

Work-related MVTC fatalities in New Zealand: occupational risks & opportunities PROVISIONAL ANALYSIS

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Introduction

- NZ's workplace fatality record has been shown to be very poor compared to similar countries.
- Under recent scrutiny following mine explosion
- Reasons for substandard performance are highly debated - in-depth analysis to inform this debate is limited by a dearth of detailed fatality data.



Data sources

	ACC <i>Compensation</i>	WorkSafe <i>Notification</i>	StatsNZ <i>(ACC + WorkSafe)</i>	WRFIS <i>Coronial</i>
Workers	Y	Y	Y	Y
Bystanders	-	Some	-	Y
Road	-	-	Y	Y
Commuters	-	-	-	Y
Children	-	Some	-	Y
Maritime (sea)	Y	-	Y	Y
Civil Aviation (air)	Y	-	Y	Y
ChCh Earthquake	Y	-	Y	Y

Coronial data however offer opportunity to capture burden beyond political and legislatively constrained definitions of work-relatedness.

Allows us to capture the true community burden of work-related fatal injury.

Coronial records

- Coronial findings
- Police report
- Toxicology report
- Pathology report
- Expert reports (ie NZTA vehicle reports)
- Witness statements



WRFIS Fatal data series

WRFIS: Workplace



WRFIS: Public Road



Our current study covers the period 1995-2014 for workplace & 1999-2014 for road fatalities



Work-related road safety

- Rarely captured in national Work Related Fatal Injury (WRFI) figures
- Driving a common occupational activity
- Fatalities on public roads an important contributor to overall burden of WRFI 1985-94*:
 - Adds an additional 106 fatalities per year
 - Of total burden, contributes 29% of worker fatalities

* McNoe et al., NZMJ 2005: 118 (1227)



Overall aim

The study aims to accurately inform work-related injury prevention efforts for NZ for the period 1995-2014 (WRFIS-3) by:

- i) comprehensively documenting and enumerating the work-related fatal injury burden; and
- ii) identifying high risk groups and circumstances to prioritise and target preventive action.



Study design: WRFIS-3

- Mortality review of cases with external underlying cause of death identified using Mortality Collection
- MC cases matched to Coronial records
- Full case audit of Coronial records held by:
 - Archives NZ (1995-99)
 - Ministry of Justice (2000-07)
 - National Coronial Information Service (2007-14)



Eligible cases: WRFIS-3

- Working, commuting or a bystander to another persons work activity or processes
- Sustained in NZ or it's territorial waters
- Deaths up to 1 year following injury event
- Excludes:
 - Suicides
 - Occupational disease
 - Unpaid home duties
 - Those aged >85 years

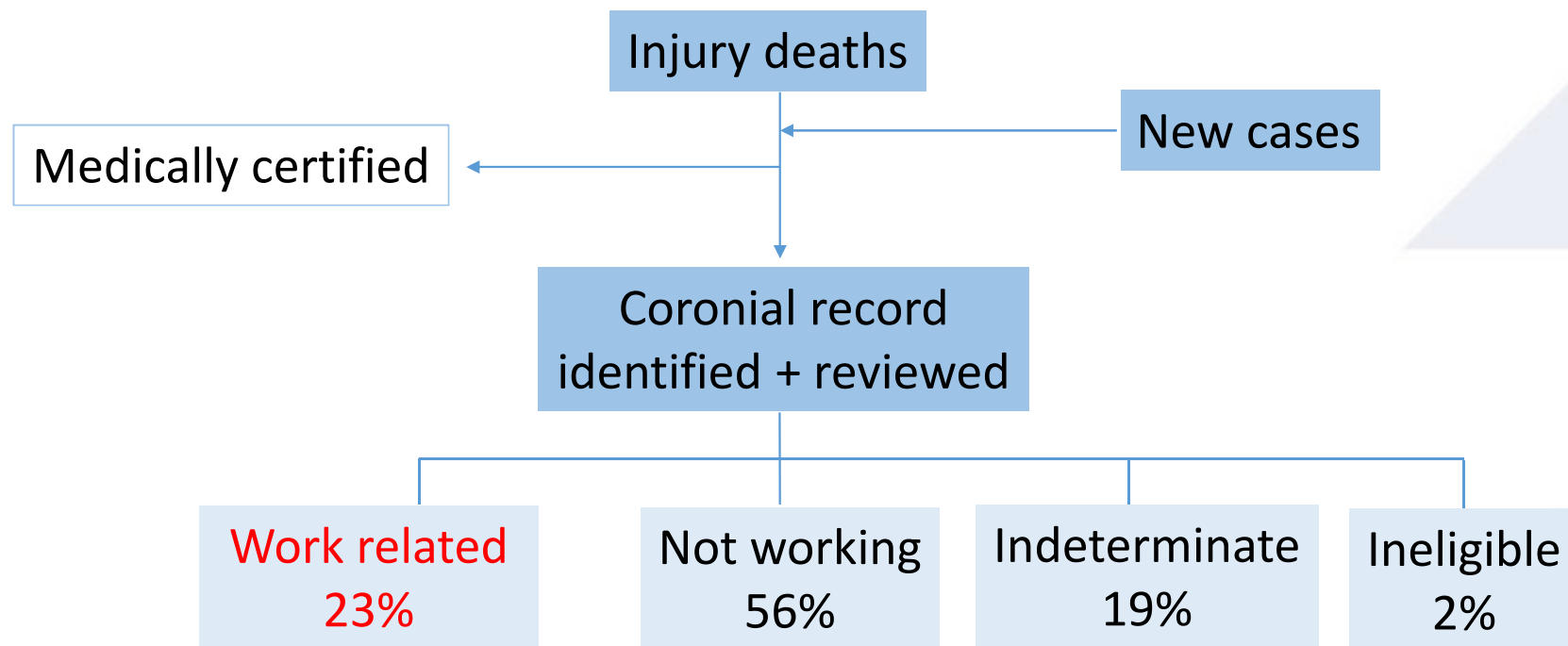


Provisional analysis

Final published figures may differ from those presented here.



Provisional results: 1999-2014



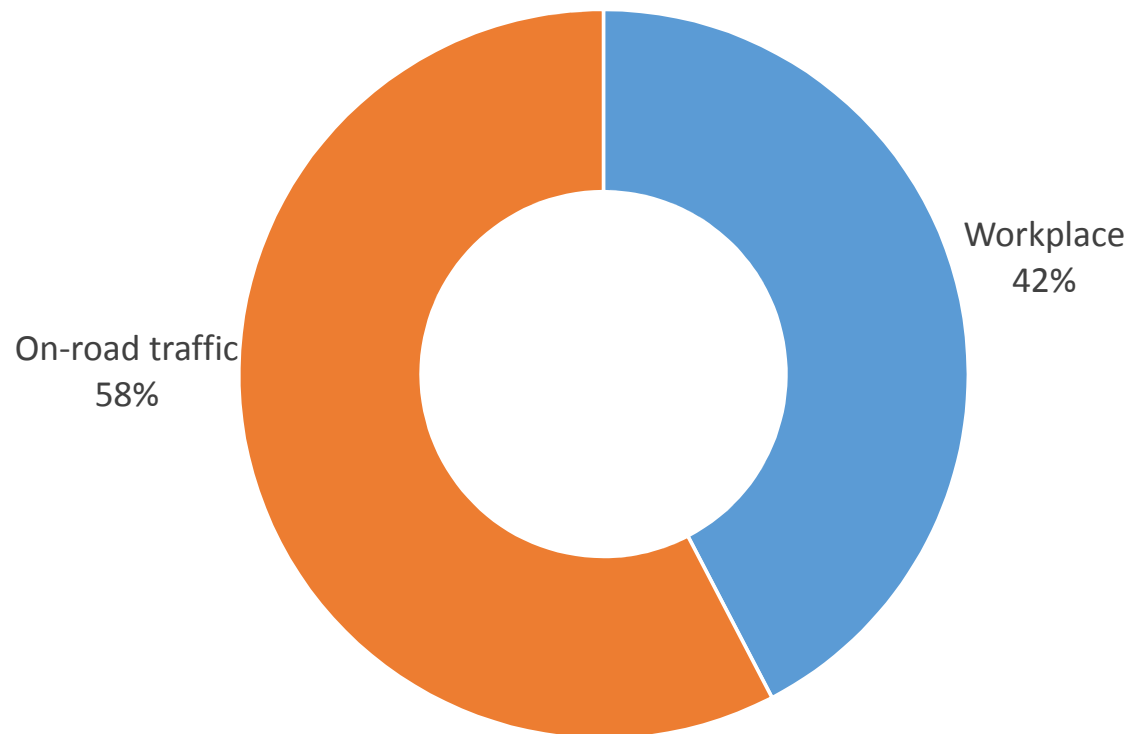
Burden of work-related fatal injury (WRFI) occurring on public roads: 1999-2014 Provisional data

Provisional analysis. Final published figures may differ from those presented here.



Provisional.

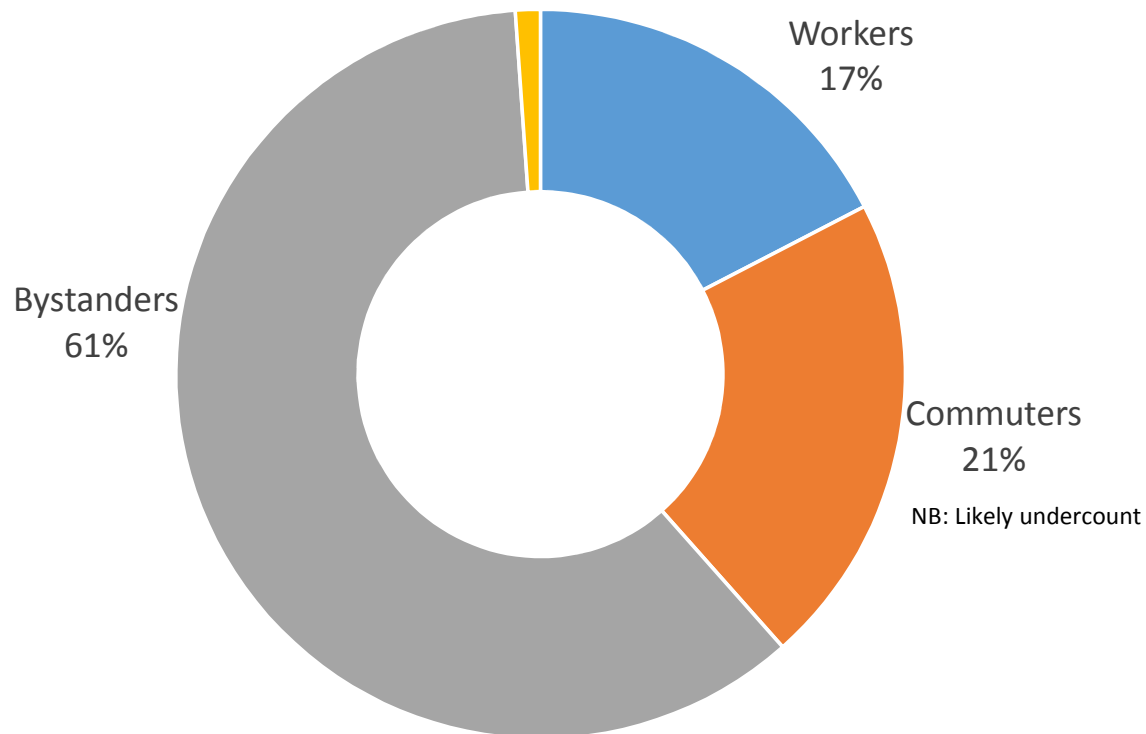
Total WRFI by work setting, 1999-2014



On-road traffic fatalities (including bystanders) are the largest contributor to the total burden of work-related fatal injuries in NZ making the road a major setting for work-related fatalities

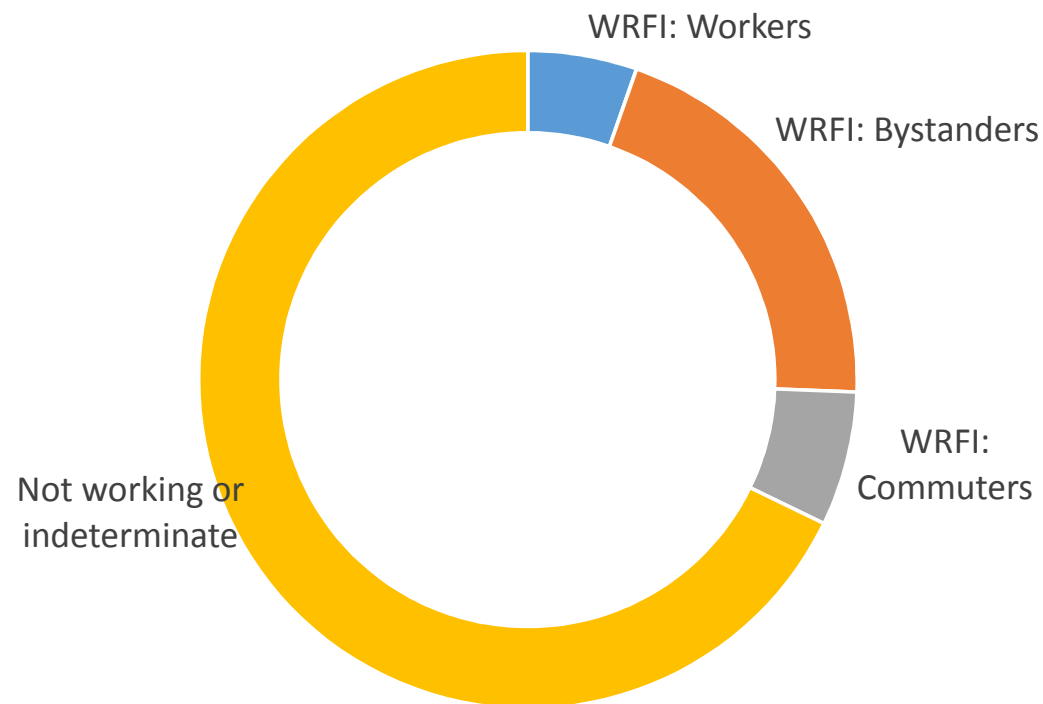


Provisional. On-road WRFI, by work-context



Provisional.

On-road WRFI, contribution to road toll



Workers, aged 15-84 yrs

Provisional analysis. Final published figures may differ from those presented here.



Provisional. On-road WRFI, by age

Workers

- Highest burden in workers aged:
 - 20-24 yrs
 - 35-59 yrs.
- Highest rates in workers aged:
 - 70-84 yrs
 - Elevated rates 20-24 years and from age 55 yrs onwards.

Provisional. On-road WRFI, by sex

- Predominantly a male worker problem:
 - 98% of on-road WRFI in males
 - Males have 8 times the rate of on-road WRFI compared with females



Provisional.

On-road WRFI, by work characteristics

- Employment arrangements (*where able to be determined*)
 - 14% Self-employed
 - 82% Employees
- Working structure (*where able to be determined*)
 - 93% full time
 - 7% casual workers
- Work schedule (*where able to be determined*)
 - 63% permanent days, 25% irregular shifts, 11% permanent nights, 4% rotating shift



Provisional.

On-road WRFI, by time variables

Workers

Time of day

- Spikes in incidence at 6-7am, 9am-4pm, 11pm-1am.

Day of week

- Fairly consistent pattern Mon-Fri, lowest burden on Sunday

Time of year

- Spike in incidence in Nov-Jan. No real pattern for the rest of the year.



Provisional.

On-road WRFI, by vehicles involved...

Workers

- 53% single vehicle collision
 - Of which majority involve a “heavy” vehicle (eg truck, tractor etc), a third involve “light” working vehicles (eg car, van, utility)
- 42% multiple vehicle collision
 - Of which 21% of workers in a “heavy” vehicle, 68% in a “light” vehicle.
- 5% not in a vehicle collision (ie drowned, hit by moving vehicle on public road)



Provisional

Most common contributing factors, on-road WRFI

Workers

- Worker driving behaviours/actions
- Worker impairment (ie. health, fatigue, alcohol, drugs)
- Site conditions (ie. slippery road conditions)
- Not wearing seatbelt
- Condition of equipment (ie. load security, brake condition)
- Site layout (ie road design, steep slope)
- Little information available on workplace/system factors



Provisional. On-road WRFI, by occupation

Workers

Burden - Top 3

- Machinery operators & drivers (50%) – *includes truck drivers*
- Labourers (12%)
- Managers (incl farmers) (11%)

Rates (2005-2014 only)

- Machinery operators & drivers (9 times the rate of next closest occupation group)



Provisional. On-road WRFI, by industry

Workers

Burden - Top 3

- Transport, Postal & Warehousing (57%)
- Agriculture, Forestry & Fisheries (8%)
- Construction (6%)

Rates (2005-2014 only) – Top 3

- Transport, Postal and Storage
- Electricity, Gas & Water Supply
- Agriculture, Forestry & Fisheries



Comparison over WRFIS studies – on-road

1985-1998*

- Highest burden
 - 25-34 yrs
 - Males
 - Transport sector
 - Drivers & mobile machine ops
 - 10am-4pm
 - 5% alcohol or drugs

1999-2014

- Highest burden
 - 20-25yrs + 35-59 yrs
 - Males
 - Transport sector
 - Drivers & mobile machine ops
 - 9am-4pm
 - Worker impairment still prominent

* McNoe et al., NZMJ 2005: 118 (1227)



Comparison over WRFIS studies – on-road

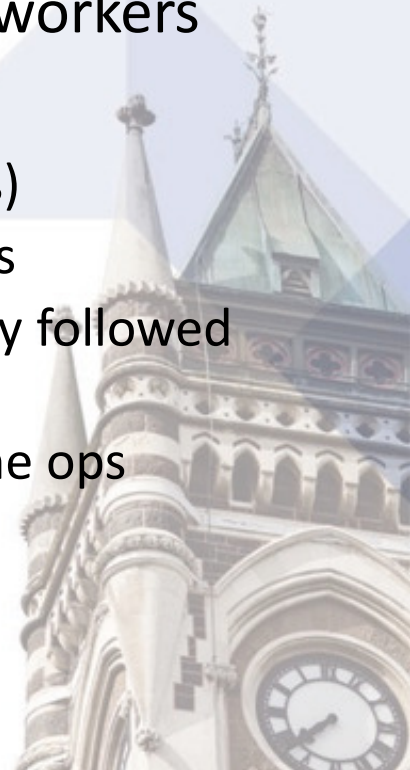
1985-1998*

- 1.1 deaths per 100,000 workers
- Highest rates
 - Older workers (65-84 yrs)
 - 15% Self, 57% employees
 - Transport Sector
- Drivers & mobile machine ops

1999-2014

- 1.2 deaths per 100,000 workers
- Highest rates
 - Older workers (70-84 yrs)
 - 14% Self, 82% employees
 - Transport sector – closely followed by Utilities sector
- Drivers & mobile machine ops

* McNoe et al., NZMJ 2005: 118 (1227)



Future analyses

Traffic Crash Report data linked to WRFI data (eg. fault, vehicle factors, driver behaviours, contributing factors)

Sub-group analyses

Trends over time & impact of policy changes

Systems level analysis possible



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