Work health and safety

AN OVERVIEW OF WORK-RELATED HARM AND RISK IN AOTEAROA NEW ZEALAND

June 2024



Te Kāwanatanga o Aotearoa New Zealand Government





About this document

This is an overview of harm and risk experienced by workers in New Zealand, based on data available as of June 2023. It has been prepared by WorkSafe New Zealand as part of its function to collect, analyse, and publish statistics and other information relating to work health and safety.

The overview provides information about harm and risk at the system level. It covers areas where WorkSafe focuses its efforts, and areas that other agencies or organisations are better placed to influence. Over time, the collective contribution by everyone who has a part to play will result in fewer people being harmed by work.

The key topics highlighted include:

- work-related acute injuries
- exposures at work that raise the risk of injury and/or ill health.

Analyses are largely focused on:

- trends in the number and rate of injuries
- proportion and number of workers exposed to risks
- groups of workers that have higher risk of injury or greater exposure to risk.

A full report on the topics in this overview, including detailed information on data sources and methods, is also available and can be found under Further Information on page 10.

Categories of harm and risk

The overview is divided into the following five categories that account for most work-related risk and harm in New Zealand.

Acute injuries

Injuries that result from a single traumatic event.

Carcinogens and airborne risks

Dusts, fumes, chemicals, and other agents that cause cancer, respiratory disease, and other disease.

Musculoskeletal risks

Biomechanical and physical factors that interact with other factors to cause injury, pain, and loss of function.

Work organisation and environmental risks

Factors that increase the risk of ill health and injury such as shift work, long working hours, noise, solar radiation, and temperature extremes.

Psychosocial risks

Aspects of work design, relationships, and behaviours that affect psychological and physical health.

Data sources

The analyses draw on data sources that use standard methods and are subject to quality control. The main sources are:

- Administrative data from WorkSafe, Stats NZ, and the Accident Compensation Corporation (ACC)
- Stats NZ labour market surveys
- Worker and business surveys commissioned by WorkSafe.

Summary

Rates of most work-related injuries have gradually reduced over the past 20 years. However, for some types of injury and for some groups of workers, injury rates have reduced more slowly or even increased over the past decade.

Most fatal and serious non-fatal injuries happen in a few high-risk industries and occupations. In contrast, time-off-work injuries occur in a range of industries and have been increasing for some groups of workers that have historically faced lower risk.

Around 1 in 2 workers have some exposure to at least one carcinogen and nearly 1 in 5 do tasks involving high exposure to a carcinogenic substance. Most high exposure happens in a small number of high-risk industries and occupations, where workers may be exposed to multiple carcinogens.

A large proportion of workers have some exposure to risks such as lifting, awkward positions, prolonged standing, vibration, loud noise, shift work, and extreme temperatures. However, some groups of workers are more likely to be exposed, including Māori, Pacific, and workers from lower socioeconomic backgrounds.

Similarly, psychosocial risks exist in all industries and occupations, but some groups of workers are more likely to be exposed to these risks, notably migrant workers with fewer than five years in New Zealand.

One in three workers are exposed to at least one form of offensive behaviour at work such as bullying, harassment or violence. Māori workers are more likely to report exposure to offensive behaviours at work.

WorkSafe

WorkSafe is part of New Zealand's work health and safety regulatory system.

The law that underpins the system places the primary responsibility for managing risks and ensuring work is healthy and safe with businesses, with support and involvement from workers.

WorkSafe's role is to influence businesses and workers to meet their responsibilities, and to hold them to account when they don't. It does this by:

- **Engaging:** helping businesses and workers to understand how to meet their responsibilities and ensure work is healthy and safe
- Enforcing: taking action against those who fail to meet their work health and safety responsibilities
- **Permitting:** allowing businesses and individuals to carry out high-risk work activities that require permission.

WorkSafe's engagement activities include developing and sharing data, insights, guidance, and resources designed to empower businesses and workers to improve health and safety practice.

WorkSafe also contributes its subject matter expertise and fosters collaboration to improve health and safety practice in areas of high harm or risk.

Work-related acute fatalities

Key findings: Work-related acute fatalities to 2021

↓56%

↓8%



At least 50% of fatalities were

The fatality rate in Forestry and

Logging was 20 times higher

than the all-industry average

The fatality rate for workers

aged 65+ was nearly 4 times

higher than the average rate

for all ages

reduction in fatality rate since 2012-14

caused by a **vehicle**



Nearly 80% of fatalities occurred in 4 major industries



The average age of a fatality in Forestry and Logging was 40, compared with 49 for all fatalities



More than 90% of fatalities were male workers



Number and age-standardised rate



Work-related acute fatalities, 2011-2022

How injuries occurred Where injuries occurred 15% 31% 22% 30% Vehicles used Agriculture for transport Forestry Off-road vehicles Transport, Postal or mobile plant and Warehousing 6% Workers being Construction hit or trapped Manufacturing Falls Other industries Other causes 8% 23% 20% 20%

11%

TREND IN ACUTE FATALITIES

The past two decades saw a long-term downward trend in work-related fatalities from acute (traumatic) injuries.

In 2021, 51 workers were killed in work-related accidents, compared with 96 workers in 2002.

This is equivalent to 2.3 lives lost for every 100,000 FTEs in 2021, compared with 5.2 lives lost for every 100,000 FTEs 20 years ago.

CAUSES OF FATALITIES

Traffic accidents and accidents involving farm vehicles were the most common causes of workplace fatalities. Being hit by a falling object was the next most common fatal accident cause.

INDUSTRIES AND WORKERS WITH GREATER RISK

Around 4 out of 5 work-related acute fatalities occurred in four industries: Agriculture. Forestry and Fishing; Construction; Manufacturing; and Transport, Postal and Warehousing. The fatality rate was highest in the Forestry and Logging sub-industry.

The acute fatality rate was higher than average for workers aged 55 and over, and three to four times higher for those aged 65 and over.

COMPARISON WITH AUSTRALIA

In the five years to 2021, New Zealand's average rate of 2.4 fatalities per 100,000 workers employed was 68% higher than Australia's rate of 1.4 fatalities per 100,000 workers.

If the distribution of New Zealand's economic activities were the same as Australia's, our fatality rate would be 2.0 per 100,000 workers, 42% higher than Australia's rate.

New Zealand's higher fatality rate in the Transport, Postal and Warehousing industry is the single largest contributor to the difference.



Work-related serious non-fatal injuries

Key findings: Work-related serious non-fatal injuries to 2021

↓23%

reduction in injury rate since 2002-04

14%

reduction in injury rate



since 2012-14

The average injury rate for Māori

workers was 30% higher than for non-Māori workers

69%

major industries

of injuries occurred in four

86%

of injuries were to male workers

The injury rate for workers **aged**

65+ was at least 3 times higher

than the average for all workers

Work-related injury claims with more than a week away from work to 2021



fractured vertebra injuries resulting from falls from height of fractured vertebra resulting from falls from height occurred in Construction



Number and age-standardised rate



Age-standardised rate by ethnic group, 2008-2010 to 2019-2021

30

20

injuri

rious non-fatal in 100,000 FTEs

ser per

of

Rate (

Where injuries occurred, 2012-2021



Note: These rates are only suitable for the assessment of change over time within each ethnic group, rather than comparison between ethnic groups at any point in time.

2008-10 2010-12 2012-14 2014-16

TREND IN SERIOUS NON-FATAL INJURIES

There has been a gradual long-term downward trend in the rate of work-related serious non-fatal injuries (injuries that result in hospitalisation).

In 2021, 436 workers suffered serious non-fatal injuries, compared with 357 workers in 2002.

In 2021, for every 100,000 FTEs, 14.9 workers suffered a serious non-fatal injury. This compares with 21.4 serious non-fatal injuries for every 100,000 FTEs in 2002.

CAUSES OF SERIOUS NON-FATAL INJURIES

WorkSafe is not able to provide detailed analysis of the causes of serious non-fatal injuries as it does not have access to the underlying data.

Analysis of ACC injury claims that were likely to result in hospitalisation indicates that vehicles accounted for a lesser proportion of these injuries than of fatalities. Falls and being hit by objects accounted for a greater proportion.

INDUSTRIES AND WORKERS WITH GREATER RISK

During 2012-2021, approximately 70% of serious non-fatal injuries occurred in four major industries: Agriculture, Forestry and Fishing; Construction; Manufacturing; and Transport, Postal and Warehousing.

The rate of serious non-fatal injuries in Agriculture, Forestry and Fishing was nearly four times higher than the all-industry average.

The average injury rate for Māori workers has remained at least 30% higher than for non-Māori workers.

The rate of serious non-fatal injuries for Pacific workers has not changed significantly over time. However, the number of injuries for Pacific workers has increased in recent years.

How injuries occurred

Work-related injury claims

Key findings: All work-related injury claims to 2021





reduction in claim rate since 2002

reduction in claim rate since 2012

Work-related injury claims with more than a week away from work (WAFW claims) to 2021



11%

reduction in WAFW claim rate since 2002

45%

increase in WAFW claim rate since **2012**

73%

increase in the WAFW claim rate for workers aged 15-34 since 2012



The WAFW claim rate in Manufacturing was double the average rate for all industries

of WAFW injuries occurred in six major industries



of WAFW claims were from male workers in 2021

Work-related injury claim rate, 2002–2021

All claims and claims with more than a week away from work (non-age-standardised rate)



Work-related injury claims resulting in more than a week away from work, 2017–2021

Where injuries occurred

14% 21% Manufacturing 27% Construction Musculoskeletal 6% 37% iniuries Agriculture, Forestry and Being hit by or Fishing hitting objects Health Care and Falls, slips and trips Social Assistance Vehicle incidents 7% Transport, Postal 17% 20% and other and Warehousing Not classified Retail Trade 8% Other industries 10% 10% 23%

TREND IN ALL INJURY CLAIMS

The past two decades saw a steady decline in the rate of all work-related ACC injury claims. The rate of all claims has reduced by 40% since 2002.

In 2021, there were 223,000 claims, compared with 258,000 claims in 2002.

In 2021, for every 1,000 FTEs, there were 91 claims. This compares with 154 claims for every 1,000 FTEs in 2002.

TREND IN INJURY CLAIMS RESULTING IN MORE THAN A WEEK AWAY FROM WORK (WAFW)

The rate of WAFW claims tends to decline during recessions and rise during times of economic growth. The claim rate has decreased by 5% since 2002 but increased by more than 30% from 2012 to 2021.

The significant growth in WAFW claims over the past decade is seen across the ACC scheme for work-related and non-work-related injuries.

In 2021, there were 35,400 WAFW claims, compared with 25.200 WAFW claims in 2002.

In 2021, for every 1,000 FTEs, there were 14.2 WAFW claims. This compares with 15.0 WAFW claims for every 1,000 FTEs in 2002.

INDUSTRIES AND WORKERS WITH GREATER RISK

Six major industries accounted for 73% of all WAFW claims, compared with just 49% of the workforce and 37% of GDP.

Workers in these industries are on average among the lowest paid in New Zealand.

From 2012, the rate of WAFW claims increased more guickly for younger workers, female workers, and workers in Manufacturing, Health Care and Social Assistance, and Retail Trade.

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WORK-RELATED SERIOUS NON-FATAL INJURIES



Carcinogens and airborne risks

Key findings: New Zealand Carcinogens Survey 2021



Farmers, construction workers and emergency workers were on average exposed to more than 7 carcinogens

workers did tasks with probable

high exposure to respirable

Carpenters, electrical trades and vehicle trade workers were on average exposed to more than 6 carcinogens



workers did tasks with probable high exposure to welding fumes or carcinogenic metals

49%

crystalline silica

77%

of workers cutting or grinding natural stone, concrete or bricks did not use local exhaust ventilation or water to suppress dust

of workers **welding** metals containing chromium **did not use an air-supplied helmet**

Workforce Segmentation and Insights Programme Survey 2021



of workers reported experiencing a work-related **respiratory problem**



Construction workers were nearly twice as likely to report a work-related **respiratory problem** Proportion of workers probably exposed to at least one carcinogen, 2021



🛑 High 📃 Medium 🕘 Low

Health risks from work-related exposure by level



Number of workers probably exposed to specific carcinogens by level of exposure, 2021



HARM FROM WORK-RELATED CANCER AND RESPIRATORY DISEASE

Past exposure to carcinogens and airborne risks is estimated to account for approximately:

- 400 deaths from cancer per year
- 250 deaths from respiratory disease per year
- 31% of the total burden of work-related harm.

Past exposure to asbestos is estimated to account for 200-250 of these deaths per year.

CURRENT EXPOSURE TO CARCINOGENS

The New Zealand Carcinogens Survey (NZCS) 2021 estimated that 57% of the workforce was probably exposed to at least one carcinogen, and 28% of workers were probably exposed at a high level.

The NZCS estimated that 50% of workers were probably exposed to carcinogenic substances (excluding solar radiation and shift work) and 18% were probably exposed at a high level.

EXPOSURES OF GREATEST CONCERN

The carcinogens of greatest concern are those that larger numbers of workers are exposed to at levels that raise the risk of serious disease.

Common activities that generate potentially harmful exposures include demolition, welding, vehicle repair, painting, metal working, using power tools with stone, brick, concrete, or wood, and working around diesel-powered vehicles or equipment.

INDUSTRIES AND WORKERS WITH GREATER RISK

The NZCS found that 68% of workers in Agriculture and 43% in Construction had probable high exposure to at least one carcinogenic substance.

On average, workers in construction, farming, and vehicle trades were exposed to multiple carcinogens.

1000

How injuries occurred



Musculoskeletal risks

Key findings: Workforce Segmentation and **Insights Programme Survey 2021**

33%

One in 3 workers reported experiencing a work-related musculoskeletal problem

50%

Around 1 in 2 workers were exposed to lifting at work at least some of the time, and 1 in 8 were exposed most of the time

11%

One in 10 of workers reported experiencing a work-related musculoskeletal problem that began in the past year

30%

Around 30% of workers had to stand in static positions at least half the time, and 7% had to stand all the time

KEY RISKS

Workers in the two lowest

socioeconomic groups were more

likely than average to be exposed

to 4 key musculoskeletal risks



Workers in Agriculture and Construction were more likely to be exposed to 3 out of 4 key musculoskeletal risks

Musculoskeletal injury claims with more than a week away from work (WAFW claims)

45%

Musculoskeletal injuries accounted for 45% of WAFW claims with an identified injury mechanism in 2021, compared with 35% in 2012



was the increase in the rate of musculoskeletal injury WAFW claims in Manufacturing from 2012 to 2021

Proportion of workers exposed to different biomechanical and physical risks, 202



Musculoskeletal injury claims with more than a week away from work, 2017–2021

Where injuries occurred



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	1	

HARM FROM MUSCULOSKELETAL DISORDERS

Work-related musculoskeletal harm includes:

- Sprains, strains, and other musculoskeletal injuries
- Back and neck conditions
- Other disorders of the upper and lower limbs.

Musculoskeletal harm is estimated to account for approximately 27% of the total burden of work-related harm. Musculoskeletal injuries account for at least 40% of work-related ACC claims and related economic impact.

WorkSafe's 2021 workers survey found that 33% of workers reported experiencing a work-related musculoskeletal problem, while 11% reported a problem that started in the past 12 months.

EXPOSURE TO MUSCULOSKELETAL RISKS

Musculoskeletal harm can occur when biomechanical and physical risks interact with other organisational, environmental, psychosocial, and individual risk factors.

Biomechanical and physical risks include:

- lifting, carrying, or moving heavy objects or people
- awkward, cramped, or tiring positions
- forceful movements
- repetitive movements
- prolonged standing in static positions
- vibration.

INDUSTRIES AND WORKERS WITH GREATER RISK

Musculoskeletal risks are present in a wide range of industries, but some groups of workers have higher exposure or face multiple exposures.

During 2012-21, ACC claims for musculoskeletal injuries increased more quickly than average in Manufacturing, Health Care and Social Assistance and Retail Trade, and for female and younger workers.



) Work organisation and environmental risks

Key findings: Workforce Segmentation and Insights Programme Survey 2021

46%

10%

of workers were exposed to **loud noise** at work; 14% were exposed most of the time of workers reported work-related hearing problems

13%

Workers in **Construction** were twice as likely as other workers to report work-related **hearing problems** of workers regularly worked at night

43%

of workers were exposed to **cold or damp conditions** at work; 7% were exposed most of the time Pacific workers were twice as likely as other workers to report working most of the time in cold

or damp conditions

New Zealand Carcinogens Survey 2021



estimated number of workers who had probable **high exposure to solar UV radiation**



more than half the time did not have access to shade

Proportion of workers exposed to shift work and long working hours, 2021



Proportion of workers exposed to noise, hot conditions, and cold or damp conditions, 2021



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HARM FROM WORK ORGANISATION AND ENVIRONMENTAL RISKS

The way work is organised, and features of the work environment, can cause harm or interact with other factors to increase the risk of injury or ill health.

- Work-related noise is estimated to be a factor in up to 100,000 cases of hearing loss and account for 7% of the estimated burden of work-related harm.
- Shift work is estimated to cause 25 deaths per year from cancer and 10 from cardiovascular disease.
- Work-related sun exposure is estimated to cause 10 deaths per year from skin cancer.
- Organisational and environmental factors contribute to musculoskeletal and mental ill health and to injury risk.

EXPOSURE TO ORGANISATIONAL AND ENVIRONMENTAL RISKS

WorkSafe's 2021 workers survey found that approximately 46% of workers were exposed to loud noise at work, 41% to hot conditions, and 43% to cold or damp conditions at least a quarter of the time.

Around 1 in 8 of workers did regular night shift work and 1 in 10 worked more than 50 hours per week.

INDUSTRIES AND WORKERS WITH GREATER RISK

Environmental and organisational risks are widespread, but some groups are more likely to be exposed or may experience multiple exposures.

WorkSafe's 2021 workers survey found that:

- Workers in Transport, Postal and Warehousing had higher exposure to shift work and long working hours.
- Pacific workers had higher exposure to shift work, loud noise, and cold or damp conditions.
- Workers in the two lowest socioeconomic groups had higher exposure to shift work, loud noise, hot conditions, and cold or damp conditions.

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Psychosocial risks

Key findings: New Zealand Psychosocial Survey 2021





Migrant workers with fewer than 5 years in New Zealand had worse than average scores on 12 out of 25 psychosocial factors

35%

of workers were exposed to at least one offensive behaviour in the past 12 months

of workers were exposed to

had worse than average scores on 10 out of 25 psychosocial factors

Public Administration and Safety

Workers in Retail Trade and



Māori workers were more likely than other workers to be exposed to all five offensive behaviours

14%

threats of violence

of workers were exposed to sexual harassment

11%

Workforce Segmentation and **Insights Programme Survey 2021**

3()%

of workers reported experiencing a work-related mental health problem



of workers reported a work-related mental health problem that started in the past 12 months

Average score for psychosocial factors at work, 2021

Negative factors (lower score is better)





Demands at work Work organisation and job content

Industries with higher exposure to offensive behaviours, 2021



	HARM FROM PSYCHOSOCIAL RISKS
Positive factors (higher score is better) 0 20 40 60 80	Psychosocial factors at work include the demands workers face, the amount of control they have, relationships with workmates and customers, job security, and trust and fairness within the organisation. These factors can affect both mental and physical health.
	Mental ill health is estimated to account for approximately 17% of work-related harm, while cardiovascular disease caused by psychosocial factors contributes a further 3%.
	In WorkSafe's 2021 worker survey, approximately 30% of workers reported experiencing a work-related mental health problem, and 11% said that this started in the past 12 months.
	EXPOSURE TO PSYCHOSOCIAL RISKS
	The New Zealand Psychosocial Survey 2021 found that the most widely experienced risk factors in the workforce were work pace, demands for hiding emotions, and quantitative demands.
ork-individual interface 🔵 Social capital	The most widely experienced positive factors were a sense of community at work, role clarity, and meaningful work.
1	Around 35% of workers reported being exposed to at least one offensive behaviour in the past 12 months. Offensive behaviours include bullying cyberbullying, sexual harassment, threats of violence, and physical violence.
	INDUSTRIES AND WORKERS WITH GREATER RISK
	Migrant workers with fewer than five years in New Zealand had consistently poorer scores for psychosocial factors and were more likely to be exposed to offensive behaviors.
	Workers in Health care and Social Assistance and Public Administration and Safety were more likely than other workers to be exposed to at least one offensive behaviour including acts of violence.
40% 50%	Among workers who reported exposure to bullying or cyberbullying, nearly half reported that these behaviours came from managers or supervisors.
ail Trade 🛛 Accommodation and	

Explanatory notes

Exclusions and limitations

This overview does not include all work-related harm and risk in New Zealand. Areas not covered include work-related infectious diseases and work-related skin conditions.

Data on acute fatalities does not include non-workers or bystanders who were killed as a result of work-related activity. These fatalities are reported separately in WorkSafe's online Data Centre. For reasons of consistency and comparability over time, this overview focuses only on workers.

Acute fatalities and injuries resulting from self harm are excluded from all data reported here.

Data on work-related injury claims with more than a week away from work does not include gradual process injuries such as noise-induced hearing loss or other conditions caused over time,

These claims do not accurately represent the estimated harm from relevant work-related exposures. They represent a small proportion of work-related claims and do not affect the overall trends in the number or rate of injury claims presented here.

ACC provides limited coverage of mental injuries, based on the laws governing the ACC scheme. Time off work from work-related mental ill health is not represented in claims data.

Definitions

Burden of work-related harm

This refers to the total loss of life and loss of quality of life that is attributed to work-related factors. This is usually expressed in terms of disability-adjusted life years (DALYs).

Industry

Industries are classified according to the Australia and New Zealand Standard Industrial Classification (ANZSIC), 2006.

Acute fatalities

Work-related acute fatalities are fatal accidents that are notified to WorkSafe and determined to be work-related, or fatal ACC claims that were deemed to be work-related.

Serious non-fatal injuries

Serious non-fatal injuries are injury events in which a patient admitted to hospital is determined to have a probability of death of at least 6.9%, based on diagnostic codes recorded in hospital records. Stats NZ identifies these injuries by matching ACC claims with hospital discharge data from the Ministry of Health.

Injury rates

Unless otherwise indicated, acute fatality and injury rates are given as the number of deaths or injuries per 100,000 full-time equivalent employees (FTEs). The number of FTEs is estimated from Stats NZ's Household Labour Force Survey.

Comparison of fatality rates with Australia is based on the estimated number of workers employed (rather than FTEs) to ensure consistency in workforce measures between the two countries.

Age-standardised rate

An age-standardised rate is the theoretical rate in which the age composition of a population is kept the same as that in a past period. This allows changes unrelated to the age composition to be observed.

Work-related risks

In this overview, 'risks' refer to work activities, circumstances or exposures that are associated with a significantly higher likelihood of experiencing harm, compared to those who are not exposed.

Exposure to carcinogens

The estimation of probable exposure to a carcinogen is based on expert assessment of answers to questions about job tasks. Probable exposure is assessed as:

- **High** At or above the workplace exposure standard (WES), where this is defined.
- Medium Within 10% of the WES, where this is defined.
- Low Above background levels, but not of immediate concern to work-related health professionals.

Psychosocial factors

Measures of psychosocial factors are based on survey questions about how often or to what extent specific conditions are experienced at work. Scores are on a 5-point scale ranging from 0 to 100.

Self-reported exposures

Exposure to biomechanical, physical, and environmental risk is self-reported. Except where noted, being 'exposed' means at least 25% of the time, while exposed 'most of the time' means at least 75% of the time.

Self-reported harm

Self-reported harm is injury or ill health that a worker experienced during the previous 12 months and believes has been caused or made worse by work. Relevant measures are of:

- Incidence Injury or ill health first experienced during the past 12 months.
- Prevalence III health first experienced at any stage during a working life.

Further information

Work health and safety: An overview of work-related harm and risk in Aotearoa New Zealand

This is the full companion report to this overview.

Work-related Health Estimates

A report produced by WorkSafe in 2019 to give updated estimates on deaths and hospitalisations that can be attributed to work-related ill health.

New Zealand Carcinogens Survey

WorkSafe's research report on the results of the New Zealand Carcinogens Survey 2021.

New Zealand Psychosocial Survey

WorkSafe's research report on the results of the New Zealand Psychosocial Survey 2021.

Workforce Segmentation and Insights Programme

WorkSafe's research report on workplace health and safety performance.

WorkSafe Data Centre

Data on notifications received by WorkSafe and work-related ACC injury claims.

Stats NZ Injury Data

Stats NZ data series on the serious injury outcome indicators.



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