

Further, at the industry division level, Mining, Electricity, gas, water and waste services, Administrative and support services, and Construction experienced the largest impacts to injury rates (see table 2).

Table 2 – Average difference over four years in injury frequency rate, by industry

|  |  |
| --- | --- |
| Agriculture, forestry and fishing | 2.3% |
| Mining | >10% |
| Manufacturing | 1.8% |
| Electricity, gas, water and waste services | >10% |
| Construction | >10% |
| Wholesale trade | 1.3% |
| Retail trade | 0.8% |
| Accommodation and food services | 1.3% |
| Transport, postal and warehousing | 3.5% |
| Information media and telecommunications | 4.6% |
| Financial and insurance services | 1.0% |
| Rental, hiring and real estate services | 4.3% |
| Professional, scientific and technical services | 5.3% |
| Administrative and support services | >10% |
| Public administration and safety | 9.8% |
| Education and training | 2.0% |
| Health care and social assistance | 1.3% |
| Arts and recreation services | 3.0% |
| Other services | 2.8% |

Despite these impacts, the overall distribution of work-related injuries and illnesses remains similar. That is, the makeup of the industries, occupations and age groups where work-related injuries or illnesses occurred more frequently under the previous approach is similar to that observed when the changes to the injury rate denominators were applied.

# Implementation in WHS Statistics

SWA will not backcast the impact of the changes, in consideration of the minor overall impact and the complexity involved with mapping the variable impacts of the change across more detailed breakdowns in the structure of SWA’s National dataset for compensation-based statistics.

For instance, interactions between various categorical variables would also have to be accounted for in the backcast methodology since industry, occupation, age and sex are not independent variables, and any adjustments applied would require further modelling to be applied to maintain additivity in the data structure. Maintaining (for example) the national level rates without any adjustment, whilst also adjusting certain industries, age groups and sex, is a complex problem.

Historical data can still be used and interpreted alongside the latest injury rates, but users are advised to interpret any differences with caution.

1. Safe Work Australia (2021), *Comparison of workers’ compensation arrangements in Australia and New Zealand, 28th edition*, https://www.safeworkaustralia.gov.au/doc/comparison-workers-compensation-arrangements-australia-and-new-zealand-2021 [↑](#footnote-ref-1)
2. https://www.abs.gov.au/statistics/labour/earnings-and-working-conditions/working-arrangements/latest-release [↑](#footnote-ref-2)