Learning the lessons:
What research into ten years of fatalities data can teach us about road safety

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Content warning

Fatalities caused by road crashes

Suicide by road crashes

Lifeline Australia

https://www.lifeline.org.au/

13 11 14

Beyond Blue

https://www.beyondblue.org.au/

1300 22 4636

Toll's commitment to safety

We believe that everyone has the right to return home safely and we are working towards **creating a workplace free of incidents and injuries**

We operate in a high risk industry

Transport, Postal and Warehousing Industry in Australia

Source: www.safeworkaustralia.gov.au/system/files/documents/1807/road-transport-priority-industry-snapshot-2018.pdf

We are safety obsessed

Our Focus Areas

Safety-first mindset

756 global safety workshops 10,909 people completed (leaders, supervisors, workers)

Stringent safety reporting

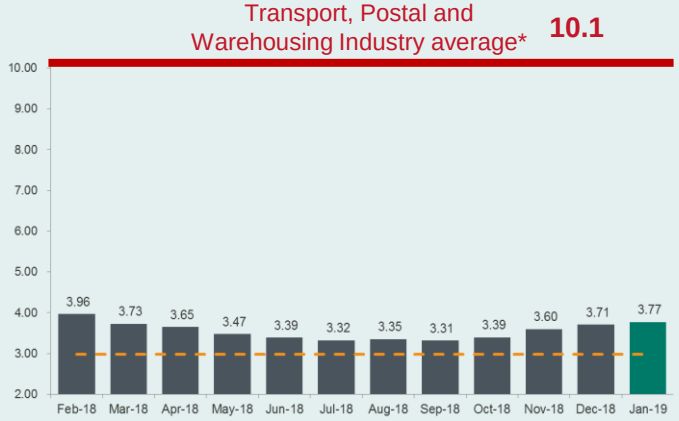
Multimillion dollar investment to embed and sustain a single comprehensive global safety system, improving reporting and compliance

Preventative technologies

AUD$1.6 B investment in fleet and equipment globally to improve safety and efficiency (including telematics, driver app)

Toll versus industry current performance

Lost Time Injury Frequency Rate



*LTI data used is from Toll's incident reporting system. Toll LTI and hours worked data have been entered in the Worksafe Australia comparison tool (https://www.safeworkaustralia.gov.au/statistics-and-research/lost-time-injury-frequency-rates-ltifr). The Toll figures are accurate at the time of reporting.

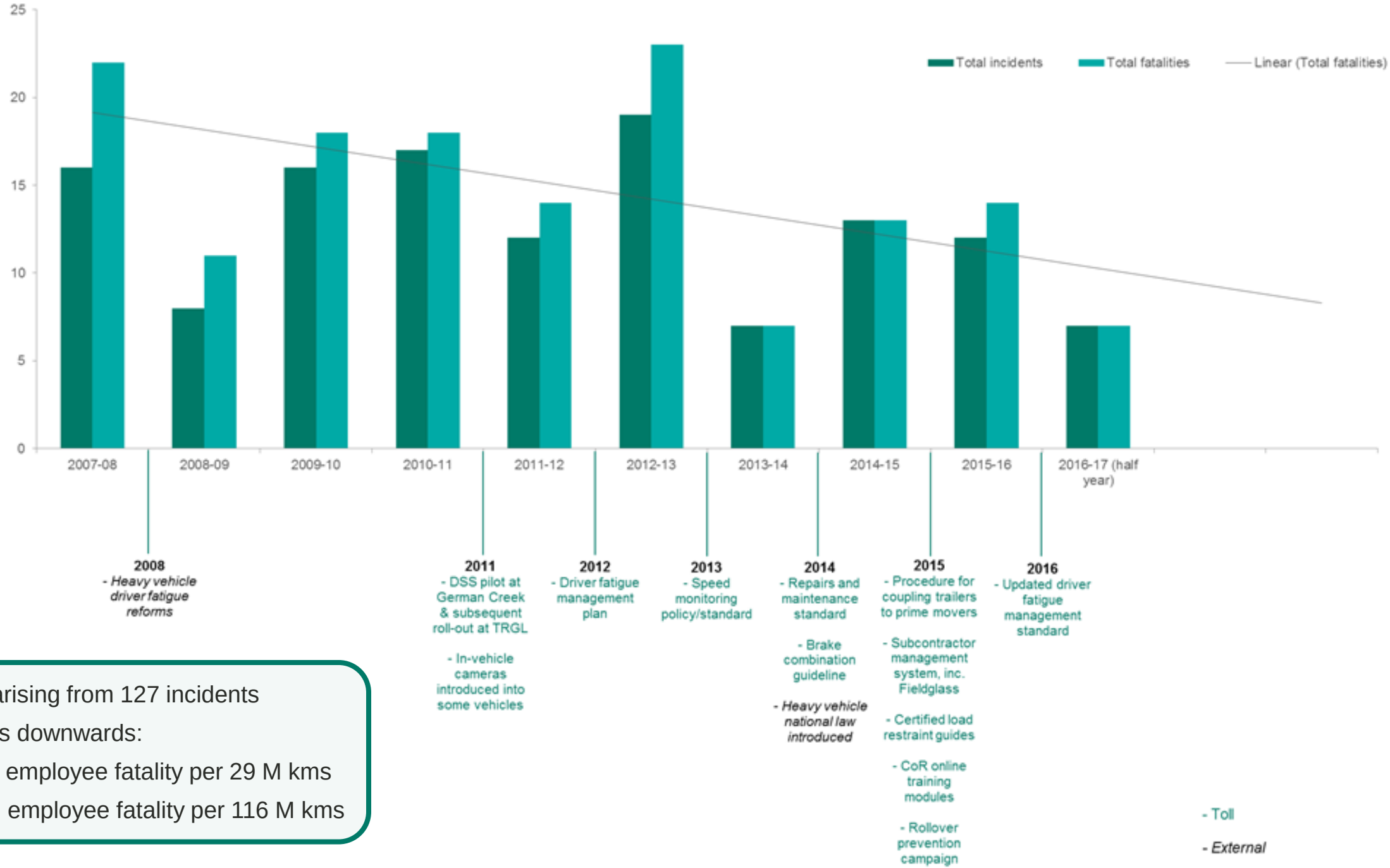
The research impetus

Chain of Responsibility ‘Primary Duty’:

- quantify the incidence of on-road and driver fatalities over ten years
- identify characteristics, patterns, anomalies in the data
- suggest preventative actions

Scope:

- 1 July 2007 – 31 December 2016
- all instances where a Toll employee, contractor or casual was killed on a road or road related area
- all instances where a Toll employee, contractor or casual was involved in (but not necessarily responsible for) an on-road incident that resulted in a fatality
- all instances where a Toll driver (employee, contractor or casual) died at a Toll premises or in a Toll vehicle, regardless of the cause
- all locations in which Toll operates



147 fatalities arising from 127 incidents

Overall trend is downwards:

- 2010-11 – 1 employee fatality per 29 M kms
- 2015-16 – 1 employee fatality per 116 M kms

What did we find?

A range of factors that didn't contribute strongly…

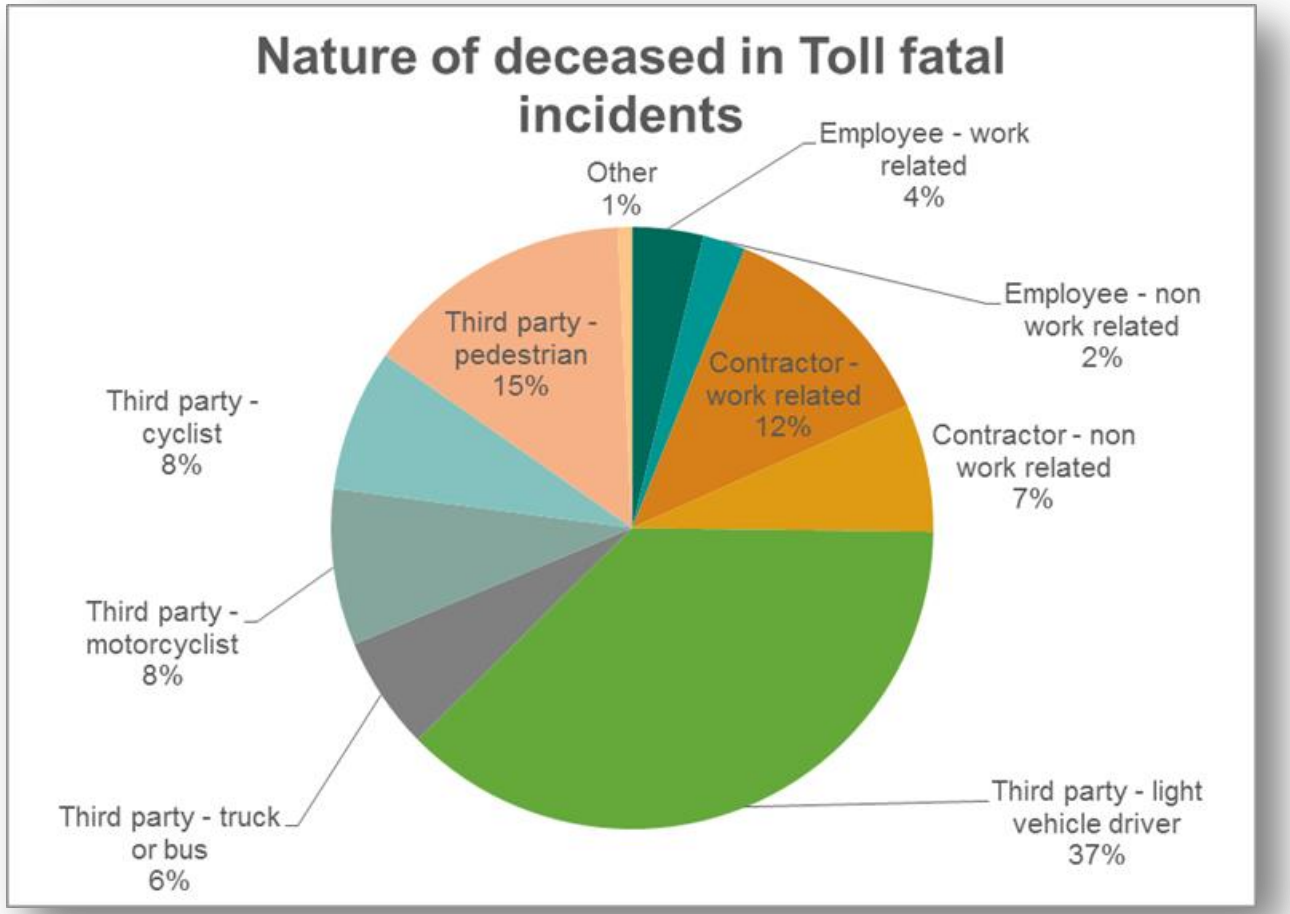
- Drugs and/or alcohol – 2% of incidents
- Speeding – 2% of incidents
- Distraction – 2% of incidents
- Equipment or mechanical failure – 3% of incidents
- Negligent driving – 4% of incidents
- Road infrastructure – 5% of incidents

….yet several interesting findings

1. Nature of the deceased
2. Differences in employment type
3. High contribution of cardiovascular disease
4. Prevalence of suicide by truck
5. Contribution of fatigue

Nature of the deceased

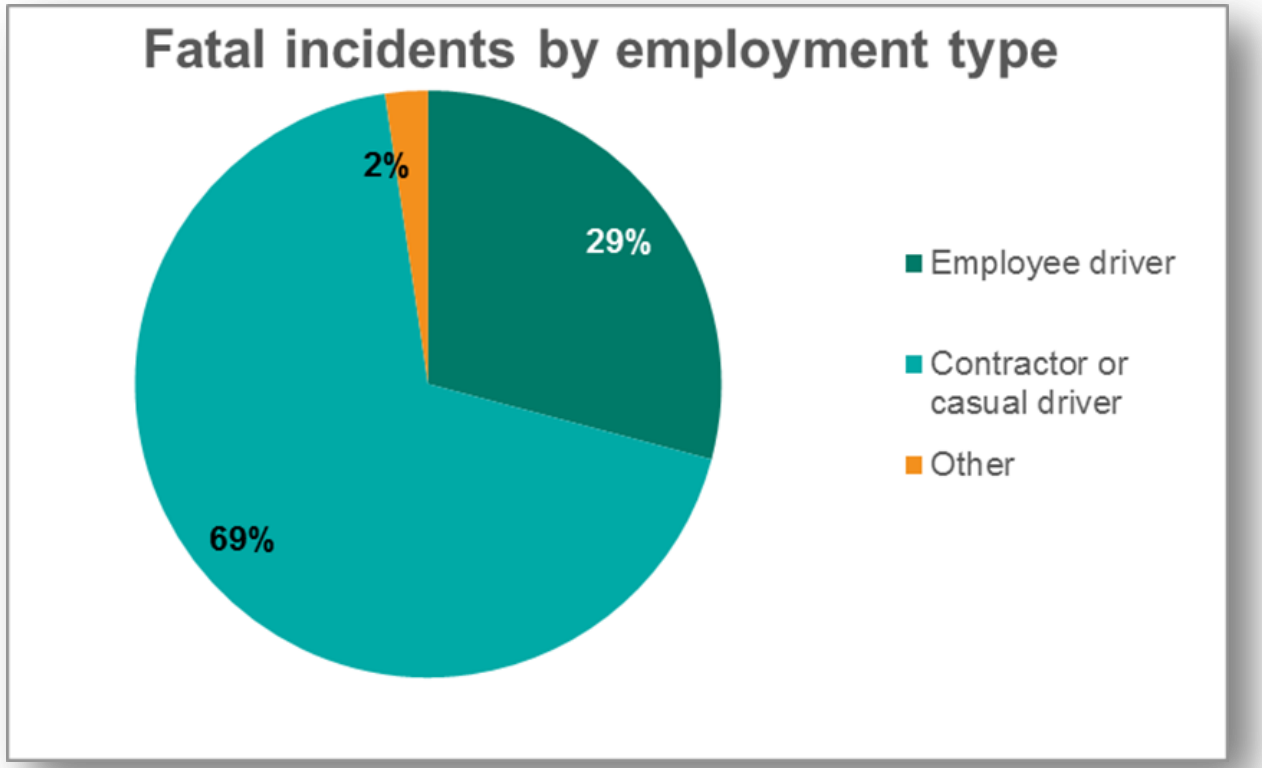
- More likely to be a third party than a Toll employee or sub-contractor
- Liability – in 66% of incidents, the third party was at fault
- Consistent with other research findings (e.g. NTI, 2017)
- Points to the need for better education and awareness of heavy vehicles



NTI (2017), Major Accident Investigation Report, NTARC, Melbourne, Australia

Differences in employment type

- Fatalities more likely to involve contractor and casual drivers (69%) than employee drivers (29%)
- Underlying reason(s) not well-defined
- The relationship holds when tested against distance travelled
- Liability rates are similar (indicates that it is de-coupled from culture)
- Relationship between employment categorisation and risk needs to be better understood



High contribution of cardiovascular disease

- Non-work related fatalities occurred in 9% of incidents (employee and contractor combined)
- Overwhelmingly the result of a heart attack experienced on a Toll premises or in a Toll vehicle
- Consistent with research (e.g. Routley et al. 2003) - most non-traumatic driver deaths are caused by cardiovascular disease
- Many have no prior knowledge of the presence of the condition
- Points to the need for improvements in addressing fitness for duty standards

Routley et al (2003), Suicide and natural deaths in road traffic, MUARC, Melbourne, Australia.

Prevalence of suicide by truck

Where a third party intentionally places themselves in the truck's path and is confirmed as suicidally ideated by the coroner, the police and/or the insurer

- 14% of fatalities are confirmed as suicide
  - 63% pedestrian
  - 32% car
  - 5% motorcyclist
- Almost certainly an underestimate
  - Coroner's court presumption against suicide
  - Social stigma of suicide
- Toll's estimate is **20%** of the fatalities with which the company is involved
  - Consistent with research (e.g. Bálint et al. 2014, NTI 2017)

- Possible impacts on Toll's drivers - post-traumatic stress disorder, mental health, general well-being

Bálint et al. (2014), Accident Analysis for Traffic Safety Aspects of High Capacity Transports [trucks], Chalmers University of Technology, Gothenburg, Sweden.

NTI (2017), Major Accident Investigation Report, NTARC, Melbourne, Australia.

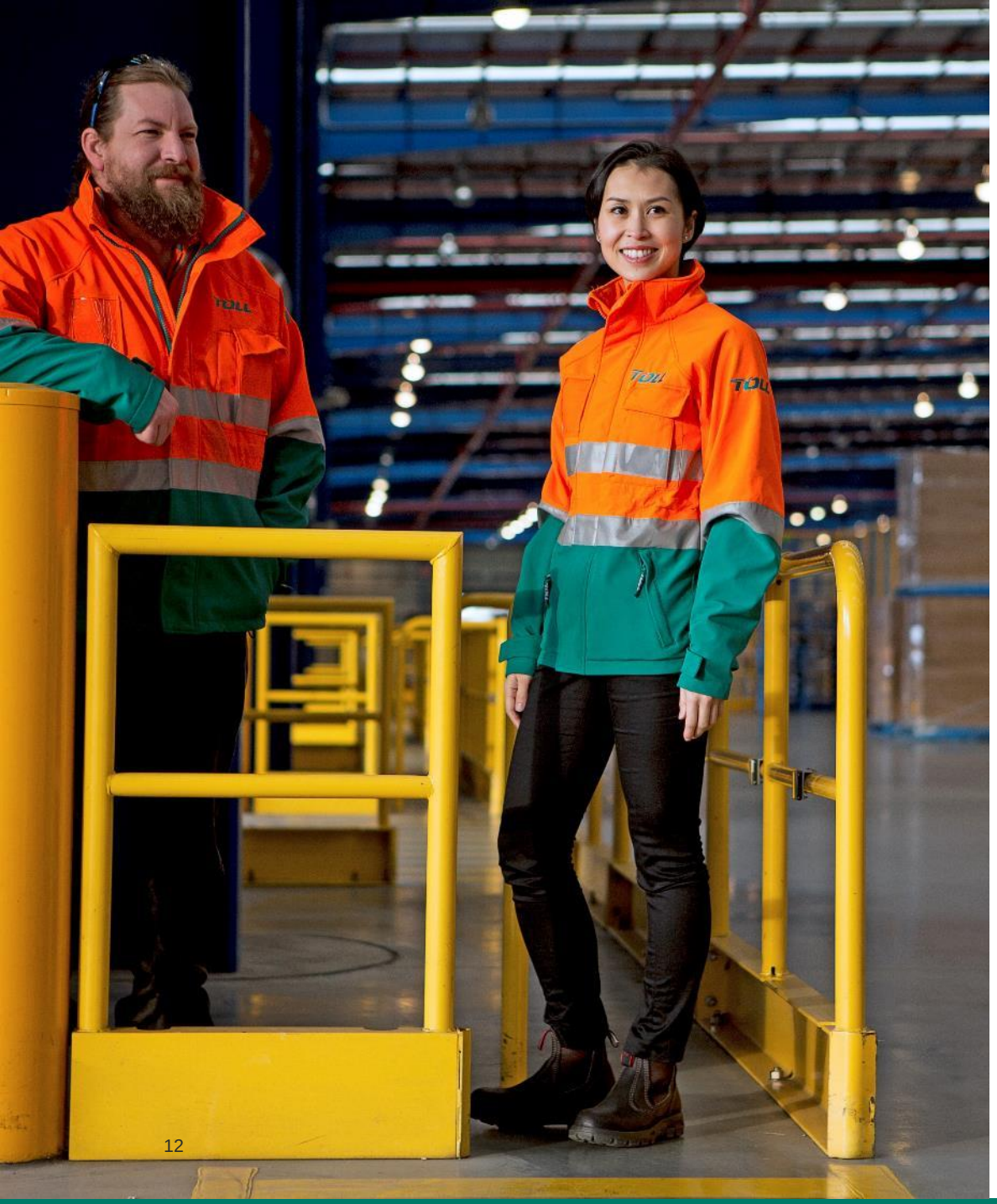
Contribution of fatigue

- ‘Window of circadian low’
  - typical time during a 24-hour period that a person is asleep
  - generally between midnight and 6 am

- Toll experience:
  - 23% of all fatalities either occurred during the window of circadian low, or fatigue was deemed a causal factor

- Consistent with research (e.g. Haworth et al. 1989) – estimated fatigue or sleep to contribute to 20% of truck-involved fatal crashes

Haworth et al (1989), Fatigue in truck accidents, MUARC, Melbourne, Australia.



Toll's response

Continue to pursue road safety initiatives and interventions, to further drive positive impacts

1. **Third party awareness** – advocating for heavy vehicle knowledge to be included in all new driver training programs, and are publishing information on social platforms
2. **Subcontractors** – holding national series of subcontractor safety forums to present road safety findings and encourage take-up of road safety measures
3. **Cardiovascular health** – developing internal fitness for duty standards
4. **Trauma management** – formal partnership with 'Tracksafe' in adapting their trauma management programs
5. **Fatigue** – Driver State Sensing (DSS) systems widely fitted throughout the fleet to monitor and alert for fatigue events

Thank you for your attention

Questions?

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