

Safe Work Australia

# Traumatic Injury Fatalities

Explanatory notes

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# Explanatory notes: Traumatic Injury Fatalities database for Safe Work Australia

The Traumatic Injury Fatalities database (TIF) includes information on all work-related traumatic injury fatalities in Australia. This database collates information from sources including workers' compensation data, fatality notifications from Australia's various WHS authorities and information in the National Coronial Information System (NCIS).

## **Inclusions**

The TIF covers fatalities due to work-related injuries and explicitly excludes deaths attributed to disease and other natural causes. Among conditions specifically included as injuries are those arising from poisonous plants and animals, environmental conditions (e.g. frostbite), allergic reactions, and embolisms. Heart attacks and strokes are regarded as natural causes of death, but where available information shows that a work-related injury directly triggered a fatal heart attack or stroke, the fatality is included.

### ***Worker fatalities***

All identified cases of persons who died from injuries sustained while they were working are included. For this purpose, 'working' includes travelling from one workplace to another. So a trades worker or professional killed driving from one job or client to the next counts as a worker fatality. Similarly, a worker killed in an air crash on their way to a conference would be a worker fatality.

The number of worker fatalities is considered reliable. However some fatalities, particularly those related to traffic incidents, may be missed due to the way these deaths are identified. The information in the NCIS relies heavily on information collected by the police and the police report may not include sufficient information to identify whether or not the deceased was working at the time of the incident.

### ***Bystander fatalities***

Deaths of people in the general public are included if the actions of a worker directly contributed to the death of the person. Under this definition an 'at fault' rule is applied. Information from a variety of sources including police reports is used to determine whether or not the bystander's action directly contributed to their own death. If the bystander's actions directly contributed to the death then the death is considered to be a 'bystander fault' death and is not included in the database. The most common example of this is when a non-working person drives their car into the path of a truck and is killed.

There are many difficulties in identifying bystander fatalities – bystanders cannot seek compensation through workers' compensation; notifications depend on the work health and safety legislation of the jurisdiction; and sufficiently detailed information on the circumstances of all parties to the death is often unavailable. Estimates of bystander fatalities in the TIF should therefore be regarded as an undercount and movements over time interpreted with caution.

### ***Deaths resulting from criminal activity***

Persons sustaining fatal injuries as a result of someone else's criminal activity are included in the TIF if the decedent was at work at the time of the incident. Where the criminal activity is incidental to legitimate work activity, for example, where a worker dies of an injury sustained while under the influence of legal or illegal substances, the fatality is also included. Non-working persons fatally injured in an incident involving criminals and law enforcement officers or security officers are included as bystanders. In the case of a bystander who is killed while the police are pursuing a vehicle for a traffic or other violation the death will be included regardless of whether they were hit by the police car or the offender's car.

## Exclusions

### ***Deaths due to natural causes***

Natural causes include heart attacks, strokes and where death is a natural progression from a disease. In NCIS a death is classed as natural causes when the person did not die from external causes. An external cause of death is defined as any death that resulted directly or indirectly from environmental events or circumstances that caused injury, poisoning and other adverse effects (WHO, 1992).

### ***Deaths due to complications of surgical and medical care***

Although the death of a patient who dies as a result of medical negligence or malpractice is in principle a bystander fatality, deaths arising from such injuries are specifically excluded from the TIF.

### ***Deaths of persons undertaking criminal activity***

Persons fatally injured while undertaking criminal activities, such as gaining illegal entry into a building or work site or crashing a car while evading a police pursuit are excluded from the TIF.

### ***Suicide***

The TIF excludes deaths resulting from self-harm because it is difficult to assess the extent of the connection between work and a decision to take one's own life.

### ***Deaths of persons commuting***

Persons fatally injured while driving to or from work.

## Data sources

The TIF uses information from three main sources:

- notifications from Work Health and Safety Authorities
- the National Coronial Information System (NCIS), and
- the National Data Set for Compensation-Based Statistics (NDS).

The individual records from each of the datasets are compared so that duplicates can be removed. Generally date of death, date of birth and sex are used for initial matching as these data are available for most cases. Other data items used for matching might include industry and occupation of the deceased and the narrative (when available). Each of these sources have limitations, so using multiple sources are needed to gain a more comprehensive understanding of the work-related fatalities that occur each year.

### ***Notifications from Work Health and Safety Authorities***

Work health and safety authorities in each jurisdiction notify Safe Work Australia of work-related injury fatalities that fall under the model Work Health and Safety legislation. There are 12 work health and safety jurisdictions in Australia that report to Safe Work Australia: each of the eight states and territories; the Commonwealth (Comcare); and the mining sectors in New South Wales, Queensland and Western Australia.

The strengths of the notifications are that:

- it captures fatalities that may not be compensated such as deaths to self-employed, contract workers and bystanders
- information is available within a few months of the incident
- work-relatedness is assessed by work health and safety officers
- names are supplied by some jurisdictions, and
- it provides a brief narrative account of the circumstances of the fatality.

The weaknesses of the notifications are that:

- only limited information may be available at the time of notification
- it tends to capture work-related fatalities only when they occur shortly after the injury, and
- prior to 1 January 2013 there was limited coverage of transport-related fatalities.

### ***National Coronial Information System (NCIS)***

The NCIS, officially launched in July 2000, is an internet-based data storage and retrieval system of coronial cases in Australia and New Zealand. Each state and territory in Australia, and New Zealand, has a licence agreement with the Victorian Department of Justice and Community Safety permitting the transfer of coronial information for storage and dissemination via the NCIS.

For the TIF, records are extracted and examined based on the scope criteria. In particular, all deaths that are coded as work-related or where the activity is coded as paid work are reviewed, as well as deaths that involve a heavy or light commercial vehicle, aircraft or occurred at a farm, industrial or commercial workplace. Some records do not have all the relevant data available at the time when the dataset is finalised, and therefore updates to historical numbers may be evident in future releases.

The strengths of the NCIS are that:

- it includes all deaths reported to an Australian coroner
- it includes police narratives and coronial findings on the causes and circumstances surrounding the fatal incident
- some information is available within a few months of the incident, and
- work-relatedness is assessed against standard criteria.

The weaknesses of the NCIS include:

- not all work-related fatalities and work-related information are correctly coded
- it can be many years before the case is closed and all files loaded and coded
- crucial data items, including name, date of birth and date of death, as well as documentation, may be missing for open cases and even some closed cases, and
- it is difficult to identify bystander fatalities.

### ***The National Data Set for Compensation-Based Statistics (NDS)***

The scope of the NDS is all accepted workers' compensation claims made by or for an employee (other than an employee of the defence forces). The NDS is compiled annually by Safe Work Australia from data supplied by state, territory and Australian Government workers' compensation authorities. The NDS has consistent data from 2000–01 onwards.

The strengths of the NDS are that:

- it codes the industry of employer accurately
- medical professionals independently assess work-relatedness, and
- work-related travel is identified.

The weaknesses of the NDS are that:

- workers' compensation is only available to employees, so the NDS does not provide good coverage of fatalities in industries where a significant proportion of workers are self-employed
- a claim may not be lodged where there are no dependants
- date of death is not available for all fatalities although jurisdictions are progressively introducing this data item
- bystander fatalities are not included as they are not compensable within the workers' compensation system
- narratives are not provided

- coding of mechanism, agency, breakdown agency and occupation may not be complete or accurate
- location of incident is not identified so workers who died in an incident in a state different to their employer can be difficult to match to an NCIS record. This is particularly relevant to Commonwealth compensation claims with workers employed in all states and territories
- date of birth may not be accurate, and
- names are not provided.

#### **Other data sources**

The media and accident investigation reports from the Australian Transport Safety Bureau relating to plane crashes, train crashes and maritime incidents are used to supplement information found in each of the datasets.

### **Calculation of fatality rates**

Fatality rates are calculated as the number of fatalities divided by the number of workers in the reference period and expressed as a rate per 100 000 workers. Employment figures are supplied by the ABS and sourced from the quarterly ABS Labour Force Survey data. The number of workers is derived from the average of all persons employed over the four quarters of the year.

Because work-related injury fatalities of Australian Defence Force (ADF) personnel within Australia are in scope for the TIF, worker estimates are supplemented with the average of levels of ADF permanent members reported in the Department of Defence Annual Report.

The TIF database also includes worker fatalities involving volunteers and children aged under 15 years old. The ABS Labour Force Survey data does not include either volunteers or children under 15, however due to the small numbers of these fatalities, the inclusion of these fatalities without adjusting the worker estimates does not impact on the fatality rates.

### **Time-series analyses**

Comparison of preliminary and finalised data should be done with caution.

Data is initially collected as information from media reports (preliminary data), then finalised annually using information sourced from workers' compensation data, fatality notifications to Australia's WHS authorities and the National Coronial Information System (finalised data).

The number of preliminary fatalities is usually less than the number of finalised fatalities due to new information coming to hand after the fatality occurs.