WORKSAFE
NEW ZEALAND | MAHI HAUMARU AOTEAROA

HEALTHY WORK

WorkSafe's Strategic Plan for
Work-Related Health 2016 to 2026

Foreword from the WorkSafe Board

Professor Gregor Coster,
CNZM, Chair

Ross Wilson,
Deputy Chair

We are pleased to present our ten-year strategic plan for work-related health. 'Healthy Work' outlines our vision for a New Zealand in which everyone who goes to work comes home not just safe, but healthy too.

The management of work-related health risks remains unacceptable. Ten times more people die each year from work-related diseases than work-related safety incidents, and thousands of workers experience ill-health because of their work. Recent reports have highlighted the need for more focus on work-related health and this strategic plan outlines the approach we will take to support and enable this.

Our strategic plan reflects the emphasis of the Health and Safety at Work Act 2015 on more proactive leadership and management of work-related health risks.

Parts of our health and safety system show encouraging signs of increased activity relating to work-related health. Similarly, our organisation already has significant activity underway.

Despite this, we recognise that there remains a need for significant change in how work-related health risks are addressed. This strategic plan is an important step in this change. We are confident this plan, and the activities described within it, will enable us to achieve our aim of a future in which healthy work is the norm.

Contents

EXECUTIVE SUMMARY

TOO MANY WORKERS IN NEW ZEALAND DIE OF, OR SUFFER FROM, ILL-HEALTH CAUSED OR MADE WORSE BY THEIR WORK. WORKSAFE IS COMMITTED TO REDUCING THIS BY INCREASING THE FOCUS AND ATTENTION GIVEN TO PROVIDING HEALTHY WORK.

Our vision is clear: everyone who goes to work comes home healthy and safe. Ultimately, this means fewer people experiencing work-related ill-health. This plan explains the outcomes needed by 2026 if we are to achieve this: improved awareness, attitudes and behaviours around work-related health and, through these, better management of work-related health risks and reduced exposures to health hazards.

Achieving a future in which healthy work is the norm will require collaboration and sustained effort across the whole health and safety system. Those who create risks are best placed to manage them, supported by WorkSafe as the primary regulator for health and safety.

This plan outlines the high-level direction and approach we will take and will act as a core pillar of the Health and Safety at Work Strategy. It details a series of strategic themes and focus areas of activity for the coming ten years to enable improvements in the way work-related health is managed.

VISION AND OUTCOMES

Vision — **EVERYONE WHO GOES TO WORK COMES HOME HEALTHY AND SAFE**

System target — **Fewer people experience work-related ill-health**

Substantive impacts — **Work-related health risks managed better*. Exposures to health hazards are reduced**

Immediate impacts — **Awareness, attitudes and behaviours related to work-related health improve**

STRATEGIC PLAN

Work-related health strategic themes — **THEME 1: INDUSTRY LEADERSHIP** / **THEME 2: REGULATORY EFFECTIVENESS** / **THEME 3: STEP CHANGE**

* Both work-related health and health-related safety risks.

Figure 1: Our vision and desired outcomes for work-related health

STRATEGIC THEME 1: INDUSTRY LEADERSHIP*

Awareness, Participation and Learning: Raising awareness of harm and risks. Encouraging PCBUs and workers to collaborate and recognise exposure and harm as opportunities to improve risk management.

Partnering with Others: Enabling and supporting collaboration across industry, government and society for more impact.

Health by Design: Educating and encouraging designers, manufacturers, importers and producers, and those who use their services, to eliminate or minimise risks at source.

Workforce Development: Influencing the education system to improve understanding of work-related health risks, as well as the broader infrastructure that affects the supply and demand of high-quality professionals in health and safety.

STRATEGIC THEME 2: REGULATORY EFFECTIVENESS

Organisational Capability: Developing the technical capability of our Inspectorate and other staff for better health-related activities.

Guidance and Education: Providing better resources outlining our expectations and what stakeholders can do to improve work-related health and health-related safety risk management.

Research and Intelligence: Capturing, analysing and reporting work-related health data better through new and improved approaches. Enhancing our understanding of the prevalence of work-related ill-health, risks and exposures and using this to target our strategic approach and activities.

Regulatory Framework: Enabling a consistent and proportionate approach to work-related health through enhanced regulation and policy activities.

STRATEGIC THEME 3: STEP CHANGE

Targeted Programmes: Implementing a series of targeted intervention programmes designed to address prioritised work-related health risks.

---

* **Industry:** All participants within the health and safety system other than the regulator; includes PCBUs, officers, workers, health and safety representatives, unions, business representatives, industry associations, health and safety professional groups, government agencies, and those that design, manufacture, produce or import substances, plant or equipment.

STRATEGIC THEME 1

INDUSTRY LEADERSHIP

Awareness, Participation and Learning

Partnering with Others

Health by Design

Workforce Development

STRATEGIC THEME 2

REGULATORY EFFECTIVENESS

Organisational Capability

Guidance and Education

Research and Intelligence

Regulatory Framework

STRATEGIC THEME 3

STEP CHANGE

Targeted Programmes

Why a strategic plan?

As the primary health and safety regulator, we have a vision of a New Zealand where everyone who goes to work comes home both healthy and safe.

We are making good progress in addressing work-related safety incidents and acute harm. But the health and safety system has so far failed to adequately address work-related health risks and the harm associated with them. This is despite an acknowledgment that the broader impact on our country from work-related ill-health is significant and even greater than that from acute work-related injuries[1].

We know that work-related health risks can be effectively eliminated or minimised. Whilst there are some discrepancies, many of the common approaches to good safety risk management can be applied to health risks. There are emerging examples of good practice, some of which are shared throughout this document.

We are committed to supporting and enabling effective risk management throughout New Zealand. But if we are to make lasting improvements to how work-related health risks are addressed, we need more than just commitment to change. We need a compelling vision of a possible future and a clear direction and approach.

This strategic plan provides those elements and will enable us to work effectively and efficiently to deliver meaningful change.

Achieving change will require:

> our proactive leadership role within the health and safety system, with our levers of education, engagement and enforcement

> accountability for effective risk management and worker engagement and participation by those who create work-related health risks

> broader infrastructure that supports businesses to operate safely and healthily, from social partners and other Government agencies to suppliers and professionals working in health and safety.

To achieve the future we want, all parts of the health and safety system will need to demonstrate greater leadership and accountability by working together to address work-related health matters. This will also involve raising awareness of the relationship between health and work across communities and whānau.

This strategic plan is focused on the changes needed across the health and safety system and, in particular, WorkSafe's role in supporting and enabling these changes to occur. It reflects many of the common themes identified through research and from engaging with our social partners and stakeholders, both in the vision for the future and in the approach to achieve it.

We have chosen a ten-year time frame as a realistic length of time to achieve the significant changes and improvements needed. We will begin implementation of this strategic plan immediately. We expect stakeholders to also begin implementing relevant changes now to improve work-related health risk management.

Part One of this plan describes our vision of the future and the approach we will take to achieve it. Part Two outlines many of the major activities we will complete over the coming ten years.

Part One

PART ONE: STRATEGIC CONTEXT, DIRECTION AND APPROACH

'Work-related health' and why it matters

Healthy workers are vital for a prosperous New Zealand and, in turn, good work is important for a person's long-term health. Work contributes to a person's health and wellbeing when it is stimulating and potential risks are managed well[2]. When a person is in good health and has high levels of wellbeing, they are more likely to be productive, engaged and attend work regularly[3].

Yet work also has the potential to be harmful to a worker's health. Too often, workers are exposed to unhealthy work and, each year, an estimated 600 to 900 people die of work-related diseases and around a further 30,000 people develop serious but non-fatal work-related ill-health[4]. These deaths and serious ill-health are not inevitable and are preventable in the vast majority of cases.

In certain circumstances, changes in a worker's health status may also impact on safety at work. Evidence from major safety incidents has demonstrated that impairment or poorly controlled health conditions can have severe and significant consequences. In 2015, 43% of workers in sectors with high-risk of injuries

and fatalities reported working when overtired and 11% reported working when hungover or when under the influence of drugs[5].

Reflecting the importance of healthy workers, a broad approach to protecting and supporting their health and wellbeing at work has emerged (Figure 2). The Health and Safety at Work Act 2015 ('HSWA') places mandatory duties on persons conducting a business or undertaking (PCBU) to ensure that workers and others are not harmed by their work (ie '*Health and Safety Protection*'). PCBUs must be able to assure themselves, workers and others in the workplace, that potential work-related health and safety risks are being eliminated or minimised, so as far as is reasonably practicable.

Beyond these mandatory duties, many businesses have recognised the benefits of supporting the general health and wellbeing of their workers. They choose to carry out voluntary activities that aim to prevent or manage the risk of lifestyle-related health conditions or to improve wellbeing within their workforce.
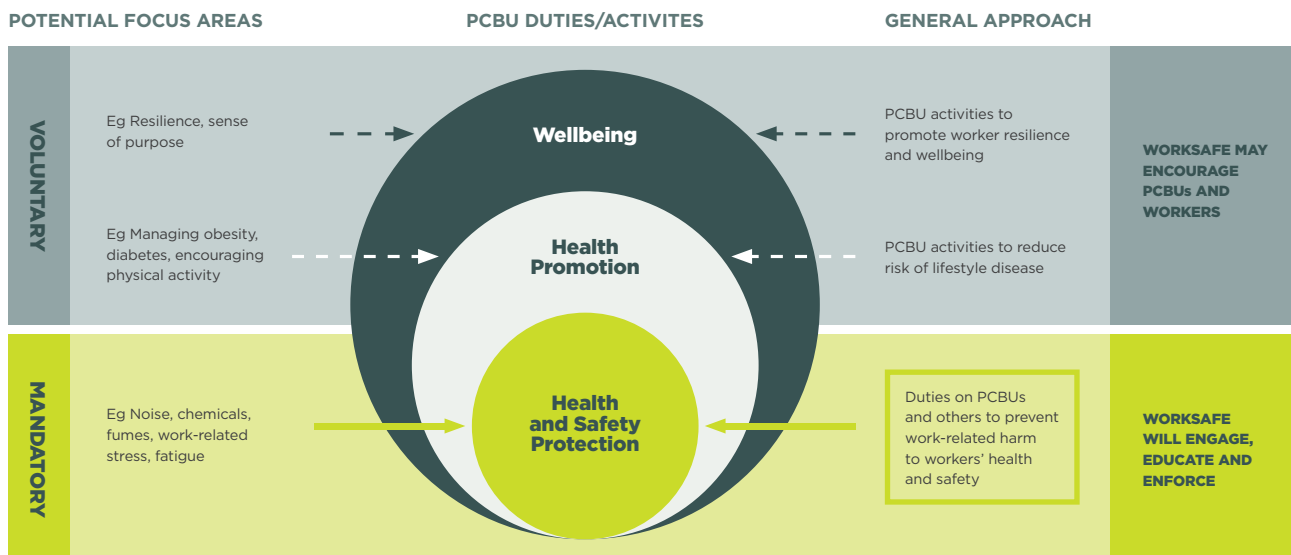

POTENTIAL FOCUS AREAS **PCBU DUTIES/ACTIVITES** **GENERAL APPROACH**

VOLUNTARY

Eg Resilience, sense of purpose

Eg Managing obesity, diabetes, encouraging physical activity

Wellbeing

Health Promotion

PCBU activities to promote worker resilience and wellbeing

PCBU activities to reduce risk of lifestyle disease

WORKSAFE MAY ENCOURAGE PCBUs AND WORKERS

MANDATORY

Eg Noise, chemicals, fumes, work-related stress, fatigue

Health and Safety Protection

Duties on PCBUs and others to prevent work-related harm to workers' health and safety

WORKSAFE WILL ENGAGE, EDUCATE AND ENFORCE

Figure 2: A broad workplace health and wellbeing agenda

An effective approach to protecting workers and others from work-related health risks is an important part of being a successful business. We use the term '*work-related health'* to differentiate it from workplace health promotion and wellbeing. We view work-related health as having two important and interrelated parts (Figure 3):

1. The effects of work on health (from work-related health risks).
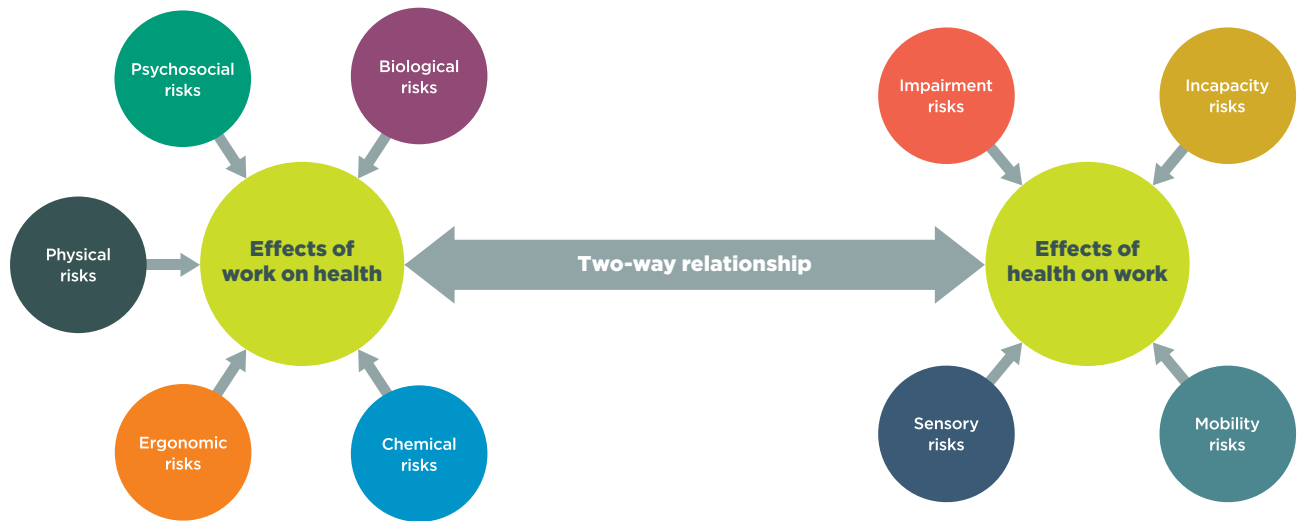2. The effects of health on work (from health-related safety risks).

Figure 3: What WorkSafe means by 'work-related health'

Work-related health risks have the potential to harm a person's health. In general, they fall into one of five categories:

> **physical risks** – for example, exposure to workplace noise may lead to noise-induced hearing loss

> **chemical risks** – for example, exposure to solvents may lead to occupational asthma

> **biological risks** – for example, exposure to animal bacteria may lead to sudden and severe illnesses

> **ergonomic risks** – for example, repeated lifting of heavy or bulky items may lead to low back pain

> **psychosocial risks** – for example, bullying at work may lead to work-related stress.

Health-related safety risks have the potential to lead to safety incidents and acute harm. In general, they fall into one of four categories:

> **sensory risks** – for example, changes in a worker's hearing or eyesight may prevent them from correctly or quickly identifying and reacting to a workplace risk

> **impairment risks** – for example, fatigue may lead to reduced concentration

> **mobility risks** – for example, physical frailty may prevent a worker from moving out of the way of an oncoming vehicle

> **incapacity risks** – for example, an unknown or poorly controlled heart condition may lead to a worker suddenly losing consciousness while involved in a safety-critical task.

The interrelated effects of work on health, and health on work, are important. For example, a worker regularly exposed to noise at work may develop hearing loss (the effect of work on health). This hearing loss may then reduce their ability to hear safety instructions at work, leading to them being hurt through a safety incident (the effect of health on work).

The problem we need to address

WORK-RELATED DISEASE AND ILL-HEALTH

Too many people in New Zealand die or suffer from work-related ill-health and diseases, indicating that work-related health and health-related safety risks need to be managed better. The latest estimates[4] are that 600 to 900 people in New Zealand die each year from diseases caused by health risks associated with their work, a figure which has not changed significantly since 1999[6]. In addition, it's estimated that a further 30,000 workers develop non-fatal work-related ill-health each year, such as noise-induced hearing loss or non-fatal lung diseases[4] (Figure 4). This figure is likely to be an underestimate as much of the work-related harm that occurs is not reported or is not correctly linked back to a person's work[1,6].
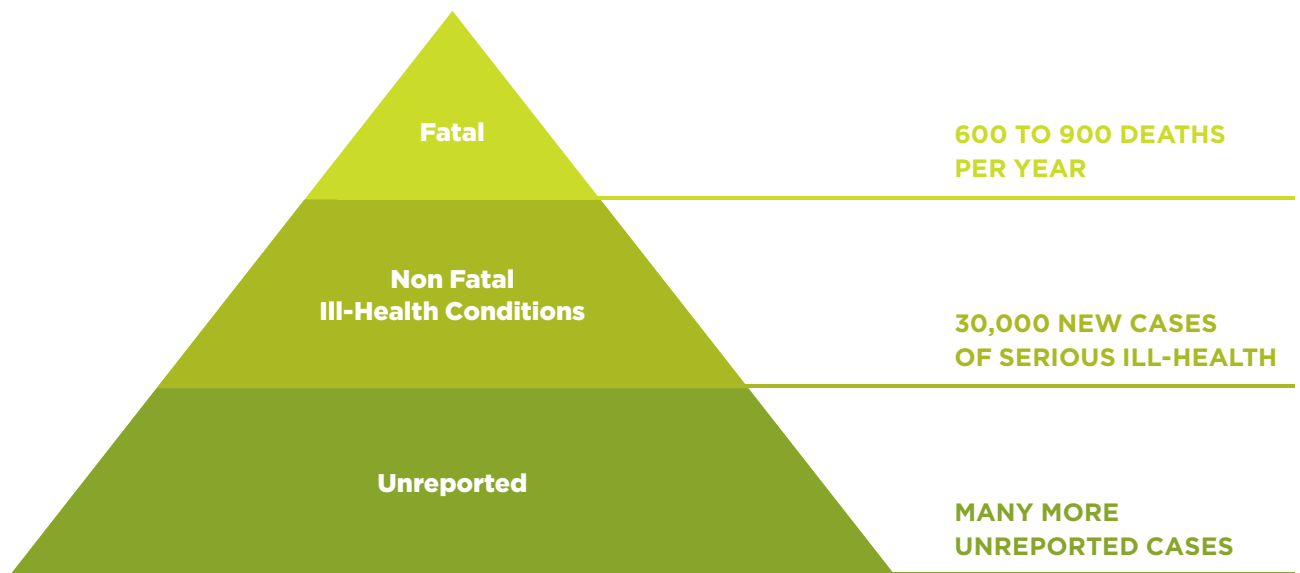

Figure 4: Work-related disease and ill-health impacts

EXPOSURES TO WORK-RELATED HEALTH RISKS

Unlike harm from most acute safety incidents, the harm from work-related health risks generally depends on the level of exposure a person has to a hazard (the dose). Understanding exposure levels to various risks is therefore an important measure of potential future ill-health and disease. Reducing exposures to health hazards is the ultimate aim for improved management of work-related health risk.

The level of exposure to various health risks across all types of work remains unacceptably high. Work-related health hazards with high exposure levels include solvents, dust, noise and fumes (Table 1)[7].

ROLE	DUST	SMOKE/FUMES	OILS/SOLVENTS	LIFTING	LOUD NOISE
Admin and Managers	25.2%	19.2%	15.6%	27.4%	21.8%
Professionals	17.3%	15.1%	12.0%	25.5%	19.7%
Service and Sales	20.1%	23.6%	21.8%	53.6%	24.4%
Agricultural and Fishery	55.8%	28.2%	35.9%	70.0%	48.9%
Trades	75.4%	42.6%	58.8%	68.8%	71.6%
Plant/Machine Operators	55.3%	43.0%	33.0%	56.4%	67.6%

Table 1 : Proportion of workers reporting being exposed to different health hazards at work Adapted from 7

WORK-RELATED HEALTH IN ACTION

Two pronged route to cleaner air

Sheet metal production engineering company **RH Freeman Ltd** took a two-pronged approach to protect the health of its 40 workers. Their welders work with a range of different products that generate various harmful fumes, so ventilation needs to be suitable and adaptable.

As well as installing a bespoke extraction and ventilation system at their Wellington factory, they also looked to tackle any problems at source. When a new product generated a lot of smoke during welding, they found an alternative material which is riveted instead.

"We have a number of welding bays so we went for a built-in customised solution that allowed us to put an extractor into every bay and add more as needed," said General Manager Kevin Tennant. "It also needed to be simple, so people would use it.

"We always try to tackle an issue at source. So we focused on adapting a product to eliminate the problem. We changed the material from aluminium to galvanised steel, cutting out the welding process and fume hazard altogether."

THE EFFECTS OF HEALTH ON WORK

Some health conditions may hinder the ability of workers to respond to risks at work or to safely perform certain tasks. Increasing rates of severe obesity and conditions such as heart disease or Type II diabetes within the general population indicates a potential increase in the likelihood of such risks.

Similarly, the number of people in New Zealand aged 65 and older is projected to increase significantly in the coming years[8]. While a person's age may not be a risk in itself, the likelihood of reduced mobility, physical frailty and chronic health conditions is known to increase as a person ages.

Factors that impair the ability to make appropriate or timely decisions, such as fatigue, mental distraction or working while under the influence of drugs or alcohol, can also pose potentially significant safety risks. In industries with high risk of fatalities and injuries during 2015[5]:

43% OF WORKERS REPORTED WORKING WHEN THEY WERE OVERTIRED

23% OF WORKERS SAID THEY HAD MADE A MISTAKE BECAUSE THEY HAD BEEN WORKING TOO LONG OR TOO HARD WITHOUT A BREAK

11% OF WORKERS REPORTED WORKING WHILE HUNGOVER OR UNDER THE INFLUENCE OF DRUGS

Appendix A provides more detail on some of the specific work-related disease, ill-health and exposures occurring in New Zealand.

⊜ WORK-RELATED HEALTH IN ACTION

Working in partnership to address fatigue

Impairment from fatigue can increase the risk of injuries. "If people are tired, things get broken and people can get hurt," said **Landcorp** Farm Business Manager Mark Johnson. "Accidents to people, equipment and property were costing us and ACC. We came up with a simple change that didn't cost us any extra and people became more efficient in their work."

There was some initial resistance from workers when the dairy farms introduced roster changes to address the problem. However, they quickly embraced the move from an 11 days on, three off roster to a four-two system.

"We talked openly with our workers about how we wanted people to have a good work-life balance. Initially younger staff weren't keen as they wanted every second weekend off. They saw that as more important than working fewer hours. We agreed to a three-month trial and at the end we asked for their feedback. No one wanted to change back. They feel better, enjoy life more and have more time with their families. Taking their views into account helped us make the right decision."

APPROACHES TO MANAGING WORK-RELATED HEALTH RISKS

The joint WorkSafe, MBIE and ACC Safety Star Rating (SSR) injury prevention initiative[9] assesses an organisation's health and safety practices and performance. During 2015/16, it assessed 90 medium and large sized businesses across seven different sectors and found that priority was consistently given to worker physical safety whereas work-related health was considered less or not at all. Very often, there was a general lack of awareness of work-related health issues in businesses. Additionally, many organisations only had a limited understanding about the key work-related health risks impacting on their businesses and, where controls were implemented, they were often very basic. In short, many businesses simply did not seem to appreciate what good work-related health risk management should look like. Where risks were identified, awareness of the actual level of exposure was poor and there was little or no baseline testing or workplace monitoring of the hazards.

SSR assessors found there was only limited attention provided to eliminating or minimising work-related health risks or to isolate workers from hazards. Most organisations defaulted straight to personal protective equipment (PPE) as the only mechanism for control, rather than applying more effective controls such as isolation or engineering controls.

SSR assessors found workers had mixed awareness of risks associated with work-related health hazards. Workers often knew about serious and acute health risks but didn't fully understand the health implications associated with chronic exposure to chemicals, noise, dust or others. This supports other research findings in which only five out of ten workers report being confident that they have the skills and knowledge to avoid long-term health problems caused by their work[5].

Where health monitoring was performed, there was little evidence of processes to review results other than to meet obligations to compensate workers for injury/illness or notify WorkSafe. Few organisations plot trends and use this information to measure or improve the effectiveness of their work-related health risk controls. Research[5] from the manufacturing and construction sectors supports this. For example, only 23% of manufacturing employers and 7% of construction employers said their workers had been offered health monitoring in the past 12 months, despite those sectors having high levels of exposures to work-related health risks.

The case for change

There is a strong case for improving the way that work-related health risks are managed.

Morally, it is unacceptable that several hundred people die each year from largely preventable risks at work. The same is true for the thousands of workers who develop non-fatal work-related ill-health.

Socially, the impact of work-related ill-health includes not only the societal costs of caring for those with poor health caused by their work, but also the impact on families, whānau and communities.

Economically, international evidence shows that addressing preventable health conditions in workers is good for business[2,3,10]. Workers who maintain good levels of health are at work more often, report higher levels of productivity, and are more likely to feel engaged with their employer.

We are confident that improved management of work-related health risks would bring multiple benefits to New Zealand (Table 2).

THE ISSUE	THE POTENTIAL BENEFITS

ESTIMATED

600 – 900[4]

people die of work-related diseases each year
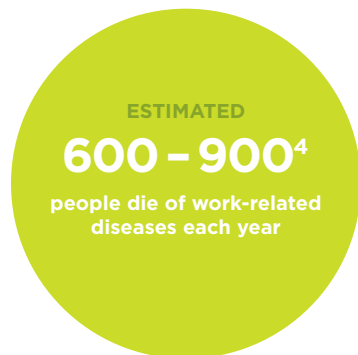
Fewer Preventable Deaths

Less exposure to work-related health hazards will reduce the incidence of potentially fatal cancers, lung and cardiovascular diseases

ESTIMATED

29,000 to 30,500[4]

people each year develop non-fatal work-related health conditions, impacting on their quality of life

Improved Quality of Life

Reducing exposure to work-related health hazards will reduce the development of ill-health conditions, ultimately increasing the ability for workers to experience high levels of sustained health and wellbeing and quality of life

THE ISSUE	THE POTENTIAL BENEFITS
$2.4 billion[11] Is the estimated cost of work-related diseases to New Zealand per year	## Reduced Societal Burden Improving the management of work-related health risks will reduce the financial burden placed on the social and healthcare systems
$44,500[12] Is the estimated average cost of lost productivity over a typical worker's career for each case of work-related ill-health	## Increased Workplace Productivity Workers with good health generally have high levels of productivity and are able to work for longer[5]
$120 million[13] Is the estimated annual cost of absences workers attribute to work-related ill-health	## Reduced Workplace Absence Reducing the number of workers who develop work-related health conditions will reduce the number of lost working days and contribute to business success

Table 2: The case for change in work-related health

The challenges we face

Work-related health is not a new issue and has historically had a much lower profile, and received much less attention, than worker safety or public health.

The effort needed to mobilise stakeholders, implement change activities and embed sustained reductions in work-related health risks will not be small and should not be underestimated. The long-latency nature of work-related diseases and ill-health conditions means much of the ill-health reported in the coming years will reflect exposure to past health risks.

Some of the key challenges we face include:

> The **long-latency period** between exposure and many health outcomes reduces individual perceptions of risk and vulnerability and makes attribution difficult.

> The **perceived complexity of work-related health** reduces confidence in risk management.

> **Limited access to appropriately trained professionals** able to give suitable and tailored advice, especially relating to workplace exposure and worker health monitoring.

> The **variable use of worker health and workplace exposure monitoring programmes** creates a false sense of assurance in businesses that risks are being managed effectively.

> The **changing work environment** is leading to new and novel work-related health risks.

> An **ageing population** brings a greater risk of general health conditions that may impact on a person's fitness to work.

> There is **limited reliable data** on the prevalence of work-related ill-health and exposures in New Zealand.

WORK-RELATED HEALTH IN ACTION

Improving health reduces injury rates

The **Sanitarium** company recognises that a worker's health can impact on safety at work so provides comprehensive health programmes for its ageing workforce. The aim is to reduce injury rates, but other benefits include better staff retention and productivity.

120 people work at Sanitarium's dry cereal factory in Royal Oak, Auckland – mostly as manual packers on food production lines. Many have some kind of health issue, including age-related conditions like arthritis.

This leads to mobility-related risk, such as the potential for people to collapse onto, or not be able to move away from, moving machinery fast enough.

Sanitarium addresses this risk through ongoing initiatives and one-on-one programmes including a Return to Work package. Workers manage their conditions and return to work, with support from medical professionals and occupational therapists.

The factory provides an onsite gym, health coaches and exercise sessions for all levels of fitness/ability aimed at improving mobility and physical resilience. Worktime workshops address issues such as managing stress or fatigue.

Sanitarium is also addressing risks at source, introducing technology to reduce manual lifting.

Health and Safety Officer Karen Daniels said: "The key thing is support. It isn't enough to just give people information. You have to provide the environment where people want to participate.

"The benefit for our people is they are less likely to be injured at work. But they are also more likely to remain employed and feel better, and happy healthy workers are more productive. The benefit for us is that we retain loyal and experienced staff, with less absenteeism and other costs due to injuries. The extra effort is more than worth it."

The opportunities we have

While we face challenges, we have opportunities we can take advantage of.

In general, there is better awareness of the importance of good health and that good work contributes to this. The health and safety system also increasingly recognises that the focus and attention given to work-related health must increase.

Some of our key opportunities include:

> HSWA provides a once-in-a-generation opportunity to improve **the focus on preventing work-related ill-health**.

> HSWA places **greater emphasis on effective management of work-related health risks**, such as upstream PCBUs designing health risks out at-source.

> **People are becoming more health-conscious**, meaning workers and others are likely to be more receptive to health messages.

> We have **effective working relationships with social partners and stakeholders**, providing more opportunities for engagement on activities to improve work-related health and health-related safety risk management.

> The Ministry of Health's recently launched **New Zealand Health Strategy**[14] recognises a whole-of-life approach to health, which includes work. This provides an important opportunity to work more closely together across the wider health system to improve health outcomes.

> **Improvements in technology** are making it easier to innovate and re-design harmful work, as well as enabling us to engage more easily with remote or traditionally hard-to-reach groups.

📄 WORK-RELATED HEALTH IN ACTION

Working with experts to find an innovative solution to airborne dust

When an airborne dust issue was identified at the **Placemakers** Frame & Truss manufacturing plant in Wiri, Auckland, management worked with experts to develop an innovative solution.

The plant, which has 103 workers, has a large extraction system. However, following changes to recommended limits for airborne particles, dust in one area around drop saws was found to exceed those levels.

Management joined a government project, which funded ventilation engineers to investigate solutions.

The plant's engineer worked with these experts to design a plywood hood for the saws, which captures dust, enabling more efficient extraction.

Testing by Massey University's Centre for Public Health Research found this reduced dust to well below recommended levels. Hoods were then fitted on all saws at Wiri and at other Placemakers factories.

"They are cheap and simple and don't restrict us in any way" said plant manager Laurie Smith. "Workers helped design, build and test the solution."

"We are also improving our extraction system so we stay within recommended levels. We have independent worker exposure monitoring carried out every two years on dust, noise and levels of timber treatment to make sure we are providing a healthy working environment".

Our guiding principles and levers for change

Our approach to enabling change must be built on strong guiding principles that can be applied across all of our programmes and activities over the coming ten years.

Our guiding principles:

> We will develop evidence-based interventions through research and intelligence-led analysis.

> We will take a high-engagement approach with social partners, key stakeholders, workplaces, agencies and communities.

> We will use our levers of educate, engage and enforce transparently and proportionately.

> We will proactively consider the perspectives of those we are aiming to support.

> We will recognise and focus on groups who are vulnerable to work-related health risks, including Māori and other ethnic groups.

We use our levers of engagement, education and enforcement to encourage, support and enable changes in the way risks are addressed.

ENGAGE
With those who
influence the workplace

ENFORCE
Proportionately,
consistently

EDUCATE
What good looks like and
how to take action

WORKSAFE'S FOCUS ON WORK-RELATED HEALTH

Engage

Our Inspectors are routinely and proactively engaging a person conducting a business or undertaking (PCBUs) and others on work-related health risks across the country. This gives us assurance in the approaches being taken to control risks, but also enables us to educate and enable continuous improvement in work-related health risk management. Between July 2015 and June 2016, our Inspectors conducted over 5,200 proactive workplace inspections covering 6,300 work-related health risks, with around 3,000 of these inspections related to noise and silica risk management.

Educate

We have increased the availability of health-related guidance and education materials available to PCBUs, workers, their representatives and other stakeholders. For example, we have developed guidance material on local exhaust ventilation, noise in the manufacturing industry, fatigue in the construction industry and ways to reduce risk of leptospirosis exposure in meat processing workers. We have also developed and published WorkSafe's Position on Occupational (Work-Related) Health, which clearly outlines WorkSafe's interpretation of work-related health, the approach we will take to the issue, and our expectations of duty holders.

Enforce

Enforcement will be used where we believe that the potential for harm to health, or the action taken to address risk, warrant this action. Where necessary, we use our enforcement tools to ensure that risks to health are adequately managed; between July 2015 and March 2016, we used our enforcement tools on 685 occasions related to the management of work-related health risks, equating to 1 enforcement action in every 7 work-related health inspections[i].

---

[i]   Data for the period April to June 2016 was not available at the time of publication.

📄 WORK-RELATED HEALTH IN ACTION

Reducing the risk of muscle and joint injuries

Heavy machinery parts manufacturer **Real Steel** identified a number of hazards in its business, including manual lifting injuries.

The Upper Hutt-based company engaged its 33 workers in creating its 'top ten risks register' and implemented a number of measures including increased signage and a rolling awareness-raising programme, focusing on two risks each month.

A company workshop on manual lifting used a skeleton to demonstrate how the spine works during lifting; a whiteboard enables people to proactively highlight issues, with a deadline set for resolving them; and a quarterly health and safety innovation award encourages workers to raise issues and promote recognition that everyone has responsibility for health and safety.

"We've had a significant reduction in manual lifting injuries," said health and safety manager Robert Smith. "Our goal is zero manual lifting injuries and 100 per cent reporting. People feel comfortable raising concerns and pick each other up if they aren't doing things safely – like trying to manually lift something over 25 kg. There's real recognition of the potentially harmful consequences if you don't follow procedures."

The vision and outcomes for 2026

Our longer-term vision is clear:

EVERYONE WHO GOES TO WORK COMES HOME HEALTHY AND SAFE

The eventual measure of success for our strategic vision will be a reduction in the number of workers who are harmed by work-related health and health-related safety risks (our '*system target*'). Achieving this outcome will not be quick or easy but evidence from other countries demonstrates it is possible.

We recognise the long-latency nature of many work-related diseases. Much of the ill-health that becomes evident over the coming ten years will reflect exposures that have occurred in previous years rather than the impact of this plan. We expect many of the benefits in terms of harm reduction to become evident in the years and decades following this plan. But we need to act now to ensure we leave a healthy legacy for the next generation.

Our aims for 2026 therefore focus on encouraging and supporting significant and sustainable improvements in work-related health and health-related safety risk management across the health and safety system. Achieving this will require PCBUs to manage work-related health and health-related safety risks better, including a reduction in exposures to work-related health hazards (our '*substantive impacts*'). This improvement in risk management will be achieved through improvement in workplace culture, including the awareness, attitudes and, ultimately, behaviours associated with work-related health and health-related safety risks (our '*immediate impacts*') (Figure 5).

VISION AND OUTCOMES

Vision	EVERYONE WHO GOES TO WORK COMES HOME HEALTHY AND SAFE
System target	Fewer people experience work-related ill-health
Substantive impacts	Work-related health risks managed better*. Exposures to health hazards are reduced
Immediate impacts	Awareness, attitudes and behaviours related to work-related health improve

* Both work-related health and health-related safety risks.

Figure 5: Our vision and desired outcomes

What 2026 will look like

A SYSTEM WORKING EFFECTIVELY TO MANAGE RISKS...

By 2026, all of Industry will be working more collaboratively and effectively to manage work-related health and health-related safety risks. There will be a strong sense of partnership and recognition of the benefits that come from working together to eliminate and minimise risks.

PCBUs will be complying with all mandatory health and safety requirements. They will effectively engage with workers to identify, assess and manage work-related health and health-related safety risks. They will have a better awareness of the potential risks their workers may encounter. They will be implementing effective approaches to managing these risks, preferring controls that protect multiple at-risk workers at once. They will be able to recognise when they need more specialist advice, accessing suitably skilled and qualified professionals such as occupational physicians, nurses, hygienists and human factors specialists.

Workers and HSRs will be participating with PCBUs in work-related health matters and be aware of the potential health risks they may encounter from their work. They will have knowledge of, and apply, healthy and safe ways of working. They will feel empowered and supported by PCBUs to report work-related harm to health and exposures to hazards. PCBUs will recognise these as opportunities to learn and continuously improve their approach to managing risks. They will be voluntarily reporting work-related health harm to allow system-wide learning to occur.

Upstream PCBUs will be proactively identifying ways to design out health risks, reducing the requirements on downstream PCBUs and workers to manage these risks. Designers, manufacturers, architects and others will appreciate their role in reducing work-related health risks and will actively apply processes to reduce risk at source. Consideration for reducing health risks at source will be reflected in the contracting processes of downstream

PCBUs, further incentivising upstream PCBUs to enhance their approach.

The broader health system, including medical and general health professionals, will have a better awareness of the potential impact a person's work may have on their health. They will contribute to improved risk management by appropriately reporting potential work-related ill-health to ourselves and others conducting research and surveillance.

A REGULATOR CONTINUOUSLY IMPROVING...

By 2026, WorkSafe's education, engagement and enforcement levers will have been used routinely to sustain change in how work-related health and health-related safety risks are identified, assessed and managed by PCBUs. Our Inspectors will have the right skills, knowledge and abilities to address the majority of work-related health risks and matters they encounter. They will have access to an effective support network of technical experts who can provide more specialist guidance where necessary.

We will have a broad range of effective and up-to-date guidance and education materials. These will enable those in the health and safety system to understand significant and prioritised work-related health and health-related safety risks and ways to eliminate or minimise them.

We will understand how PCBUs manage work-related health and health-related safety risks, as well as the levels of exposure to various risks. We will be using this understanding to inform our strategic direction, approach and programmes. We will be actively contributing to expanding research focused on work-related health nationally and internationally so understanding of risks, controls and ill-health is being continuously enhanced.

Consideration for work-related health will be embedded throughout our positions, policies and processes, enabling a consistent approach to it across our organisation so it is simply a part of '*what we do*'.

Our strategic approach to delivering the vision

To achieve our vision and strategic outcomes, we have identified three core themes that will guide our activities over the coming years (Figure 6). These strategic themes were identified through earlier research and recommendations for improving work-related health and health-related safety risk management and confirmed through engagement with social partners and stakeholders [15,16,17,18]:

STRATEGIC THEME 1

INDUSTRY LEADERSHIP

Engaging and influencing Industry to enable system-wide action

STRATEGIC THEME 2

REGULATORY EFFECTIVENESS

Continuously improving our capabilities for engaging, educating and enforcing

STRATEGIC THEME 3

STEP CHANGE

Embedding meaningful and significant change in the way that prioritised risks are managed

VISION AND OUTCOMES

Vision	**EVERYONE WHO GOES TO WORK COMES HOME HEALTHY AND SAFE**
System target	Fewer people experience work-related ill-health
Substantive impacts	Work-related health risks managed better*. Exposures to health hazards are reduced
Immediate impacts	Awareness, attitudes and behaviours related to work-related health improve

STRATEGIC PLAN

Work-related health strategic themes

THEME 1: INDUSTRY LEADERSHIP   **THEME 2: REGULATORY EFFECTIVENESS**

THEME 3: STEP CHANGE

* Both work-related health and health-related safety risks.

Figure 6: Our strategic themes for delivering our vision

STRATEGIC THEME 1: INDUSTRY LEADERSHIP

We recognise that, to achieve our long-term vision, those who create and interact with work-related health and health-related safety risks are the best placed to identify and manage them effectively. They therefore need to take greater ownership for managing and controlling them. This will require PCBUs and officers to demonstrate sustained, focused and effective leadership on work-related health matters. Workers and HSRs must be empowered to participate in risk management and raise concerns about potential risks.

Similarly, we recognise that social partners and key stakeholders will play an important part in influencing how risks are managed. These include trade unions, business representatives, Government agencies, health professionals and those who design, manufacture, produce or import substances, plant and equipment. The activities within this theme will enable us to influence the Industry leadership necessary for lasting change in how work-related health is addressed.

STRATEGIC THEME 2: REGULATORY EFFECTIVENESS

As the primary regulator for health and safety, we recognise that while we are not directly responsible for how risks are managed, we have an important leadership role to play in the work-related health system. We also recognise the need to continuously improve our approach to work-related health if we are to achieve our long-term vision. Our levers of education, engagement and enforcement are how we develop wider change in the health and safety system; these must be continuously improved to reflect the importance of work-related health. The activities in this strategic theme will enable us to become a continuously improving regulator in the area of work-related health.

STRATEGIC THEME 3: STEP CHANGE

If we are to achieve the significant change needed in overall work-related health performance we need to target our efforts on prioritised risks. We will implement a series of multi-year intervention programmes to address these prioritised risks over the course of this strategic plan. Over time, the cumulative effect of these targeted programmes will be a step change in the overall work-related health capability and performance across the wider health and safety system (Figure 7).
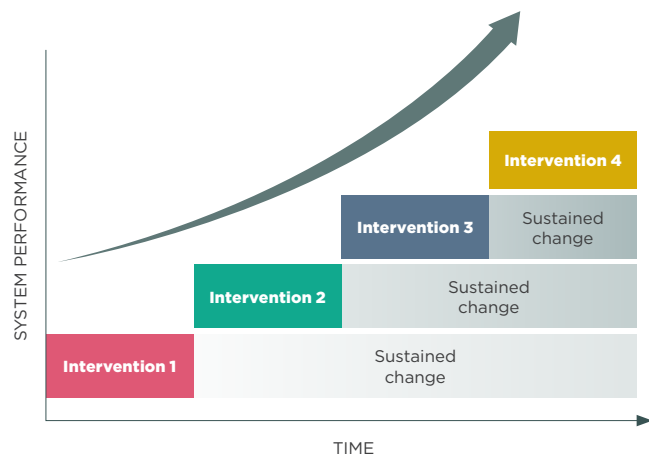

Figure 7: Targeted programmes improving system performance

Part Two

TURNING STRATEGY INTO ACTION

How we will deliver our strategic plan

Our three strategic themes direct the approach to delivering our vision. Across these themes, we have identified focus areas of activity that will be critical over the coming ten years (Table 3).

These focus areas were identified from previous research recommendations[15,16,17,18], and through engagement with a range of social partners and stakeholders. Over the coming ten years, we will work to improve how we and others operate within each of these nine areas so the whole work-related health system is sustainably enhanced.

In each focus area, we have identified what 'success' would look like by 2026 and outlined some of the high-level activities that will enable us to achieve it. We will implement a strategic monitoring framework for each focus area, regularly assess our impact and use these reviews to adjust the proposed activities as needed to achieve our vision. As such, success may be achieved sooner in some areas than in others and there may be other activities we complete in addition to the ones in this plan.

The following sections provide more detail on how we will approach each of these focus areas.

📄 **WORK-RELATED HEALTH IN ACTION**

Working together to reduce carbon monoxide fumes

WorkSafe Inspector Nigel Formosa highlighted a carbon monoxide hazard at **Plumbing World** in Hastings, leading to company-wide changes.

During an inspection, Nigel alerted management to risks of an LPG-powered forklift, used in an inward goods area, potentially without adequate ventilation. Plumbing World had the forklift tested, finding carbon monoxide emissions were well above acceptable levels.

Nigel built a relationship with the branch and Plumbing World's National Health and Safety Advisor, providing them with information and technical material.

The company carried out exposure testing and made alterations, where needed, at all branches using these types of forklifts inside to make sure they keep within acceptable emission levels. It also commissioned a formal training guide for forklift use and reviewed PPE use and certain work methods nationally.

"You need to trust your instinct and keep highlighting the issues with those who have influence," said Nigel. "Keeping pushing can lead to large scale organisational awareness, mindset change, operational improvements and ultimately a healthier environment."
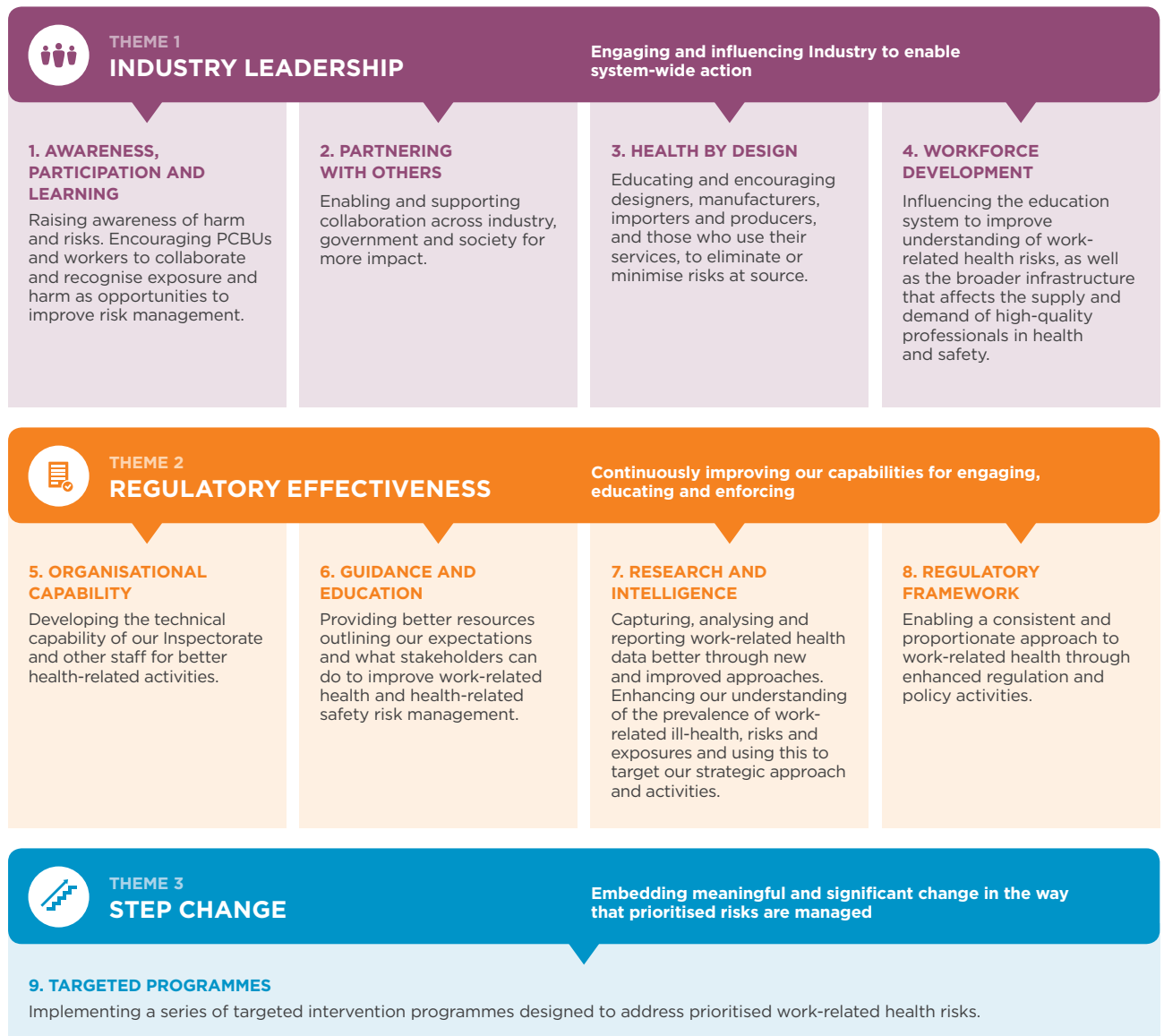
THEME 1
INDUSTRY LEADERSHIP

Engaging and influencing Industry to enable system-wide action

1. AWARENESS, PARTICIPATION AND LEARNING

Raising awareness of harm and risks. Encouraging PCBUs and workers to collaborate and recognise exposure and harm as opportunities to improve risk management.

2. PARTNERING WITH OTHERS

Enabling and supporting collaboration across industry, government and society for more impact.

3. HEALTH BY DESIGN

Educating and encouraging designers, manufacturers, importers and producers, and those who use their services, to eliminate or minimise risks at source.

4. WORKFORCE DEVELOPMENT

Influencing the education system to improve understanding of work-related health risks, as well as the broader infrastructure that affects the supply and demand of high-quality professionals in health and safety.

THEME 2
REGULATORY EFFECTIVENESS

Continuously improving our capabilities for engaging, educating and enforcing

5. ORGANISATIONAL CAPABILITY

Developing the technical capability of our Inspectorate and other staff for better health-related activities.

6. GUIDANCE AND EDUCATION

Providing better resources outlining our expectations and what stakeholders can do to improve work-related health and health-related safety risk management.

7. RESEARCH AND INTELLIGENCE

Capturing, analysing and reporting work-related health data better through new and improved approaches. Enhancing our understanding of the prevalence of work-related ill-health, risks and exposures and using this to target our strategic approach and activities.

8. REGULATORY FRAMEWORK

Enabling a consistent and proportionate approach to work-related health through enhanced regulation and policy activities.

THEME 3
STEP CHANGE

Embedding meaningful and significant change in the way that prioritised risks are managed

9. TARGETED PROGRAMMES

Implementing a series of targeted intervention programmes designed to address prioritised work-related health risks.

Table 3: Our focus areas for work-related health

**STRATEGIC
THEME 1**

Industry leadership

① Awareness, participation and learning

Lasting improvement in the management of work-related health and health-related safety risks will require a series of important cultural building blocks that enable PCBUs, officers, workers and others to work together proactively.

Everyone involved should be aware of the scale of harm occurring, the risks present and the benefits that come from healthy work. Evidence from other health and safety regulators shows campaigns that educate and raise awareness of work-related health are important to improving how health risks are managed in the workplace[10].

But awareness alone won't lead to the changes needed. Sustained improvements in risk management will not be achieved without workplace environments in which all parties are actively involved in identifying and managing risks. Workers need to be confident in reporting harm or near misses, such as being exposed to harmful substances or other hazards. We know that workplaces in which workers are actively engaged and participate in risk management have lower rates of work-related health and safety incidents[1].

Under-reporting of exposure to work-related health hazards and harm is common, both within New Zealand workplaces and to us as the regulator[19]. Variable use of worker health and workplace exposure-monitoring programmes is likely to play a significant part in this. PCBUs, workers and HSRs are often unaware, unable or unwilling to report exposures or harm. This under-reporting prevents lessons from being learnt, good practice from being shared, and risk management from improving.

We are confident that the necessary step-change in performance can only be achieved if workplaces:

> increase awareness of work-related health

> encourage engagement and collaboration with workers as part of everyday business

> encourage workers to openly and honestly report work-related harm to health and exposures, and

> recognise and take advantage of learning opportunities throughout the organisation.

STRATEGIC THEME 1

WHAT SUCCESS LOOKS LIKE IN 2026

a. PCBUs, officers, workers, HSRs and others are aware of the issue of work-related health, the harm occurring and the benefits of healthy work.

b. PCBUs, workers and HSRs collaborate with one another on work-related health matters through effective engagement and participation processes.

c. PCBUs have the appropriate worker health and workplace exposure monitoring programmes in place to assess the effectiveness of controls and enable continuous improvement.

d. PCBUs empower and support workers and HSRs to openly and honestly report exposures and harm to health, and everyone recognises these as opportunities to learn and continuously improve their approach to risk management.

OUR KEY ACTIVITIES TO ACHIEVE SUCCESS

> Implement **a series of targeted campaigns** focused on raising awareness of work-related health matters amongst PCBUs, officers, workers, HSRs and others.

> Implement interventions to **support HSRs** to engage with PCBUs, officers and workers, and to carry out their functions confidently in relation to work-related health matters.

> **Educate and engage** PCBUs, officers, workers and HSRs on the duties of worker engagement and participation by sharing and highlighting good practice in a work-related health context.

> Implement interventions to **encourage** PCBUs, workers, HSRs and others to implement effective monitoring programmes and **report work-related ill-health and exposures**.

② Partnering with others

We recognise that successfully reducing the harm caused by unhealthy work will require action from many stakeholders across the wider health and safety system, as well as ourselves[17].

PCBUs, workers, trade unions, Government agencies and departments, health and safety professional groups, industry associations and public health organisations all have an interest in worker health. By working together, we will enhance the collective impact of our individual efforts. Many of the stakeholders we engaged with during the development of this plan highlighted the importance of those in the health and safety system working together more proactively to address work-related health and health-related safety risks.

WHAT SUCCESS LOOKS LIKE IN 2026

a. Businesses, Government agencies and departments, professional bodies, social partners and other stakeholders have a coordinated and system-wide approach to improving worker health risk management.

b. We continuously improve our collective impact on work-related health matters through collaborative and coordinated activities working across social partners and key stakeholder groups.

c. WorkSafe is seen as a key partner in addressing work-related health matters by businesses, social partners, key stakeholders, industry associations and others. They will be proactively and positively engaging with us.

OUR KEY ACTIVITIES TO ACHIEVE SUCCESS

> Encourage and support the establishment of **dedicated forums on work-related health** to enable sharing of good practice amongst PCBUs, officers, HSRs and professionals working in health and safety.

> **Work with social partners and other key stakeholders** to collaborate better on work-related health matters. Some of the potential social partners and stakeholders include the Accident Compensation Corporation, BusinessNZ, Business Leaders' Health and Safety Forum, Council of Trade Unions, Environmental Protection Authority, Health and Safety Association of New Zealand, Health Promotion Agency, and Ministry of Health.

> **Build strong working relationships with trade and industry associations** to maximise our impact on work-related health and health-related safety risk performance, including within small-to-medium enterprises.

**STRATEGIC
THEME 1**

3 Health by design

We know that eliminating or minimising potential health risks at source is more effective than attempting to address them 'downstream' in the workplace.

The concept of '*Safety by Design*' has been well accepted and many PCBUs now focus on sourcing those resources that have increased safety designed into them. Yet far less consideration is given to whether potential health risks have been designed out at source. Examples from other countries indicate '*Health by Design*' is becoming more common and is an important part of reducing the potential for harm to health and safety[20].

We are confident that both upstream and downstream PCBUs will benefit from a '*Health by Design*' approach. Downstream PCBUs will have reduced costs and resource requirements associated with having to eliminate or minimise risks to their workers. Upstream PCBUs will be able to use their approach to health risk management as a way to differentiate themselves from competitors. However, effort is needed to educate and encourage this approach within designers, manufacturers and importers of plant, equipment and substances, as well as those who procure their services.

WHAT SUCCESS LOOKS LIKE IN 2026

a. Upstream PCBUs routinely address potential work-related health risks within their product design and development stages so inherent risks are eliminated or minimised at source.

b. Downstream PCBUs continuously improve health risk management by incorporating '*Health by Design*' concepts into their work, including within contracting and tendering processes.

c. The '*Health by Design*' concept is embedded within training programmes for targeted upstream professions.

OUR KEY ACTIVITIES TO ACHIEVE SUCCESS

> **Develop a range of guidance materials** outlining '*Health by Design*' concepts and principles and include these concepts within wider relevant WorkSafe materials.

> Intervene to encourage and enable **greater use of the '*Health by Design*' approach** in both upstream and downstream PCBUs.

> **Influence legislation, regulations and standards** to align with the principles of the '*Health by Design*' concept.

> **Influence the inclusion of '*Health by Design*' principles** in training and accreditation standards for targeted upstream professions.

④ Workforce development

The workforce needs to understand the implications of work as a factor that can affect health, and health as a factor that can affect safety.

This understanding is needed in all roles, from business leaders, managers and professionals in health and safety to workers and HSRs. Leaders and managers are critical for creating an environment that addresses work-related health risks. Health and safety professionals provide necessary technical guidance and input. Workers are the ones who interact with risks on a day-to-day basis. HSRs carry out a range of activities to support good worker health and safety outcomes.

Without sufficient knowledge, skills and abilities relating to work-related health, individuals in these roles will not be able to adequately identify, consider and respond to potential risks at work. To address this effectively we have a leadership role to play. We will support stakeholders to identify existing gaps in both work-related health capability and capacity, and work with them to embed interventions that can address these gaps.

WHAT SUCCESS LOOKS LIKE IN 2026

a. All levels of the workforce have a strong awareness and understanding of work-related health and health-related safety risks and ways to eliminate or minimise these risks effectively.

b. Professional development courses are established, quality assured and internationally aligned to produce highly skilled professionals in health and safety who can provide effective guidance on ways to manage risks.

c. High quality work-related health advice to support business aims is available and in strong demand.

OUR KEY ACTIVITIES TO ACHIEVE SUCCESS

> Support the **establishment or expansion of professional development courses** to build better work-related health technical skills.

> **Influence the tertiary education system** to embed work-related health concepts and matters within relevant training courses.

> **Influence the content of formal occupational health training programmes** to reflect elements of WorkSafe's approach to work-related health.

> **Enhance the understanding of work-related health concepts** and matters in HSR training programmes.

**STRATEGIC
THEME 2**

Regulatory
effectiveness

5 Organisational capability

Our capability in work-related health and health-related safety risks is central to our role as an effective regulator. Our Inspectors need to be able to educate, engage and make enforcement decisions on work-related health matters in an effective, consistent and evidence-based manner.

Our long-term approach to organisational capability for work-related health needs to reflect our approach of having effective generalist Inspectors who are able to engage on a broad range of health and safety risks and matters.

While awareness of the ill-health effects from risks is important, knowledge on the risks and reasonably practicable controls is most critical. Where necessary, Inspectors will need to be supported by a smaller number of subject matter experts capable of providing expert technical advice and guidance. Everyone in our organisation needs to have an understanding of our approach to work-related health, as well as the role they play in supporting our long-term aims and objectives.

WHAT SUCCESS LOOKS LIKE IN 2026

a. Our Inspectors are knowledgeable about significant work-related health and health-related safety risks and are aware of reasonably practicable controls to eliminate or minimise them.

b. Our Inspectors confidently and consistently engage duty holders in discussions about their approach to health risk management and carry out enforcement action when risk has not been managed appropriately.

c. We have appropriate access to work-related health subject matter experts to provide technical advice and guidance to all parts of the organisation and, where appropriate, wider stakeholders.

d. All WorkSafe staff understand the importance of work-related health, WorkSafe's approach and their role in achieving our vision.

OUR KEY ACTIVITIES TO ACHIEVE SUCCESS

> Embed a framework of **role-specific knowledge, skills and abilities** relating to work-related health and health-related safety risks across our Inspectorate and other key parts of the organisation.

> Provide **continuing professional development** options for targeted roles specific to the work-related health and health-related safety risks they are likely to encounter.

> Use **training and development activities** to improve our technical subject matter capabilities relating to work-related health.

> Explain **work-related health in our internal induction process** so everyone understands the importance of the issue and WorkSafe's approach to it.

STRATEGIC THEME 2

6 Guidance and education

Providing clear, effective guidance materials is a key contributor to an effective work-related health system[17]. We know that there have been calls for greater breadth and clarity of guidance materials for PCBUs, officers, workers, HSRs and others on work-related health[15].

Only half of workers feel very confident they have the knowledge and skills to prevent ill-health from work[5] and the provision of guidance and education materials is one important way this can be addressed.

Our approach to providing guidance and education needs to be based around a strong understanding of how stakeholders best receive and use these materials. This will ensure we are effective at improving knowledge of risks, their assessment and management, and are viewed as a trusted advisor and source of accessible and helpful guidance materials.

WHAT SUCCESS LOOKS LIKE IN 2026

a. PCBUs, officers, workers, HSRs and others understand

> key work-related health concepts and principles

> their roles and responsibilities in relation to our prioritised work-related health and health-related safety risks

> significant work-related health and health-related safety risks relevant to their work

> reasonably practicable approaches to eliminate or minimise risks.

b. WorkSafe is viewed as a critical enabler to better awareness and understanding of work-related health and health-related safety risk management by social partners and stakeholders.

c. More people regularly access and engage with our work-related health guidance and education materials and tools through a range of different channels and mediums.

OUR KEY ACTIVITIES TO ACHIEVE SUCCESS

> Provide a wider range of formal work-related health and health-related safety **guidance materials**, including approved codes of practice, good practice guides and factsheets.

> Produce a range of **tools and resources** that duty holders can choose to use to educate those in their businesses or supply chains about work-related health and health-related safety risks.

> Use **more channels to engage** with people learning about work-related health, including improving WorkSafe's online presence for it.

⑦ Research and intelligence

Effective systems for detecting work-related ill-health are an essential part of a health risk management system.

If we cannot measure the occurrence of ill-health or the management of risk factors, we will fail in two ways: we will fail to correctly prioritise risks and prevent further ill-health from occurring, and we will be unable to measure the effectiveness of our interventions[17,19].

While some important and insightful studies are available[4,6,7,17], there is no systematic approach to gathering national data on work-related ill-health, exposure or risk-control. This means we cannot adequately monitor the size of the problem or the impact of approaches to address the issue. This state has existed for many years[4,19] and cannot continue.

Positively, there are many other surveillance systems from across the world we can learn from. Attributes of effective and high-quality surveillance systems include both voluntary and mandatory disease reporting and periodic or ongoing surveys. Well-defined and standardised definitions and criteria that conform to international trends for data collection are also important[19]. Achieving this within New Zealand will take dedicated focus, commitment and resources, as well as a 'whole-of-Government' approach.

WHAT SUCCESS LOOKS LIKE IN 2026

a. We are able to assess and report on the prevalence of work-related ill-health and levels of exposure to a range of work-related health risks.

b. We are able to assess and report on approaches being taken to manage our prioritised work-related health and health-related safety risks.

c. We understand awareness, attitudes and behaviours related to work-related health and health-related safety risks in PCBUs, officers, workers and other duty holders.

d. We are better able to assess, report and act upon the contribution of health factors to safety incidents.

e. There is an enhanced programme of research on work-related health across New Zealand.

OUR KEY ACTIVITIES TO ACHIEVE SUCCESS

> Implement a range of **research and surveillance activities** to systematically improve the collection of work-related health data and intelligence, partnering with other agencies and organisations where appropriate.

> Review WorkSafe **disease registers and voluntary notification systems** and, where appropriate, implement changes to make them more effective and useful.

> Implement **strategic and operational intelligence dashboards** for work-related health measures. Use these to continuously improve how we focus on significant risks.

> Embed a **consistent set of data rules** and codifications for work-related ill-health to make analysis and reporting more consistent.

> **Use existing third-party health and surveillance systems** in new ways to capture occupational history, employment status, industry and potential ill-health related to work.

> Identify ways to better **use the rich knowledge and insight our Inspectors gather** about work-related health and health-related safety risk management.

> **Research work-related health**, partnering with universities or other research bodies where appropriate.

**STRATEGIC
THEME 2**

8 Regulatory framework

The regulatory framework related to work-related health, including our approach to enforcement and operational practice, remains challenging and, sometimes, inconsistent. This may weaken the sense of urgency for change and may lead to inconsistent approaches in the management of similar risks.

HSWA provides greater clarity and emphasis on the approach that PCBUs must take in relation to work-related health and the roles and responsibilities of PCBUs, officers, workers and others in relation to risk management. There remains a need for more clarity on work-related health requirements for duty holders through the development and promotion of regulatory tools.

The focus within our internal policies has also historically been weighted towards acute harm and safety incidents and matters. While work-related health and work-related safety bear many similarities, there are some important differences between them. Our policies and processes need to adequately reflect these differences if we are to achieve an effective and consistent approach.

WHAT SUCCESS LOOKS LIKE IN 2026

a. Legal responsibilities and requirements related to work-related health are embedded within the health and safety regulatory framework.

b. The health and safety legislative and regulatory environment adequately reflects work-related health and health-related safety risk management requirements.

c. Work-related health-specific matters have been integrated throughout our operational policies and procedures.

d. We have a consistent and proportionate response to work-related health and health-related safety risk management, including our approach to enforcement.

OUR KEY ACTIVITIES TO ACHIEVE SUCCESS

>   **Review our approach to regulatory activities** specific to work-related health. We must provide clear policy guidance on the approach we will take and embed this throughout our organisational activities, including enforcement, triage, inspections and assessments.

>   **Develop a policy framework** for work-related health tools. The framework will provide greater guidance, clarity and consistency on our approach to work-related health and expectations of PCBUs, officers, workers and others.

>   **Consider work-related health and health-related safety risks** in the development and review of all policy guidance.

>   **Work with partner agencies**, influencing them to consider work-related health more explicitly in the broader health and safety regulatory framework.

**STRATEGIC
THEME 3**

Step Change

**STRATEGIC
THEME 3**

9 Targeted programmes

We recognise there are a wide range of work-related ill-health conditions, with varying severity and nature. Our targeted priority risks will reflect the need to address both fatal and non-fatal work-related ill-health conditions.

As part of the development of this strategic plan, we reviewed previous recommendations and national and international literature on work-related ill-health and associated risks. The resulting prioritised risks to be addressed over the duration of this strategic plan are likely to include:

> carcinogens, including airborne contaminants and hazardous substances

> noise at work

> psychosocial risks, including work-related stress

> musculoskeletal risks, including manual handling

> impairment risks, including fatigue.

As over 50% of deaths from work-related diseases are from cancer, we will establish a long-term programme on prioritised work-related carcinogens linked to work-related cancers.

To reduce the incidence of non-fatal work-related ill-health, our targeted programmes will address a series of prioritised risks through medium-term programmes. The initial focus for these targeted programmes will be to complete our '*Clean Air*' programme and implement a programme on noise at work.

Our targeted programmes will follow the broader strategic approach outlined in this plan, including raising awareness, partnering with others, influencing the way health risks may be eliminated or minimised at source, improving our organisational capability, and developing specific guidance and education materials. This system-wide approach will allow us to achieve sustained change.

As our data and intelligence on work-related health continues to improve over the coming years, we will use this enhanced insight to continuously review our prioritised risks and programmes associated with them. While we will target a small number of prioritised risks at a time, we expect duty holders to be appropriately managing all of their work-related health and health-related safety risks at all times.

Some of the key activities we will complete over the duration of this strategic plan to achieve the step-change in performance for our prioritised work-related health and health-related safety risks include:

> Implementing **a long-term targeted programme focused on work-related cancers** that reflects good practice approaches, such as the Institute of Occupational Safety and Health's '*No Time To Lose*' campaign.

> Implementing **a series of medium-term targeted programmes** focused on our priority work-related health and health-related safety risks.

> **Embedding explicit consideration for work-related health and health-related safety risks** throughout all of our wider targeted programmes.
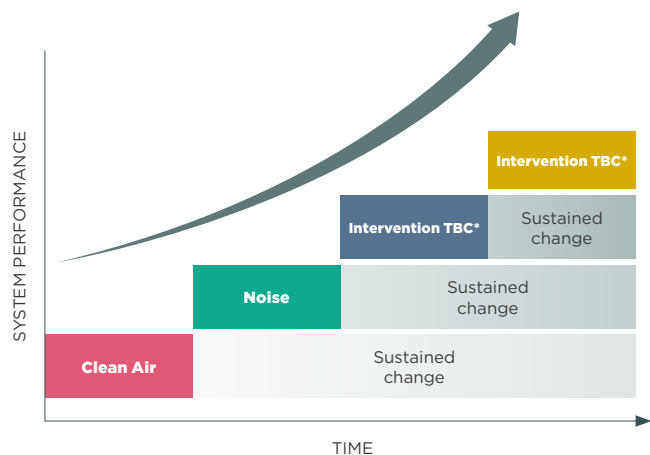
* Future interventions to be identified and prioritised using data and intelligence.

Figure 8: Targeted Programmes Improving System Performance

⊕ WORKSAFE'S FOCUS ON WORK-RELATED HEALTH

Targeted Programmes

In 2015, our National Programmes function launched our first targeted intervention on work-related health risks: 'Clean Air'. Clean Air was a response to the recognition that much of the burden of work-related ill-health is caused by exposure to airborne hazards, such as silica, wood dust and welding fumes. The programme has focused on raising awareness of work-related respiratory risks, increasing Inspectorate knowledge and capability to conduct high-quality Inspections related to these risks, and engaging Industry to enable and encourage a proactive approach to better risk management. During 2015/16, the Clean Air programme worked with other parts of our organisation to develop a range of guidance materials for key respiratory risks, provided a series of one-day workshops for Inspectors and held a number of Industry roadshows and workshops to raise awareness and improve Industry practice.

OUR EARLY STRATEGIC

To implement our strategic plan, we need to have a clear link between our long-term aims and our immediate activities. We have identified the early strategic priorities for each focus area that will guide our activities for the first three years. Our priorities fall under the strategic commitments for each focus area and this enables a clear line of sight between our long-term vision and delivery of discrete activities. Our immediate activities for 2016/17 are described in more detail in a separate and supporting document.

THEME 1
INDUSTRY LEADERSHIP

1. AWARENESS, PARTICIPATION AND LEARNING
Raise awareness of work-related health amongst business leaders, enhance the understanding and consideration for work-related health concepts amongst HSRs, and provide guidance on effective approaches to worker health and workplace exposure monitoring

2. PARTNERING WITH OTHERS
Improve how the health and safety system collaborates together to support worker health and enable good practice sharing amongst business leaders and professionals in health and safety

3. HEALTH BY DESIGN
Raise awareness of the 'Health by Design' concept in upstream PCBUs and develop guidance for targeted work-related health risks

4. WORKFORCE DEVELOPMENT
Embed key work-related health concepts within national qualifications and industry standards

PRIORITIES: 2016 TO 2019

THEME 2
REGULATORY EFFECTIVENESS

5. ORGANISATIONAL CAPABILITY
Develop a clear knowledge, skills and abilities framework for work-related health and embed this across our Inspectorate

6. GUIDANCE AND EDUCATION
Enhance understanding of 'work-related health' concepts and develop guidance on key risks, including carcinogens, substances hazardous to health, fatigue and noise

7. RESEARCH AND INTELLIGENCE
Expand the systematic collection of work-related health data and develop robust baselines relating to ill-health, exposures to hazards and risk management approaches

8. REGULATORY FRAMEWORK
Begin embedding prioritised work-related health risks in regulatory tools and frameworks and improve consistency of approach to work-related health enforcement actions

THEME 3
STEP CHANGE

9. TARGETED PROGRAMMES
Complete our Clean Air programme and implement targeted programmes focused on work-related cancers and noise at work

Who will deliver this plan, and what will delivery look like?

Accountability for work-related health does not belong to one part of WorkSafe; it falls across all parts of our organisation.

Each of the nine focus areas in our plan is sponsored by a member of our Senior Leadership Team, including our Chief Executive, and led by a member of our management team. The sponsors are accountable for the ultimate delivery of the agreed strategic activities and the realisation of their benefits. These leaders will shape the approach and deliverables to be achieved in line with the principles and direction set out in this plan.

To enable a consistent approach, a central strategy team is responsible for working with managers across all focus areas and providing strategic oversight and guidance. We have established a formal governance structure to prevent duplication or conflict in activities and to ensure planning and delivery of work is effective throughout the organisation. This structure will provide visibility and tracking of all major strategic activities, potential risks and mitigations.

We recognise that, for many of the activities outlined in this plan, we will need to work in partnership with others to achieve our aims. We will aim to identify these opportunities and agree responsibility for delivering activities with those partners.

OUR EXPECTED STRATEGIC PERFORMANCE AND TRAJECTORY

Given the high-level of underreporting of work-related ill-health[17], we recognise that much of the harm currently happening is hidden or not easily identified. Over the initial years of this plan, we expect to see PCBUs more effectively encouraging and enabling workers to identify and report work-related ill-health. The scale of harm may therefore appear to get worse before it gets better. This apparent increase in the short-to-medium term,

at both business and national level, will be taken as a sign of a more transparent workplace culture with better processes to identify harm to health. However, we will still expect PCBUs to use the results from worker health and workplace exposure monitoring to continuously improve how risks are eliminated or minimised.

The apparent increase in the prevalence of work-related ill-health, and the limited availability of robust data and intelligence related to work-related health today, make it difficult to set meaningful strategic targets. However, as reporting of ill-health improves, and as we implement a systematic approach to surveillance and intelligence, we will set a range of challenging but realistic strategic targets. By the end of the 2018/19 financial year we expect to have a range of targets relating to work-related health. The long-latency issue previously highlighted means some targets related to reductions in work-related ill-health will need to be for years beyond 2026.

To measure progress in delivering this plan, a strategic evaluation framework will be developed in the 2016/17 financial year. We will provide regular updates on our progress through our standard reporting procedures.

EVIDENCE-BASED INTERVENTIONS AND ALIGNMENT TO THE 'REDUCING HARM IN THE WORKPLACE ACTION PLAN'

We are committed to using effective, evidence-based interventions to achieve the changes needed. WorkSafe's intervention model sets out our approach to delivering sustained change using strong evidence and early engagement with stakeholders when exploring an issue. This will help us to:

> use evidence to clarify the problem we are trying to resolve

> identify our stakeholders and target audience, and

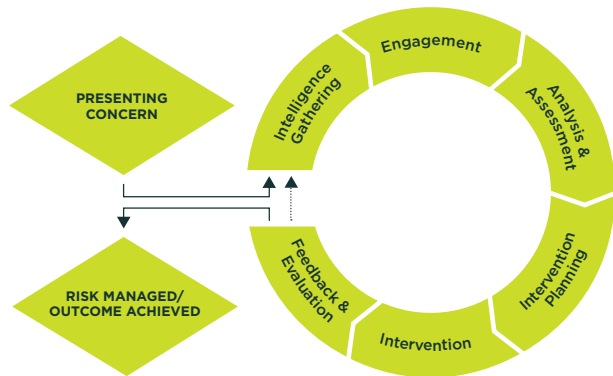> ensure we can monitor and evaluate success when we invest in changes.

Figure 9: WorkSafe Intervention Model

WorkSafe and ACC developed the '*Reducing Harm in New Zealand Workplaces Action Plan*' ('the Action Plan') to provide visibility of the harm reduction interventions and programmes that both organisations will be carrying out over the coming years.

The strategic plan for work-related health outlined in this document is closely aligned to the Action Plan. The strategic plan sets the direction, approach and high-level activities relating to work-related health for WorkSafe. The Action Plan enables WorkSafe and ACC's health and safety activities to be tracked and monitored. This approach maximises opportunities for collaborative work and reduces the risk of duplicative or conflicting activities.

FUNDING AND RESOURCES FOR DELIVERY

The purpose of this strategic plan is to outline a high-level direction and approach to be taken, as well as signal a range of activities that will enable us to achieve our vision. As such, it does not provide detail on the budget or resources required for the activities within it.

However, we recognise that the activities in this strategic plan will require suitable resourcing, both in terms of funding and personnel. As interventions are scoped and developed in more detail, we will clarify resource requirements and agree options.

We expect the majority of funding and resources to come from WorkSafe itself, with many of the activities being delivered as part of the normal business of teams across the organisation.

Where the business case for a targeted programme or other activity meets the requirements for ACC investment, funding for these interventions and programmes may be sourced from ACC. We will also work to identify opportunities for partnership with others.

Acknowledgements

We would like to thank the following for their valuable input and contributions to the development of this strategic plan and the approach outlined:

> Accident Compensation Corporation

> Australasian Faculty of Occupational and Environmental Medicine

> Business Leaders' Health and Safety Forum

> BusinessNZ

> Council of Trade Unions

> Dairy NZ

> Environmental Protection Authority

> Health and Safety Association of New Zealand

> Health Promotion Agency

> Horticulture New Zealand

> Ministry of Business, Innovation and Employment

> Ministry of Health

> New Zealand Occupational Health Nurses Association

> New Zealand Occupational Hygiene Society

> Te Puni Kōkiri

> WorkSafe Occupational Health Advisory Group

> WorkSafe staff

APPENDIX A

Work-related disease and illness, risks and exposures

This section outlines a brief summary of statistics related to work-related health. We look at:

> deaths due to work-related disease (mortality)
> work-related ill-health (morbidity) and exposures
  > musculoskeletal disorders
  > noise-induced hearing loss
  > work-related mental health
  > skin conditions
> gender, ethnicity and work-related health.

DEATHS DUE TO WORK-RELATED DISEASE (MORTALITY)

What we know:

> 600 to 900 people are estimated to die from work-related diseases each year.

> Cancers, heart disease and non-malignant lung diseases account for an estimated 51%, 22% and 18% of all work-related disease deaths respectively (Graph 1)[4].

> Cancers of the lungs and airways are the most prevalent and an estimated 170 people die of asbestos-related diseases each year (Graph 2).

> Silica and other dusts remain significant causes of work-related disease deaths[4]. 32% of manufacturing workers and 16% of construction workers report being exposed to dust most of the time at work[5].

> Evidence shows that regular, long-term night-shift work is associated with an increased risk of breast cancer[21], type II diabetes[22] and obesity[23]. 22% of adults report working some form of shift work, including night work[16].

OCCUPATIONAL DISEASE DEATHS
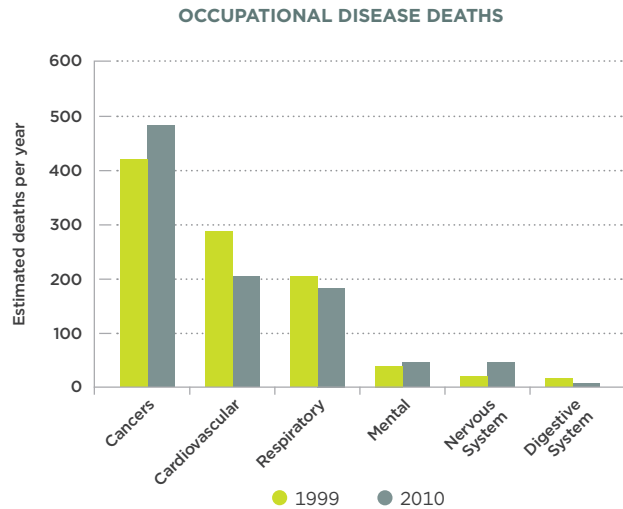
Graph 1: Work-related disease deaths

ASBESTOS-RELATED DEATHS
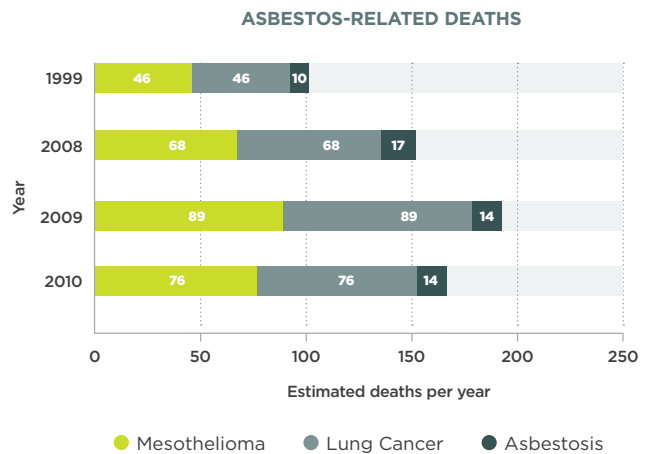
Graph 2: Asbestos-related mortality

WORK-RELATED ILL-HEALTH (MORBIDITY) AND EXPOSURES

Data on non-fatal work-related ill-health requires improvement and it has been acknowledged that the majority of work-related ill-health is not reported or is missed[19]. 2010 figures show approximately 24,000 people submitted a successful ACC claim for a work-related ill-health condition and a further 5,000 to 6,000 were hospitalised through severe ill-health related to their work[4]. Facts on selected work-related health risks and conditions are outlined below:

Musculoskeletal Disorders

What we know:

> Musculoskeletal disorders account for a significant proportion of successful work-related health claims to the ACC[4].

> In 2014, there were 1,969 serious injuries in the forestry, agriculture, construction, manufacturing and healthcare sectors at a cost of approximately $67 million dollars to the ACC[24].

> Over 70% of employers and nearly 80% of workers across the agriculture, manufacturing, construction and forestry sectors report that 'body wear and tear' is a risk faced by workers in their sectors[25].

> 70% of agricultural and fishery workers, 69% of trades workers, 56% of plant and machine operators, and 54% of service and sales workers report being required to lift heavy items at work[7].

Noise-Induced Hearing Loss

What we know:

> Loss of hearing caused by a person's work remains one of the most significant work-related health conditions.

> Overall, 10 to 13% of the New Zealand population are estimated to have significant hearing impairment and between 30% and 50% of hearing loss in adults can be attributed to noise exposure during a lifetime[26].

> Noise-induced hearing loss accounts for around one third of all successful work-related health claims to the ACC and the agriculture, forestry, fishing, manufacturing and construction industries account for a significant proportion[4].

> 72% of trades workers, 68% of plant and machine operators, 49% of agricultural and fishery workers, and 24% of service and sales workers report working in noisy environments for at least a quarter of their working time[7].

> 2% of workers across the agriculture, forestry, construction and manufacturing sectors report permanent loss of hearing in the previous 12 months because of their work[5].

5,000 TO 6,000

WERE HOSPITALISED THROUGH SEVERE ILL-HEALTH RELATED TO THEIR WORK

1,969 SERIOUS MUSCULOSKELETAL

FROM THE FORESTRY, AGRICULTURE, CONSTRUCTION, MANUFACTURING AND HEALTHCARE SECTORS

30% TO 50%

OF HEARING LOSS IN ADULTS IS ATTRIBUTED TO NOISE EXPOSURE

72% OF TRADES WORKERS

REPORT WORKING IN NOISY ENVIRONMENTS FOR AT LEAST 25% OF THEIR WORKING TIME

Work-Related Mental Health

What we know:

> HSWA explicitly recognises the duty of care to protect not just physical health but also mental health from harm due to work.

> Around one in five employers and workers believe mental health conditions, including stress, anxiety and depression, are a long-term health risk to workers in their sector[25].

> 9% of workers report experiencing stress or another work-related mental health condition within the previous 12 months[5].

> Only 5% of employers report being aware of a worker in their business experiencing a work-related mental health condition within the previous 12 months[5].

Skin Conditions

What we know:

> The incident rate for work-related skin conditions has been estimated to be 5 to 19 cases per 10,000 full-time workers per year[25].

> Occupations at high risk of dermatitis include hairdressing, food handling and preparation, nurses, construction industry and metal workers.

> Cleaners are four times as likely to report skin conditions caused by wearing gloves than non-cleaners. They are twice as likely as non-cleaners to report experiencing eczema within the previous three months[28].

GENDER, ETHNICITY AND WORK-RELATED HEALTH

What we know:

> There is a clear difference in the burden of work-related disease mortality between genders. Much of this is due to men making up a larger proportion of the workforce in those industries and roles associated with greater exposure to harmful substances[7].

> Between 1999 and 2010, the proportion of male work-related disease deaths grew from 81.8% to 83.4%[4].

> Māori have been found to be at greater risk of work-related ill-health. This is due to them being more likely to work in roles that expose them to work-related health risks[29].
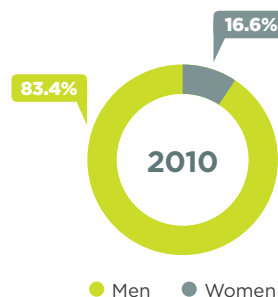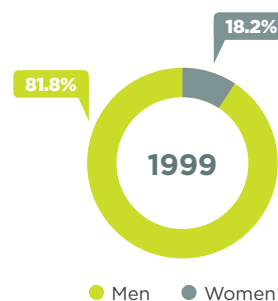
9% OF WORKERS

REPORT EXPERIENCING STRESS OR ANOTHER MENTAL HEALTH CONDITION WITHIN THE PREVIOUS 12 MONTHS

5 TO 19 CASES PER 10,000

FULL-TIME WORKERS PER YEAR ARE ESTIMATED TO HAVE A WORK-RELATED SKIN CONDITION

GENDER DIFFERENCES IN WORK-RELATED DISEASE MORTALITY

18.2%
81.8%
1999
● Men ● Women

16.6%
83.4%
2010
● Men ● Women

Glossary

TERM	MEANING
acute harm	Injury that happens suddenly, such as harm caused by falling from heights or ill-health that happens suddenly, such as short-term breathing difficulties like asthma.
chronic health condition	An illness or disease that has long- latency (develops slowly over time), such as work-related lung cancer.
exposure	Being subjected to something that may have a harmful health effect, such as infectious agents, toxic chemicals, noise or contaminated air.
exposure monitoring	The measurement and evaluation of exposure to a health hazard experienced by a person at work; and includes— (i) monitoring of the conditions at the workplace; and (ii) biological monitoring of people at the workplace.
hazardous substance	Any substance that has one or more of these hazardous properties: explosiveness, flammability, human toxicity, corrosiveness or eco-toxicity; and that may cause harm to people or the environment on exposure.
health and safety system	The complex set of health and safety components working together as parts of an interconnected network. Includes PCBUs, workers, Government, Professional in Health and Safety, Health and Safety Representatives.
health hazard	A potential source of harm that could have an adverse health effect on a person.
health-related safety risk	An impairment or health condition that may adversely affect the safety of a worker or other person in the workplace.
Industry	All participants within the health and safety system other than the regulator; includes PCBUs, officers, workers, health and safety representatives, unions, business representatives, industry associations, health and safety professional groups, government agencies, and those that design, manufacture, produce or import substances, plant or equipment.
long-latency	The long period between first exposure to a health hazard and the manifestation of ill-health, such as occurs with certain cancers.
New Zealand Health and Safety Strategy	A document required under HSWA by April 2018 that sets out the Government's overall direction in improving the health and safety of workers.
occupational health	*See work-related health.*
officer	Defined in HSWA, in summary means a person that exercises significant influence over the PCBU's management. For example, the CEO, a director, or a partner in a partnership.
person conducting a business or undertaking (PCBU)	Defined in HSWA, generally any legal person running a business or undertaking. For example, includes a limited liability company, partnership, trust, incorporated society, etc.
positions	Documents that articulate WorkSafe's view as the regulator on a specific issue.

TERM	MEANING
reasonably practicable (or so far as reasonably practicable)	The primary duty of care requires a PCBU to ensure health and safety 'so far as is reasonably practicable'. When used in this context, something is reasonably practicable if it is reasonably able to be done to ensure health and safety, having weighed up and considered all relevant matters.
regulator	A person or body that has regulatory oversight of a particular industry or business activity. Under HSWA, it is WorkSafe New Zealand or the relevant designated agency.
risk	The likelihood of harm occurring.
sector	A group of businesses that operate in the same segment of the economy or share a similar business type.
social partners	WorkSafe's social partners are the New Zealand Council of Trade Unions and Business New Zealand.
whānau	The extended family within Māori society; includes-respected elders, adults, children and grandchildren.
worker	Defined in HSWA, generally a person who carries out work in any capacity for a PCBU. It covers almost all working relationships, including employees, contractors, sub-contractors, and volunteer workers.
work-related health	The effect of work-on-health and the effect of health-on-work.
work-related ill-health	A physical or mental health condition originating from or caused by a person's work or workplace.
work-related health risk	Risk factor arising from a persons work that fall into one of the categories of biological risks, chemical risks, ergonomic risks, physical risks and psychosocial risks.
work-related safety incident	An unplanned or uncontrolled incident in relation to a workplace that exposes people to the likelihood of injury or illness.

ACRONYM	MEANING
ACC	Accident Compensation Corporation
HSRs	Health and Safety Representatives
HSWA	Health and Safety at Work Act 2015
MBIE	Ministry of Business Innovation and Employment
PCBU	Person conducting a business or undertaking

References

1. Department of Labour, (2011). *The Report of the Independent Taskforce on Workplace Health & Safety. He Korowai Whakaruruhau*.

2. Black, C., (2008). *Working for a healthier tomorrow. Dame Carol Black's Review of the health of Britain's working age population*. London: Department for Work and Pensions.

3. Bevan, S., (2010). *The Business Case for Employee Health and Wellbeing*. The Work Foundation.

4. Ministry of Business, Innovation and Employment, (2012). *Work-related disease in New Zealand: The state of play in 2010*. Wellington.

5. WorkSafe New Zealand, (2016). *2015 Health and Safety Attitudes and Behaviours Survey*. Wellington.

6. Driscoll, T., et al, (2004). *The burden of occupational disease and injury in New Zealand: Technical report*. Wellington: National Occupational Health and Safety Advisory Committee (NOHSAC).

7. Eng, A., et al, (2010). The New Zealand Workforce Survey I: Self-Reported Occupational Exposures. *Annals of Occupational Hygiene*, 54 (2).

8. MacPherson, L., (2014). National Population Projections: 2014 (base) – 2068. Wellington: Statistics New Zealand.

9. WorkSafe New Zealand, Accident Compensation Corporation and Ministry for Business, Innovation and Employment, (2016). *Key Themes: Safety Star Rating Scheme Pilot Onsite Assessments* (draft). Joint report, Wellington.

10. Anon., (2015). *Best-Practice Guidelines: Workplace Health in Australia*. The Health & Productivity Institute of Australia.

11. O'Dea, D. and Wren, J., (2012). *New Zealand Estimates of the Total Social and Economic Cost of Injuries. For All Injuries, and the Six Injury priority areas. For Each of Years 2007 to 2010. In June 2010 dollars. Report to New Zealand Injury Prevention Strategy*. Wellington.

12. Access Economics, (2006). *The economic and social costs of occupational disease and injury in New Zealand: NOHSAC Technical Report 4*. Wellington: National Occupational Health and Safety Advisory Committee (NOHSAC).

13. Business NZ (2013). Wellness in the Workplace. Survey Report 2013. Wellington.

14. Minister of Health, (2016). *New Zealand Health Strategy: Future direction*. Wellington: Ministry

15. New Zealand Government, (2013). *Working Safer: A Blueprint for Health and Safety at Work*. Wellington.

16. Gander, P., et al (2009). *The Evolving Work Environment in New Zealand: Implications for Occupational Health and Safety*. Wellington: National Occupational Health and Safety Advisory Committee (NOHSAC).

17. Pearce, N., et al (2007). *National Profile of Occupational Health and Safety in New Zealand*. Wellington: National Occupational Health and Safety Advisory Committee (NOHSAC).

18. Pearce, N., et al (2006). *Surveillance and Control of Workplace Exposures in New Zealand*. Wellington: National Occupational Health and Safety Advisory Committee (NOHSAC).

19. Pearce, N., (2005). *Surveillance of Occupational Disease and Injury. Report to the Minister of Labour*. Wellington: National Occupational Health and Safety Advisory Committee (NOHSAC).

20. Anonymous. *Healthy by Design. A Guide for Crossrail Design Teams*. London: Crossrail.

21. He, C., et al, (2014). Circadian disrupting exposures and breast cancer risk: a meta-analysis. *Int Arch Occup Environ Health*, 137 (5); 1147 – 1157.

22. Pan, A., Schemhammer, E.S., Sun, Q., and Hu, F.B., (2011). Rotating night shift work and risk of Type 2 diabetes: Two prospective cohort studies in women. *PLoS Medicine*, 8 (12).

23. Ramin, C., et al, (2014). Night shift work at specific age ranges and chronic disease risk factors. *Occupational and Environmental Medicine*.

24. ACC Accident Claim Data.

25. WorkSafe New Zealand, (2015). *2014 Health and Safety Attitudes and Behaviours Survey*. Wellington.

26. Thorne, P.R., et al, (2008). Epidemiology of noise-induced hearing loss in New Zealand. *New Zealand Medical Journal*, 121 (1280); 33 – 44.

27. Accident Compensation Corporation, (2007). *Occupational causes of contact dermatitis*. Wellington: Accident Compensation Corporation.

28. Douwes, J., et al., (2012). *Occupational dermatitis in New Zealand cleaners. Study report for the Department of Labour*. Wellington: Centre for Public Health Research, Massey University.

29. Eng, A., et al, (2011). Ethnic differences in patterns of occupational exposure in New Zealand. *American Journal of Industrial Medicine*, 54 (5); 410 – 418.

New Zealand Government

WORK**SAFE**
NEW ZEALAND | MAHI HAUMARU AOTEAROA