Queensland Mines and Quarries

Safety Performance and Health Report

1 July 2015–30 June 2016

Queensland Government

Photography
The Department of Natural Resources and Mines wishes to thank the following individuals and companies who have assisted with the provision of images for this publication: Bromelton Quarry, Hill of Stone Quarry (Gosford Quarries) and Meandu Coal Mine.

Cover image – *DNRM*
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Disclaimer
The data in this report is derived from the Department of Natural Resources and Mines (DNRM) Queensland mining industry Lost Time Accident database, in addition to information, including survey responses supplied by mining and quarrying operators throughout Queensland.

Some data has been summarised or consolidated in order to present a standardised format in this report. Although DNRM makes every effort to verify supplied data, it accepts no responsibility for data that was incorrect when supplied. The data in this report may not be fully representative of the industry or any component of it.

Please note: *The figures reported in this document are collected from mine sites on an ongoing basis. The figures are not finalised until the following year. For this reason there may be variations in the figures reported for the previous period of 2014–15.*

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Contents

List of figures

List of tables

Abbreviations

CMSHAC	coal mining safety and health advisory committee
CMWHS	coal mine workers' health scheme
CWP	Coal workers' pneumoconiosis
DI	disabling injury
DNRM	Department of Natural Resources and Mines
HPI	high potential incident
HSU	Health Surveillance Unit
LTI	lost time injury/disease
LTIFR	lost time injury frequency rate
m	metre
mm	millimetre
MSHAC	mining safety and health advisory committee
MTI	medical treatment injury
NMA	nominated medical advisor
PPI	positive performance indicators
QGSO	Queensland Government Statistician's Office
T	tonne
TARP	trigger action response plan
TRI	total recordable injury
TRIFR	total recordable injury frequency rate

Definitions*

Breakdown agency	The object, substance or circumstance that was principally involved in, or most closely associated with the injury.
Coal mine	Mine subject to the *Coal Mining Safety and Health Act 1999* and associated regulations.
Days on alternative duties	The number of days a worker is unable to perform his/her regular job and has been assigned other temporary or modified duties. Alternative duties include a changed work environment, roster or shift pattern.
Days lost	All rostered shifts that a worker is unable to work because of injury, not including the day of the injury. This also includes days lost because of recurrences of injuries from previous periods and days on alternative duties after returning to work. A fatal injury is treated as 220 days lost (as per Australian Standard AS1885.1–1990, Clause 6.17).
Disabling injury	A work-related injury or disease resulting in a worker being unable to fully perform his/her regular job. Either light or alternative duties are performed.
Duration rate	The average time (days) lost and the time (days) on alternative duties for each LTI or DI. In this report, time lost includes all time lost for an incident to date.
High potential incident	An event, or series of events, that causes or has the potential to cause a significant adverse effect on the safety or health of a person.
Lost time injury/ disease	An incident resulting in a fatality, permanent disability or time lost from work of one shift or more. The shift on which the incident occurred is not counted as a shift lost.
Lost time injury frequency rate	The number of lost time injuries/diseases per million hours worked.
Lost time and disabling injury frequency rate	The number of lost time injuries/diseases and disabling injuries per million hours worked.
Mechanism of injury	The action, exposure or event that is the direct cause of the most serious injury.
Medical treatment injuries	Those incidents, which were not lost time injuries or disabling injuries, for which first aid and/or medical treatment was required by a doctor, nurse or person qualified to give first aid.
Metalliferous mine	Mine subject to the *Mining and Quarrying Safety and Health Act 1999* and associated regulation.
Nature of injury	The most serious injury or disease sustained or suffered by the worker.
Occurrence class of injury	The activity that was principally involved in, or most closely associated with the injury.
Quarry	Excavation of hard rock for use in construction (operations covered by the *Mining and Quarrying Safety and Health Act 1999* and associated regulation).
Severity rate	The time (days) lost and time (days) on alternative duties per million hours worked.
Total recordable injury	Includes the number of fatalities, lost time injuries/diseases, medical treatment injuries and disabling injuries.
Total recordable injury frequency rate	The number of total recordable injuries/diseases per million hours worked.

* The definitions in the report for bodily location, breakdown agency, lost time injury/disease, mechanism of injury, nature of injury, incidence rate and frequency rate generally conform to the workplace injury and disease recording Australian Standard (AS 1885.1–1990). The Standard's 'average lost time rate' (number of days lost per lost time injury) is called duration rate. The Standard's 'no lost time injuries/diseases' (those occurrences that were not lost time injuries and for which first aid or medical treatment was administered) are called medical treatment injuries or disabling injuries (the injured person cannot return to their normal job and is put on alternative duties). When calculating duration rate (number of days per lost time injury) and severity rate (days lost per million hours worked) for a lost time injury, the days lost include the days away from work and the days on alternative duties. The Australian Standard is not clear on whether days lost should include days on alternative duties. It is common practice in other Australian jurisdictions to only include days away from work in duration and severity calculations. However, as the number of days required to be spent on alternative duties is a reflection of the severity of the injury, it is considered that including these days presents a more accurate picture of the industry with respect to the severity of an injury or illness.

Message from the Executive Director

I am pleased to present the *Queensland Mines and Quarries Safety Performance and Health Report* for the 2015–2016 financial year.

The Mine Safety and Health group within the Department of Natural Resources and Mines administers mining safety and health laws in Queensland. These laws provide the framework we operate within to protect the safety and health of workers at mines and quarries. In addition to providing regulatory oversight, the group advises, mentors, and assists industry to build capacity in managing safety and health risk.

The drive for continuous improvement in safety and health performance in mining is tireless. This report provides performance indicators which offer a sound basis for targeting future safety and health interventions. The data and information presented helps identify focus areas and provides a benchmark for continuous improvement.

The number of lost time injuries (LTI) reduced from 301 in 2014–15 to 237 in 2015–16. The corresponding lost time injury frequency rate (LTIFR) fell from 3.1 to 2.6 injuries per million hours worked. This decrease in LTIFR was experienced across all mining sectors.

While it is positive to see these trends moving to lower numbers overall, we cannot become complacent and we need to use this information to drive change.

The number of permanent incapacities (PI) in the industry more than doubled from 38 to 87, driven by the coal sector. The number of PIs in metalliferous mines and quarries have both decreased. Forty-one per cent of the PIs are attributed to noise-induced hearing loss.

Contractors are still over represented in high potential incident data. In Queensland mining safety and health legislation, mine management owes an equal duty of care to both contractors and employees. Improved training, competency and support for front-line supervisors are key areas for continuous improvement. Inadequate knowledge and competency are precursors to major mining accidents.

The Mines Inspectorate will continue to work with operators to ensure all mines have effective dust management plans in place, so that worker exposure to respirable dust is kept to an acceptable level. Regulatory reforms introduced to tackle coal mine dust lung disease head-on and strengthen respirable dust monitoring requirements remain a key focus of our compliance and engagement program moving forward.

Recognising compromises in worker safety and health in an industry that is experiencing contraction and organisational change is important—factors such as concern over security of employment, loss of site-specific expertise, and the effectiveness of safety and health supervision, can all weaken safety and health management systems.

Safety and health is more than a priority; it is a value. Industry must actively support and reaffirm its commitment to safety and health leadership, to ensure all workers return home safe and well after working a shift at a Queensland mine or quarry.

Looking forward, while the data and information presented here and in the Queensland Mines and Quarries Safety Performance and Health Report provides a sound basis for targeted improvements, the Mines Safety and Health group is considering how to better analyse and present the data provided by industry. This will include more detailed analysis to identify trends and questions we need to be asking collectively in response to that information. We invite you to contribute your thoughts and ideas on the future focus for the data and information presented in this report. Industry stakeholders will be surveyed during the first quarter of 2017.

Mark Stone
Executive Director Mine Safety and Health

Summary from the Chief Inspectors of Mines

We welcome this opportunity to comment on the safety and health performance of Queensland's mines and quarries over the past 12 months.

The statistical information provided in this report predominantly focuses on the safety performance of the industry.

We recognise that most sectors of the industry have continued to experience a downturn in demand and price for their respective products over the last 12 months. This has resulted in an ongoing focus on reducing costs and improving productivity.

We have seen cutbacks in production, mines going into care and maintenance and/or closing. This has resulted in a 13 per cent reduction in the number of workers employed in the industry, from 45 899 workers at the end of 2014–15 to 39 797 at the end of 2015–16.

In this climate of uncertainty the challenge for industry has been to ensure that the safety and health of workers is not compromised by the actions taken to maintain the economic viability of individual mines and quarries.

The statistical information presented in this report generally indicates that despite the tough times industry has maintained a steady improvement in safety performance, continuing the trend that has been evident in recent years.

- The overall lost time injury frequency rate reduced from 3.1 to 2.6, compared to the five year average of 3.3.
- The overall lost time and disabling injury frequency rate reduced from 12.9 to 9.5, compared to the five year average of 10.1
- The lost time and disabling injury severity rate reduced from 300 to 218, compared to the five year average of 291.
- The lost time and disabling injury duration rate reduced from 32.4 to 23.1, compared to the five year average of 31.1.

We are pleased to recognise that this year the industry experienced a fatality free year. This is the first time that this has occurred in Queensland since mining fatality records were first compiled in 1877.

While having a fatality free year is something to be noted it needs to be tempered with a reality check that during 2015–16 we continued to have serious accidents and high potential incidents. We acknowledge that a fatality free year is an achievement of the efforts by all mine workers and the mines inspectorate in applying risk management processes to reduce risk to an acceptable level.

With regard to high potential incidents (HPIs), the number reported has continued its downward trend from the peak in 2011–12, in line with decreasing employment numbers. The overall HPI frequency rate has remained constant over the last five years.

On one hand it is encouraging that there has been no reduction in the HPI frequency rate despite the downturn in the industry as the willingness of workers to report HPIs is a measure of an open and efficient safety and health management system. This shows a measure of an empowered workforce and a measure of the willingness of leaders to receive "bad news".

On the other hand the fact that we are often seeing the same types of HPIs occurring, albeit usually at different sites, is a concern to us with regard to how well the lessons from such incidents are being shared across industry and recommended controls effectively implemented.

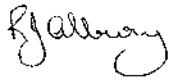
Across the industry there continue to be HPIs and serious accidents that cause significant concern.

In the coal mining sector an increasing number of wall failures in open cut mines and the occurrence of roof failures in some underground mines is most concerning.

Addressing coal workers' pneumoconiosis (CWP) remains a priority for the Mines Inspectorate. In 2015-16 the department confirmed nine cases of CWP, bringing the total to 10 by 30 June 2016. In response, we have amended the Coal Mining Safety and Health Regulation 2001 in consultation with industry and unions. These changes, which commence 1 January 2017, strengthen rules around respirable dust management, prescribes notifiable occupational diseases, and improves respiratory health screening for coal mine workers. In addition to the regulatory changes, the department is focused on improving the Coal Mine Workers' Health Scheme (CMWHS) to ensure early detection of respiratory conditions through better, effective screening.

In the metalliferous and quarrying sectors incidents involving being hit by moving or falling object continue to be over-represented.

Our thanks go to those who have assisted with compiling and contributing to this report. We hope the information provided in the report can be used by mines and quarries to improve their safety and health performance. We look forward to continuing to work with industry to achieve that result.



Russell Albury
Chief Inspector of Coal Mines

Phil Goode
Chief Inspector of Mines
(Metalliferous and Quarries)

Mines Inspector Deon Esterhuizen conducting a site visit at Bromelton Quarry
Photo: DNRM

1 PERFORMANCE

Industry safety and health performance

Workshop activity
Photo: DNRM

1. Industry safety and health performance

This report summarises information about accidents and incidents that occurred between 1 July 2015 and 30 June 2016 on Queensland mines and quarries subject to the provisions of the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*.

Table 1.1 shows a comparison of each sector's key performance indicators for 2015–16. Performance measures for individual mines and quarries can be found on the DNRM website at www.dnrm.qld.gov.au.

For more information on the data used in this report refer to Chapter 9.

1.1 Fatal injuries

There were no fatalities in the mining industry during 2015–16. While Figure 1.1 shows a significant decline in the number of mine fatalities since 1900, this trend has stabilised over the last 10 years.

Figure 1.2 illustrates that even though there was a continuing decline in employee numbers across the industry in 2015—16, there was a decrease in fatalities compared with 2014–15. The mechanism that was the direct cause of the 22 fatalities in Queensland mines and quarries over the past 10 years is shown in Figure 1.3. Being hit by a moving object has resulted in 18 per cent of fatalities, the most common cause of fatalities.

Coal mines

There were no fatal accidents in the coal mining sector in 2015–16.

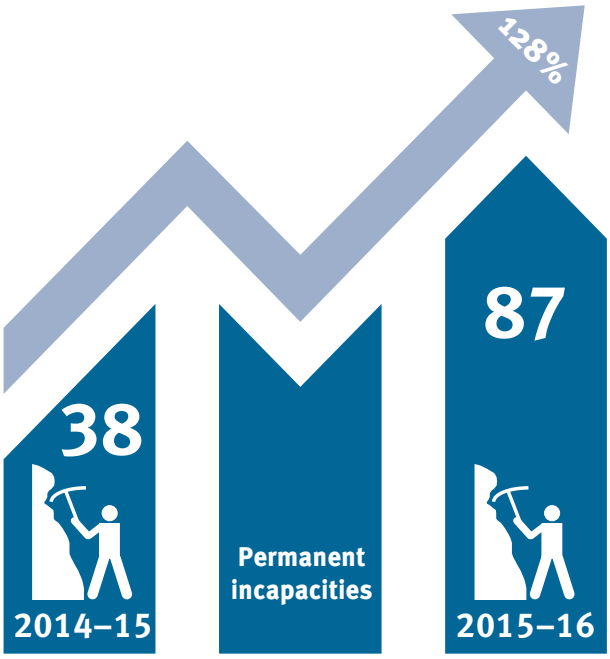
Metalliferous mines and quarries

There were no fatal accidents in the metalliferous mines and quarries sector in 2015–16.

1.2 Permanent incapacities

Table 1.2 provides further information on these permanent incapacities.

For details on the number of permanent incapacities for the 2011–2016 period refer to Table 3.8 in Chapter 3.



1.3 Lost time injuries and disabling injuries

Figures 1.4–1.6 show the lost time injury frequency rate (LTIFR), severity rate and duration rate per month combined for all sectors over the 10 year period of 2006–16. These figures emphasise changes in trend over time. Over the last five years there has been a decreasing trend in the average LTIFR and severity rate per month. The average duration rate per month has remained steady over the same period.

The combined lost time injury (LTI) and disabling injury (DI) severity rate and duration rate are shown in Figures 1.7 and 1.8, respectively. The severity rate has decreased over the last 10 years while the duration rate has remained relatively steady until 2014–16, which shows a substantial decrease compared to other years.

As shown in Figure 1.9, the number of LTIs in coal mines has generally increased and decreased in line with rising and falling employment numbers over the last 10 years. In comparison, the number of DIs continued to increase while employment numbers fell. However, there was a decrease in the number of DI's at coal mines in 2015–16.

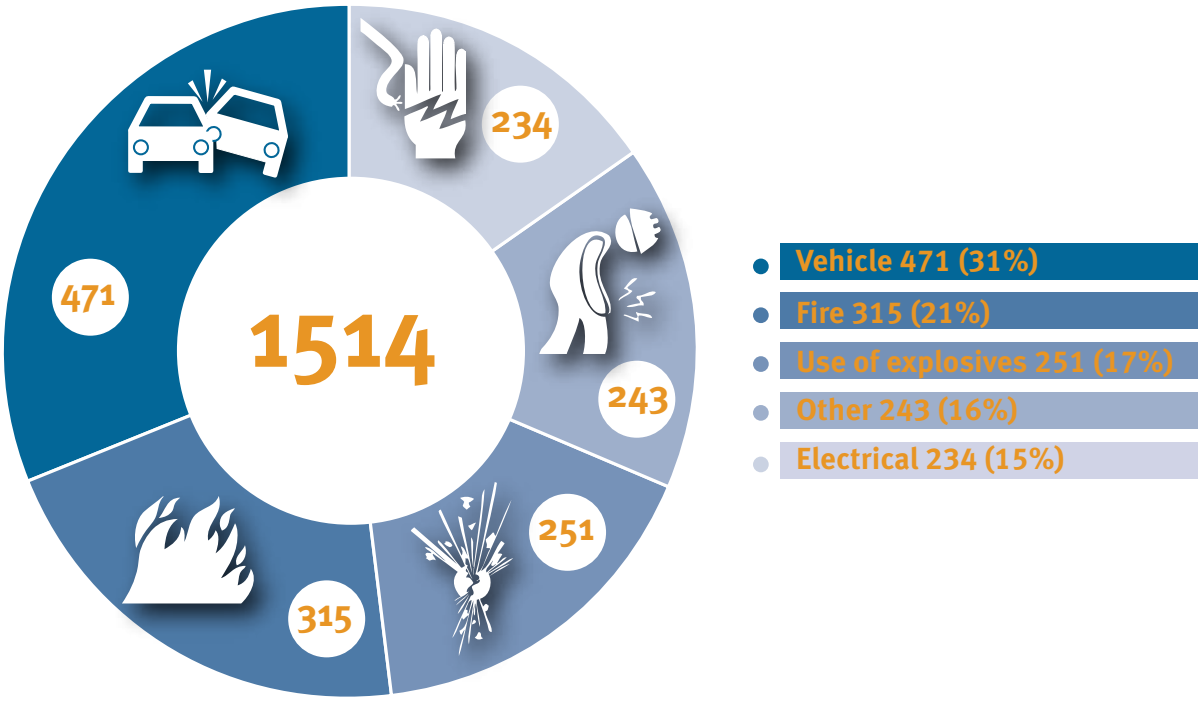
For metalliferous mines and quarries, Figure 1.10, there has been a decrease in the number of LTIs and DIs in recent years in line with falling employment numbers and these numbers continue to remain low in 2015–16.

Table 1.1: Comparison of key performance indicators 2014–15 to 2015–16

	Number of lost time injuries (LTI)		Number of disabling injuries (DI)		Number of medical treatments (MTI)		Number of high potential incidents (HPI)		LTI days lost†		Number of DI days		LTI frequency rate (LTIFR)*		LTI severity rate#†		LTI Duration rate*†		LTI + DI severity rate#		LTI + DI duration rate*		Million hours worked*		Number of permanent incapacities		Number of fatalities	
	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16	14–15	15–16
Coal surface	118	105	463	277	350	355	1 147	1 112	6 299	3 698	6 270	6 308	2.3	2.1	122	74	53.4	35.2	244	201	21.6	26.2	51.6	49.8	8	52	2	0
Coal underground	89	66	384	231	162	77	324	288	4 120	2 576	6 147	3 679	6.4	4.8	294	188	46.3	39.0	733	457	21.7	21.1	14.0	13.7	8	29	1	0
All Coal	**207**	**171**	**847**	**508**	**512**	**432**	**1 471**	**1 400**	**10 419**	**6 274**	**12 417**	**9 987**	**3.2**	**2.7**	**159**	**99**	**50.3**	**36.7**	**348**	**256**	**21.7**	**23.9**	**65.6**	**63.5**	**16**	**81**	**3**	**0**
Metalliferous surface	50	36	15	27	101	71	182	138	1 021	740	361	503	3.0	2.5	61	51	20.4	20.6	82	86	21.3	19.7	16.8	14.4	11	2	0	0
Metalliferous underground	31	20	90	85	44	44	173	124	2 443	1 016	1 965	847	2.4	2.0	189	104	78.8	50.8	342	190	36.4	17.7	12.9	9.8	8	3	1	0
All Metalliferous	**81**	**56**	**105**	**112**	**145**	**115**	**355**	**262**	**3 464**	**1 756**	**2 326**	**1 350**	**2.7**	**2.3**	**117**	**73**	**42.8**	**31.4**	**195**	**128**	**31.1**	**18.5**	**29.7**	**24.2**	**19**	**5**	**1**	**0**
Quarries	13	10	9	2	31	39	51	54	410	290	294	26	5.2	4.2	164	121	31.5	29.0	282	132	32.0	26.3	2.5	2.4	3	1	0	0
All Sectors	**301**	**237**	**961**	**622**	**688**	**586**	**1 877**	**1 716**	**14 293**	**8 320**	**15 037**	**11 363**	**3.1**	**2.6**	**146**	**92**	**47.5**	**35.1**	**300**	**218**	**23.2**	**22.9**	**97.8**	**90.1**	**38**	**87**	**4**	**0**

#Rounded to whole numbers
*Rounded to 1 decimal place
†Days lost to LTIs include lost time days and days on alternative duties

Five most common mechanisms of HPIs



1.4 High potential incidents

The number of reported HPIs continued to fall in line with decreasing employment numbers from the peak in 2011, as shown in Figure 1.11. The industry is to be commended on the sustained compliance with reporting of HPIs. This reporting allows for the sharing of information across the industry and enables industry to implement proactive strategies for managing the identified risks before a person is injured.

The rate of HPIs for all sectors, as shown in Table 1.3, remained steady in 2015–16.

Figure 1.12 outlines the number of HPIs per type of incident for all sectors combined.

The most common type of HPI reported for surface coal mines was related to vehicles, while underground coal mines was related to electrical incidents (Figures 1.13 and 1.14 respectively). Surface and underground metalliferous mines, and quarries reported vehicle related incidents as the most common type of HPI—which is illustrated in Figures 1.15—1.17.

Safety alerts and bulletins issued by DNRM in response to a number of HPIs are reported in Table 1.4. Further information on HPIs including graphical breakdowns and statistics by sector is available from the DNRM website at www.dnrm.qld.gov.au.

A number of HPIs that occurred during 2015–16 are of particular concern. These incidents do not include all HPIs which occurred during this period but represent a sample of incidents.

Coal mines

- Face operations went down at a site, due to a blown return line of a shearer. Coal mine workers were walking off face and noticed a flame coming from main gate pivot point of ranging arm. The fire was extinguished with the water hose available at the face. An oil leak had been previously identified, but the ignition source was not known. Permission was given to locate shearer if required to a location where roof and face support has been installed.
- A continuous miner was bolting up the cut cycle when the personal gas detectors of the ERZ Controller and miner driver alarmed at 3.5 per cent and offscale methane respectively. The ERZ Controller noticed floor heave to the rear of the continuous miner and withdrew the crew from the area.
- While driving to work, a coal mine worker left the road and impacted heavily into an embankment ending upside down on a drainage line. The driver received extensive serious injuries and was air lifted to a base hospital for medical attention.
- While relocating a cable tower that was feeding an electric shovel (SHE 37), a loop of cable on the tower became wedged under the tower and was damaged as the tower moved over it. Mine site transportable substation protection detected the fault as “earth continuity” and tripped the circuit breaker feeding the shovel immediately.
- A truck came into contact with an overhead 6.6 kV cable on a truck underpass. The truck had dumped a load on the ramp and moved away with its tray in the air. The extent of damage is unknown at this stage and the truck was treated for tyre heating.

- As a loaded Cat 793C rear dump truck reversed into the tiphead the dump's edge dropped under the trucks's rear wheels. The truck was unable to drive out, and was recovered by two dozers pulling it out. The dump was approximately 10 to 12 metres high.
- The operator of a Cat 789C rear dump truck had a suspected microsleep, allowing the truck to veer to the left off the haul road and into the safety rill with the Pos 1 tyre.
- The tyres of load haul dump impacted an on-setting trolley. This caused unplanned movement of the trolley, towards a coal mine worker who took evasive action to avoid being struck by the trolley.
- While assisting to conduct NATA calibrations an electrician found that the DSEM NERZ/ERZ gas monitoring (Trolex) control system had both alarm and trip, trigger point levels set at 5 per cent
- While flitting the continuous miner backwards for a clean-up run, a continuous miner backed into the rib on its right side, squashing the cable at the point where the cable sock attaches to the frame. There was no report of a flash, but the electrician has reported that conductors were exposed.
- A Cat 797 had just been refuelled in the 9–12 go-line maintenance bay when a fire started near top of fuel tank and spread rapidly, engulfing the truck. No coal mine workers were injured. Initial indications indicate that the fire was fuelled by diesel that had sprayed from the overflow line during the servicing.
- A tyre on a mobile lighting plant was discovered to be on fire after it had been towed for approximately 2 km. An Open Cut Examiner (OCE) pulled up alongside the lighting plant and saw the issue.
- Fitters were removing chocks from a Cat 789C dump truck when they found the chock at the rear of Pos 1 tyre could not be removed. They have moved the chock in front of the Pos 1 tyre about 0.5 m forward and a fitter has started the truck to move it forward off the rear chock. Truck has moved forward ejecting chock.

Metalliferous mines and quarries

- While reversing up to a tip face a Terex MT3300 truck has breached the bund and tipped over ending up resting on its back. The operator was able to self-escape from the cabin. The operator was transported to hospital for assessment and treatment.
- A worker was working from an integrated tool carrier loader basket to repair a vent when the basket made contact with a charged 63 mm diameter compressed air line hung from the back, causing it to come apart at a fitting and whip around. The line struck the worker in the basket several times before the basket was lowered. He was transported to hospital for assessment and later released.
- Fitters in an underground workshop were adjusting the feed beam side clearance of a carousel and rod changer assembly on a Tamrock ITHH production drill rig when it detached from the unit. A worker was knocked to the floor by the assembly as it fell, but was able to crawl out from under it as the horseshoe frame prevented the assembly going right to the floor.
- An electrician was struck by a fire suppression cylinder he was relocating when it suddenly discharged and became a violent projectile. He sustained serious injuries.
- A light vehicle was stopped and stationary on a decline to allow an agitator truck to drive into a recess. While the agitator truck was moving into the recess a rock wedged between the tyre and road surface was suddenly ejected. The rock smashed through the windscreen of the light vehicle, hit the operator and went through the back window. The operator was hospitalised with head injuries.
- A high voltage isolation was performed to work on a 132 kV switchyard. Work started in a bay within the switchyard not covered by the isolation. This bay was alive. Test equipment was placed on live 132 kV lines the test equipment was destroyed and the supply tripped on earth fault.
- A Sandvik DP1100i drill rig was operating near the crest of a bench, when it rolled over onto the crest, coming to rest on its roof. The operator was trapped in the machine and was rescued by Queensland Fire Service.
- A brick wall in an underground cribroom collapsed while being backfilled with concrete. A person standing on a platform ladder pouring the concrete into a void between the brick wall and the drive sidewall received fractured bones to one foot when the ladder was struck by the brick wall.
- A worker sustained an abdominal injection injury while high pressure water blasting. The hose ruptured near the gun during pre-start at about 28 000 psi.
- Three workers were dismantling a G50 cone crusher, when a wedge was driven into one side of the crusher, causing a wedge that was already driven into a slot on the other side to dislodge and strike one of the workers in the chest. The worker sustained cracked ribs.
- During maintenance on a SAG mill a feed chute liner plate has fallen approximately 3.7 m and glanced off the hard hat of a worker below. The worker was not injured.
- Excavator operator was preparing to load a sandstone block (approximately 8.9 tonne) onto the dump truck. The operator lost control of the oversized block during the loading process and the block then fell onto the cab of the excavator. The operator sustained small lacerations to both legs from broken front screen. There was major damage to the excavator cab. The operator was taken to a doctor for assessment.

Figure 1.1: Fatalities in Queensland mines (all sectors), 1900–2016

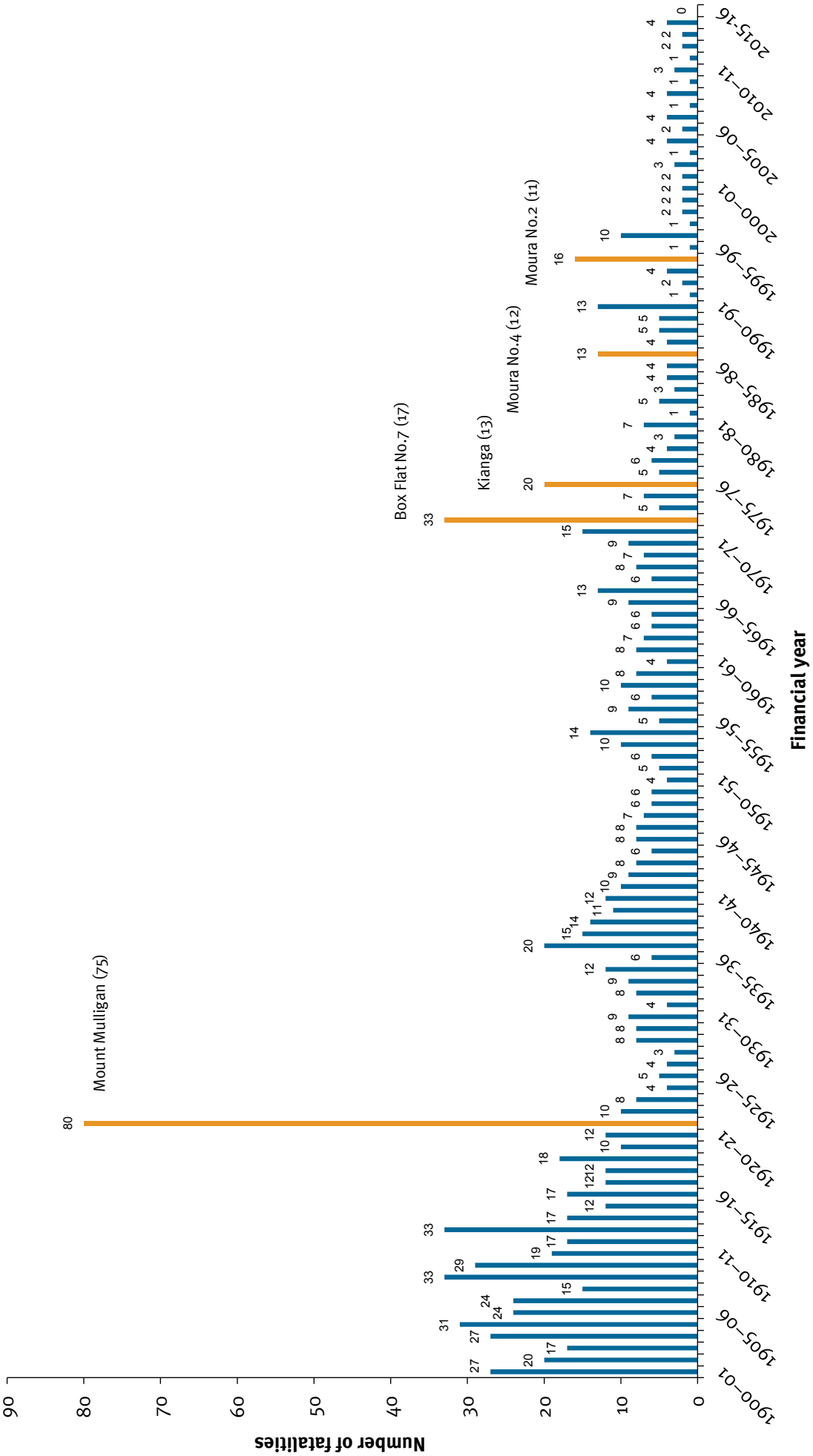


Figure 1.01: Fatalities in Queensland mines (all sectors - since the introduction of current mining legislation), 2001–16

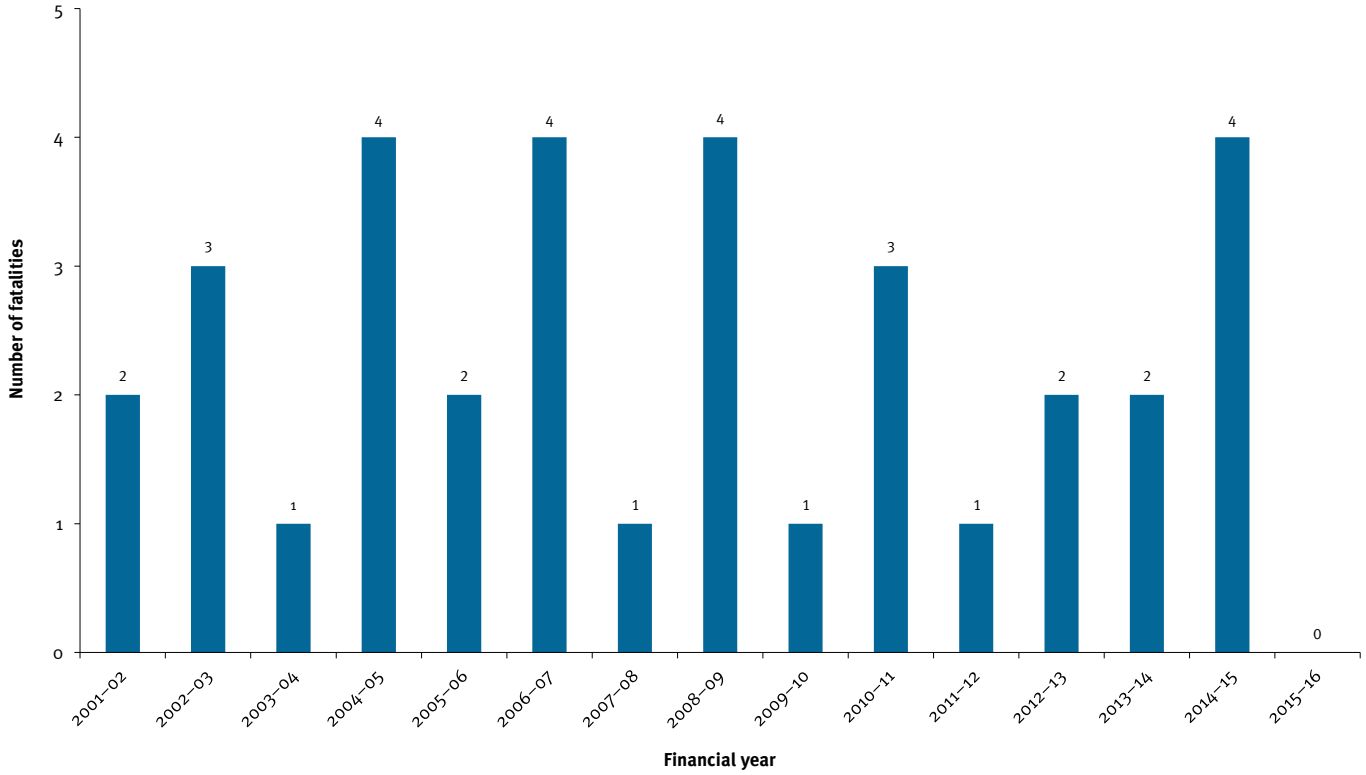
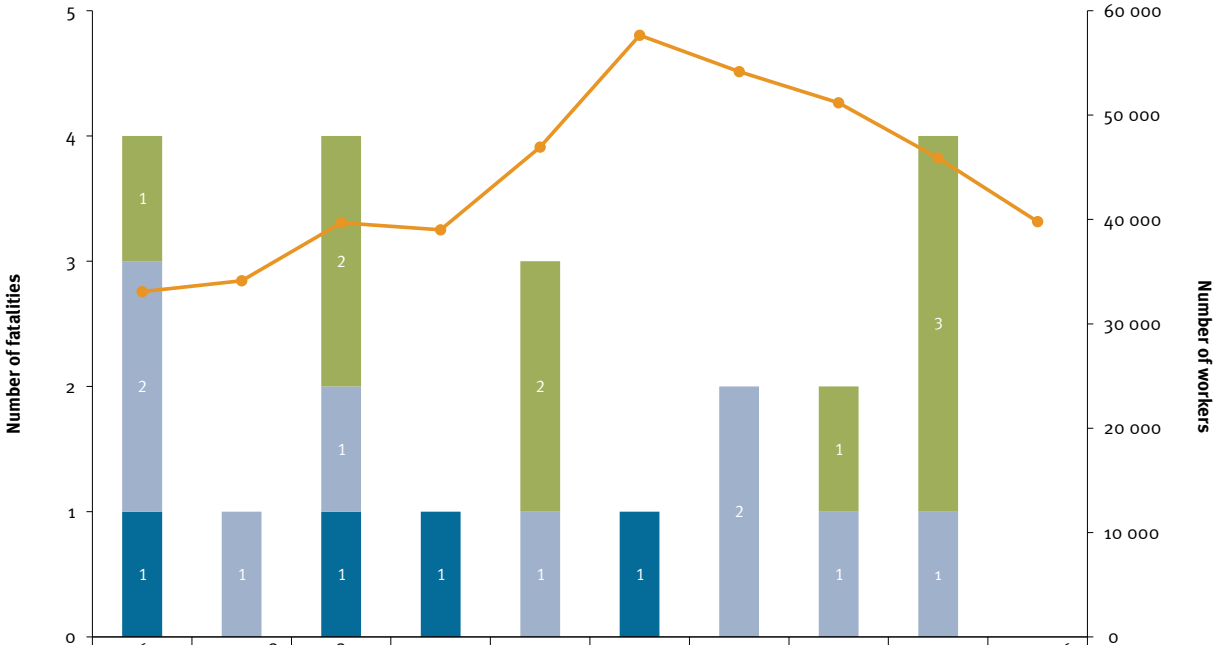


Figure 1.2: Fatalities versus employment numbers (all sectors), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Total fatalities	4	1	4	1	3	1	2	2	4	0
Coal fatalities	1	0	2	0	2	0	0	1	3	0
Metalliferous fatalities	2	1	1	0	1	0	2	1	1	0
Quarry fatalities	1	0	1	1	0	1	0	0	0	0
No. of workers	33 092	34 135	39 691	39 013	46 936	57 656	54 158	51 186	45 899	39 797

Table 1.2: Permanent incapacities reported by mines, 2015–16

Injury/disease	Incapacity type	Incapacity description	Qty
Coal surface			
Hearing loss	Ears	Noise induced hearing loss	36
Sprain/strain	Trunk–back (upper/lower)	Lower back injury	4
	Trunk–back (upper/lower)	Back injury	1
	Lower limbs–knee	Knee injuries	5
	Upper limbs–arm/shoulder	Shoulder injuries	4
Unspecified injury	Lower limbs–knee	Knee injury–anterior cruciate ligament	1
	Trunk–back (upper/lower)	Disc pathology injury	1
Coal underground			
Fracture	Lower limbs–leg	Distal right femur	1
	Other/unspecified		1
Hearing loss	Ears	Noise induced hearing loss	2
Traumatic amputation	Upper limbs–hand/finger/thumb	Partial amputation of right index finger	1
	Upper limbs–hand/finger/thumb	Partial amputation of the right middle finger	1
	Upper limbs–hand/finger/thumb	Partial amputation of crushed left little finger, crushed left ring finger	2
	Upper limbs–hand/finger/thumb	Partial amputation of crushed left thumb	1
	Upper limbs–hand/finger/thumb	Partial amputation of the right little finger	1
	Upper limbs–hand/finger/thumb	Partial amputation of the right little and ring fingers	1
	Upper limbs–hand/finger/thumb	Partial amputation of the right middle finger	1
	Upper limbs–hand/finger/thumb	Partial amputation of right index finger	1
Sprain/strain	Lower limbs–knee	Knee injury meniscus tear	1
	Lower limbs–lower leg/ankle	Lower leg and ankle injury	2
	Upper limbs–arm/ shoulder	Shoulder injuries	2
Pre–existing condition	Upper body	Cardiac failure	1
Other/unspecified			1
Other diseases	Lung	Pneumoconiosis	5
Unspecified injury	Other/unspecified	Lower back/knee/leg	3
Unspecified injury	Other/unspecified	Anxiety disorder	1
Metalliferous surface			
Unspecified injury	Upper and lower limbs	Impairment to right elbow and right leg	1
	Trunk–back (upper/lower)	Back injury from a slip trip	1
Metalliferous underground			
Burns	Upper body	Superficial burns to chest, neck and right arm	1
Unspecified injury	Upper limbs–shoulder and neck	Shoulder/neck injury	2
Quarries			
Unspecified injury	Lower limbs–knee	Left knee injury	1
Total			**87**

Figure 1.3: Mechanism of fatalities (all sectors), 2006–16

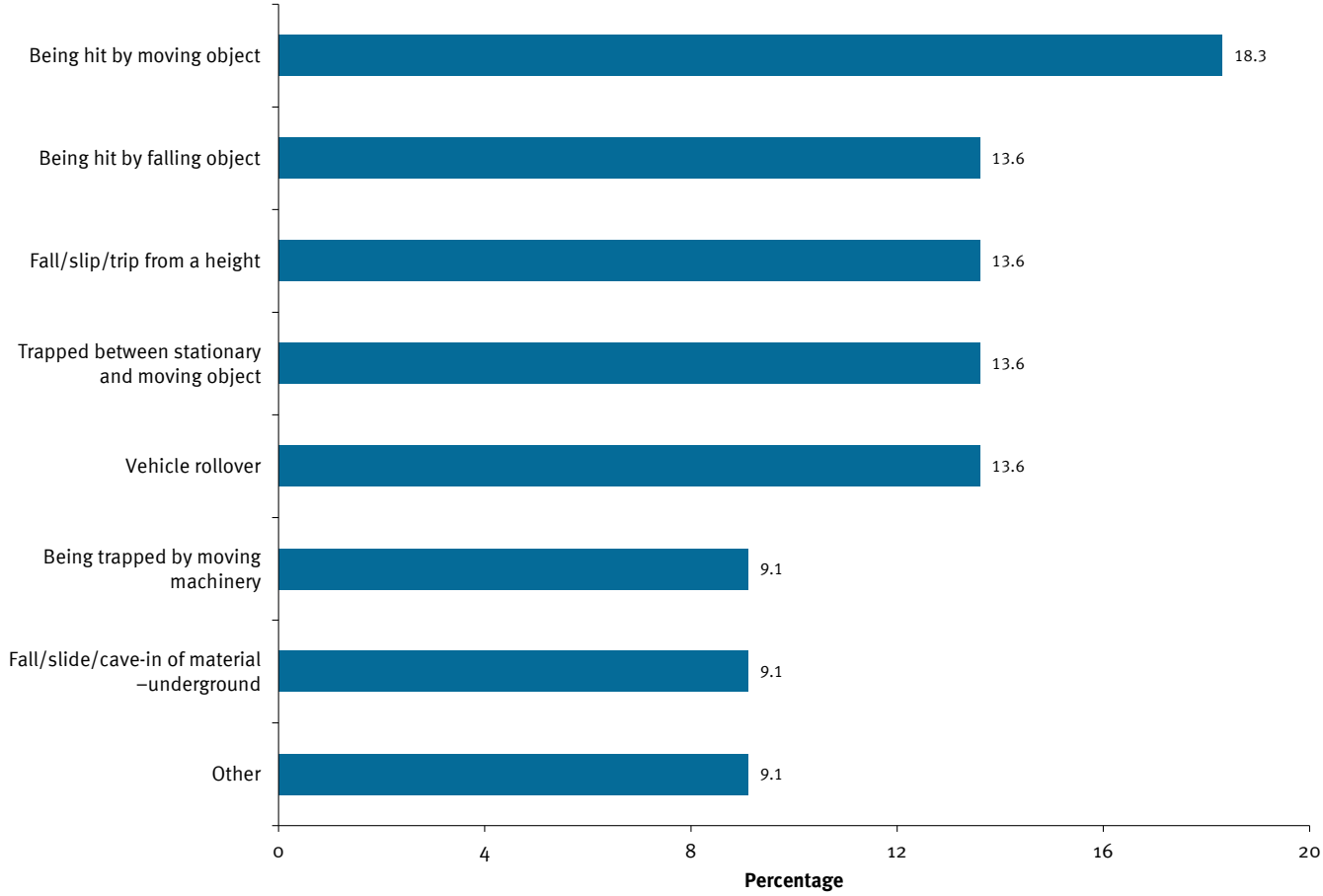


Figure 1.4: Lost time injury frequency rate per month (all sectors), 2006–16

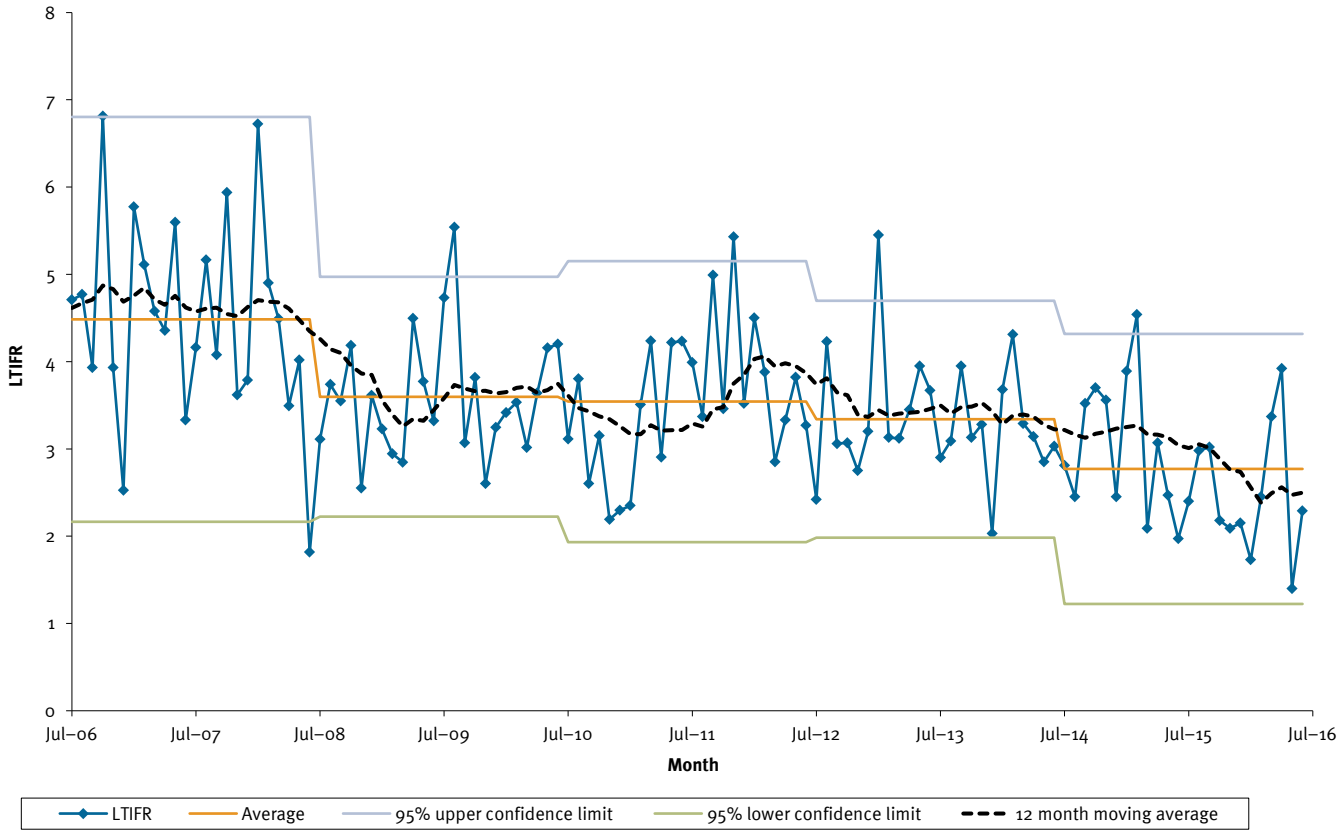


Figure 1.5: Lost time injury severity rate per month (all sectors), 2006–16

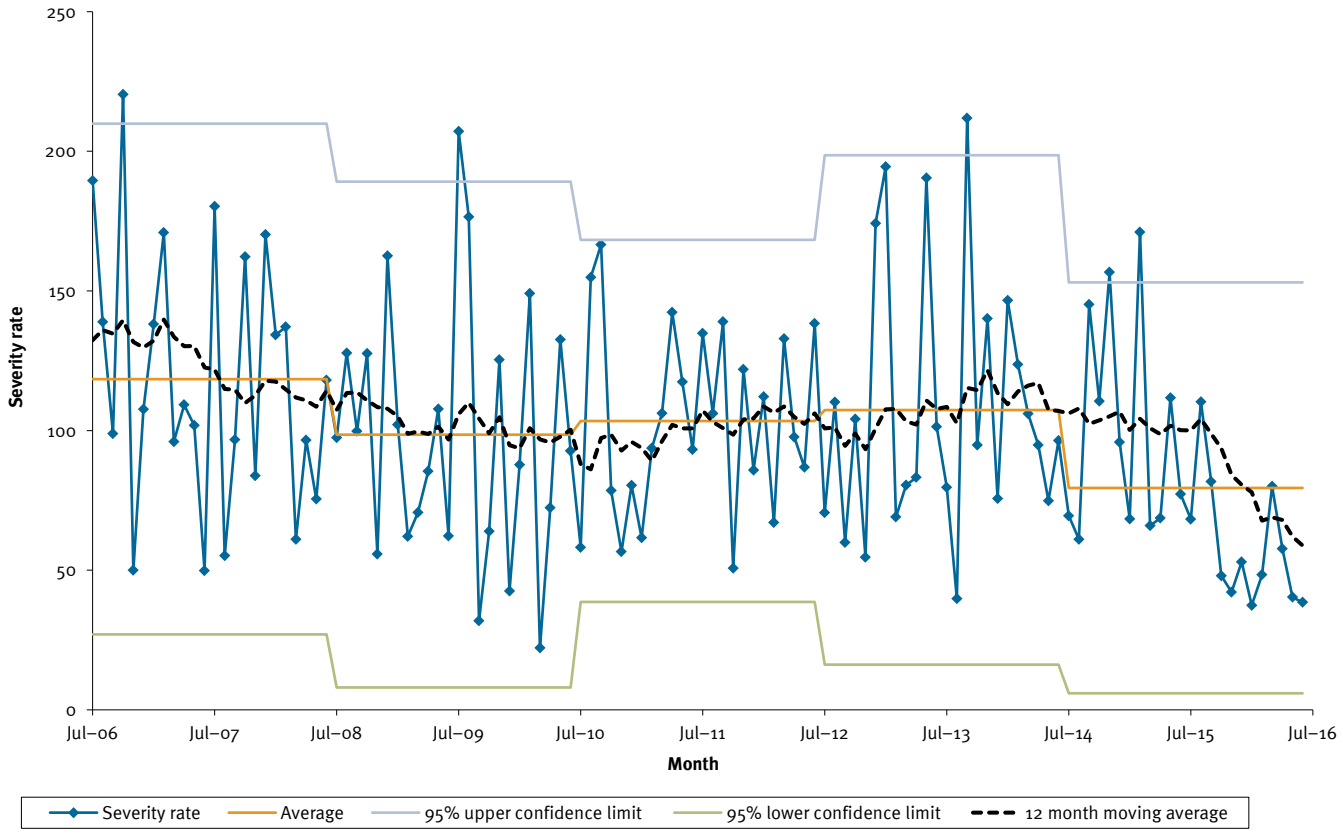


Table 1.3: High potential incident rate (per 1000 workers), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	41	46	47	45	47
Coal–underground	55	61	64	49	62
All coal	**43**	**48**	**50**	**46**	**49**
Metalliferous–surface	35	28	22	25	25
Metalliferous–underground	35	32	30	33	28
All metalliferous	**35**	**30**	**25**	**28**	**26**
Quarries	53	46	35	35	40
All sectors	**41**	**43**	**42**	**41**	**43**

Table 1.4: Safety alerts and bulletins relating to high potential incidents, 2015–16

Dust	
Safety Bulletin 151	Preventing dust-related lung diseases
Equiptment failure	
Safety Alert 321	High pressure water jet injection injury
Safety Alert 323	Worker injured by a discharging fire suppression cylinder
Explosives	
Safety Alert 318	Mobile mixing unit explosives truck rollover
Fall of ground	
Safety Alert 328	Working under a stope bridge
Falling material or objects	
Safety Alert 320	Rock from loading shovel smashes rear window of a dozer
Safety Alert 326	Serious leg injuries from unrestrained drill rig break-out wrench
Hazardous materials or substances	
Safety Bulletin 150	Exploding lead acid batteries
Inadequate systems or responses	
Safety Alert 319	Dragline and cable tractor interaction
Safety Alert 322	Worker injured in pugmill
Medical emergency	
Safety alert 325	Contract coal mine worker suffers cardiac arrest
Plant failure or damage	
Safety Bulletin 153	Handling and management of surface trailing cables (update to safety bulletin 6)
Vehicle	
Safety Alert 327	Uncontrolled engine shutdown on a dump truck

Figure 1.6: Lost time injury duration rate per month (all sectors), 2006–16

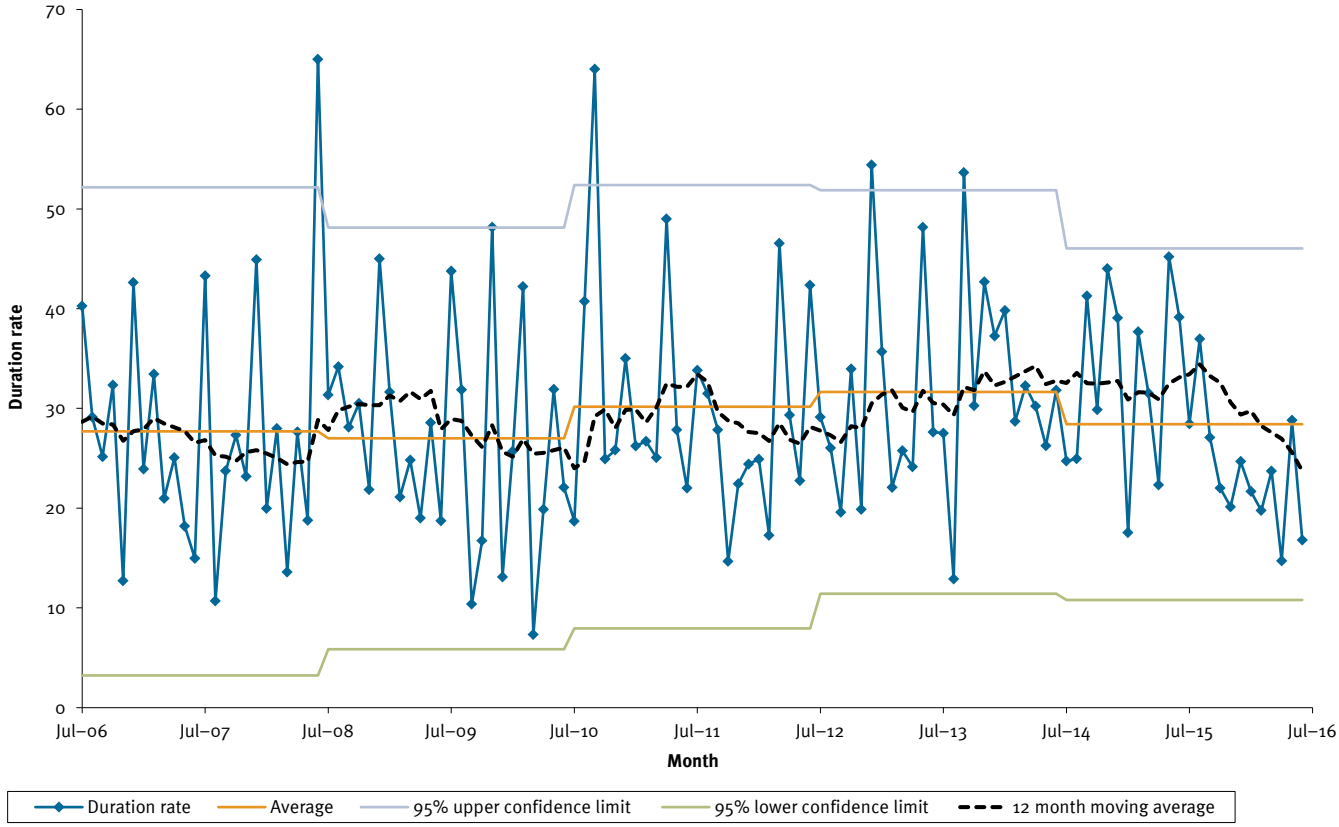
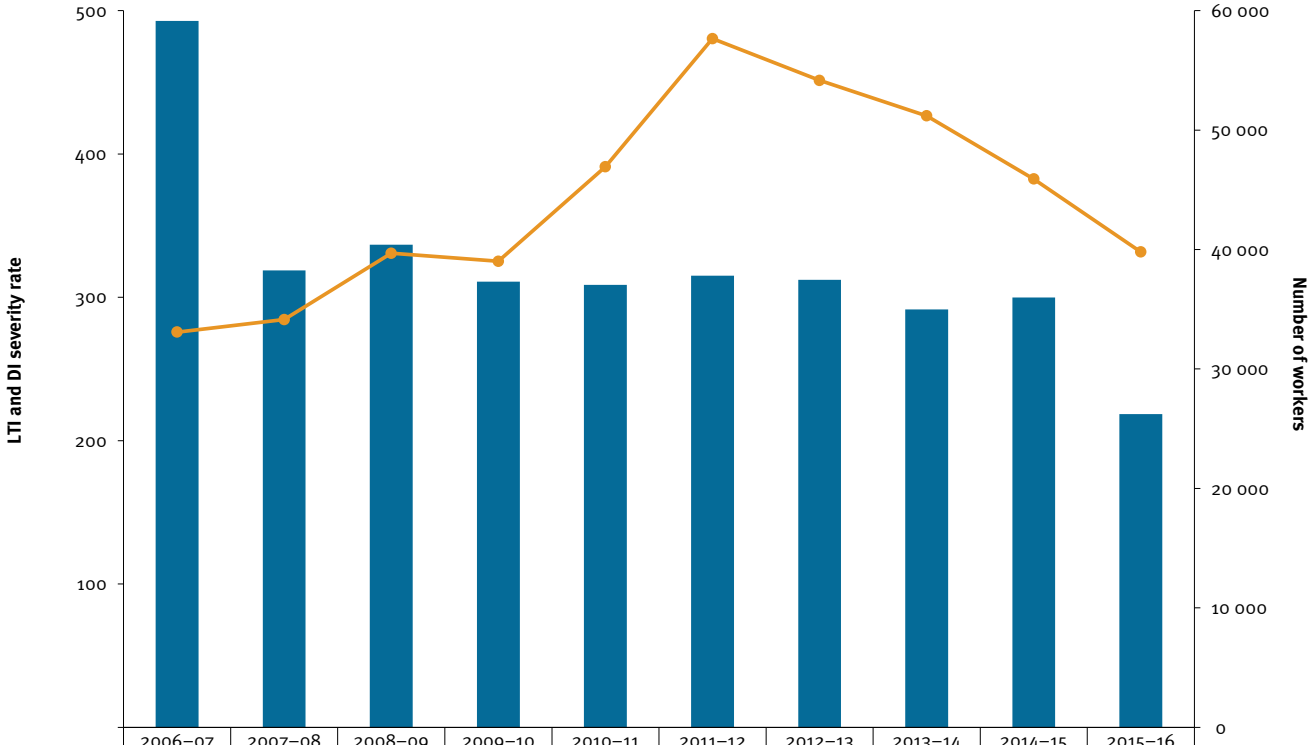
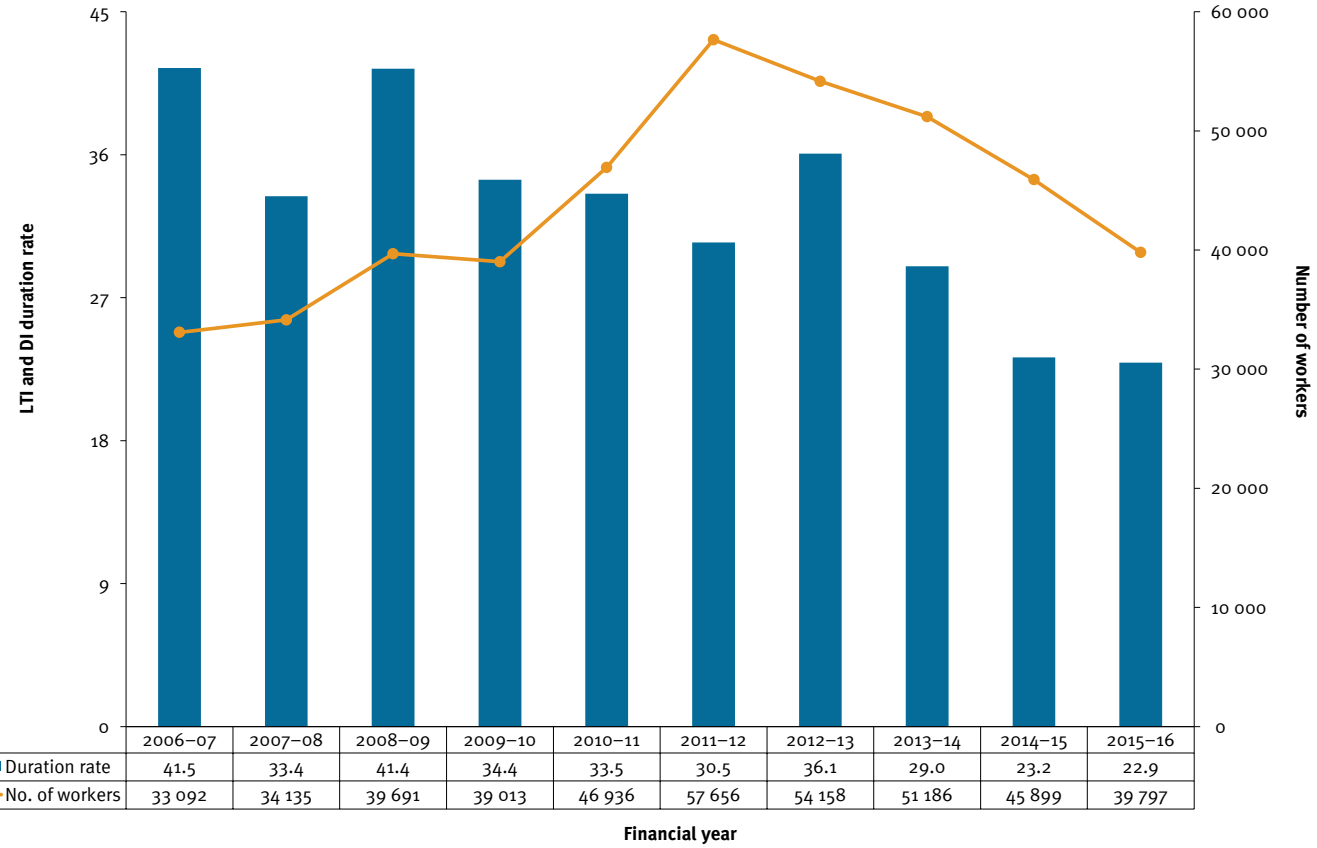


Figure 1.7: Lost time and disabling injury severity rate versus employment numbers (all sectors), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Severity rate	493	319	337	311	309	315	312	292	300	218
No. of workers	33 092	34 135	39 691	39 013	46 936	57 656	54 158	51 186	45 899	39 797

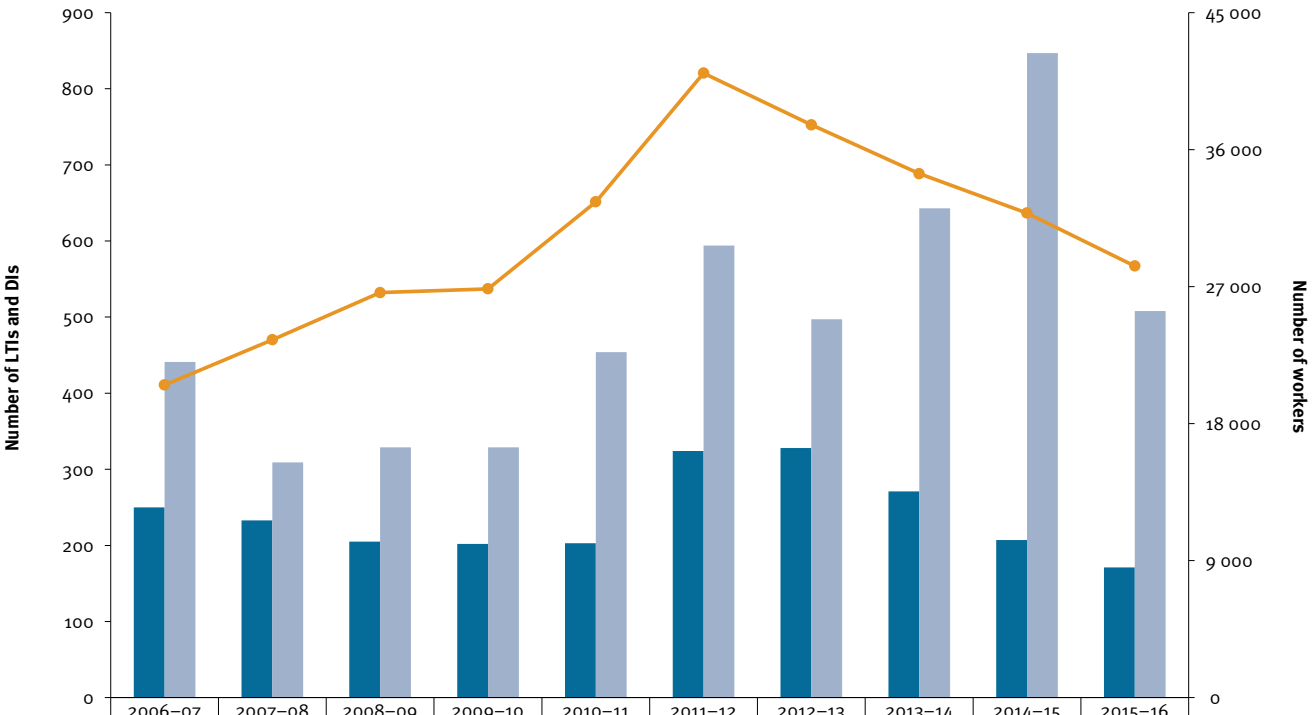
Figure 1.8: Lost time and disabling injury duration rate versus employment numbers (all sectors), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Duration rate	41.5	33.4	41.4	34.4	33.5	30.5	36.1	29.0	23.2	22.9
No. of workers	33 092	34 135	39 691	39 013	46 936	57 656	54 158	51 186	45 899	39 797

Financial year

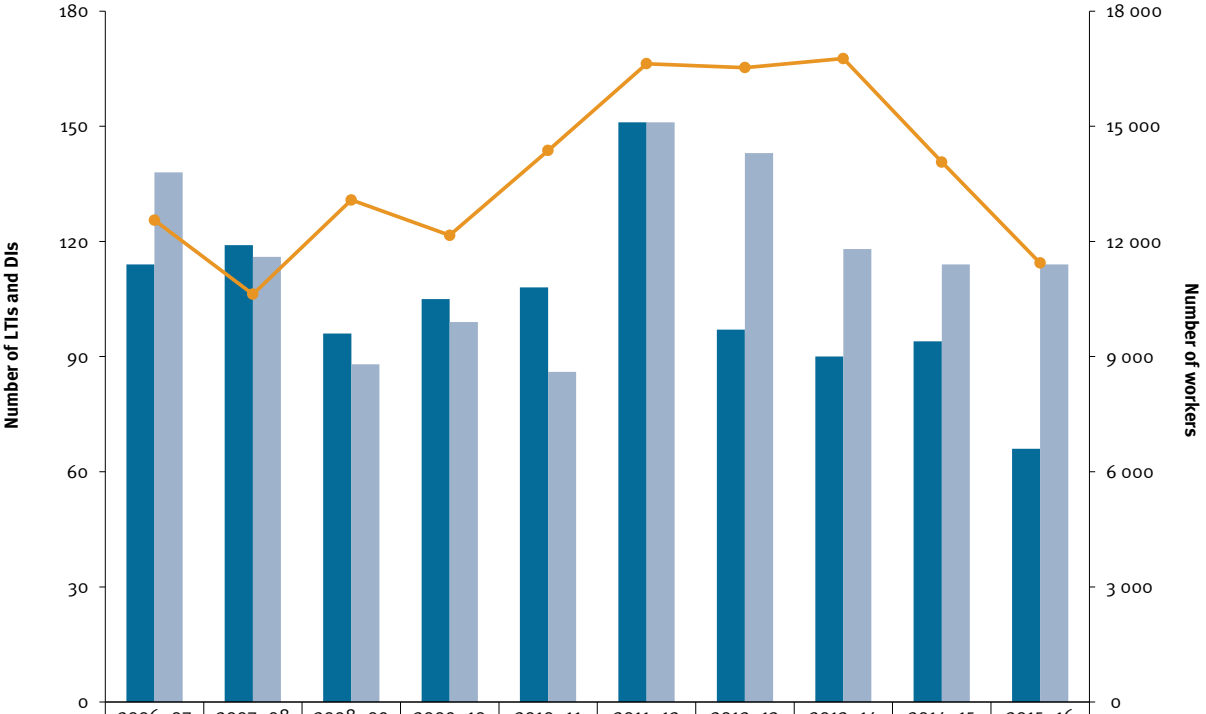
Figure 1.9: Lost time and disabling injuries versus employment numbers (coal mines), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Coal LTIs	250	233	205	202	203	324	328	271	207	171
Coal DIs	441	309	329	329	454	594	497	643	847	508
Coal workers	20 539	23 510	26 611	26 855	32 568	41 027	37 632	34 421	31 834	28 359

Financial year

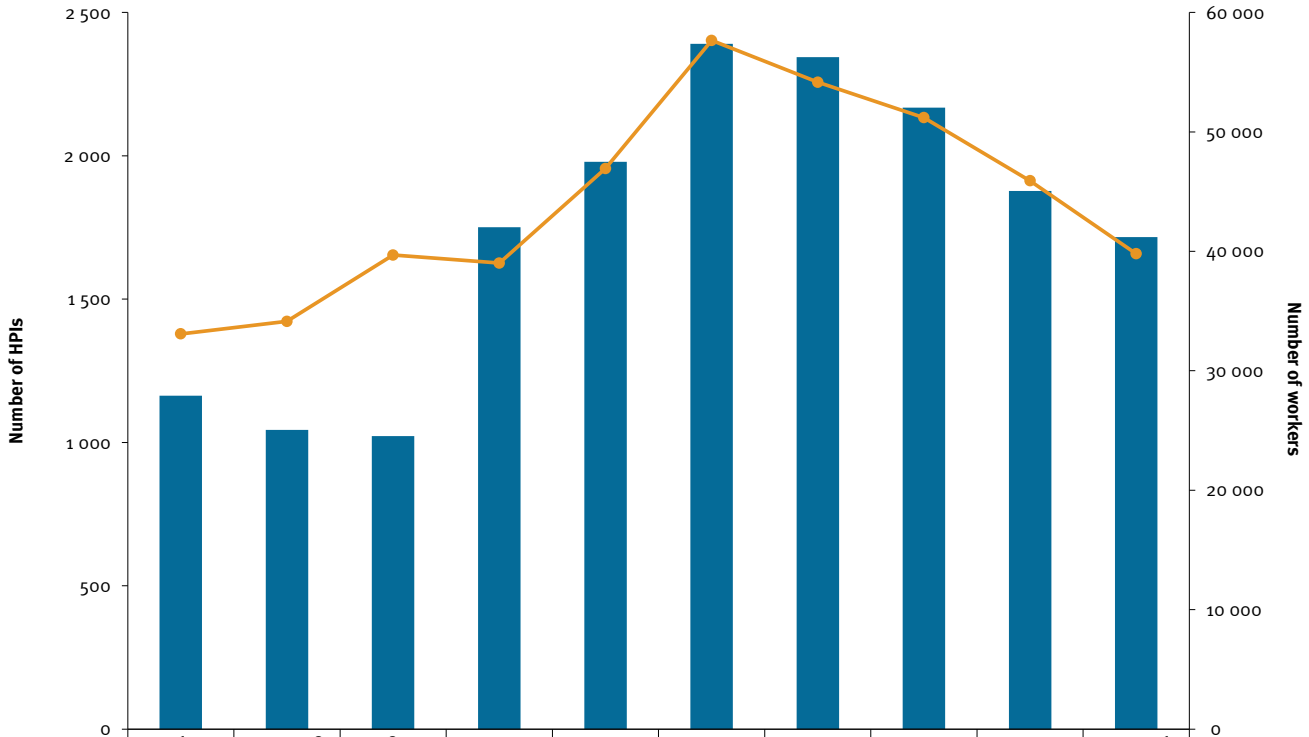
Figure 1.10: Lost time and disabling injuries versus employment numbers (metalliferous mines and quarries), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Met and quarries LTIs	114	119	96	105	108	151	97	90	94	66
Met and quarries DIs	138	116	88	99	86	151	143	118	114	114
Met and quarries workers	12 553	10 625	13 080	12 158	14 368	16 629	16 526	16 765	14 065	11 438

Financial year

Figure 1.11: High potential incidents versus employment numbers (all sectors), 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Number of HPIs	1 163	1 044	1 022	1 751	1 979	2 390	2 344	2 168	1 877	1 716
No. of workers	33 092	34 135	39 691	39 013	46 936	57 656	54 158	51 186	45 899	39 797

Finamcial year

Figure 1.12: High potential incidents by type (all sectors), 2013–16

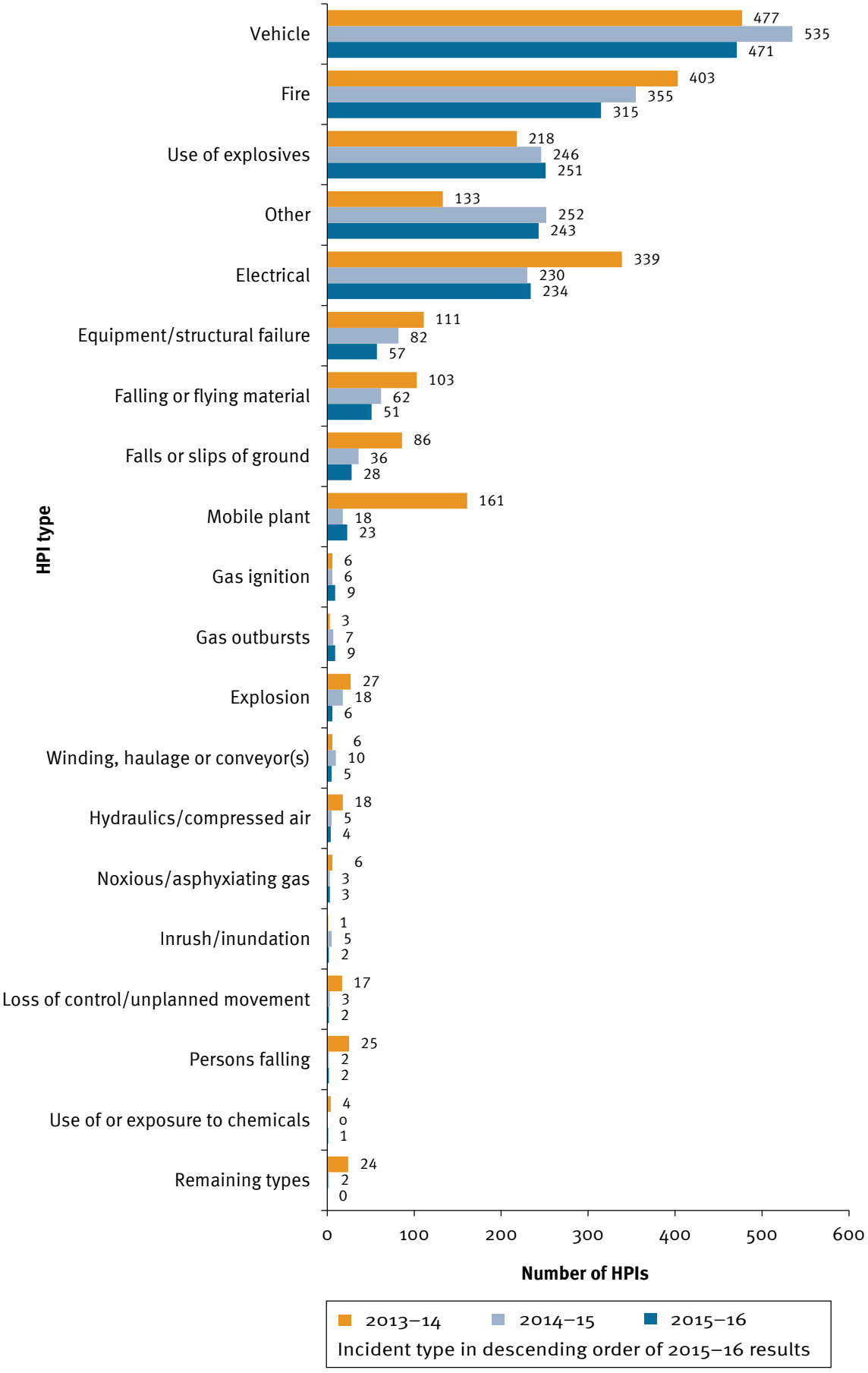


Figure 1.13: High potential incidents by type (surface coal mines), 2015–16

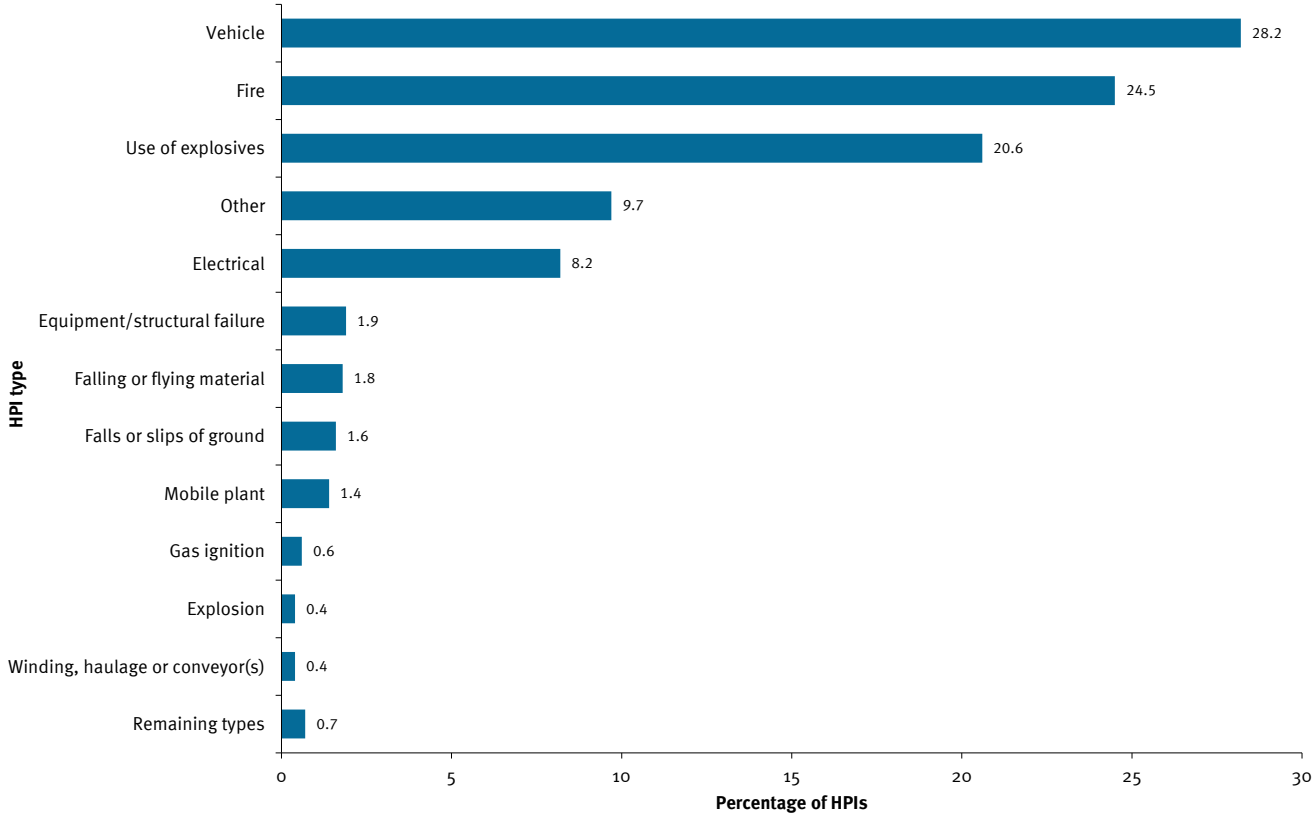


Figure 1.14: High potential incidents by type (underground coal mines), 2015–16

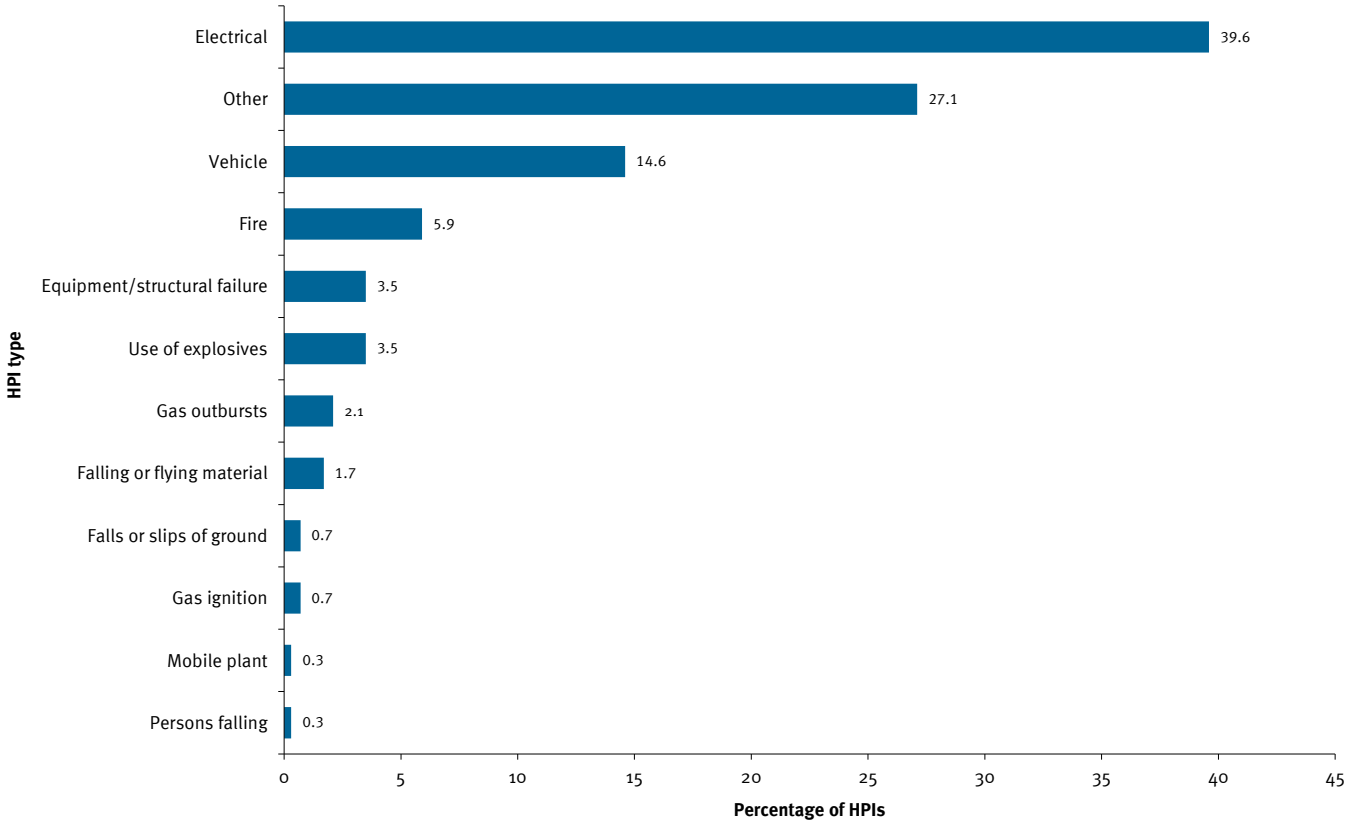


Figure 1.15: High potential incidents by type (surface metalliferous mines), 2015–16

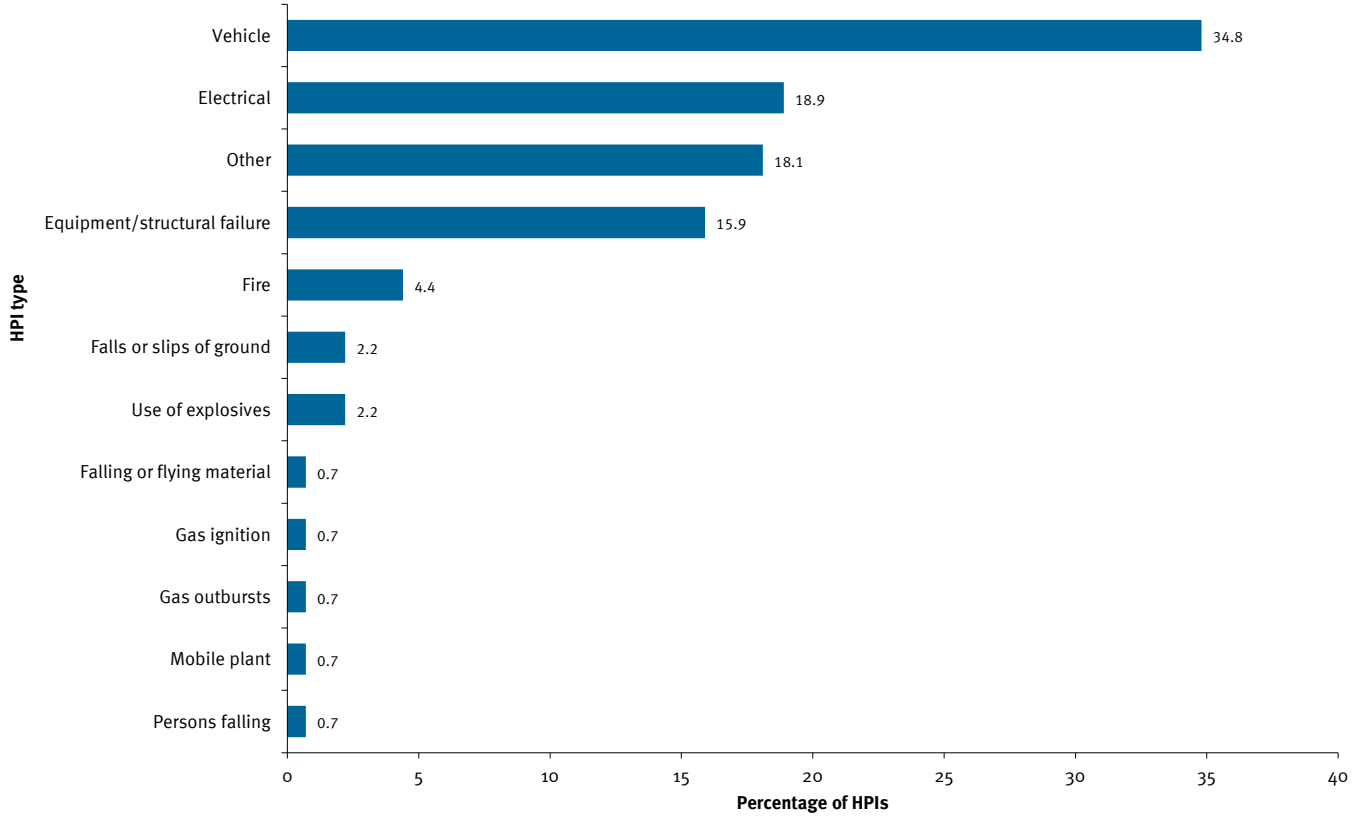


Figure 1.16: High potential incidents by type (underground metalliferous mines), 2015–16

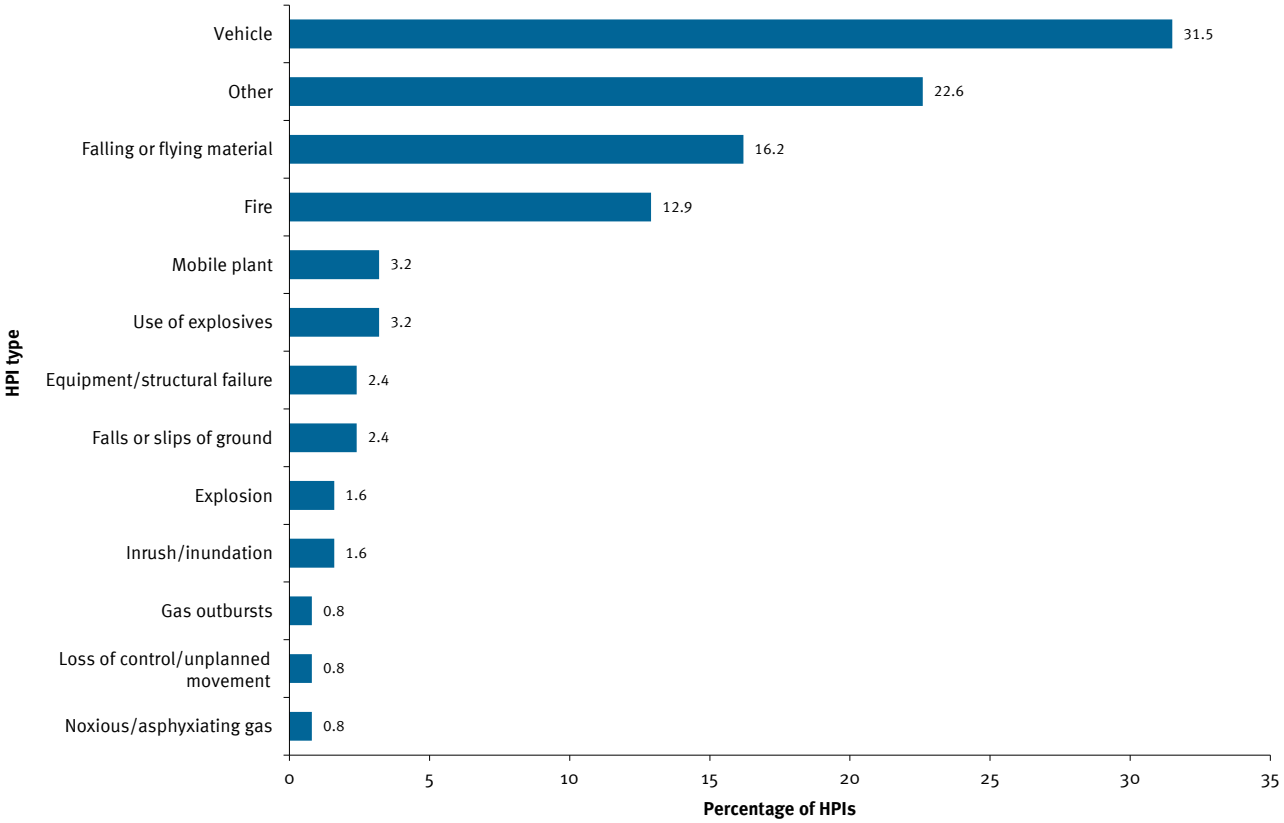
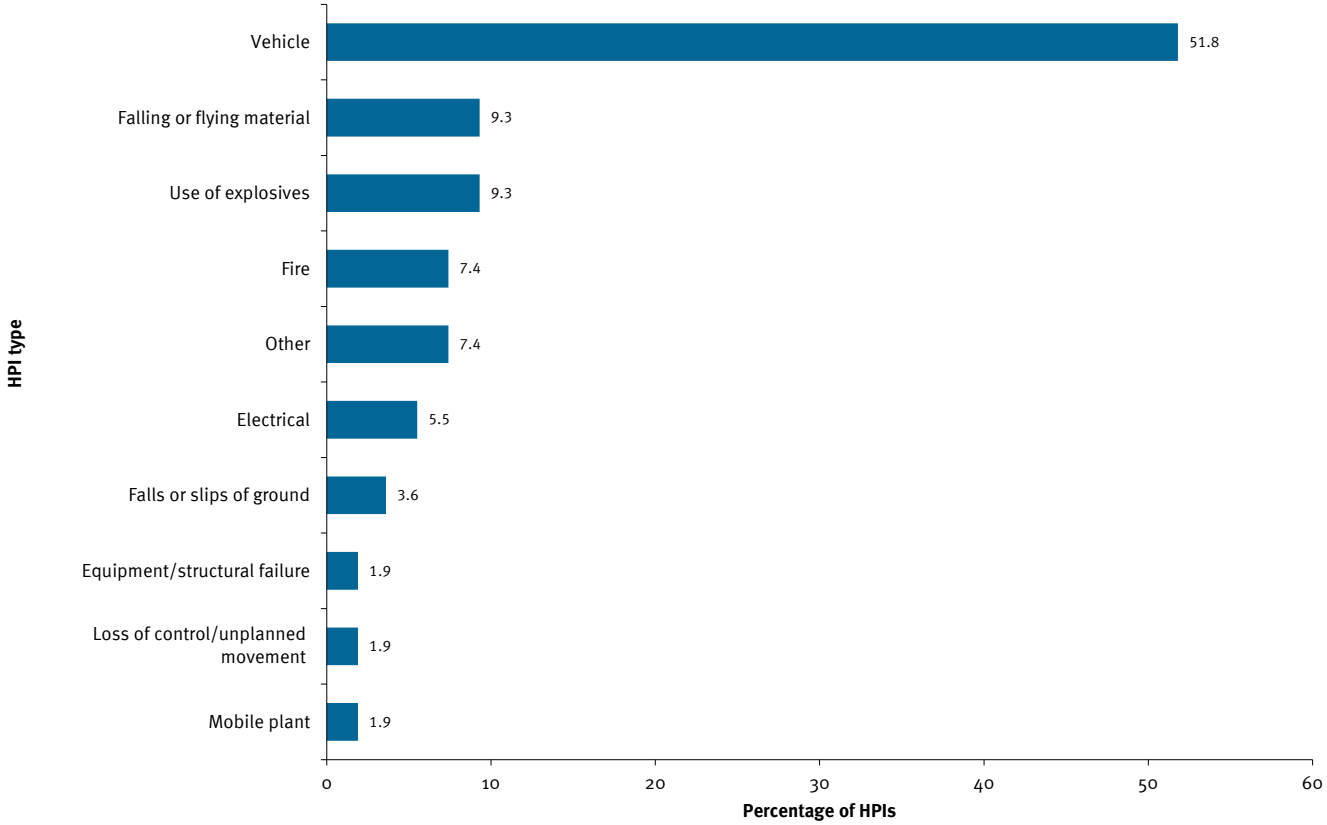


Figure 1.17: High potential incidents by type (quarries), 2015–16



2 MINES INSPECTORATE

The Mines Inspectorate

Mines Inspectorate staff, coal mine in the Bowen Basin
Photo: DNRM

2. The Mines Inspectorate

2.1 Miners Memorial Day

Every year on 19 September a service is held on the anniversary of Queensland's worst mining disaster when 75 coal miners lost their lives at the Mount Mulligan Mine in 1921. The 2015 Miners Memorial Day service was held at the Mount Morgan mine site and commemorated the lives of more than 1 500 miners who have died in mining tragedies in Queensland since 1877.

Members of the clergy, government, unions, industry officials and families of deceased mine workers were invited to attend and lay wreaths at the service. The service was also attended by members of the local mining community as well as the Minister for State Development and Minister for Natural Resources and Mines Dr Anthony Lynham and representatives from the Mines Inspectorate and Simtars.

2.2 Prosecutions and other enforcement actions

Metalliferous mines and quarries

On 6 March 2013, a fatal incident occurred at a metalliferous mine in north-west Queensland, in which a sub-contracting company's employee was fatally injured after being struck in the head by a falling pump, when it was being lifted with a crane.

As a result of this accident, three defendants were sentenced during the 2014–15 reporting year for failing to discharge their safety and health obligations and causing the death of the worker. They received a total of $210 000 in fines. This included the main contractor, the sub-contractor company engaged by the main contractor to complete maintenance work (which included lifting the pump) and the crane driver performing the lift.

The Site Senior Executive (SSE) of the main contractor was charged with failing to discharge their safety and health obligations and causing the death of the worker, contrary to section 31 of the *Mining and Quarrying Safety and Health Act 1999*. The charge related to a failure to ensure a manager performed the role of overseeing of independent contractors to ensure the safety and health management system was complied with by those contractors when they performed their work.

The SSE pleaded guilty and was sentenced in June 2016. A $35 000 fine was imposed by the court and orders were made that the SSE pay $25 300 in investigation costs and $4 860 in professional costs and disbursements.

Proceedings are still ongoing for additional defendants in relation to this incident.

On 5 June 2012, an incident occurred at a quarry in Central Queensland in which an employee was fatally injured after being pulled into an operating conveyor.

The company responsible for the design and importation of the conveyor was prosecuted for failing to discharge their safety and health obligations and causing the death of the worker, contrary to section 31 of the *Mining and Quarrying Safety and Health Act 1999*. The two charges related to failures to ensure the plant was designed and constructed in such a way that, when used properly, the risk from using the plant was at an acceptable level. Two directors of the company were also prosecuted for failing to ensure the company did not breach its obligations.

Tne Minister for State Development and Minister for Natural Resources and Mines, Dr Anthony Lynham lays a wreath at the Miners Memorial Day, 2015
Photo: DNRM

The company pleaded guilty and received a $30 000 fine as well as being required to pay $20 500 in professional and investigation costs.

The directors of the company, who also pleaded guilty, each received fines of $15 000 and were required to pay professional and investigation costs of approximately $20 500 each.

Proceedings are still ongoing for additional defendants in relation to this incident.

2.3 Complaints about safety and health at mines

Queensland mine safety and health legislation allows mine workers, their representatives or others to make confidential complaints about safety and health matters to the Mines Inspectorate.

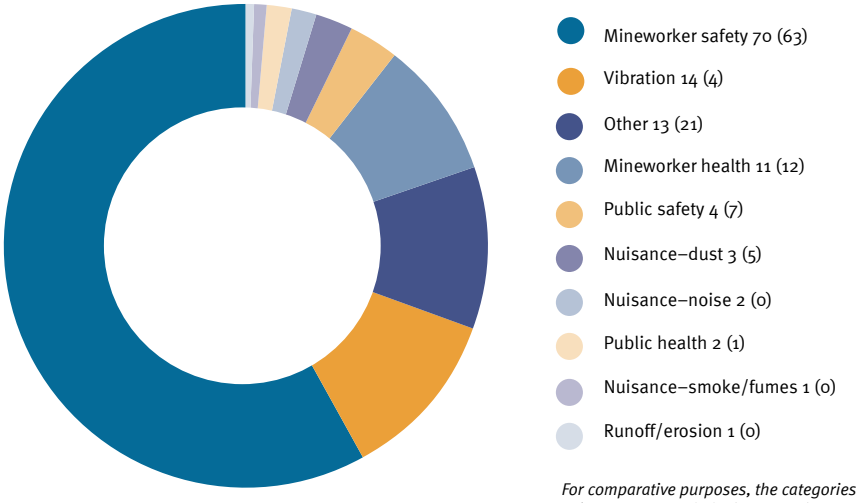
The complaints divided into the categories are shown in Figure 2.1 and an overview of complaints in Figure 2.2.

2.4 Inspections and audits conducted by the Mines Inspectorate

Inspectors and inspection officers have the power to enter and inspect or audit mines and quarries under the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*.

Table 2.1 shows details of Mines Inspectorate activities in 2015–16. There were 1 781 inspections and 35 audits completed in 2015–16.

Figure 2.1: Complaints by type (all sectors), 2015–16 (compared with 2014–15)



For comparative purposes, the categories of 'Waste/spoil' and 'Hazardous substances' recorded 0 instances in 2015–16 (both down from 1 each recorded in 2014–15.)

Figure 2.2: Complaints about safety and health at mines, 2015–16

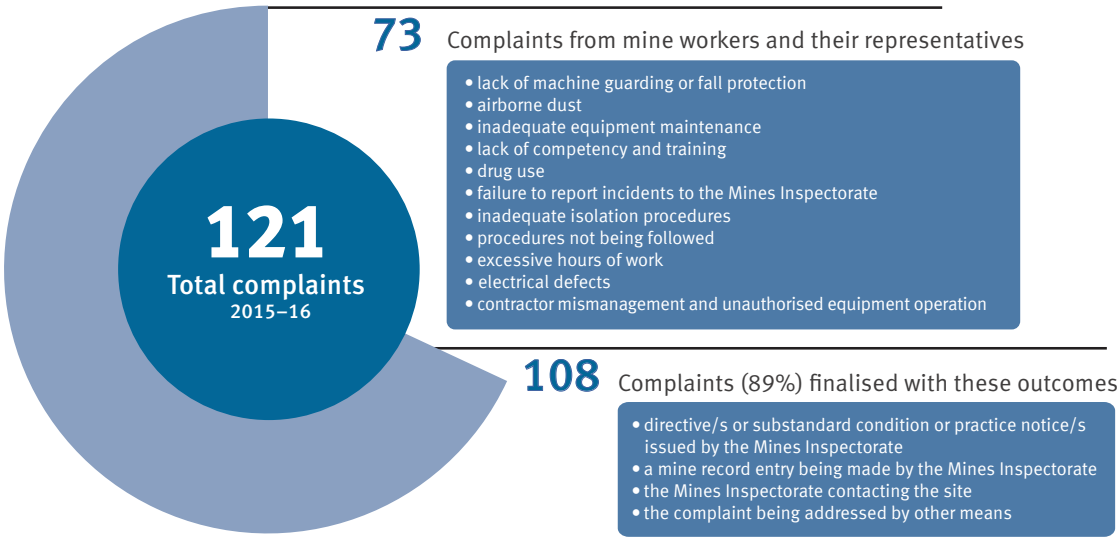


Table 2.1: Mines Inspectorate activity, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Inspections	1 387	1 451	1 487	1 431	1 598
Inspections–unannounced	136	127	135	102	162
Inspections–weekend or backshift	8	13	12	10	17
Inspections–unannounced weekend or backshift	12	11	7	2	4
Audits–subject or system specific	48	14	36	35	32
Audits–compliance audits	7	19	13	27	3

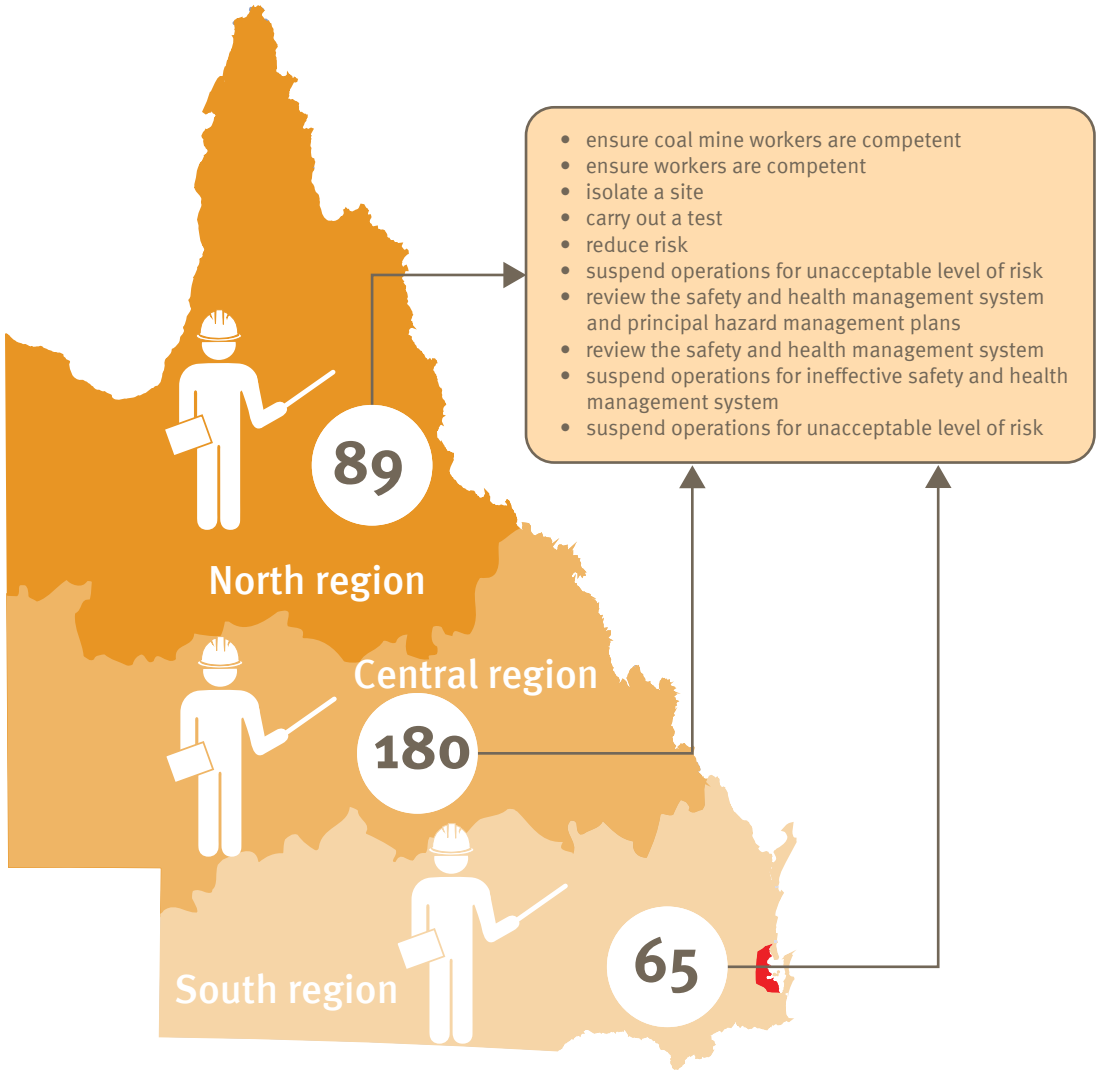
2.5 Directives issued by the Mines Inspectorate

Inspectors of mines and inspection officers have the power to issue various directives under the *Coal Mining Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Act 1999*.

During 2015–16 the Mines Inspectorate issued 334 directives; an increase from the 240 issued in 2014–15. Of these directives, 149 were issued to coal mines and 185 to non-coal mines and quarries.

The number of directives issued by the Mines Inspectorate by region are shown in Figure 2.3.

Figure 2.3: Directives issued by the Mines Inspectorate by region, 2015–16



3 INCIDENT NUMBERS

Lag performance indicators: incident numbers

Training exercise at Simtars
Photo: DNRM

3. Lag performance indicators: incident numbers

The following tables show five-year trends in a number of indicators used to assess safety and health performance across the industry. These are the raw, unadjusted numbers and cannot be used for comparison of industry sectors. Adjusted data and rates are presented in Chapter 4 of this report.

The performance indicators plotted are:

- Table 3.1: Number of lost time injuries, 2011–16
- Table 3.2: Number of lost time injury days (days away from work only), 2011–16
- Table 3.3: Number of lost time injury days (days away from work and days on alternative duties), 2011–16
- Table 3.4: Number of disabling injuries, 2011–16
- Table 3.5: Number of disabling injury days (days on alternative duties), 2011–16
- Table 3.6: Number of lost time injuries and disabling injuries, 2011–16
- Table 3.7: Number of lost time injury and disabling injury days (days away from work and days on alternative duties), 2011–16
- Table 3.8: Number of permanent incapacities, 2011–16
- Table 3.9: Number of fatalities, 2011–16
- Table 3.10: Number of medical treatment injuries, 2011–16
- Table 3.11: Number of total recordable injuries, 2011–16
- Table 3.12: Number of reported high potential incidents, 2011–16
- Table 3.13: Number of employees at 30 June, 2011–16
- Table 3.14: Total hours worked (millions), 2011–16

These indicators are lag indicators and are a measure of performance after the event. Lead indicators, while difficult to define and measure, show the positive steps taken to prevent incidents from occurring. A suite of lead indicators were measured and these are detailed in Chapter 6 of this report.

The number of total recordable injuries shown in Table 3.11 is a more accurate reflection of safety and health performance compared to the use of the number of lost time injuries alone. Using the number of lost time injuries as the main safety and health measure can be manipulated by having injured or sick workers prematurely return to work on light or alternative duties.

Table 3.3 shows the number of days lost from work and the number of days on alternative duties for lost time injuries. Most jurisdictions in Australia do not include the number of days on alternative duties but only count the days lost from work (see Table 3.2). The true severity of an injury can only be assessed by evaluating the number of days a worker is away from their normal job. So, it is necessary to count the days lost from work and the days on alternative duties when assessing injury severity.

Lost time injuries (LTI) 2014–15 compared to 2015–16

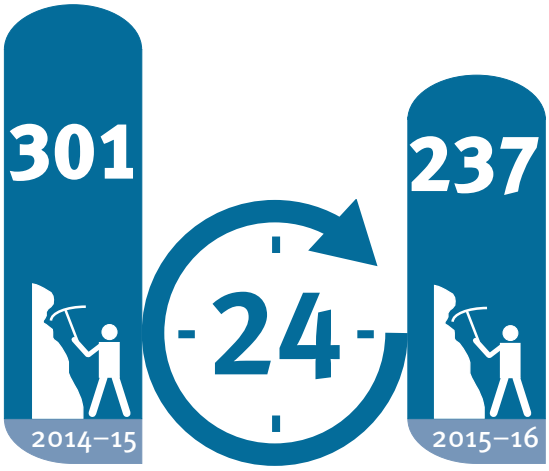


Table 3.1: Number of lost time injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	202	219	166	118	105
Coal–underground	122	109	105	89	66
Coal subtotal	**324**	**328**	**271**	**207**	**171**
Metalliferous–surface	73	64	47	50	36
Metalliferous–underground	50	19	25	31	20
Metalliferous subtotal	**123**	**83**	**72**	**81**	**56**
Quarries	28	14	18	13	10
All operations	**475**	**425**	**361**	**301**	**237**

Table 3.2: Number of lost time injury days (days away from work only), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	6 077	7 777	5 526	4 597	2 698
Coal–underground	3 477	3 269	3 654	2 942	1 692
Coal subtotal	**9 554**	**11 046**	**9 180**	**7 539**	**4 390**
Metalliferous–surface	1 512	1 239	851	492	376
Metalliferous–underground	991	479	1 303	1 438	523
Metalliferous subtotal	**2 503**	**1 718**	**2 154**	**1 930**	**899**
Quarries	573	410	444	308	272
All operations	**12 630**	**13 174**	**11 778**	**9 777**	**5 561**

Table 3.3: Number of lost time injury days (days away from work and days on alternative duties), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	10 684	13 320	8 950	6 299	3 698
Coal–underground	6 003	6 696	5 458	4 120	2 576
Coal subtotal	**16 687**	**20 016**	**14 408**	**10 419**	**6 274**
Metalliferous–surface	1 887	1 833	1 341	1 021	740
Metalliferous–underground	1 403	1 265	1 853	2 443	1 016
Metalliferous subtotal	**3 290**	**3 098**	**3 194**	**3 464**	**1 756**
Quarries	736	435	558	410	290
All operations	**20 713**	**23 549**	**18 160**	**14 293**	**8 320**

Table 3.4: Number of disabling injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	337	312	374	463	277
Coal–underground	257	185	269	384	231
Coal subtotal	**594**	**497**	**643**	**847**	**508**
Metalliferous–surface	56	62	50	15	27
Metalliferous–underground	85	80	64	90	85
Metalliferous subtotal	**141**	**142**	**114**	**105**	**112**
Quarries	10	1	4	9	2
All operations	**745**	**640**	**761**	**961**	**622**

Table 3.5: Number of disabling injury days (days on alternative duties), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	8 983	6 623	7 405	6 270	6 308
Coal–underground	2 752	3 466	3 900	6 147	3 679
Coal subtotal	**11 735**	**10 089**	**11 305**	**12 417**	**9 987**
Metalliferous–surface	1 551	1 939	732	361	503
Metalliferous–underground	2 951	2 821	2 231	1 965	847
Metalliferous subtotal	**4 502**	**4 760**	**2 963**	**2 326**	**1 350**
Quarries	231	17	76	294	26
All operations	**16 468**	**14 866**	**14 344**	**15 037**	**11 363**

Table 3.6: Number of lost time injuries and disabling injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	539	531	540	581	382
Coal–underground	379	294	374	473	297
Coal subtotal	**918**	**825**	**914**	**1 054**	**679**
Metalliferous–surface	129	126	97	65	63
Metalliferous–underground	135	99	89	121	105
Metalliferous subtotal	**264**	**225**	**186**	**186**	**168**
Quarries	38	15	22	22	12
All operations	**1 220**	**1 065**	**1 122**	**1 262**	**859**

Table 3.7: Number of lost time injury and disabling injury days (days away from work and days on alternative duties), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	19 667	19 943	16 355	12 569	10 006
Coal–underground	8 755	10 162	9 358	10 267	6 255
Coal subtotal	**28 422**	**30 105**	**25 713**	**22 836**	**16 261**
Metalliferous–surface	3 438	3 772	2 073	1 382	1 243
Metalliferous–underground	4 354	4 086	4 084	4 408	1 863
Metalliferous subtotal	**7 792**	**7 858**	**6 157**	**5 790**	**3 106**
Quarries	967	452	634	704	316
All operations	**37 181**	**38 415**	**32 504**	**29 330**	**19 683**

Table 3.8: Number of permanent incapacities, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	16	16	21	8	52
Coal–underground	3	7	6	8	29
Coal subtotal	**19**	**23**	**27**	**16**	**81**
Metalliferous–surface	3	6	3	11	2
Metalliferous–underground	3	1	6	8	3
Metalliferous subtotal	**6**	**7**	**9**	**19**	**5**
Quarries	3	2	2	3	1
All operations	**28**	**32**	**38**	**38**	**87**

Table 3.9: Number of fatalities, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	0	0	0	2	0
Coal–underground	0	0	1	1	0
Coal subtotal	**0**	**0**	**1**	**3**	**0**
Metalliferous–surface	0	2	0	0	0
Metalliferous–underground	0	0	1	1	0
Metalliferous subtotal	**0**	**2**	**1**	**1**	**0**
Quarries	1	0	0	0	0
Exploration	0	0	0	0	0
All operations	**1**	**2**	**2**	**4**	**0**

Table 3.10: Number of medical treatment injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	467	396	364	350	355
Coal–underground	350	201	88	162	77
Coal subtotal	**817**	**597**	**452**	**512**	**432**
Metalliferous–surface	195	131	120	101	71
Metalliferous–underground	149	79	60	44	44
Metalliferous subtotal	**344**	**210**	**180**	**145**	**115**
Quarries	38	58	72	31	39
All operations	**1 199**	**865**	**704**	**688**	**586**

Table 3.11: Number of total recordable injuries, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	1 006	927	904	931	737
Coal–underground	729	495	462	635	374
Coal subtotal	**1 735**	**1 422**	**1 366**	**1 566**	**1 111**
Metalliferous–surface	324	257	217	166	134
Metalliferous–underground	284	178	149	165	149
Metalliferous subtotal	608	**435**	**366**	**331**	**283**
Quarries	76	73	94	53	51
All operations	**2 419**	**1 930**	**1 826**	**1 950**	**1 445**

Table 3.12: Number of reported high potential incidents, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	1 380	1 397	1 303	1 147	1 112
Coal–underground	398	428	423	324	288
Coal subtotal	**1 778**	**1 825**	**1 726**	**1 471**	**1 400**
Metalliferous–surface	302	238	196	182	138
Metalliferous–underground	216	210	186	173	124
Metalliferous subtotal	**518**	**448**	**382**	**355**	**262**
Quarries	94	71	60	51	54
All operations	**2 390**	**2 344**	**2 168**	**1 877**	**1 716**

Table 3.13: Number of employees at 30 June, 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	33 820	30 666	27 825	25 211	23 731
Coal–underground	7 207	6 966	6 596	6 623	4 628
Coal subtotal	**41 027**	**37 632**	**34 421**	**31 834**	**28 359**
Metalliferous–surface	8 628	8 394	8 821	7 325	5 618
Metalliferous–underground	6 217	6 600	6 209	5 270	4 462
Metalliferous subtotal	**14 845**	**14 994**	**15 030**	**12 595**	**10 080**
Quarries	1 784	1 532	1 735	1 470	1 358
All operations	**57 656**	**54 158**	**51 186**	**45 899**	**39 797**

Table 3.14: Total hours worked (millions), 2011–16

	2011–12	2012–13	2013–14	2014–15	2015–16
Coal–surface	64.2	66.3	61.4	51.6	49.8
Coal–underground	17.3	18.6	14.3	14.0	13.7
Coal subtotal	**81.5**	**84.9**	**75.7**	**65.6**	**63.5**
Metalliferous–surface	20.1	20.3	19.6	16.8	14.4
Metalliferous–underground	14.2	15.0	13.3	12.9	9.8
Metalliferous subtotal	**34.3**	**35.3**	**32.9**	**29.7**	**24.2**
Quarries	2.2	2.8	2.9	2.5	2.4
All operations	**118.0**	**123.0**	**111.5**	**97.8**	**90.1**

Bromelton Quarry, 2016
Photo: DNRM

4 INCIDENT RATES

Lag performance indicators: incident rates

Workshop maintenance
Photo: DNRM

4. Lag performance indicators: incident rates

The graphs in this chapter and their accompanying tables show five-year trends across a number of indicators used to assess safety and health performance across the industry. The data presented here has been adjusted either in terms of the number of hours worked or the average days lost per injury. These adjusted values can be used to make comparisons across different sectors.

The performance indicators plotted are:

- Figure 4.1: Lost time injury frequency rate, 2011–16
- Figure 4.2: Lost time injury severity rate (days away from work only), 2011–16
- Figure 4.3: Lost time injury duration rate (days away from work only), 2011–16
- Figure 4.4: Lost time injury severity rate (days away from work and on alternative duties), 2011–16
- Figure 4.5: Lost time injury duration rate (days away from work and on alternative duties), 2011–16
- Figure 4.6: Disabling injury frequency rate, 2011–16
- Figure 4.7: Disabling injury severity rate, 2011–16
- Figure 4.8: Disabling injury duration rate, 2011–16
- Figure 4.9: Lost time injury and disabling injury frequency rate, 2011–16
- Figure 4.10: Lost time injury and disabling injury severity rate, 2011–16
- Figure 4.11: Lost time injury and disabling injury duration rate, 2011–16
- Figure 4.12: Permanent incapacity frequency rate, 2011–16
- Figure 4.13: Fatality frequency rate, 2011–16
- Figure 4.14: Total recordable injury frequency rate, 2011–16
- Figure 4.15: Fatality frequency rate by sector, 2006–16.

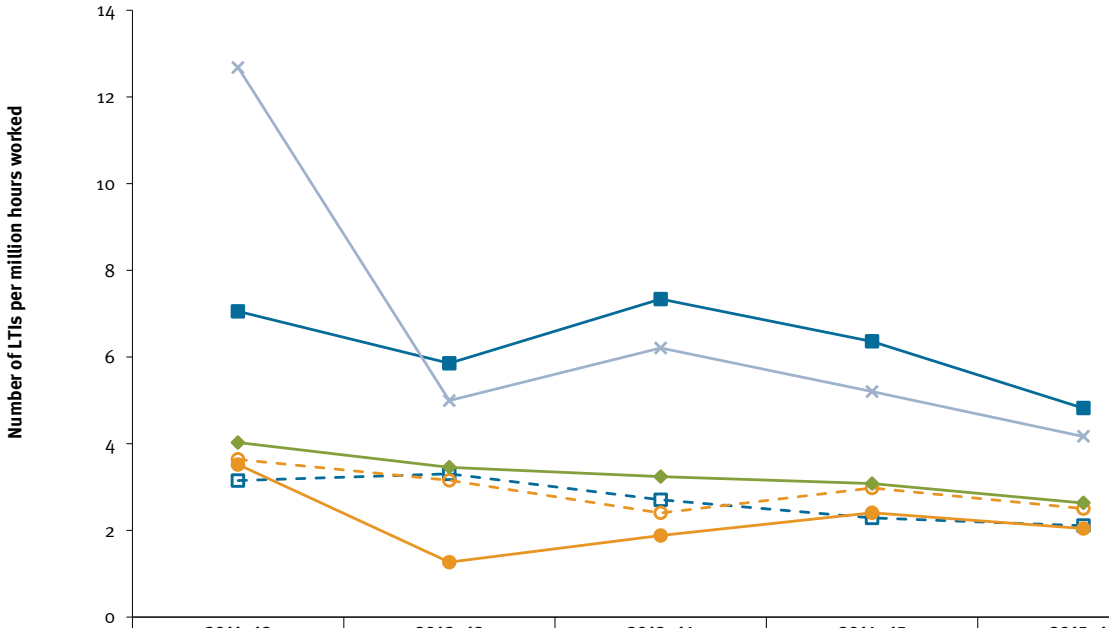
Figures 4.10 and 4.11 indicate the combined lost time injury and disabling injury severity rate and duration rate respectively. These performance indicators are the best measure of safety performance and are primarily referred to when assessing industry performance.

Lost time injury/disease: An incident resulting in a fatality, permanent disability or time lost from work of one shift or more. The shift on which the incident occurred is not counted as a shift lost.

Lost time injury frequency rate: The number of lost time injuries/diseases per million hours worked.

Lost time and disabling injury frequency rate: The number of lost time injuries/diseases and disabling injuries per million hours worked.

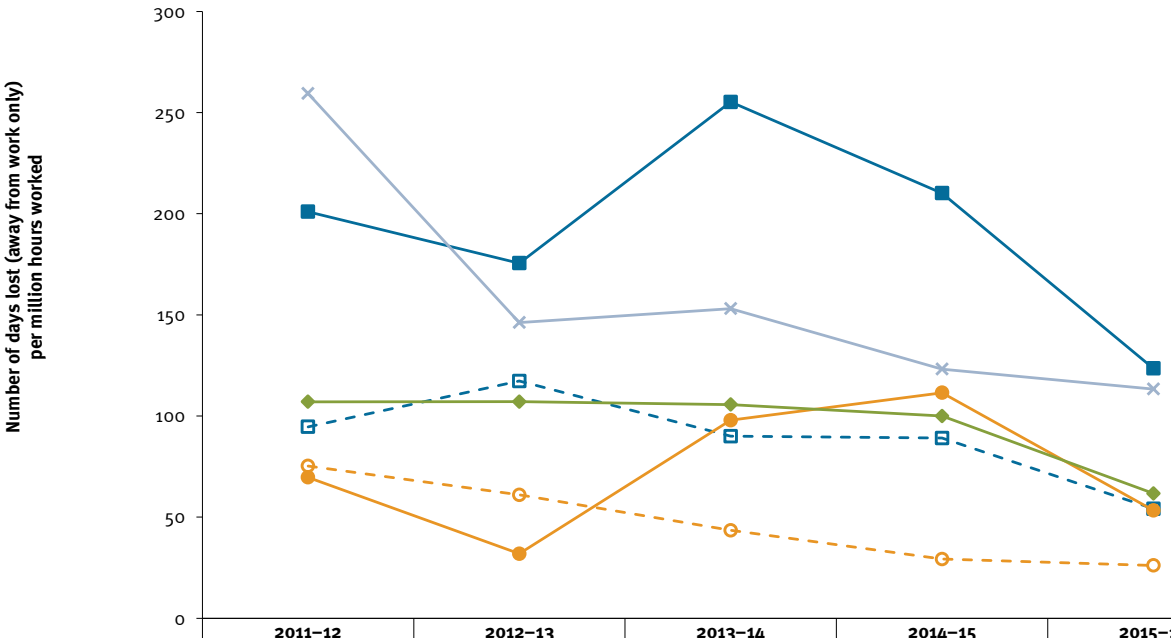
Figure 4.1: Lost time injury frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	3.1	3.3	2.7	2.3	2.1
Coal – underground	7.1	5.9	7.3	6.4	4.8
Metalliferous – surface	3.6	3.2	2.4	3.0	2.5
Metalliferous – underground	3.5	1.3	1.9	2.4	2.0
Quarries	12.7	5.0	6.2	5.2	4.2
All operations	4.0	3.5	3.2	3.1	2.6

Financial year

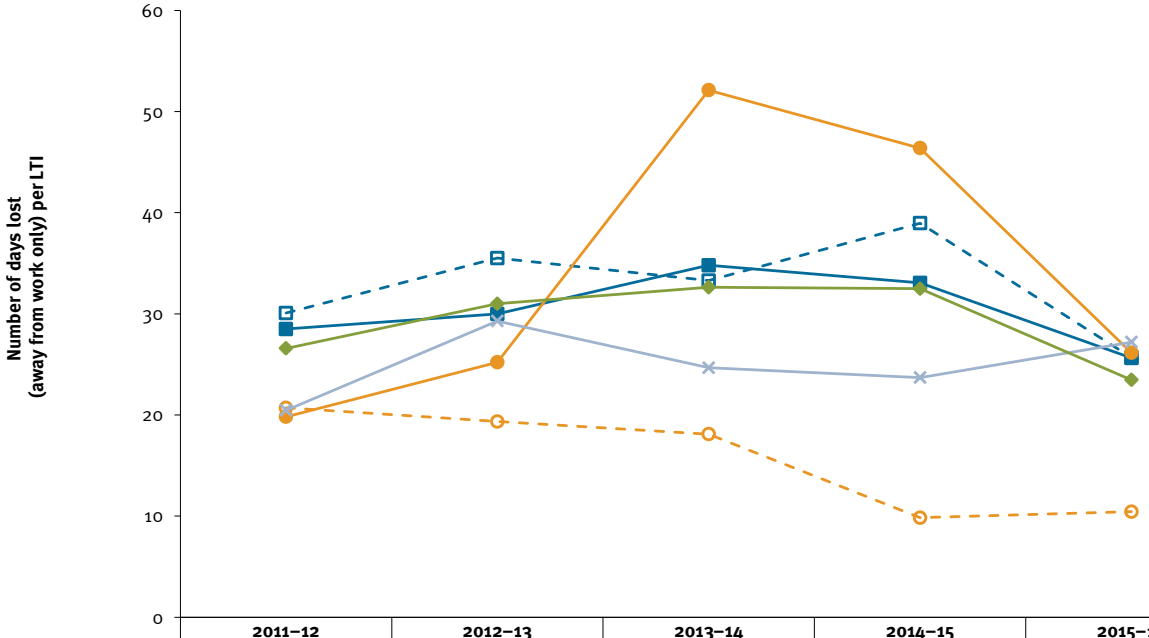
Figure 4.2: Lost time injury severity rate (days away from work only), 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	95	117	90	89	54
Coal – underground	201	176	255	210	124
Metalliferous – surface	75	61	44	29	26
Metalliferous – underground	70	32	98	111	53
Quarries	259	146	153	123	113
All operations	107	107	106	100	62

Financial year

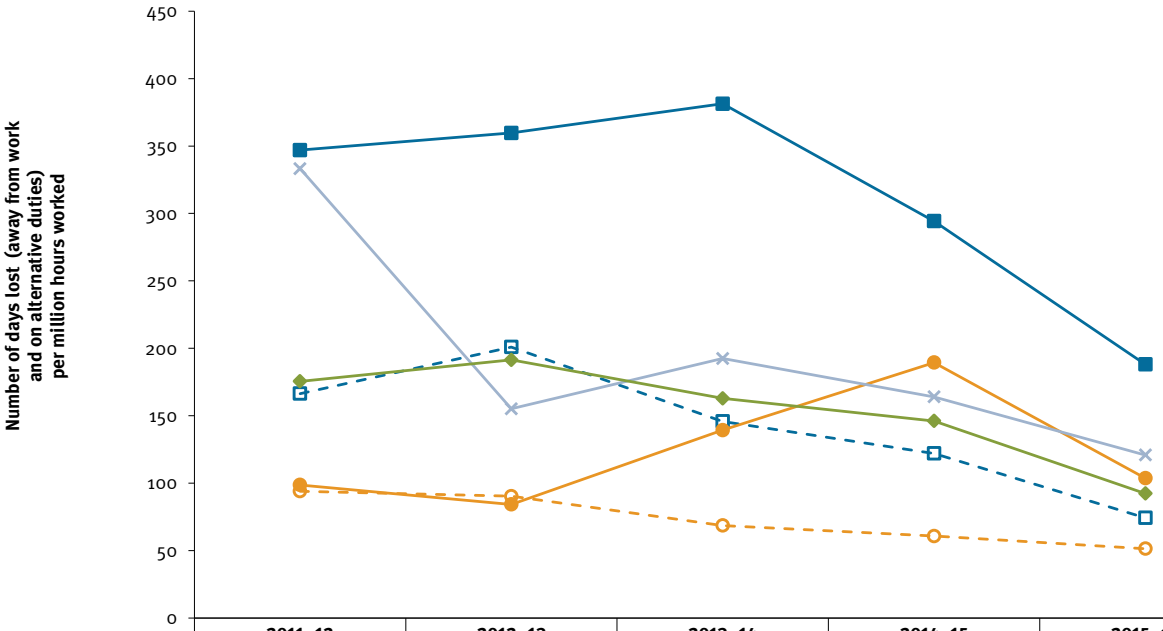
Figure 4.3: Lost time injury duration rate (days away from work only), 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	30.1	35.5	33.3	39.0	25.7
Coal – underground	28.5	30.0	34.8	33.1	25.6
Metalliferous – surface	20.7	19.4	18.1	9.8	10.4
Metalliferous – underground	19.8	25.2	52.1	46.4	26.2
Quarries	20.5	29.3	24.7	23.7	27.2
All operations	26.6	31.0	32.6	32.5	23.5

Financial year

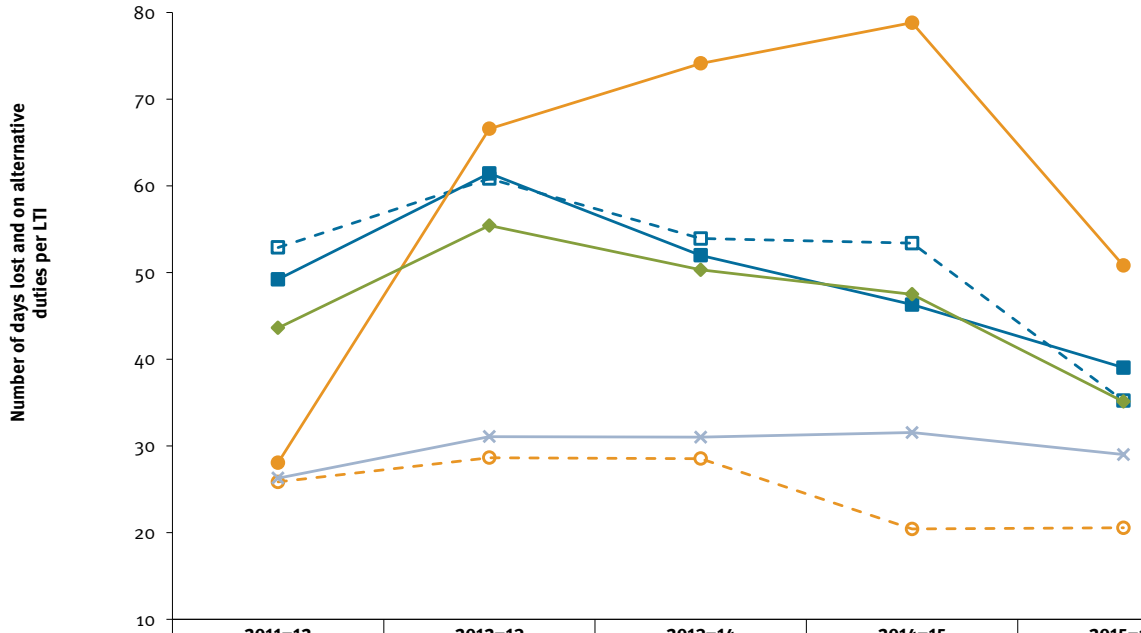
Figure 4.4: Lost time injury severity rate (days away from work and on alternative duties), 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	166	201	146	122	74
Coal – underground	347	360	381	294	188
Metalliferous – surface	94	90	69	61	51
Metalliferous – underground	99	84	139	189	104
Quarries	333	155	192	164	121
All operations	176	191	163	146	92

Financial year

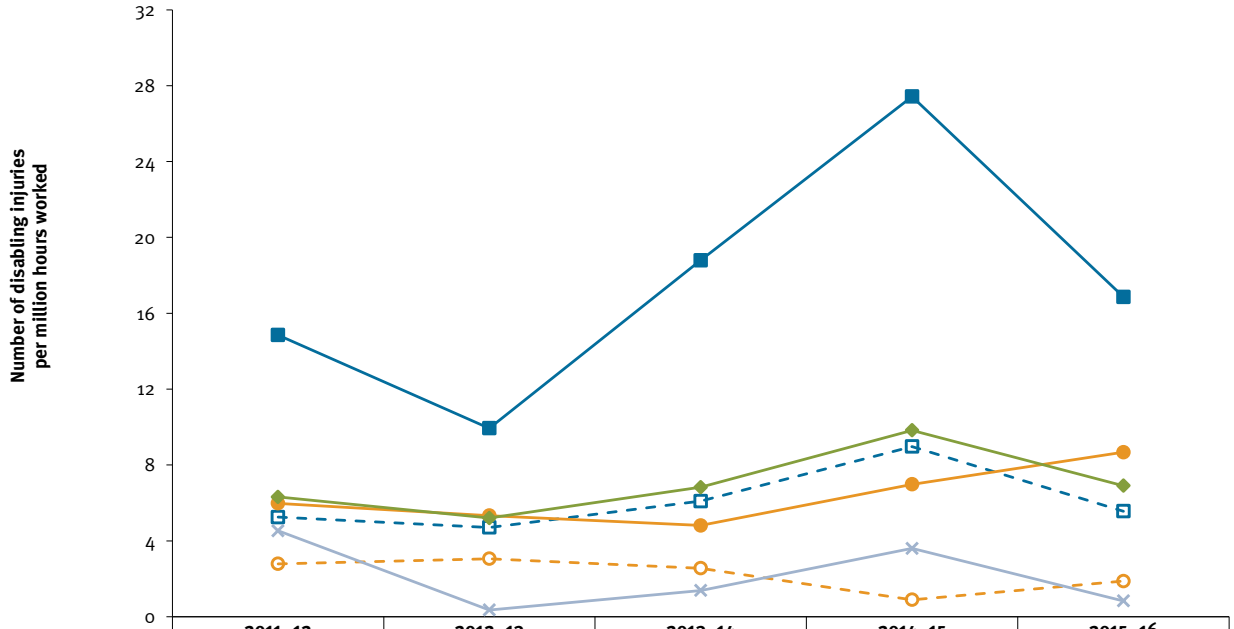
Figure 4.5: Lost time injury duration rate (days away from work and on alternative duties), 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	52.9	60.8	53.9	53.4	35.2
Coal – underground	49.2	61.4	52.0	46.3	39.0
Metalliferous – surface	25.8	28.6	28.5	20.4	20.6
Metalliferous – underground	28.1	66.6	74.1	78.8	50.8
Quarries	26.3	31.1	31.0	31.5	29.0
All operations	43.6	55.4	50.3	47.5	35.1

Financial year

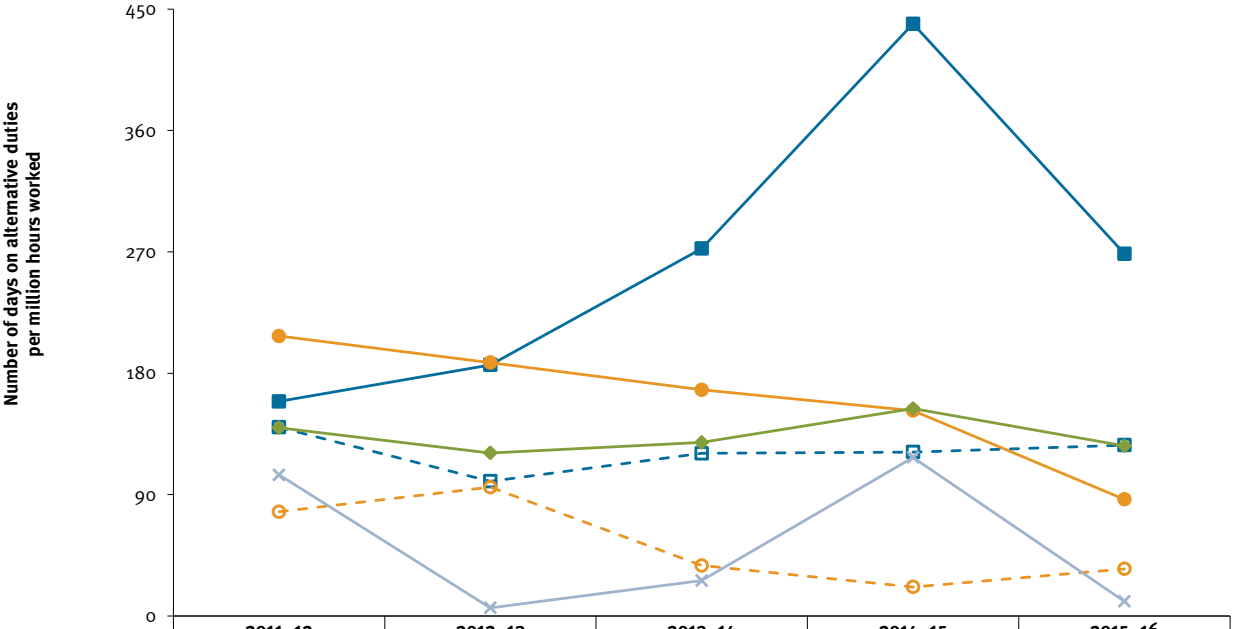
Figure 4.6: Disabling injury frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	5.2	4.7	6.1	9.0	5.6
Coal – underground	14.9	9.9	18.8	27.4	16.9
Metalliferous – surface	2.8	3.1	2.6	0.9	1.9
Metalliferous – underground	6.0	5.3	4.8	7.0	8.7
Quarries	4.5	0.4	1.4	3.6	0.8
All operations	6.3	5.2	6.8	9.8	6.9

Financial year

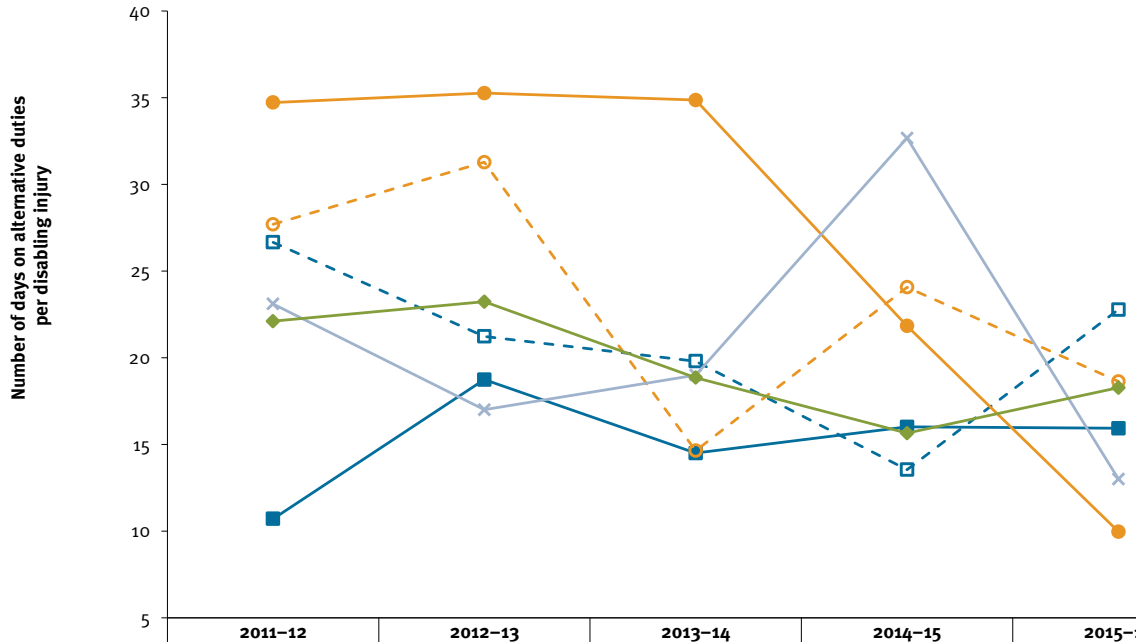
Figure 4.7: Disabling injury severity rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	140	100	121	122	127
Coal – underground	159	186	272	439	269
Metalliferous – surface	77	96	37	21	35
Metalliferous – underground	208	188	168	152	86
Quarries	105	6	26	118	11
All operations	140	121	129	154	126

Financial year

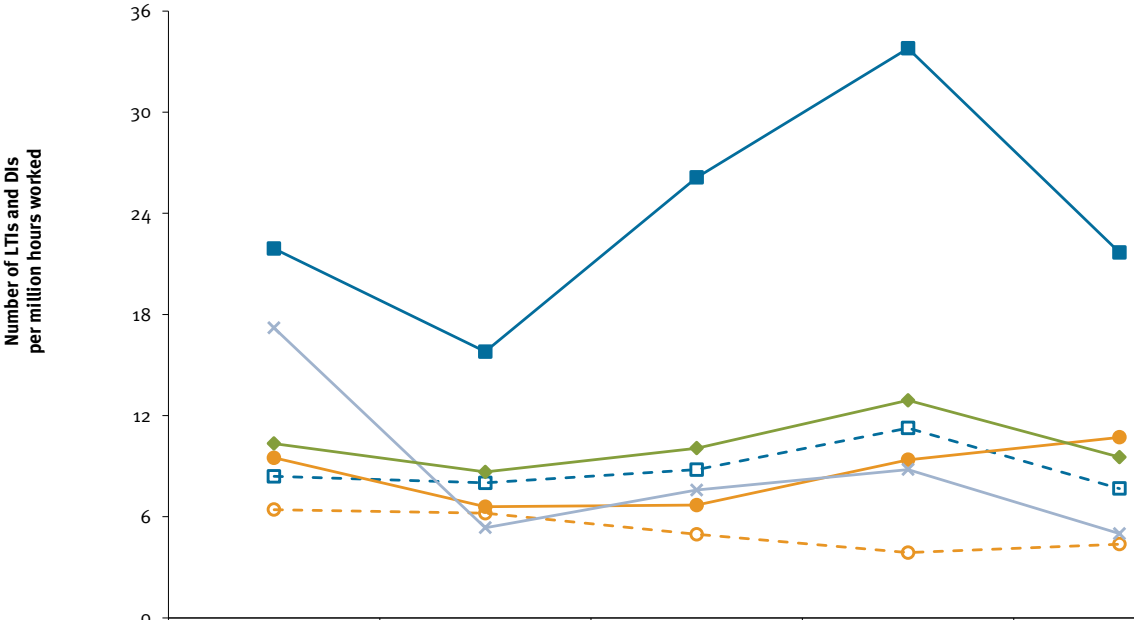
Figure 4.8: Disabling injury duration rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	26.7	21.2	19.8	13.5	22.8
Coal – underground	10.7	18.7	14.5	16.0	15.9
Metalliferous – surface	27.7	31.3	14.6	24.1	18.6
Metalliferous – underground	34.7	35.3	34.9	21.8	10.0
Quarries	23.1	17.0	19.0	32.7	13.0
All operations	22.1	23.2	18.8	15.6	18.3

Financial year

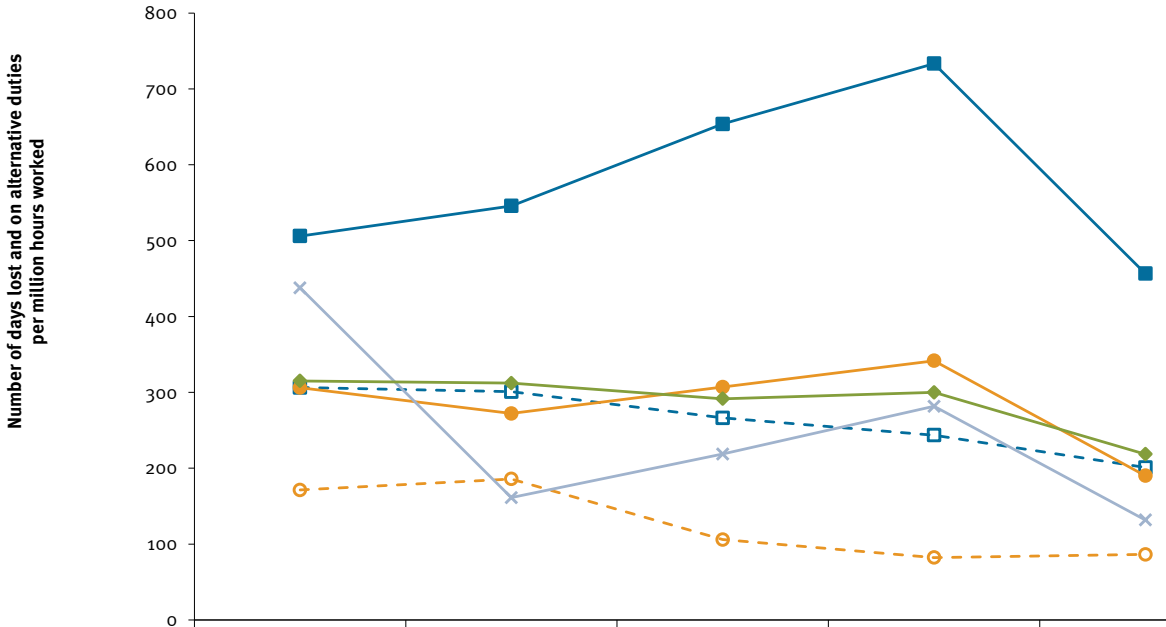
Figure 4.9: Lost time injury and disabling injury frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	8.4	8.0	8.8	11.3	7.7
Coal – underground	21.9	15.8	26.1	33.8	21.7
Metalliferous – surface	6.4	6.2	5.0	3.9	4.4
Metalliferous – underground	9.5	6.6	6.7	9.4	10.7
Quarries	17.2	5.3	7.6	8.8	5.0
All operations	10.3	8.7	10.1	12.9	9.5

Financial year

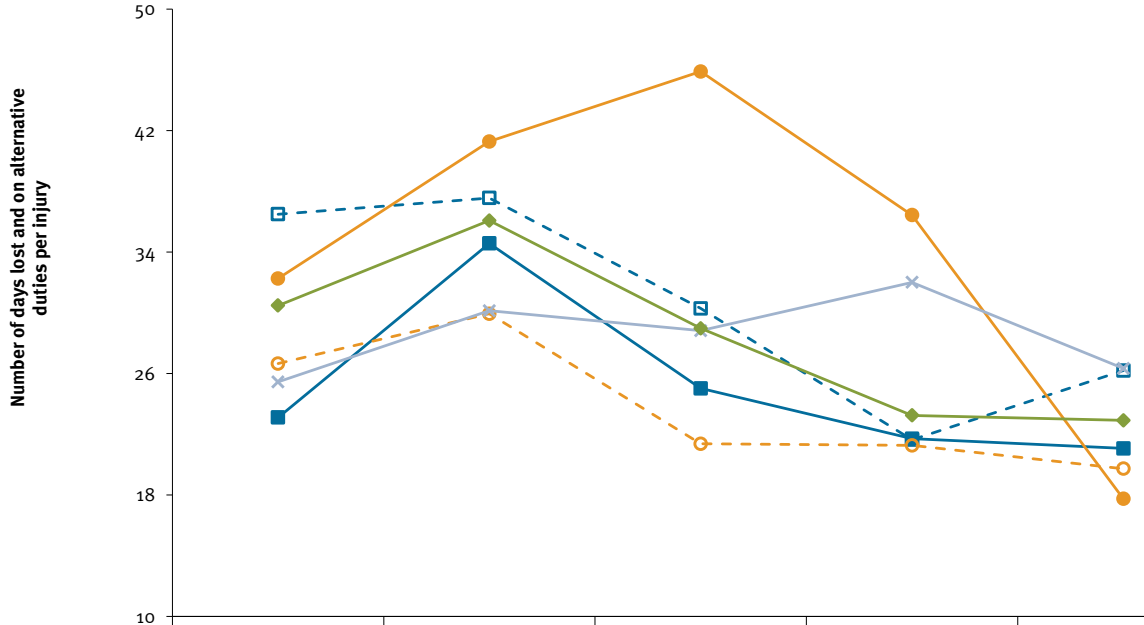
Figure 4.10: Lost time injury and disabling injury severity rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	306	301	266	244	201
Coal – underground	506	546	654	733	457
Metalliferous – surface	171	186	106	82	86
Metalliferous – underground	306	272	307	342	190
Quarries	438	161	219	282	132
All operations	315	312	292	300	218

Financial year

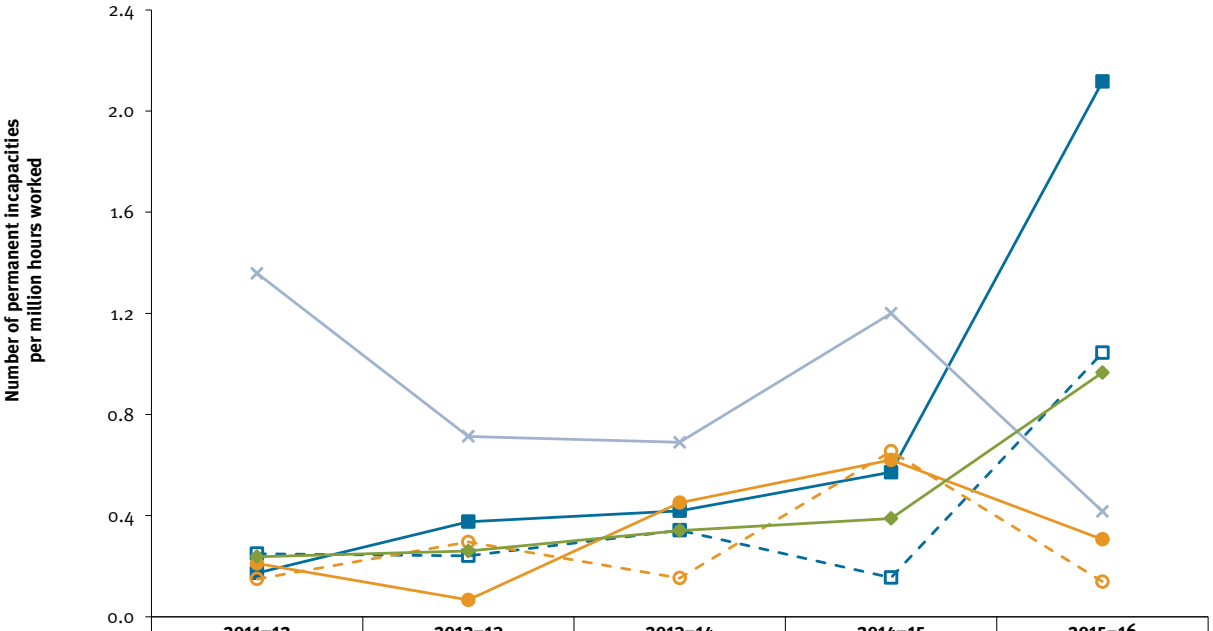
Figure 4.11: Lost time injury and disabling injury duration rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	36.5	37.6	30.3	21.6	26.2
Coal – underground	23.1	34.6	25.0	21.7	21.1
Metalliferous – surface	26.7	29.9	21.4	21.3	19.7
Metalliferous – underground	32.3	41.3	45.9	36.4	17.7
Quarries	25.4	30.1	28.8	32.0	26.3
All operations	30.5	36.1	29.0	23.2	22.9

Financial year

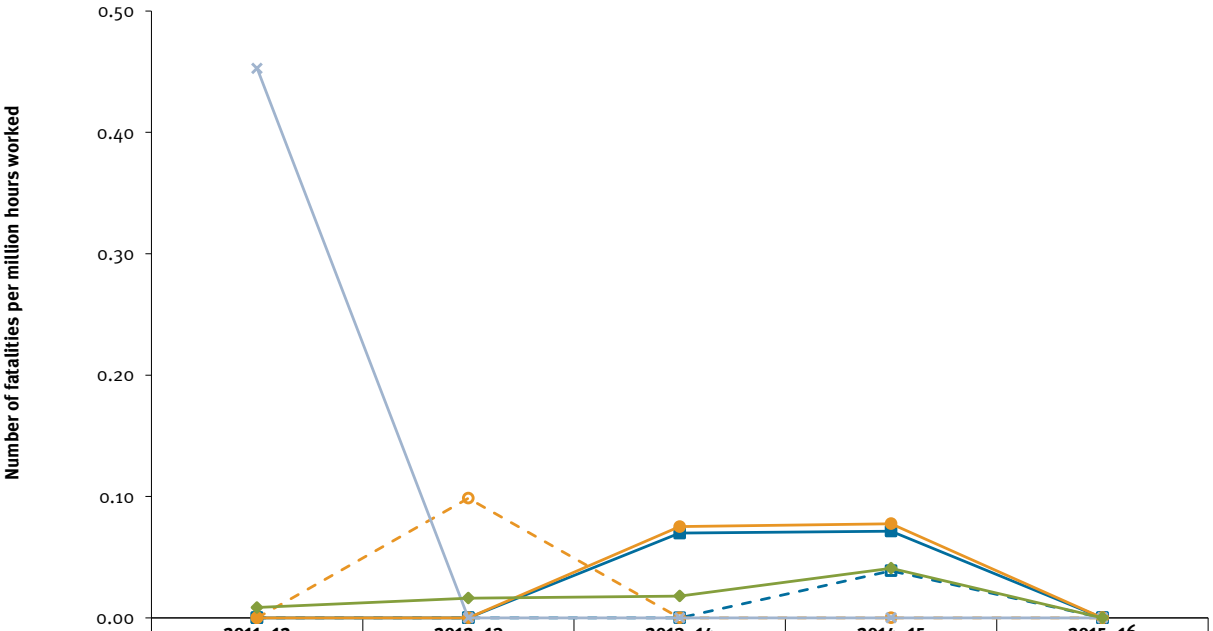
Figure 4.12: Permanent incapacity frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	0.25	0.24	0.34	0.16	1.04
Coal – underground	0.17	0.38	0.42	0.57	2.12
Metalliferous – surface	0.15	0.30	0.15	0.65	0.14
Metalliferous – underground	0.21	0.07	0.45	0.62	0.31
Quarries	1.36	0.71	0.69	1.20	0.42
All operations	0.24	0.26	0.34	0.39	0.97

Financial year

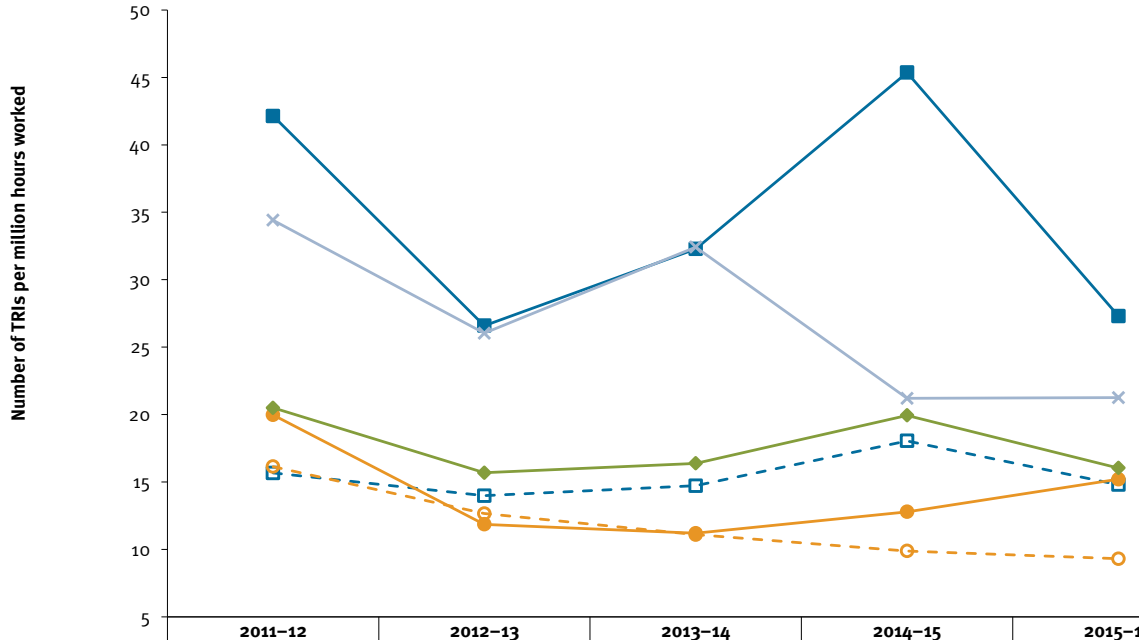
Figure 4.13: Fatality frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	0.00	0.00	0.00	0.04	0.00
Coal – underground	0.00	0.00	0.07	0.07	0.00
Metalliferous – surface	0.00	0.10	0.00	0.00	0.00
Metalliferous – underground	0.00	0.00	0.08	0.08	0.00
Quarries	0.45	0.00	0.00	0.00	0.00
All operations	0.01	0.02	0.02	0.04	0.00

Financial year

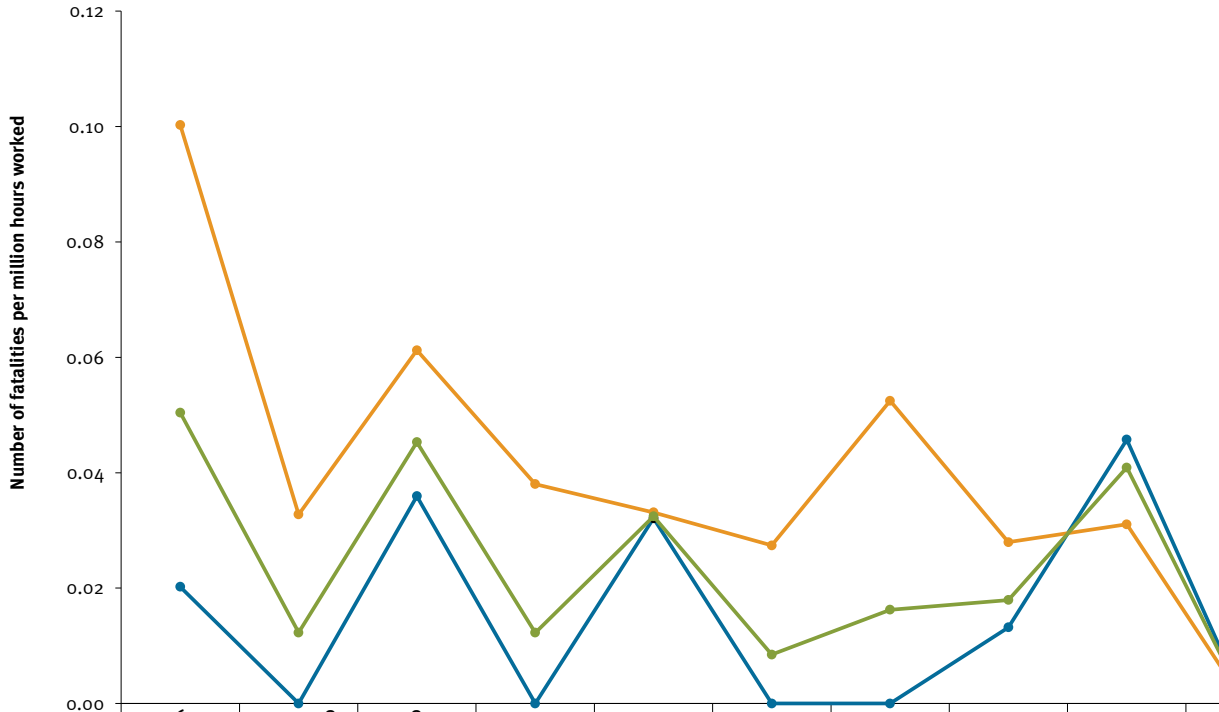
Figure 4.14: Total recordable injury frequency rate, 2011–16



	2011–12	2012–13	2013–14	2014–15	2015–16
Coal – surface	15.7	14.0	14.7	18.0	14.8
Coal – underground	42.1	26.6	32.3	45.4	27.3
Metalliferous – surface	16.1	12.7	11.1	9.9	9.3
Metalliferous – underground	20.0	11.9	11.2	12.8	15.2
Quarries	34.4	26.0	32.4	21.2	21.3
All operations	20.5	15.7	16.4	19.9	16.0

Financial year

Figure 4.15: Fatality frequency rate by sector, 2006–16



	2006–07	2007–08	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15	2015–16
Coal	0.02	0.00	0.04	0.00	0.03	0.00	0.00	0.01	0.05	0.00
Metal & Quarry	0.10	0.03	0.06	0.04	0.03	0.03	0.05	0.03	0.03	0.00
All Operations	0.05	0.01	0.05	0.01	0.03	0.01	0.02	0.02	0.04	0.00

Financial year

Bromelton Quarry, 2016
Photo: DNRM

5 OCCURRENCE DATA

Injury occurrence data

Plant at a south-east Queensland quarry, 2016
Photo: DNRM

5. Injury occurrence data

There were 237 LTIs during 2015–16 and these have been classified and illustrated in the following figures:

- Figure 5.1: Body parts injured, 2013–16
- Figure 5.2: Nature of injury, 2013–16
- Figure 5.3: Mechanism of injury, 2013–16
- Figure 5.4: Breakdown agency–equipment, 2013–16
- Figure 5.5: Occurrence class of injuries–activity, 2013–16.

Significant results from this classification are summarised below:

- hand and back injuries account for 35 per cent of injuries (Figure 5.1)
- disorder of muscles/tendons/other soft tissue account for almost 22 per cent of injuries (Figure 5.2)
- fall/slip/trip on the same level accounts for almost 13 per cent of injuries (Figure 5.3)
- earthmoving equipment was involved in almost 15 per cent of injuries (Figure 5.4)
- manual handling of equipment/material accounts for almost 44 per cent of injuries (Figure 5.5).

5.1 Age analysis of injury occurrence data

The breakdown of age across the coal mining sector, based on data collected for the Coal Mine Workers' Health Scheme (CMWHS), is shown in Figure 5.6. Note the average age for 2001–16 was 39 years old. The average days lost of lost time injuries by age group from 2011 to 2016 are shown in Figures 5.7 and 5.8.

Table 5.1 provides a breakdown of LTIs for 2007–16 by age group according to:

- nature of injury
- mechanism of injury
- occurrence class of injury.

The analysis gives an indication of which age group had the highest proportion of a single type of LTI.

Figure 5.1: Body parts injured (all sectors), 2013–16

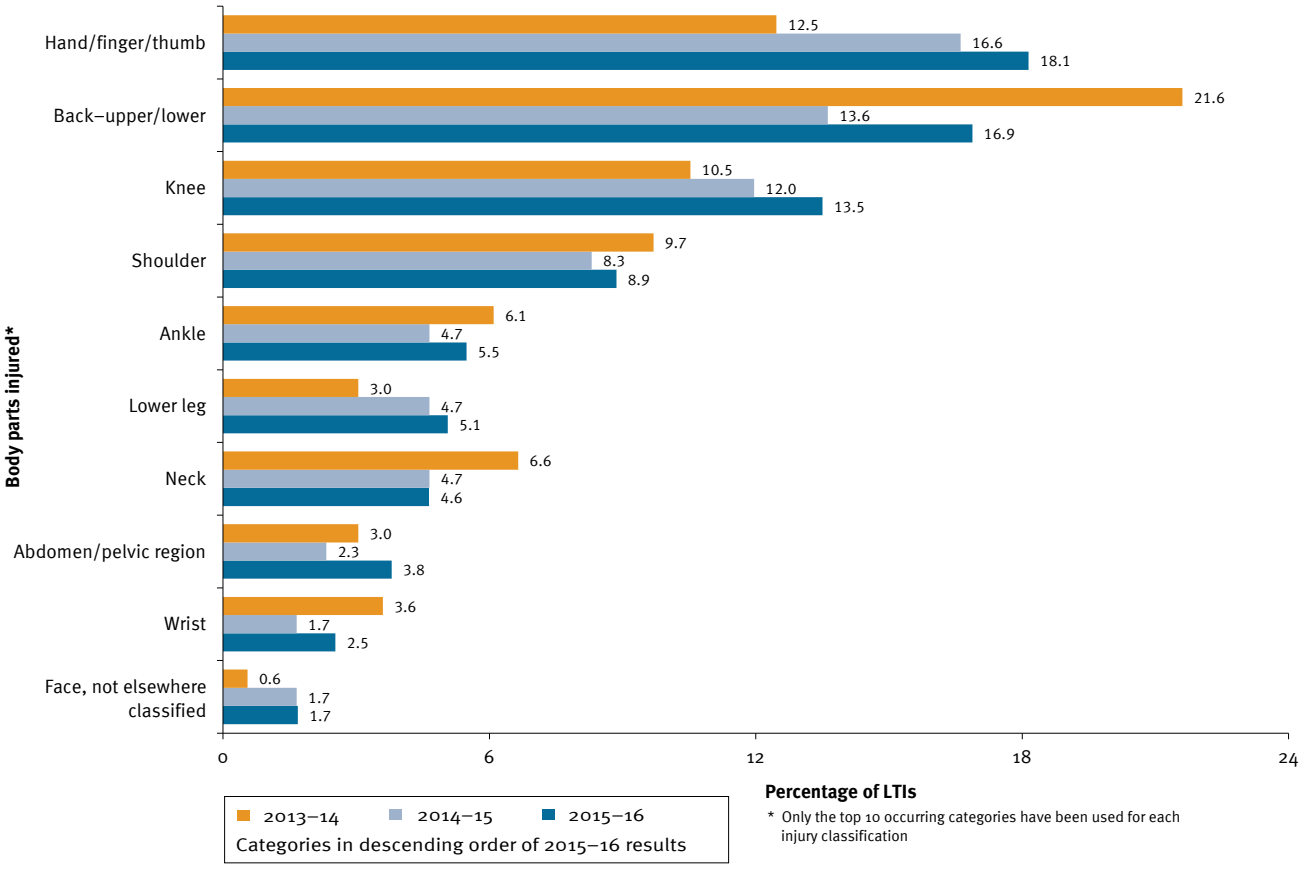


Figure 5.2: Nature of injury (all sectors), 2013–16

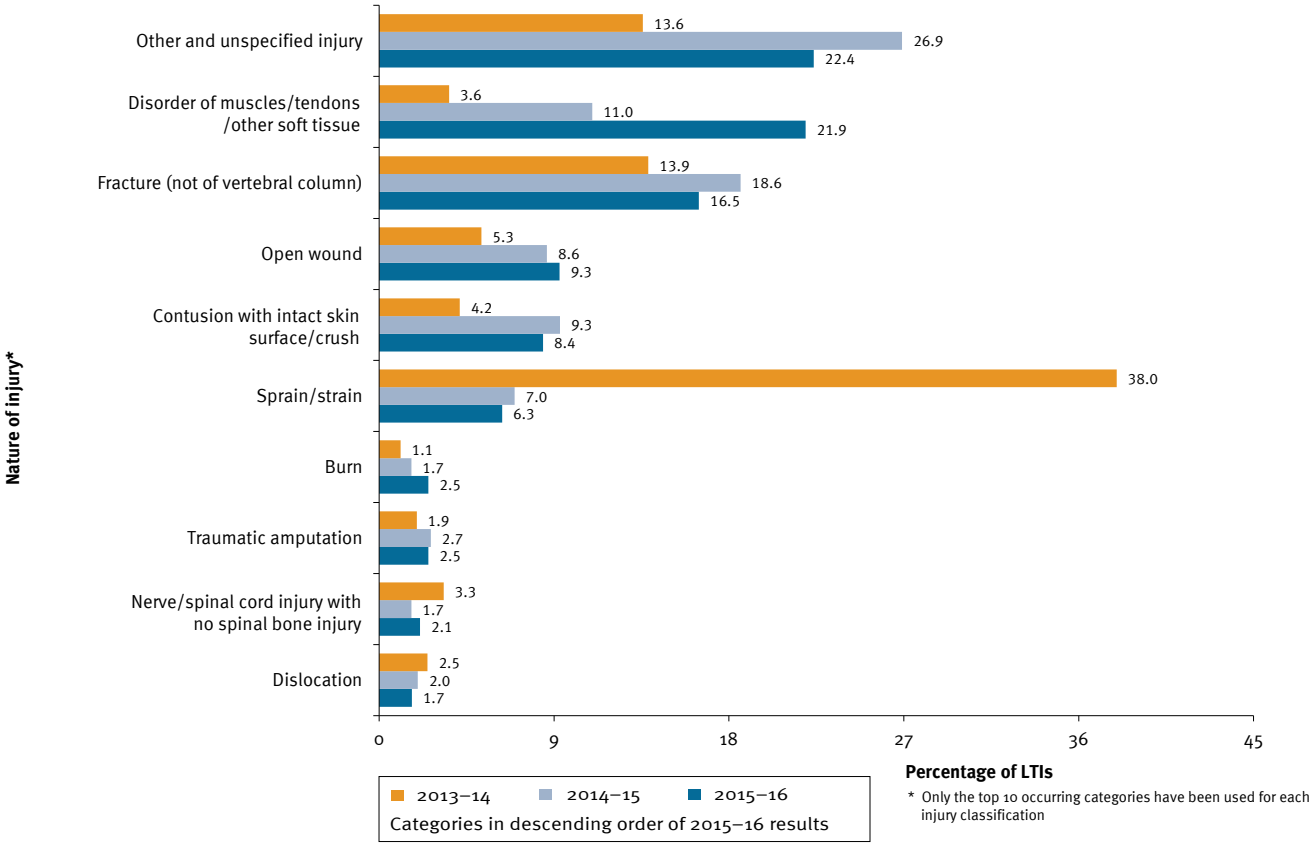


Figure 5.3: Mechanism of injury (all sectors), 2013–16

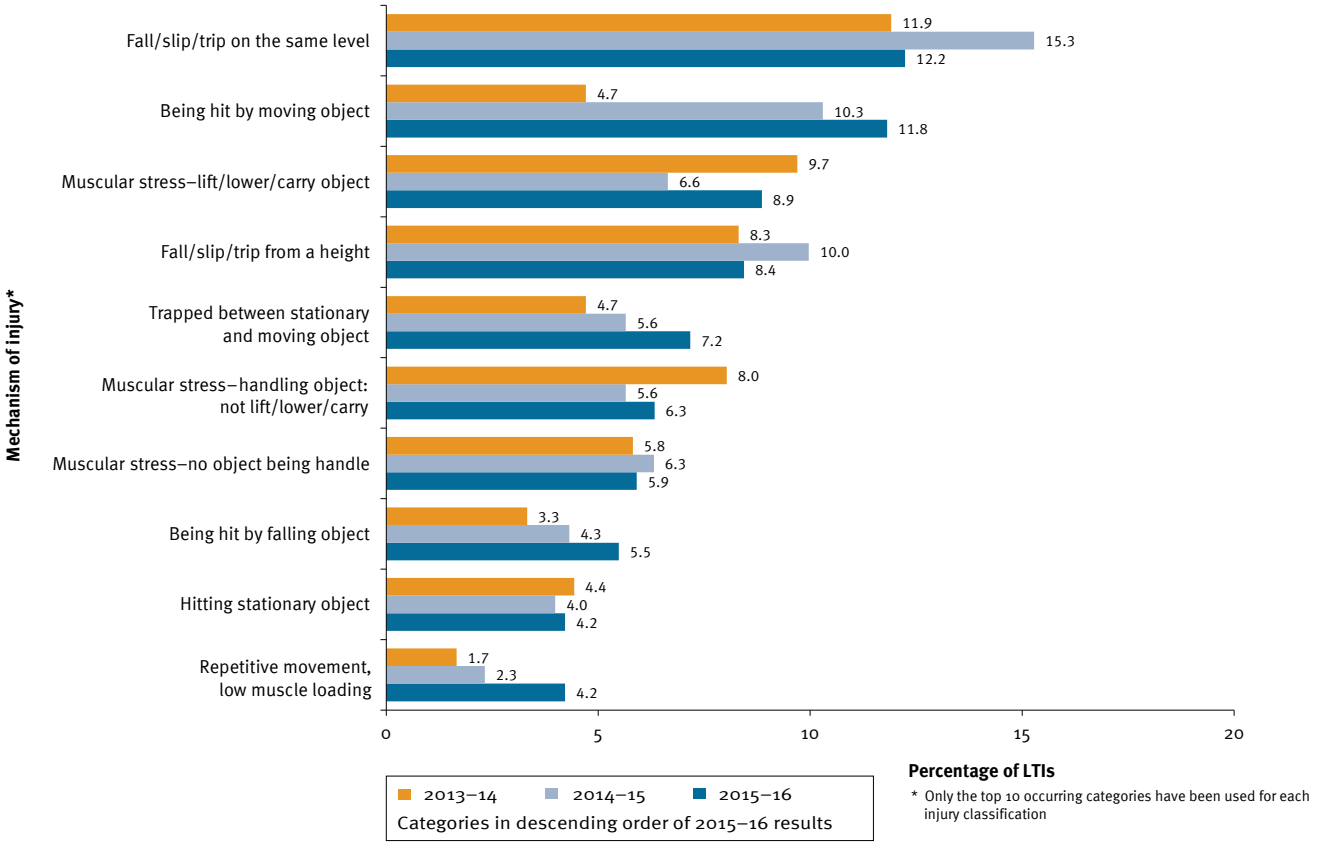


Figure 5.4: Breakdown agency – equipment (all sectors), 2013–16

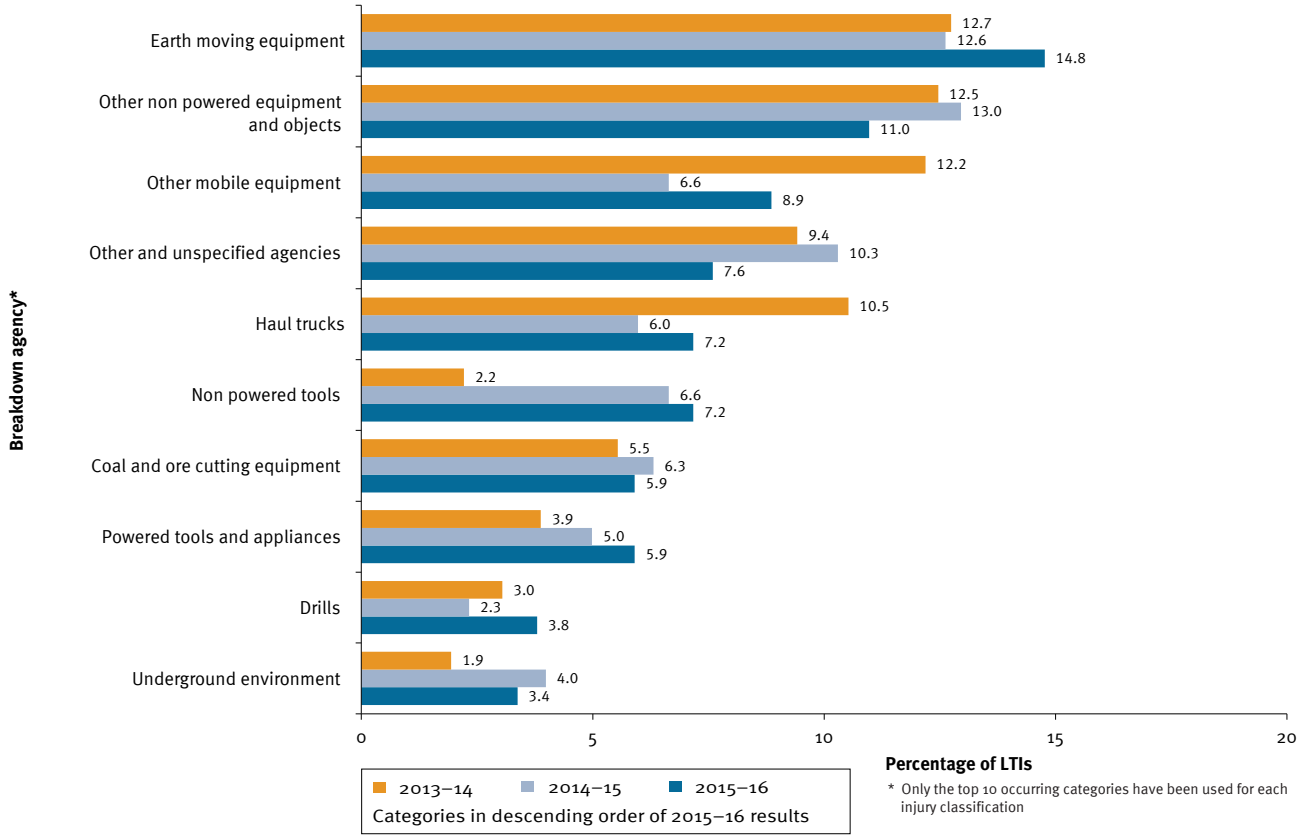


Figure 5.5: Occurrence class of injuries – activity (all sectors), 2013–16

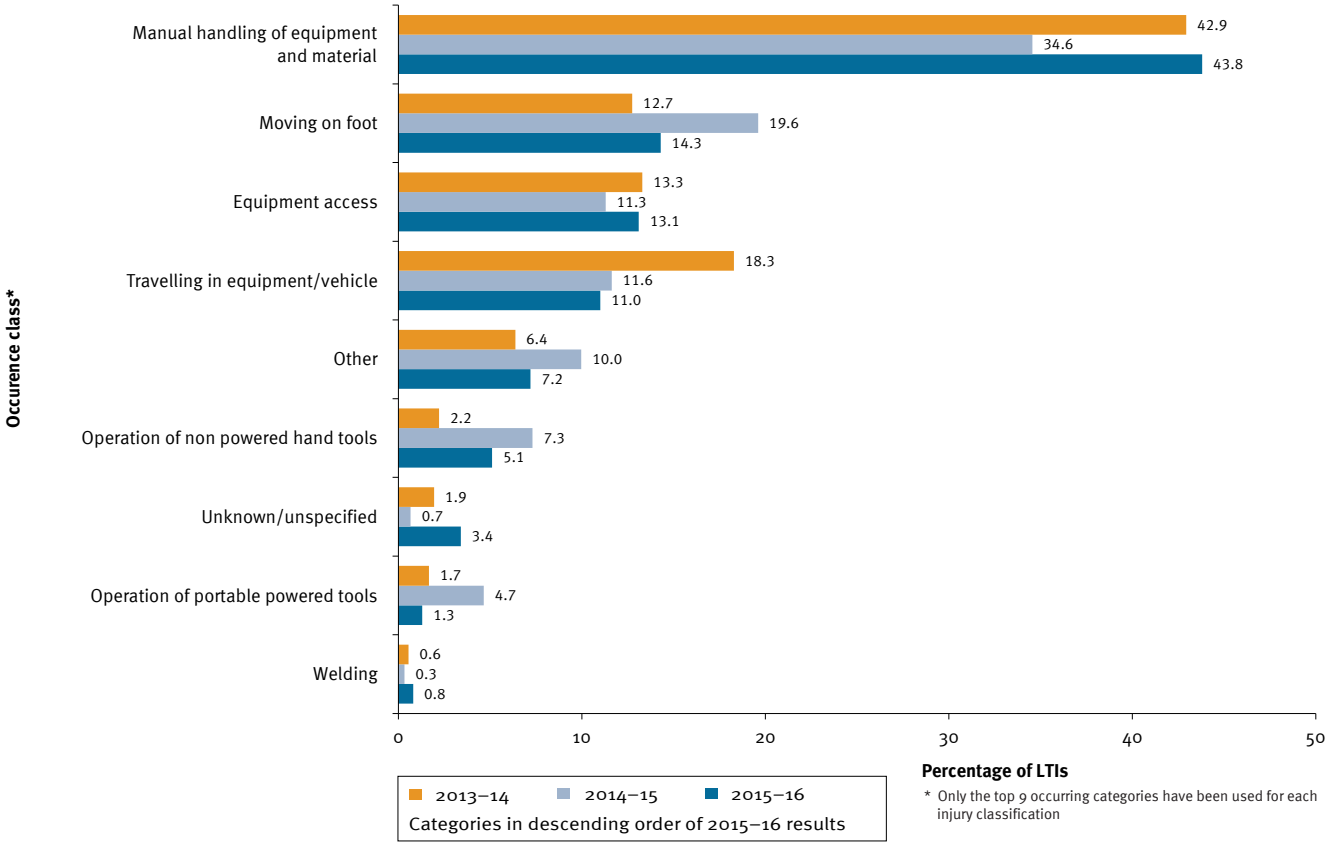
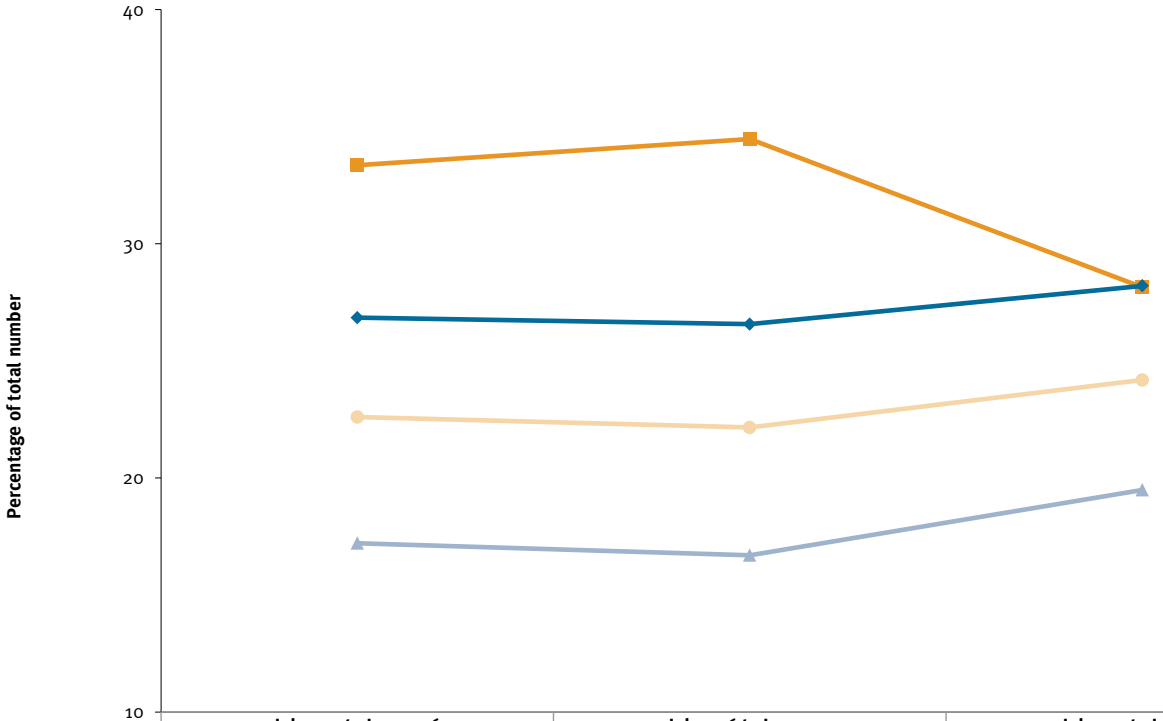


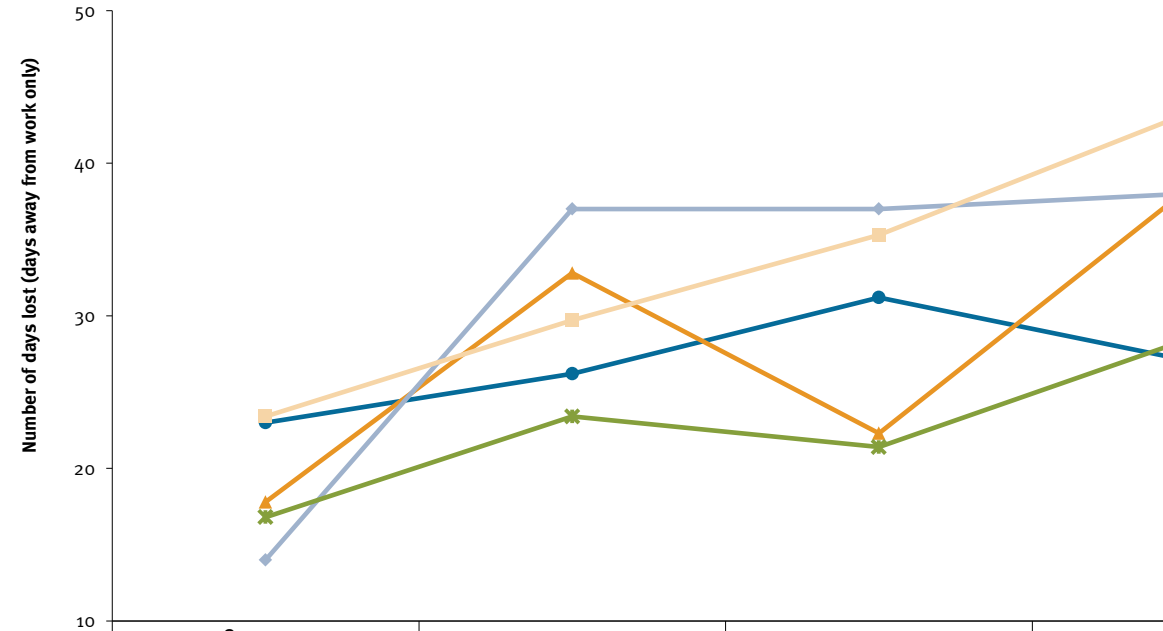
Figure 5.6: Age distribution (coal mines), 2001–16



	Jul 2001 to Jun 2006	Jul 2006 to Jun 2011	Jul 2011 to Jun 2016
18–29 years old	33.4	34.5	28.1
30–39 years old	26.8	26.6	28.2
40–49 years old	22.6	22.2	24.2
50+ years old	17.2	16.7	19.5

Age group

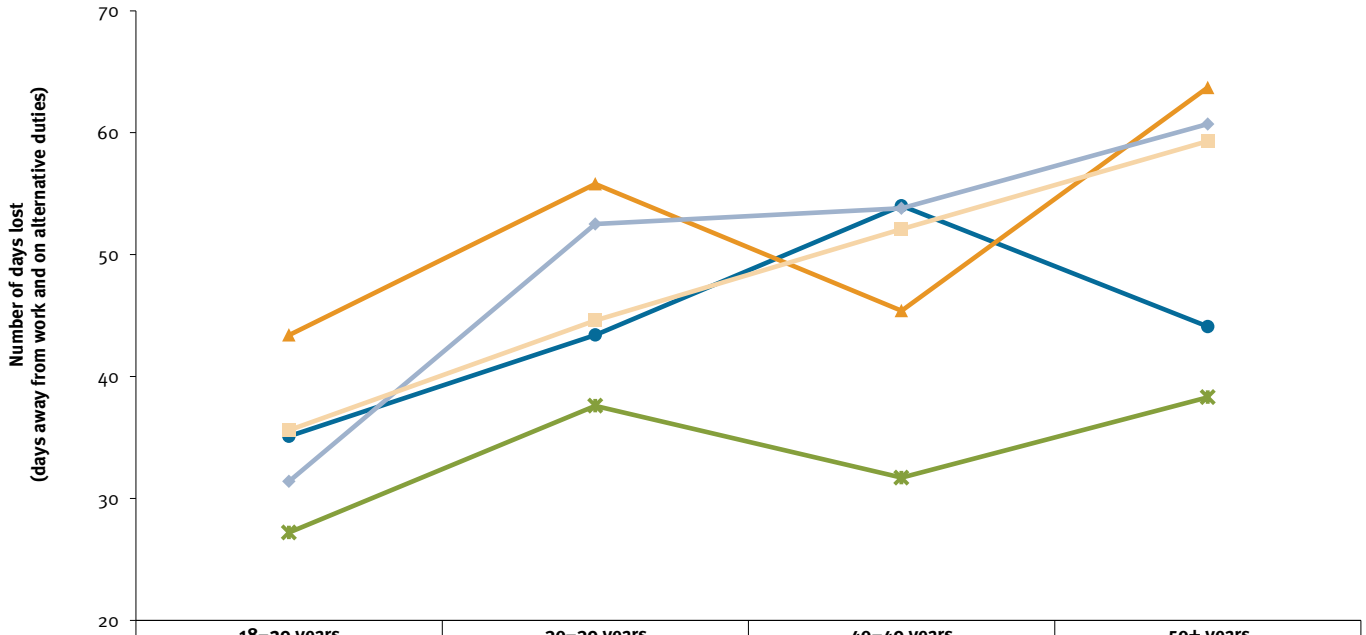
Figure 5.7: Average days lost (days away from work only) of lost time injuries per age group (all sectors), 2011–16



	18–29 years	30–39 years	40–49 years	50+ years
2011–12	23.0	26.2	31.2	27.1
2012–13	17.8	32.8	22.3	38.2
2013–14	14.0	37.0	37.0	38.0
2014–15	23.4	29.7	35.3	43.2
2015–16	16.8	23.4	21.4	28.4

Age group

Figure 5.8: Average days lost (days away from work and on alternative duties) of lost time injuries per age group (all sectors), 2011–16



	18–29 years	30–39 years	40–49 years	50+ years
2011–12	35.1	43.4	54.0	44.1
2012–13	43.4	55.8	45.4	63.7
2013–14	31.4	52.5	53.8	60.7
2014–15	35.6	44.6	52.1	59.3
2015–16	27.2	37.6	31.7	38.3

Age group

Table 5.1: Lost time injury occurrence per age group (all sectors), 2007–16

		18–29 yrs old 23.2% of all LTIs		30–39 yrs old 29.1% of all LTIs		40–49 yrs old 25.2% of all LTIs		50+ yrs old 22.5% of all LTIs	
		% in age group	% of all LTIs	% in age group	% of all LTIs	% in age group	% of all LTIs	% in age group	% of all LTIs
Nature of Injury *	Sprain/strain	31.1	7.2	39.4	11.5	38.6	9.7	41.2	9.3
	Fracture (not of vertebral column)	15.8	3.7	13.6	3.9	15.1	3.8	11.4	2.6
	Other and unspecified injury	9.8	2.3	11.8	3.4	10.7	2.7	13.2	3.0
	Open wound	10.2	2.4	5.4	1.6	5.9	1.5	6.3	1.4
	Contusion with intact skin surface/crush	7.0	1.6	7.0	2.0	6.5	1.6	6.3	1.4
	Disorder of muscles/tendons/other soft tissue	2.1	0.5	4.2	1.2	6.4	1.6	6.2	1.4
	Burn	4.2	1.0	2.7	0.8	1.5	0.4	1.6	0.4
	Traumatic amputation	3.9	0.9	0.7	0.2	1.8	0.5	1.7	0.4
	Foreign body (not superficial skin injury)	2.4	0.5	3.2	0.9	1.8	0.5	0.6	0.1
	Dislocation	3.1	0.7	1.2	0.4	1.8	0.5	0.7	0.2
Mechanism of Injury *	Fall/slip/trip on the same level	11.5	2.7	11.0	3.2	14.0	3.5	14.5	3.3
	Muscular stress – lift/lower/carry object	7.8	1.8	11.0	3.2	9.1	2.3	10.9	2.5
	Fall/slip/trip from a height	6.1	1.4	7.4	2.2	9.8	2.5	12.2	2.7
	Being hit by moving object	10.9	2.5	7.2	2.1	7.4	1.9	6.5	1.5
	Muscular stress – no object being handled	6.7	1.6	7.8	2.3	8.5	2.1	7.2	1.6
	Muscular stress – handling object not lift/lower/carry	4.7	1.1	5.7	1.6	6.4	1.6	7.3	1.6
	Being hit by falling object	7.1	1.6	6.3	1.8	4.7	1.2	4.5	1.0
	Motion of moving vehicle	4.5	1.0	5.6	1.6	5.6	1.4	6.0	1.4
	Trapped between stationary and moving object	7.8	1.8	5.1	1.5	4.1	1.0	3.9	0.9
	Unspecified mechanisms of injury	2.5	0.6	5.1	1.5	4.6	1.2	4.5	1.0
Occurrence class of injury *	Working on equipment	25.6	5.9	19.7	5.7	14.9	3.8	15.5	3.5
	Moving on foot	14.9	3.5	13.9	4.0	16.4	4.1	16.8	3.8
	Travelling in equipment/vehicle	10.8	2.5	13.7	4.0	15.1	3.8	14.1	3.2
	Other manual handling	11.5	2.7	12.1	3.5	14.5	3.7	13.6	3.1
	Other	7.8	1.8	10.0	2.9	7.7	1.9	7.2	1.6
	Other equipment access e.g. moving about	3.1	0.7	4.2	1.2	5.5	1.4	4.9	1.1
	Operation of non powered hand tools	6.0	1.4	3.6	1.0	3.6	0.9	2.9	0.6
	Loading/unloading from vehicles	3.2	0.7	3.7	1.1	4.1	1.0	3.9	0.9
	Descending – ground/floor involved	2.9	0.7	3.2	0.9	4.0	1.0	3.3	0.7
	Transporting manually i.e. carrying, dragging	3.2	0.7	3.7	1.1	2.8	0.7	3.7	0.8

* Only the top 10 occurring categories have been used for each injury classification

6 INDICATORS

Lead performance indicators

Prep/wash plant, Meandu Mine
Photo: DNRM

6. Lead performance indicators

Lead indicators or positive performance indicators (PPIs) are measures of pre-emptive actions or initiatives that assist in preventing workplace injury and disease. This is considered a more proactive approach than the use of lag indicators, such as lost time injuries which, by their nature, measure the event or its impact after it has occurred.

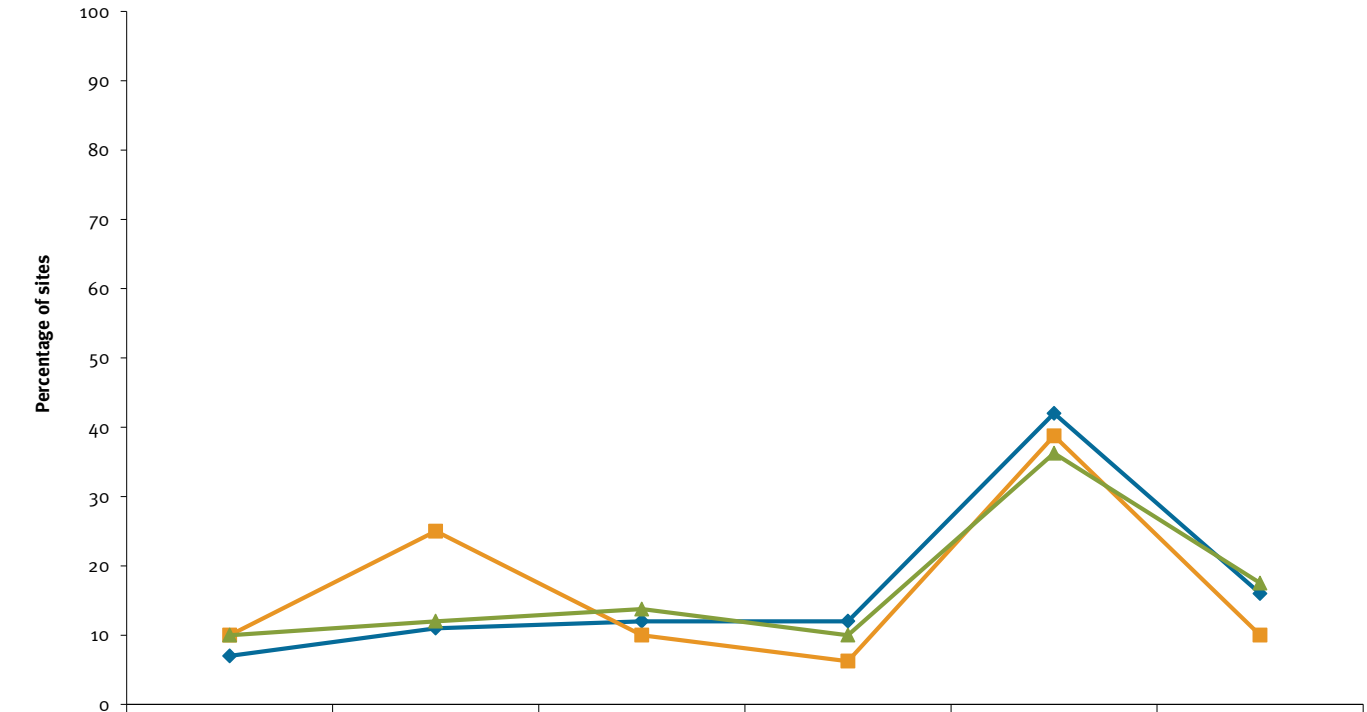
Questions in relation to PPIs have been included in the Queensland Mining and Quarrying Industry Census since 2007–08. The questions cover areas of risk management, audits, reviews and HPIs; and are designed to collect data on safety and health issues concerning both employees and contractors.

The data are presented in the graphs listed below:

- Figures 6.1–6.3: Annual formal risk assessment carried out by sector, 2013–16
- Figures 6.4–6.6: Annual audits (internal and external) by sector, 2013–16
- Figure 6.7: Improvement actions resulting from investigations into high potential incidents by sector, 2013–16
- Figure 6.8: High potential incident rates by sector (number of HPIs per 1000 workers), 2013–16.

Mines Inspector, Deon Esterhuizen on site, 2016
Photo: DNRM

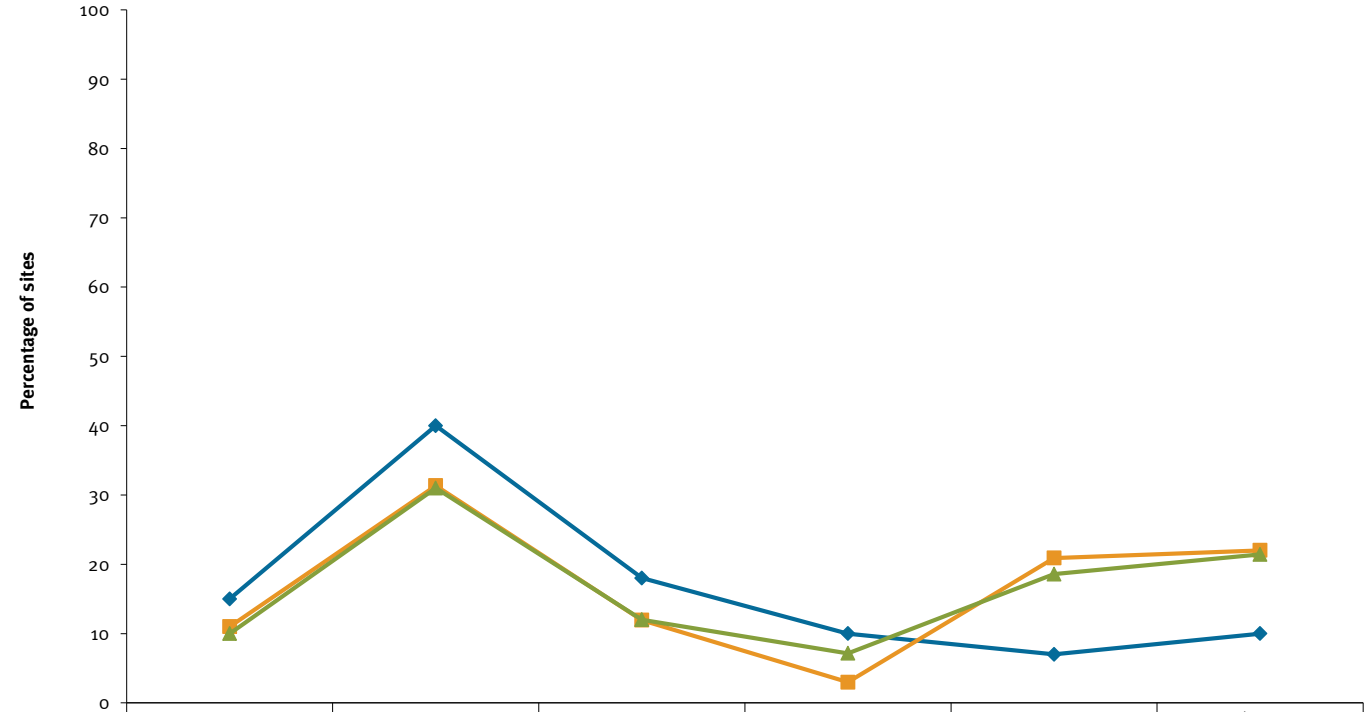
Figure 6.1: Annual formal risk assessment carried out (coal mines), 2013–16



	0	1–10	11–20	21–30	31–100	>100
2015–16	7	11	12	12	42	16
2014–15	10	25	10	6	39	10
2013–14	10	12	14	10	36	18

Number of risk assessments

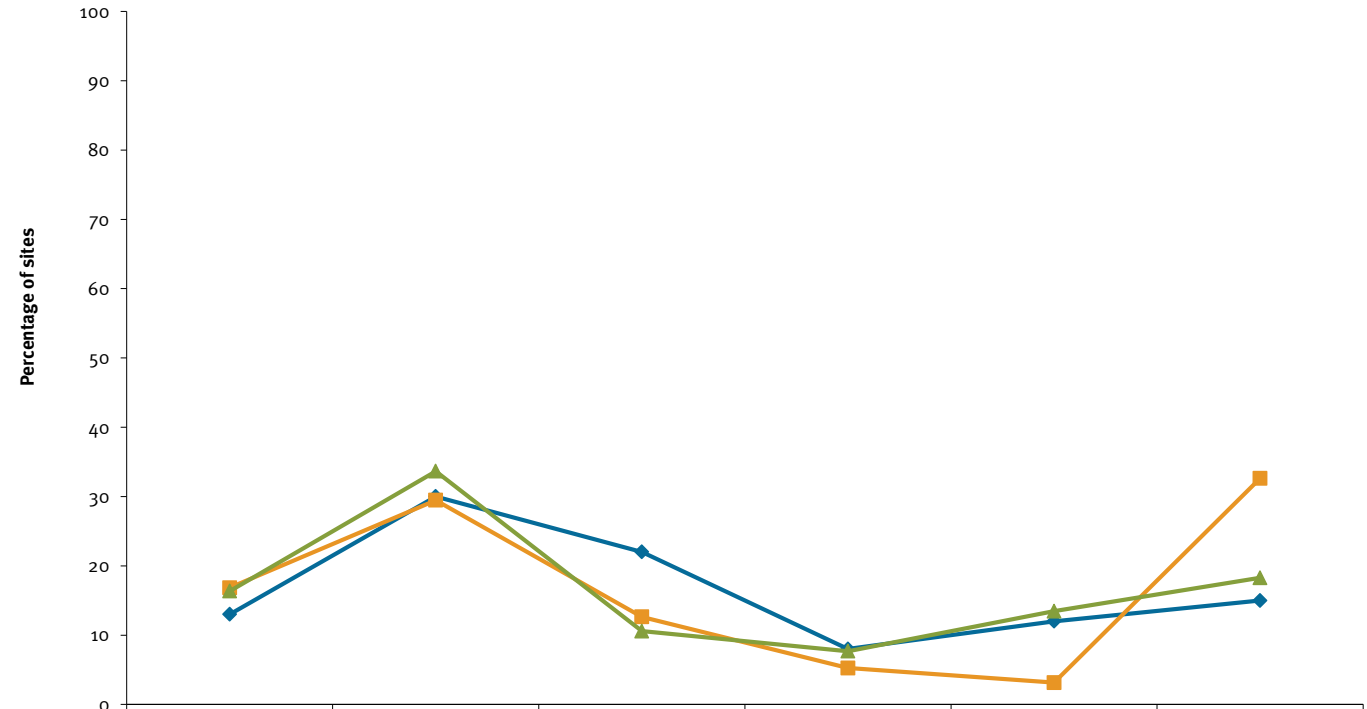
Figure 6.2: Annual formal risk assessments carried out (metalliferous mines), 2013–16



	0	1–10	11–20	21–30	31–100	>100
2015–16	15	40	18	10	7	10
2014–15	11	31	12	3	21	22
2013–14	10	31	12	7	19	21

Number of risk assessments

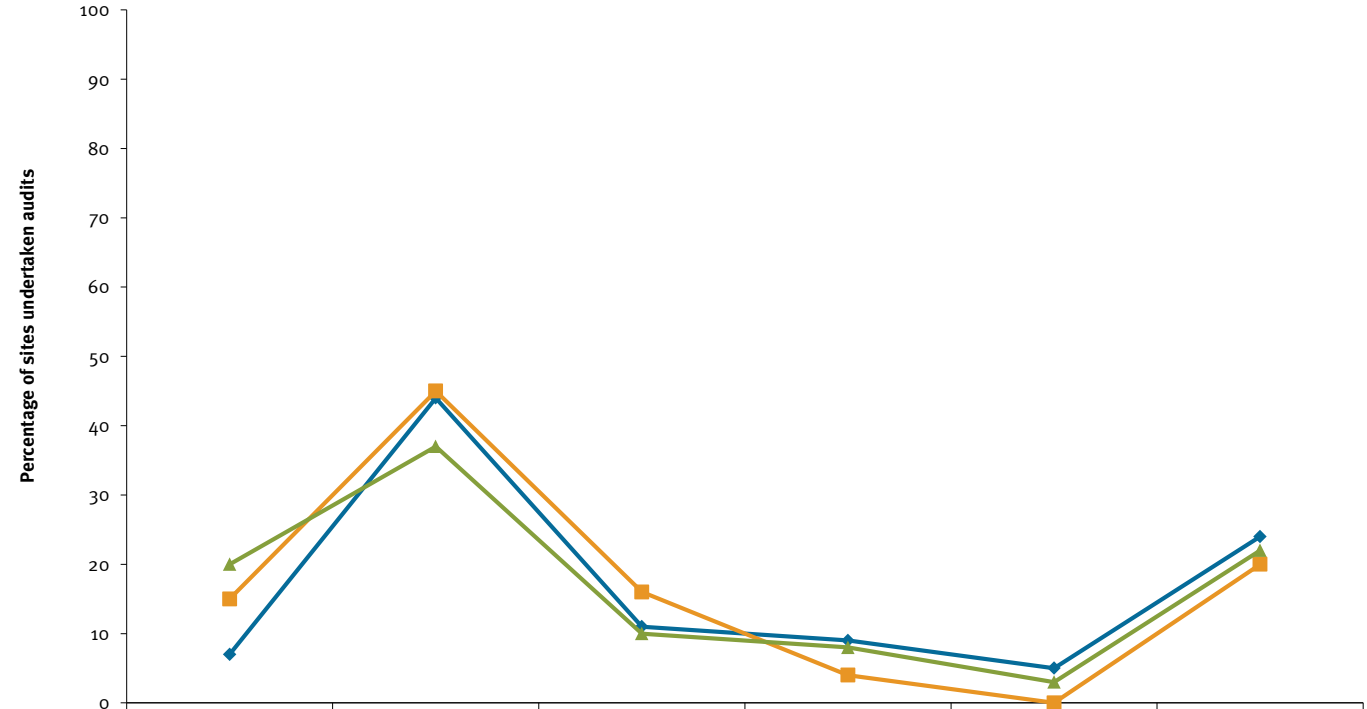
Figure 6.3: Annual formal risk assessments carried out (quarries), 2013–16



	0	1–10	11–20	21–30	31–100	>100
2015–16	13	30	22	8	12	15
2014–15	17	29	13	5	3	33
2013–14	16	34	11	8	13	18

Number of risk assessments

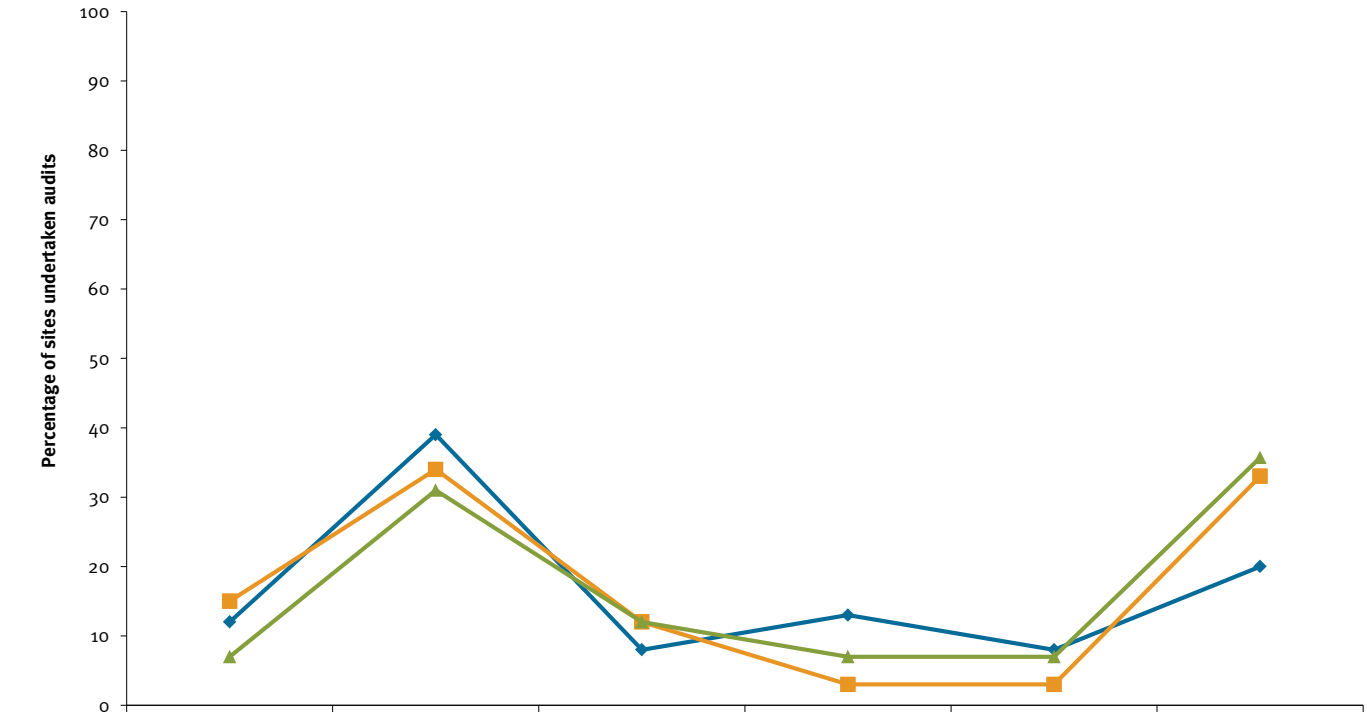
Figure 6.4: Annual audits (internal and external) (coal mines), 2013–16



	0	1–5	6–10	11–15	16–20	>20
2015–16	7	44	11	9	5	24
2014–15	15	45	16	4	0	20
2013–14	20	37	10	8	3	22

Number of audits

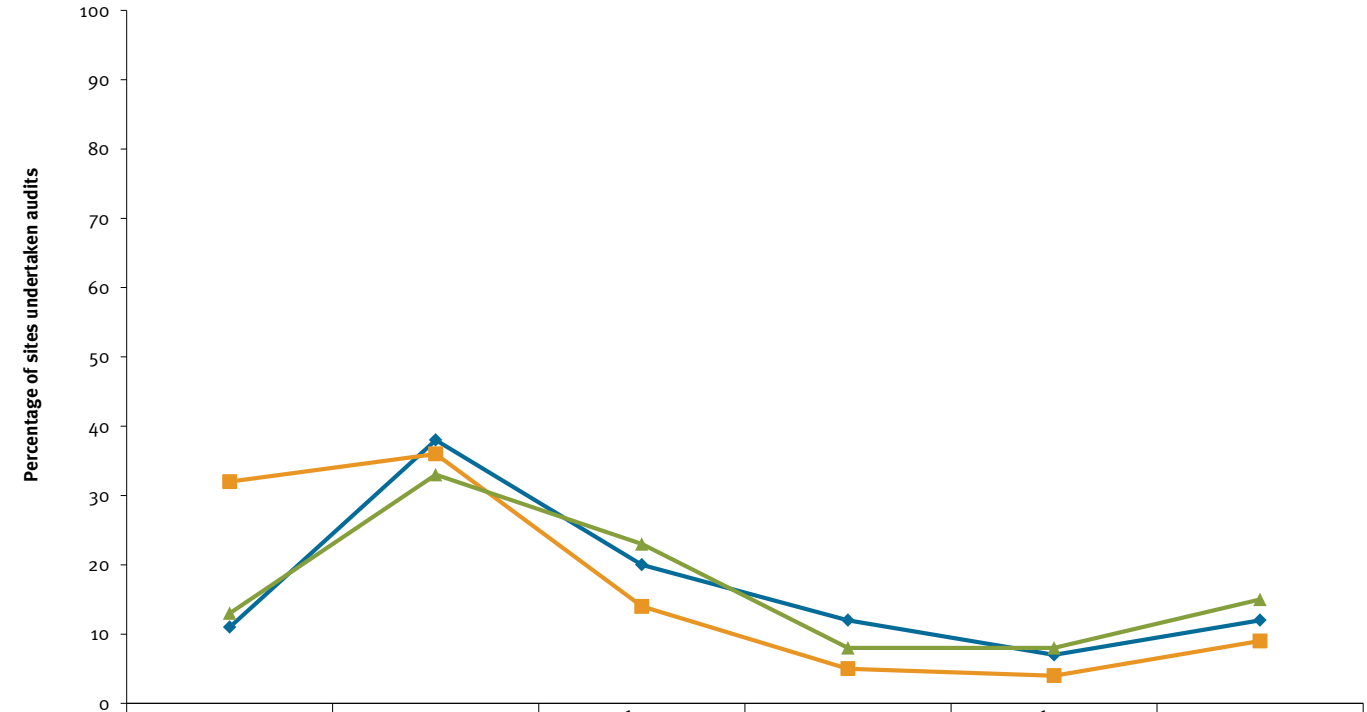
Figure 6.5: Annual audits (internal and external) (metalliferous mines), 2013–16



	0	1–5	6–10	11–15	16–20	>20
2015–16	12	39	8	13	8	20
2014–15	15	34	12	3	3	33
2013–14	7	31	12	7	7	36

Number of audits

Figure 6.6: Annual audits (internal and external) (quarries), 2013–16



	0	1–5	6–10	11–15	16–20	>20
2015–16	11	38	20	12	7	12
2014–15	32	36	14	5	4	9
2013–14	13	33	23	8	8	15

Number of audits

Figure 6.7: Improvement actions resulting from investigations into high potential incidents by sector, 2013–16

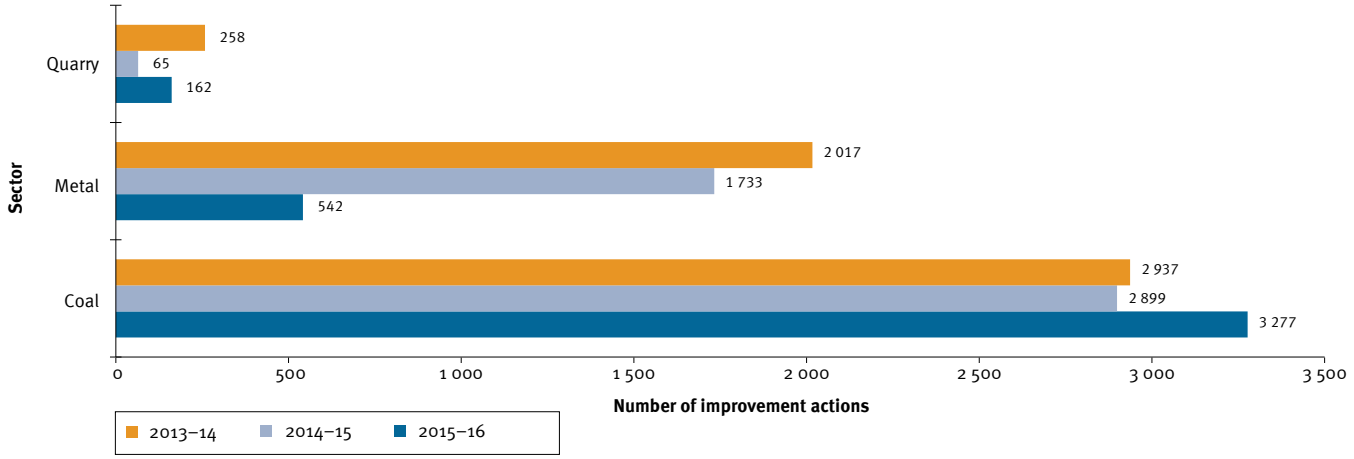
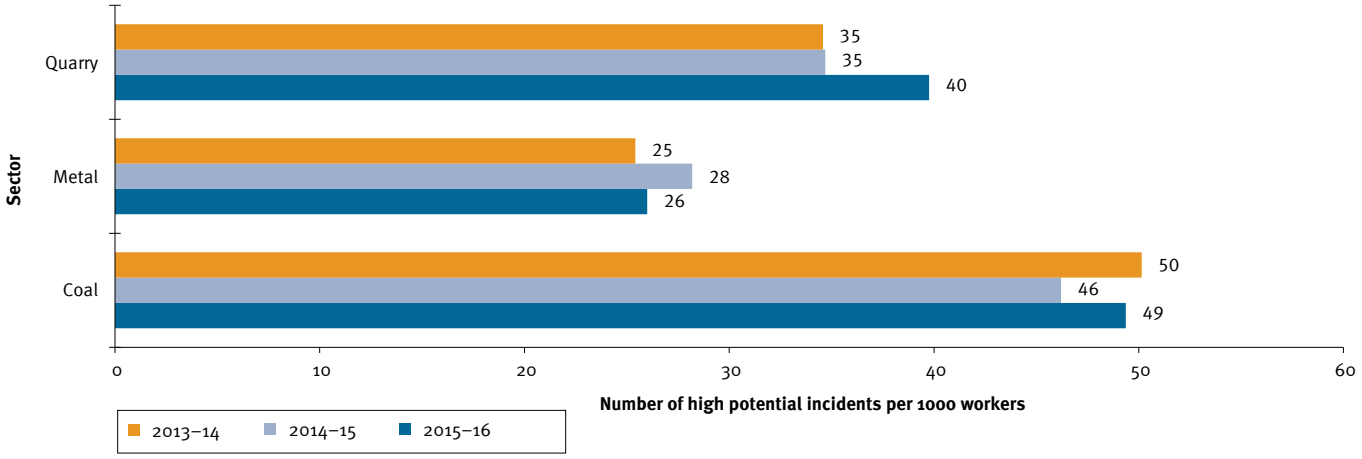


Figure 6.8: High potential incident rates by sector (number of HPIs per 1000 workers), 2013–16



7 HEALTH ASSESSMENT

Health assessment data

Hill of Stone Quarry, 2016
Photo: DNRM

7. Health assessment data

All workers are required to undergo a health assessment and health surveillance if a hazard with the potential to cause a significant adverse effect on the health or safety of a person is identified at a mine or quarry. Health assessments for coal mine workers are carried out under the Coal Mine Workers' Health Scheme (CMWHS) by a Nominated Medical Adviser (NMA) appointed by the worker's employer. These health assessment records are sent by the NMA to the department's Health Surveillance Unit (HSU) for database entry and storage.

The fitness level of workers, health assessments and health surveillance for other mine workers at quarries, metalliferous mines and other non-coal mines are carried out by an appropriate doctor, as required in the Mining and Quarrying Safety and Health legislation. The records from these activities are retained and kept confidentially by the site senior executive and are not required to be submitted to DNRM.

7.1 Coal mine workers' health assessments

Employers of coal mine workers must ensure a health assessment is carried out for each person who is to be employed, or is employed as a coal mine worker other than those employed to do low risk tasks. The assessment must be completed before the person is employed as a coal mine worker and periodically as decided by the NMA, but at least once every five years.

The employer is required to complete Section 1 of the health assessment form with details about the worker's job and any potential exposure to hazards at the mine. The person undergoing the health assessment is required to complete Section 2 of the health assessment form. This section records the person's work history, medical history and health status. The examining medical officer or NMA completes Section 3 of the health assessment form. This section records the findings from the person's physical examination, eye test, hearing test, and chest X-ray and concludes with an assessment of fitness for duty. The NMA then completes Section 4 of the health assessment form. This section is also known as the Health Assessment Report. This report records the person's fitness for duty, work restrictions, follow-up tests and date of next periodic assessment. The NMA is required to provide a copy of the report to the employer; and a copy of the report and an explanation of the report to the person who was examined. The NMA retains a copy of the completed health assessment and related documentation and sends a copy of the health assessment form, along with any digital x-ray to the HSU where the details are recorded in the CMWHS database. There are currently over 182 958 health assessments recorded in the database. The earliest of these health assessments dates back to 1983 under the previous legislation's Coal Board Medical Scheme.

In 2015–16, HSU entered 22 392 health assessments into the CMWHS database, a significant increase on 2014–15, mainly due to additional staffing at the department's Stafford facility.

7.2 Coal workers' pneumoconiosis

Eight cases of coal workers' pneumoconiosis (CWP) were confirmed by the HSU in 2015–16. A case is confirmed when the NMA advises the department's occupational physician. Prior to the first case in 2014–15, no cases of CWP had been identified by the CMWHS for a number of decades. Data on the number of confirmed CWP cases by DNRM is provided in Table 7.1.

7.3 Review of the respiratory component of the CMWHS

In December 2015, DNRM engaged Monash University Centre for Occupational and Environmental Health to conduct an independent review of the respiratory component of the CMWHS. The final report was delivered in July 2016. The department supports all 18 recommendations and is working on five key areas (chest X-rays, spirometry, medical practitioners, surveillance and digital records management) to address the issues identified in the report.

Table 7.1: Coal workers' pneumoconiosis, 2014–16

	2014–15	2015–16
Confirmed CWP cases	1	8

8 INFORMATION

Collection of information

Bromleton Quarry, 2016
Photo: DNRM

8. Collection of information

The department collected the information used in this report a number of ways. Injuries and incidents were reported by mine and quarry operators. Details of injuries, time lost and/or alternative duties and hours worked were reported monthly by large mines and quarries. Confirmed cases of CWP was provided by the department's CWP team. The number of workers was gathered from the quarterly safety and health levy census submissions. The levy data was used to validate the hours of work data submitted and has been reported here where a significant difference was found.

The dataset used in this report is not usually complete until well into the following financial year because mines often take considerable time to supply the data. An arbitrary cut-off, in order to start analysis, usually takes place in September each year after most of the data has been received. For this reason there will be minor changes in data reported in this year's report for previous years because all financial year's data are updated with each new report.

8.1 Data collected

Fatalities, accidents that resulted in injuries involving the loss of at least one full working shift (LTIs), DIs and medical treatment injuries (MTIs) are included in this report. High potential incidents are also included.

Data on permanent incapacities is collected from census data. A permanent incapacity is any work-related injury or disease that leads to one or more of the following outcomes:

- the complete loss, or permanent loss of use, of any member or part of the body
- any permanent impairment of any member or part of the body, regardless of any pre-existing disability of that member or part
- any permanent impairment of physical/mental functioning, regardless of any pre-existing impaired physical or mental functioning
- a permanent transfer to a different job
- termination of employment

Accidents and injuries that occurred while employees were travelling to or from work are not included in this report.

8.2 Access to the lost time accident database

Twenty consecutive years of injury and disease data for coal and metalliferous mines is available to industry and members of the public on request including site specific performance and sector-wide data. The data can be used as a benchmark in the preparation of safety management systems.

Examples of requests for information received during 2015–16 included:

- cost and category information for lost time incidents for 2013–14 and 2014–15, including explanations, definitions, values for accident severity, total days alternate duties, worker type, provided to a contractor for Simtars
- occupational accidents in Queensland's underground coal mines starting from 1950, including lost time injuries, lost time injuries frequency rate, fatal injuries frequency rates for underground coal mines since 2000, provided to a student completing a master's degree in Germany
- health and safety statistics for nature of injury claims in Queensland separated by gender and occupational groups such as profession, traditional, operator roles, and other roles for 2010–11 and 2014–15, provided to a student studying for a bachelor degree in Queensland
- vertebral column fracture injuries in Queensland mines and quarries from July 2008 to June 2014 as a distribution of mine workers based on type of employment, job title, age and gender, provided to a student studying a master's degree in Australia
- mine worker numbers for June and September 2015, provided to a mining analyst in Australia
- coal specific—surface and underground safety statistics up to current date, or at least until the end of 2015, provided to a mining company manager
- last five years incident types, based on description of incident for lightning strike, explosion, and use of explosives incident types, provided to a mining company
- statistics for injury rates and overall graph for combined injuries provided to a student
- statistics on the number of production employees, including working proprietors, employees of the operator of the mine or as employees of a contractor undertaking work relating to coal production, coal preparation, overburden removal, drivers transporting coal from the mine to a preparation plant or in administration work at the mine site
- statistics on fly-in/fly-out industry for previous 5–10 years, provided to a student.

To request data, contact the regional Mines Inspectorate office or email minesafetystats@dnrm.qld.gov.au .

Mines Inspectorate contact details can be found at www.dnrm.qld.gov.au

This report provides information to assist industry improve safety and health management systems and processes. The Mines Inspectorate welcomes suggestions for improvement and feedback on the report. Please email customerfeedback@dnrm.qld.gov.au or call 13 QGOV (13 74 68) and ask to be put through to the Mines Inspectorate.

Thanks are extended to the mining industry in Queensland for providing the data used in this report.

Scale of equipment!
Photo: DNRM

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