



Health and safety

Our highest priority is the health and safety of those impacted by our operations, including our employees and contractors, and the communities in which we operate. Protecting the health and wellbeing of our workforce is vital to our business.



In this section:

- Our safety performance
- Contractor safety
- High occupancy vehicles
- Security, Crisis and Emergency Management, and Business Continuity plans
- Occupational illness
- Occupational exposures
- Coal mine dust lung diseases
- Mental health

Health and safety

Safety

Our highest priority is the safety of our operations, including our employees and contractors and the communities in which we operate. We achieve nothing if we do not do it safely.

Tragically, one of our colleagues died at work on 31 December 2018. Allan Houston suffered fatal injuries while he was operating a dozer at BHP Mitsubishi Alliance's Saraji Mine. After a thorough investigation, we could not determine the direct cause of the incident. However, we identified several areas for improvement and are actively sharing the learnings from the investigation throughout our operations, with contract partners and the broader resources industry.

On 5 November 2018, Western Australia Iron Ore (WAIO) experienced a train rollaway event. There were no injuries as our team at Train Control intentionally derailed the train at a time when it was considered the safest to do so. Post the incident and before rail operations recommenced, we implemented additional procedures to help prevent a similar event from re-occurring.

In FY2019, we established new requirements for engaging and managing contractors. The contractor safety requirements were rolled out across BHP and assurance programs have been established to monitor and verify the implementation of the requirements.

To strengthen our safety leadership and culture, we are educating our people about chronic unease, that is, being mindful of the possibility of what could go wrong, and creating a culture where it is safe to speak up and report hazards and incidents. One of the objectives of our global Field Leadership Program is to strengthen the reporting culture. We monitor reporting culture across all our operations and coach and support our leaders to improve the quality of our field leadership activities with our employees and contractors.

We also introduced a new event management system for recording health, safety, environmental and community events. The system is designed to capture, analyse and track events in real time and will be implemented in FY2020.

We continue to play a key role in supporting the International Council on Mining and Metals (ICMM) in its development and delivery of the Innovation for Cleaner, Safer Vehicles initiative that promotes cleaner and safer mining vehicles. Our CEO Andrew Mackenzie is the Chair of the ICMM Advisory Council for this initiative. → [Read our case study Towards cleaner, greener and safer mining vehicles at \[bhp.com/community/case-studies\]\(http://bhp.com/community/case-studies\).](#)

Safety incident investigations

BHP has a goal of zero work-related fatalities. During FY2019, we continued to improve investigation processes, leadership and culture to effectively embed the lessons from safety incidents across our business.

We prioritise near misses and injuries with fatality potential for in-depth investigation and appoint those with investigation expertise to facilitate and lead these investigations. Senior leaders are actively involved in leading high potential incident investigations, providing them with an opportunity to learn through practice, which we believe will positively impact their ability to share lessons and influence learning across their existing leadership networks and routines.

Organisational, cultural and leadership factors are examined to understand whether they have contributed to an incident. A repository of investigation findings from across the Group is available to our people, with investigation findings presented in a standard format that can be filtered and searched.

In FY2019, we improved the quality of investigations and established a network of investigation facilitators across the Group. We will also investigate positive safety performance and apply those lessons where applicable across the Group.

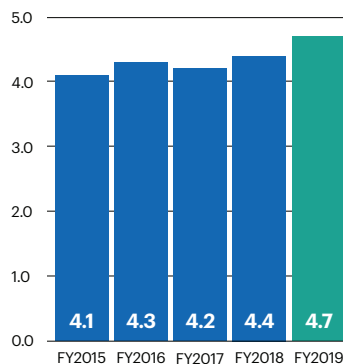
Our safety performance

Total recordable injury frequency (TRIF) performance increased by 7 per cent to 4.7 per million hours worked, compared to 4.4 in FY2018. This was due to an increase in injuries in both Minerals Australia and Minerals Americas.

High potential injuries declined by 7 per cent from FY2018 due to reductions at WAIO, Olympic Dam and Potash; the frequency rate declined by 18 per cent. High potential injury trends remain a primary focus to assess progress against our most important safety objective: to eliminate fatalities.

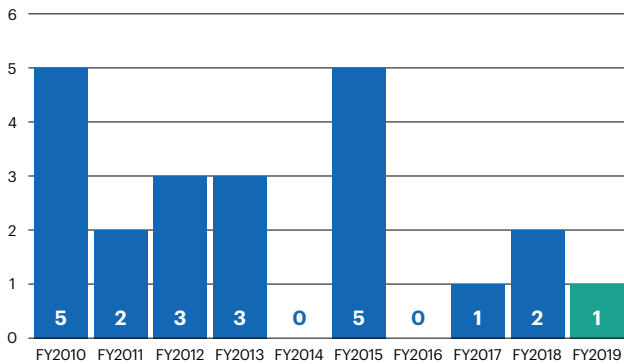
Total recordable injury frequency

Per million hours worked



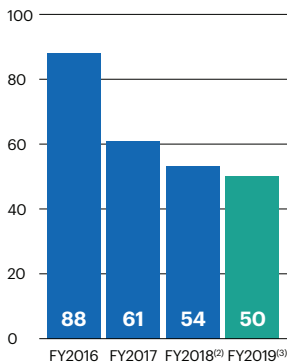
FY2015 to FY2018 data includes Continuing and Discontinued operations. FY2019 data includes Discontinued operations (Onshore US assets) to 28 February 2019 and Continuing operations.

Workplace fatalities (FY2010–FY2019)



FY2014 to FY2018 data includes Continuing and Discontinued operations. FY2019 data includes data for Discontinued operations (Onshore US assets) to 28 February 2019 and Continuing operations.

High potential injury events⁽¹⁾



(1) High potential injuries (HPI) are recordable injuries and first aid cases where there was the potential for a fatality. FY2016 to FY2018 HPI data includes Continuing and Discontinued operations (Onshore US assets).
 (2) FY2018 data has been adjusted due to the reclassification of an event after the reporting period.
 (3) FY2019 data includes Discontinued operations (Onshore US assets) to 28 February 2019 and Continuing operations.

We continuously improve our programs under our global safety priorities established in FY2016 and our focus remains on:

- reinforcing that safety comes before productivity;
- in-field verification of material and fatal risks through embedding our Field Leadership Program;
- enhancing our internal investigation process and widely sharing and applying lessons;
- enabling additional quality field time to engage our workforce.

In FY2019, we focused on improving critical control design and performance (controls that alone or in conjunction with other controls significantly reduce the likelihood and/or impact of material risks) and continued to remove people from sources of danger through standardised work and new technologies. We increased the quality of our global safety incident investigations, with the focus on better organisational learning. The Field Leadership Program remains one of our core leadership activities as we build the quality of engagements in the field.

Hazard identification and reporting continued to be a priority given a healthy reporting culture provides us with the signals to urgently and swiftly respond. This will be supported by a new incident management system and process that will be implemented in FY2020.

Field Leadership Program

Leaders spending time in the field is vital to maintaining safe operations. Through our Field Leadership Program, leaders from all levels of BHP spend time in the field engaging with employees and contractors about safety. They are also responsible for verifying fatality risk controls that are behavioural in nature and ensuring that elements of our Health, Safety and Environment management system are working as intended. Through this engagement we identify positive behaviours, at-risk behaviours and opportunities for system improvements.

The Field Leadership Program was deployed with a Group-wide common approach in FY2019. This included common training and a system to support the recording of field leadership activities. Over the past two years, more than two million field leadership activities with our employees and contractors have been completed, which continues to highlight how well this program has been embedded into our daily leadership routines. We monitor field leadership participation and coaching in all operations, which has supported continual improvement and embedment of the program.

During FY2019, field leadership work focused on:

- embedding field leadership activities with operational leaders in each asset;
- identifying and analysing critical control failures and implementing improvement plans;
- completing actions to address critical control failure.

We introduced the following lead indicators for field leadership to track the quality and further enhance the program. These indicators formed part of the performance scorecard for our executives in FY2019 and included:

- increasing field leadership coaching activities;
- identifying and analysing critical control failures and implementing improvement plans;
- ensuring all risks that have behavioural controls are covered and completing the field leadership activities to plan;
- timely completion of actions to address critical control failures.

Contractor safety

The last seven fatalities at our operations involved contractors or subcontractors. This brought into sharp focus the issue of contractor safety, given our 40,000 contractors comprise around two-thirds of our workforce, and precipitated significant changes to the way we engage and manage contractors.

Global contractor safety requirements now form an integral part of the *Our Requirements for Safety* standard and are based on lessons from previous fatalities at BHP. The standard guides leaders on how they can effectively help to keep contractors and subcontractors safe while at work. In addition, assurance activities from frontline leaders and Internal Audit and Advisory team audits have been implemented to monitor, verify and improve contractor safety.

The next phase of this work is to integrate the following guiding principles into our contractor management:

- inclusive culture – contractors and BHP employees are treated and operate as one team;
- mutually beneficial relationships – we actively work to develop long-term relationships with our contractors;
- simple processes and systems – our processes and systems are fit-for-purpose and deliver a simpler, safer user experience.



High occupancy vehicles

We transport employees and contractors in high occupancy vehicles every day, which presents a high potential material risk exposure for the Group.

We also continue to actively work with the National Road Safety Program Partnership, which is part of the Australia Road Research Board. A working group with participants from organisations across a number of business sectors has been established to develop and implement strategies to better manage and monitor high occupancy vehicles.

Security, Crisis and Emergency Management, and Business Continuity Plans

We updated the *Our Requirements for Security, Crisis and Emergency Management, and Business Continuity Plans* standard in FY2019. New requirements were introduced for security management, including the designation of a single point of accountability for security management and the use of approved security specialists. The requirements also provide guidance on when to undertake security risk assessments and when to prepare security management plans. In addition, the standard includes guidance on how to set up response teams and provide crisis and emergency management training.

Health

Our goal is to protect the health and wellbeing of our workforce from potential occupational injury, now and into the future, through the setting of clear requirements for our operations.

We set minimum mandatory controls to identify and manage health risks for our employees and contractors. Our workplace health risks include occupational exposures to noise, silica, diesel particulate matter (DPM), coal mine dust, musculoskeletal stressors and mental health impacts. The effectiveness of our health controls is regularly reviewed and subjected to periodic audit to verify the controls are implemented and operating as designed.

We continue to monitor emerging health issues and trends through our membership of industry and professional associations, informal benchmarking, networking and participation in national and international conferences. We also monitor information from scientific journals, occupational health regulatory setting and advisory agencies.

Fatigue management supports the wellbeing of our people, including their mental and physical health. We have reviewed our fatigue management strategy to identify areas that require further focus. In FY2020, we will evaluate factors that contribute to the risk of fatigue during shift work to identify opportunities to further control potential causes of fatigue. Shift work that involves circadian disruption is under review by the International Agency for Research on Cancer and outcomes from the evaluation will be used to inform potential updates to our health requirements.

We set internally specified occupational exposure limits (OELs) to manage exposures to DPM, silica, coal mine dust and other potentially harmful agents. For our most material exposures, our process to set those OELs involves periodic monitoring and evaluation of scientific literature, benchmarking against peers as well as engagement with regulators, OEL-setting agencies and expert independent advice. Our approach to monitor and review our internal OELs is designed to ensure they continue to be aligned with, or are more conservative than, applicable regulated health limits.

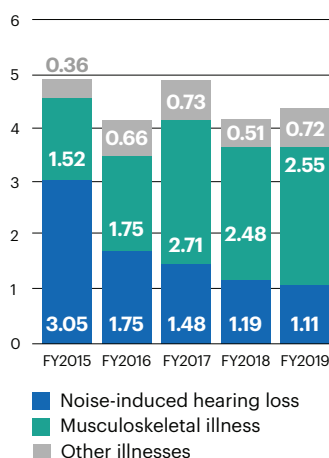
Our periodic medical surveillance programs help us support early identification of potential occupational exposure illness and enable us to assist our people through illness management and recovery. In FY2019, we established key performance indicators that require a 90 per cent adherence to schedule for health surveillance activities, achieving 79 to 100 per cent across the Group. We also reviewed our medical testing programs through internal and external benchmarking with industry peers and standards. Improvement opportunities identified from the review are expected to be evaluated and the implementation of endorsed recommendations are expected to commence in FY2020, along with plans to further increase adherence to planned surveillance activities.

In line with *Our Charter* and our culture of care, we support the proactive management of mental wellbeing through the provision and promotion of the Employee Assistance Program (EAP), a mental health toolkit called Thrive, education and awareness campaigns, including stigma reduction and the BHP Resilience Program.

Occupational illness

Employee occupational illness

Per million hours worked



FY2015 to FY2018 data includes Continuing and Discontinued operations. FY2019 data includes Discontinued operations (Onshore US assets) to 31 October 2018 and Continuing operations.

The incidence of employee occupational illness in FY2019 was 4.38 per million hours worked, an increase of 5 per cent compared with FY2018. The reported incidence of contractor occupational illness was 1.62 per million hours worked, a decrease of 16 per cent compared with FY2018. The overall decrease in contractor illnesses was predominantly driven by the 23 per cent increase in hours worked in FY2019. We do not have full oversight of the incidence of contractor noise-induced hearing loss (NIHL) cases in many parts of BHP due to regulatory regimes and limited access to data. We continue to work with our contractors and regulatory agencies to resolve these issues.

The majority of our reported occupational illnesses are musculoskeletal illness. The improved identification and more effective control of causes of musculoskeletal stressors will be supported by the progressive implementation of the Standardised Work program. Standardised Work is a key foundational tool of the BHP Operating System that seeks to empower individuals to design work in a way that supports efficiency and ergonomics, where health and other risks are identified, and enables additional controls to be identified and incorporated.

Our continued focus on implementing our requirements for fit testing for hearing protection devices has supported a 6.7 per cent reduction in NIHL illness rate.

We have seen an increase in the number of other illnesses reported, which include short-term, low-impact conditions such as blisters, skin conditions (dermatitis/eczema), bites and stings, due to a small increase in cases across most Minerals Australia operations.

The dermatitis/eczema cases arose from different work locations across Olympic Dam and could be attributed to the continued education campaign on the prevention and management of skin conditions, which encourages early reporting of signs and symptoms.

To a lesser extent, the increase was also driven by increases in mental stress conditions and heat stress cases at Olympic Dam in South Australia. These conditions are currently captured as 'other illnesses' but, with our strong focus on mental health, we plan to establish a stand-alone category for 'mental stress conditions' in FY2020. Across the Group, mental stress conditions continue to be reported in low numbers and the number of cases were not significantly different to FY2018. Through the BHP Mental Health Framework, we continue to seek to foster a work environment where our people feel comfortable to raise their experience of mental stress and to access appropriate support when needed.

Occupational exposures

For our most material exposures to DPM, silica and coal mine dust, we have committed to a five-year target to achieve a 50 per cent reduction in the number of workers potentially exposed⁽¹⁾ as compared to our baseline exposure profile (as at 30 June 2017⁽²⁾) by 30 June 2022.

In Petroleum, the divestment of our Onshore US assets during FY2019 changed the exposure profile for the region as workplace exposures to silica and DPM are no longer present. Our baseline exposure profile for the Group for the five-year target was therefore adjusted to remove the baseline exposures attributed to the Onshore US assets.

In FY2019, planned exposure reduction projects were implemented across the Group, involving a collaborative effort from operational and maintenance teams, supported by the Health, Safety and Environment, Supply and Technology teams. Many assets exceeded planned exposure reductions, resulting in an overall reduction of 49⁽³⁾ per cent compared to the revised FY2017 baseline. Planned growth projects across the Group may result in an increase in some potential exposures over the short term; however, commitments to achieve planned exposure reductions over the five-year target period remain unchanged.

In Minerals Americas, silica exposure reduction projects were successfully implemented at our Escondida and Pampa Norte assets in Chile. This included the installation of dust collection units within ore concentrator plants at Escondida and the installation of a central vacuum system to reduce dust exposure during plant maintenance activities at Pampa Norte's Spence mine. Design changes to the conveyor belt transfer and discharge areas were also introduced at Spence to further reduce dust release and potential exposures.

Across Minerals Australia, all assets contributed to the reduction in silica exposures. The main factors that influenced the reduction in silica exposures included:

- developing and implementing control plans to reduce airborne dust generated from surfaces and environmental conditions; using engineered water spray systems on hoppers and conveyers; introducing intelligent cabin pressurisation systems; eliminating where practical the use of compressed air for cleaning; and improving maintenance strategies;
- increasing task rotation through organisational changes and movement into areas of higher-grade ore;
- additional monitoring and re-baselining as part of the FY2019 silica exposure assessment, which identified a number of workgroups exposed below the OEL.

Projects focused on reducing silica exposure will continue in FY2020 in Minerals Australia and Minerals Americas. In FY2019, pilot studies commenced at Escondida (Chile) and BMA's Broadmeadow mine (Queensland) to install and test real-time monitoring equipment for silica in Escondida and DPM and coal mine dust in Broadmeadow as a method to support targeted exposure assessment and verify exposure controls. The pilots will continue in FY2020 and findings will inform subsequent application of the technology into other operations.

An overall reduction in DPM exposures in Minerals Australia was achieved due to the implementation of control plans at Olympic Dam (South Australia) and Nickel West (Western Australia). Olympic Dam continued to replace or retrofit equipment with diesel particulate filters, which enabled a reduction in exposure for mine production workers. Nickel West continued to replace end of life fleet with Tier 4 engine equipment, changed equipment maintenance schedules based on diesel particulate emissions and introduced improvements to the management of secondary ventilation. BMA's Broadmeadow mine continued to implement DPM exposure reduction controls, including engine upgrades to underground loaders. Both Olympic Dam and Broadmeadow continue to participate in a light electric vehicle pilot as a potential opportunity to further reduce DPM exposures and other emissions. → Read more in our case study [Light electric vehicles in underground pilot](https://www.bhp.com/community/case-studies) at [bhp.com/community/case-studies](https://www.bhp.com/community/case-studies).

Through the continued implementation of exposure control plans for coal mine dust, there were no workers exposed over the OEL at the end of FY2019.

In addition to these exposure reduction projects, BHP continues to play a key role in supporting the ICMM in its development and delivery of the Innovation for Cleaner, Safer Vehicles initiative that promotes technological innovation to reduce emissions of DPM and greenhouse gases and reduce vehicle interactions (and the associated safety risk). Our CEO Andrew Mackenzie is the Chair of the ICMM Advisory Council for this initiative, with a number of BHP employees leading or participating in key working groups. The strong alignment and common ambition between ICMM member companies and Original Equipment Manufacturers represents an important change in partnership and collaboration, which will help accelerate delivery of the technology required for a safer and cleaner world.

Coal mine dust lung diseases

In our Sustainability Report for FY2017, we reported on the re-identification of coal workers' pneumoconiosis (CWP) in our industry, the number of our current employees and former workers who had been diagnosed with CWP and the steps we had taken in response.

As at 30 June 2019, 10 cases of coal mine dust lung diseases (CMDLD⁽⁴⁾) among our current employees were reported to the Queensland Department of Natural Resources, Mines and Energy. We continue to provide counselling, medical support and redeployment options (where relevant) for all 10 colleagues (seven of the 10 have been able to continue working).

(1) For exposures exceeding our baseline occupational exposure limits discounting the use of personal protective equipment, where required.

(2) The baseline exposure profile is derived through a combination of quantitative exposure measurements and qualitative assessments undertaken by specialist occupational hygienists consistent with best practice as defined by the American Industrial Hygiene Association.

(3) FY2019 data excludes Discontinued operations (Onshore US assets).

(4) CMDLD is the name given to the lung diseases related to exposure to coal mine dust and includes CWP, silicosis, mixed dust pneumoconiosis and chronic obstructive pulmonary disease.

During FY2019, one former BHP employee had a worker's compensation claim accepted for CMDLD, resulting in a total, as at 30 June 2019, of six former workers diagnosed with CMDLD since January 2016 (noting that no Australian coal mine worker had been diagnosed with CMDLD in the preceding two decades). In addition to these confirmed cases, as at 30 June 2019, there were six intimated worker's compensation claims for CMDLD from current and former employees that had not yet been determined. *Our Charter* values guide our response and the support we offer, and we are actively reviewing how we can improve timeframes and processes for determination of claims.

To further protect the health of our people we remain committed to:

- a reduction in our coal mine dust OEL from 2 mg/m³ to 1.5 mg/m³ to be achieved as soon as reasonably practicable and no later than 1 July 2020 (as compared with the regulatory OEL of 2.5 mg/m³), noting that all operations have developed exposure reduction plans;
- a reduction in potential exposure to silica in coal mine workers that exceeds a level 50 per cent lower than the current regulatory level by no later than 1 July 2021.

To strengthen the regulatory framework and health surveillance system, we will continue to provide input and share improvements in technical knowledge and controls with the Queensland Government and the coal mining industry more broadly through industry associations and working groups.

We believe that our stricter OELs combined with the statutory health surveillance scheme will prevent serious disabling and fatal cases of CMDLD arising in our workforce from existing conditions. We achieved this through the combination of further reductions in coal mine dust and silica potential exposures across our operations (driven by our current five-year exposure reduction targets and reductions in OELs, as described earlier) and the statutory health surveillance schemes in Queensland and New South Wales.

Mental health

BHP has prioritised the mental health of our people since 2015. We have subsequently made good progress with the implementation of our Group-wide Mental Health Framework. We have focused on reducing the stigma associated with mental illness and raising awareness of mental health conditions, as well as building capacity and confidence to recognise and support individuals experiencing mental health issues.

In FY2019, we continued to embed programs and resources that support a healthy, thriving workforce. This included the peer-led Resilience Program in which 3,392 people had participated, as at the end of FY2019.

We held a workshop with our Human Resources function and external representatives from Beyondblue, Keil Centre, and BSS (one of our Employee Assistance Program (EAP) providers) and benchmarked companies to discuss strategies to embed existing resources and inform our five-year mental health and wellbeing strategy. The workshop reinforced the need to continue to promote existing resources. This led to the development of the Resilience Program meeting series and program refresher session materials, which can be built into existing team routines.



We launched the inaugural BHP Mental Health Week to raise awareness of BHP's mental health resources and tools, and encourage conversations about mental health. By leveraging the existing communication platforms across our operations and offices, we sparked conversations about how to check in with colleagues, highlighted strategies to manage stress, pressure and working away from home, and raised awareness about the EAP support options.

Proactive use of our EAP continues to be promoted across all our operating regions and functions. Online and face-to-face EAP sessions were offered across our sites to increase awareness of the counselling services and manager assistance program, as well as information sessions on how to support longer term wellbeing.

Our people supported World Mental Health Day and R U OK? Day and we again embarked on a global Movember campaign to raise awareness and funds (A\$396,954 as of 30 June 2019) for key men's health issues, including mental health and suicide prevention. BHP was the highest fundraising organisation within the mining challenge that supported the CY2018 campaign, contributing to the Movember Foundation's programs and research into men's health.

We conducted a global mental health risk assessment with internal and external stakeholders to identify critical parts of our Mental Health Framework that promote a supportive work environment. The Western Australian Government released the Code of Practice on mentally healthy workplaces for fly in, fly out workers in the resources and construction sectors. The outcomes from the risk assessment and our review of the Code of Practice will help to inform and strengthen our long-term mental health strategy.

FY2019 was the third year that the wellbeing category was included in our annual Engagement and Perception Survey. There was no change overall at the Group level, but we continue to evaluate the differences at the asset and function levels from the previous year's results to inform local plans.

We will continue to better integrate all BHP priorities that contribute to mental health, such as diversity and inclusion, flexible work options and the strengthening of leadership awareness and skills.

→ For more on how we are addressing fatigue when working at altitude, read our case study [New program tackles fatigue at Escondida](https://www.bhp.com/community/case-studies) at [bhp.com/community/case-studies](https://www.bhp.com/community/case-studies).