

# **BLUEPRINT** **FOR THE MANAGEMENT OF OVERWEIGHT AND OBESITY** IN THE NSW MINING INDUSTRY





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# FOREWORD

Maintaining a healthy weight is a challenge for many Australians, and can create problems for people at home as well as at work. Obese workers have higher rates of absenteeism and presenteeism (diminished on-the-job work performance) and reduced productivity. Obese workers also have a higher risk of injury and illness, fatigue, disability and death.

In the mining sector, key contributing factors to obesity include long working hours, poor health literacy, education, sedentary work, stress, mental illness and alcohol use. While past efforts within the mining industry have been focused on identifying and minimising physical risks to health and safety, maintaining a healthy weight can also have an impact on the health of individual workers and workplace as a whole.

This Blueprint for the Management of Overweight and Obesity in the NSW Mining Industry provides an industry-wide framework to promote effective weight management. This Blueprint identifies key directions for the industry and recommends evidence-based strategies to reduce and prevent obesity by promoting good health and wellbeing, improving the capacity of the industry response, encouraging a culture that challenges

the normalisation of obesity, and providing support systems and strategies to reduce levels of obesity. These key directions can be applied at company and site level to benefit individual employees and their families, mining operations, the industry, and the community.

The workplace is an important setting for obesity prevention. Strong leadership, a supportive culture and appropriate workplace policies can help support behavioural change. With guidance from this Blueprint, companies can proactively address obesity as a key element in our commitment to workforce health.

**Stephen Galilee**

**Chief Executive Officer  
NSW Minerals Council**

This Blueprint for the Management of Overweight and Obesity in the NSW Mining Industry highlights the important contributions of the NSW Minerals Council's OHS Committee and the work being undertaken within the industry to ensure that workers are supported and encouraged to live active, healthy and productive lifestyles.

I thank all OHS Committee members past and present for their commitment and vision in developing this Blueprint and encourage all companies across the industry to adopt strategies to improve employee health and reduce harm associated with obesity.

**Kylie Ah Wong**

**Chair  
NSW Minerals Council  
OHS Committee**



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The NSW Minerals Council (NSWMC) initiated the development of this Blueprint by releasing a report detailing the prevalence of overweight and obesity in NSW coal mining operations titled 'Obesity in the NSW Minerals Industry' [3]. Contributions from key stakeholders and obesity experts were sought at a workshop held in Newcastle in June 2016. This followed a similar consultative process used for the development of the Blueprint for Mental Health and Wellbeing in mining.

Workshop attendees included representatives from the following organisations: The University of Newcastle (Newcastle Institute for Energy and Resources, Centre for Resources Health and Safety and Priority Research Centre for Physical Activity and Nutrition), Hunter New England Central Coast Primary Health Network, Coal Services Health, Workplace Health Association of Australia, Construction, Forestry, Mining and Energy Union, Hunter New England Health, Rio Tinto, NSW Department of Industry, Ethos Health, Workplace Health and Safety Queensland, Glencore and Thiess.

Our sincere thanks to members of the Obesity Blueprint Steering Committee, senior research academics and health professionals for their input into the Blueprint document: Trent Watson, Jane Watson, Kylie Ah Wong, Mark O'Neill, Robyn Considine, Carole James, Clare Collins, Myles Young, Bronwen Otto, Steven Whitehead, Gerry Bobsien, Jane Rich, Louise Parfitt, Catherine Turner, Kate Schmich, Helen Barker, Greg Sullivan, Simon Coleman, Catherine Turner and Claire Doherty.

# 1.0 INTRODUCTION

Obesity is a major health, safety and societal issue. The prevalence of overweight and obesity in Australia has steadily increased over the past thirty years [6] and is forecast to continue increasing [7]. Overweight and obesity reduces life expectancy and is strongly associated with several chronic diseases and poorer quality of life. [6]







# INTRODUCTION

Given the significance of this health issue nationally, the NSW Minerals Council (NSWMC) engaged Ethos Health to prepare the report 'Obesity and the NSW Minerals Industry'. The report, published in 2015, presented data on current overweight and obesity prevalence for employees in NSW coal mining operations and comparisons with other state and national data. The potential impact of overweight and obesity on individuals, the workplace and the community was also discussed and key strategies for achieving and maintaining a healthy weight were presented [3].

Following this report, the NSWMC in partnership with the Newcastle Institute for Energy and Resources (NIER) and the Centre for Resources Health and Safety at the University of Newcastle, hosted a workshop for senior mine health and safety representatives, health professionals and researchers, mine safety regulators, union representatives and government-related health organisations. The aim of the workshop was to develop a framework (the Blueprint) to guide and support employees and workplaces in the management and maintenance of healthy weight to optimise health and wellbeing.

In the context of Australian workplaces, the increasing prevalence of overweight and obesity in Australia has significant consequences for both employers and employees. When compared to healthy weight workers, obese workers have higher rates of absenteeism and presenteeism<sup>1</sup>, reduced productivity, increased injury and illness, slower recovery and increased workers' compensation costs [8-17]. Obesity also increases the risk of fatigue, disability and death. In addition, obese workers are at greater risk of negative attitudes and discrimination [10].

In 2008, 76% of employees in the mining industry in Australia were overweight or obese, the highest of all industry groups [18]. Based on data from NSW Coal Services Health, the prevalence of overweight and obesity among NSW coal miners is 83.4% [3].

This is markedly higher than the proportion of Australian adults who are overweight or obese at national (63%) [19] and state (52.5%) [20] levels. No data was available for metalliferous or other mining sectors.

<sup>1</sup>Presenteeism is a self-reported measure of diminished on-the-job work performance due to health or life problems [8].

The fundamental cause of overweight and obesity is an imbalance between energy consumed and energy expended [21]. When more energy is consumed than is expended, the excess energy is stored as body fat. An individual's dietary intake and physical activity are directly and indirectly influenced by a wide range of social, environmental, behavioural, genetic and physiological factors [6]. Dietary intake and physical activity are influenced by work and home environments, social networks, and more broadly by community, national and international factors influencing access to healthy food and opportunities for physical activity.

The workplace is an important setting for obesity prevention. Strong leadership, a supportive culture and environment, workplace policy and systems can play an important role in supporting individual behaviour change. Focusing interventions only on individual behaviours fails to address the environmental and social factors influencing physical activity opportunity and food and beverage choices that predispose people to obesity [22]. Whilst there is evidence that workplace health promotion can have some impact on absenteeism and productivity, there is still much to be learnt about what approaches will prove to be the most effective in preventing and managing obesity in the workplace [23].

Of particular relevance for the NSW mining industry are the following factors associated with obesity: education and occupational status, low health literacy, long working hours, sedentary nature of work, workplace stress, low autonomy and control, mental illness, alcohol use and social factors [13, 24-33]. Consideration of these contributing factors will assist the mining industry to develop suitable approaches for improving diet and physical activity to reduce obesity prevalence.

The NSW mining industry is committed to addressing the health and safety of its employees with a focus on obesity. This industry-wide framework for obesity provides a comprehensive approach to the prevention and management of obesity that will benefit employees, employers and the community as a whole. Effective weight management is a new area of investment for the mining industry with potential for significant benefit.

### Body Mass Index

Overweight and obesity is defined by Body Mass Index (BMI) calculated by dividing weight in kilograms by height in metres squared ( $\text{kg}/\text{m}^2$ ). The BMI categories are shown in Table 1 with the same cut-offs applied to males, females and adults of all ages.

**Table 1: International BMI classification in adults [1]**

BMI ( $\text{kg}/\text{m}^2$ )	CLASSIFICATION
<18.5	UNDERWEIGHT
18.5 - 24.9	HEALTHY WEIGHT
25.0 - 29.9	OVERWEIGHT
$\geq 30.0$	OBESE

$\text{kg}/\text{m}^2 = \text{weight (kg)}/\text{height squared (m}^2\text{)}$

Age, gender and muscle mass can influence the interpretation of BMI. However, BMI is strongly correlated with more direct measures of body fatness including waist circumference, skinfold thickness and bioelectrical impedance measurements [1, 2, 4]. BMI is inexpensive, easy-to-measure and easily replicated, allowing comparisons between studies and across time periods.

## 2.0 ABOUT THE BLUEPRINT

The NSWMC is committed to the health and safety of NSW miners and mining communities. This Blueprint represents a key part of this commitment by providing a framework for industry-wide change to the prevention and management of obesity. The Blueprint demonstrates a commitment to addressing overweight and obesity in the areas of leadership, systems and policy, culture and environment, education and training, partnerships, and communication and engagement.







# ABOUT THE BLUEPRINT

## 2.1 Aims of the Blueprint

As a guide to the industry as a whole, mining companies and to individual mines, the Blueprint aims to:

- Focus on prevention of obesity by promoting good health and wellbeing and preventing the occurrence of overweight and obesity.
- Improve the capacity of the industry to respond to the impacts of overweight and obesity.
- Encourage a culture that supports the importance of a focus on overweight and obesity.
- Support systems and strategies to reduce the levels of overweight and obesity.

Given the limited evidence for effective workplace interventions, the Blueprint has a strong focus on research, evaluation and monitoring to understand the effectiveness of different workplace strategies on individuals, the workplace and the broader community.

## 2.2 Principles Guiding the Blueprint

The following principles have guided the development of the Blueprint:

- A collaborative partnership approach across key industry, health and community stakeholders.
- Recognition of the paramount importance of employee and community health, safety and wellbeing.
- Acknowledgement of the importance of the role industry can play in strengthening systems, capacity and culture for good health and wellbeing.
- Development of initiatives that reflect a non-judgmental, supportive approach and recognise a shared responsibility between the industry, mine site and employees.

## 2.3 What Might Success Look Like?

The successful implementation of this Blueprint across the NSW mining industry will benefit employees, families, communities, the workplace and industry as a whole. The potential benefits of workplace initiatives that achieve weight loss are summarised in Table 2.

**Table 2: Benefits of reduced prevalence of overweight and obesity in the workplace**

INDUSTRY	MINING OPERATIONS	EMPLOYEE	COMMUNITY
<ul style="list-style-type: none"> <li>• Reputation as a “World Class Mining” industry</li> <li>• Improved health and safety profile</li> <li>• Improved productivity</li> <li>• Improved retention and recruitment</li> <li>• Sustainable business model</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced absenteeism</li> <li>• Lower injury rates and return to work duration</li> <li>• Improved productivity and competitiveness</li> <li>• Lower workers’ compensation costs</li> <li>• Improved workplace morale, engagement and innovation</li> <li>• Employer of choice</li> </ul>	<ul style="list-style-type: none"> <li>• Improved physical and mental wellbeing and potential for flow-on benefit to family members</li> <li>• Improved knowledge and skills in health and wellbeing</li> <li>• Reduced personal health care costs</li> <li>• Reduced risk of disability and dependence on care-givers</li> <li>• Increased earning potential</li> <li>• Reduced disease prevalence and mortality</li> <li>• Improved work, family and social participation</li> </ul>	<ul style="list-style-type: none"> <li>• Improved health and wellbeing</li> <li>• Viable, vibrant and prosperous communities</li> <li>• Lower health care costs</li> </ul>

## 2.4 Roles

Realising the benefits outlined in Table 2 requires the alignment, collaboration and shared action of a number of stakeholders. Success will be visible through increased investment in the health and wellbeing of employees at industry, company and mining level. There will be evidence of multi-pronged strategies at system and individual levels targeting overweight and obesity. Below is an outline of what a successful contribution of each of the key stakeholders might look like.

### 2.4.1 Industry

*Clear Message, Method and Measurement*

- Deliver a strategic investment in systems, policies and initiatives to improve health and wellbeing and challenge the normalisation of overweight and obesity in the mining workforce and community.
- Implement an industry-wide evaluation framework to monitor the impact of strategies aligned with the Blueprint.
- Deliver a consistent and relevant industry-wide communication initiative supporting the Blueprint.

### 2.4.2 Mines

*Policy and Commitment*

- Implement policy and systems that support:
  - lifestyle behaviours for healthy weight for all employees.
  - employees who are overweight or obese in achieving healthy weight.
- Provide information, education and training, and resources tailored to the needs of the mining industry.
- Ensure management commitment in the prevention and management of overweight and obesity and to address workplace factors associated with the risk of overweight and obesity.

### 2.4.3 Employees

*Participate and Engage*

- Support for and participation in workplace and community initiatives that promote healthy lifestyle choices aimed at preventing or managing overweight and obesity.
- Make healthy lifestyle choices at work, at home and in the community.

### 2.4.4 Service Providers (private, public, not-for-profit)

*Knowledge, Skills and Resources*

- Provide evidence-based health services targeting healthy lifestyle choices that deliver measurable outcomes demonstrating the collaborative efforts of the industry.
- Partnerships with institutions to participate in research on initiatives which address overweight and obesity.

### 2.4.5 Research Institutions

*Research and Evaluate*

- Seek research funding and develop research partnerships and initiatives.
- Undertake research in the area of the prevention and management of overweight and obesity in the mining industry, and evaluate, publish and communicate the results.
- Translate research findings into practice.

### 2.4.6 Regulatory/Statutory Bodies

*Monitor and Support*

- Monitor and report on the health and safety of NSW mine employees, including indicators for overweight and obesity.

### 2.4.7 Government Health Care Organisations (primary health networks, local health districts)

*Integrate, Coordinate and Advocate*

- Coordinate and integrate health services.
- Influence health policy and systems through evidence and advocacy.
- Identify and attract funding.
- Assist in or coordinate development of the service model and business case.
- Assist with the commissioning, tendering and procurement of health services.
- Utilise, analyse and share regional health data.
- Increase awareness of relevant local health services and referral processes.

### 2.4.8 Unions

*Support and Encourage*

- Support initiatives for overweight and obesity that will benefit members.

### 2.4.9 Communities

*Integrate and Collaborate*

- Integrate and collaborate with existing community initiatives that normalise healthy weight and promote the benefits of initiatives that prevent and manage overweight and obesity (e.g. Parkrun, Go for Fun).

# THE BLUEPRINT

## 3.0 The Blueprint

The vision and purpose for an industry-wide overweight and obesity strategy needs to align with the overall approach to health and safety in the NSW minerals industry.

A workplace obesity strategy provides an opportunity for NSWMC to demonstrate the vision for the mining workforce through leading initiatives addressing overweight and obesity in the workplace. Workplaces can be catalysts in the community and promote broader change.

## 3.1 Vision

The NSW minerals industry is committed to a sustained approach to fostering healthy and productive workplaces that support the prevention and management of overweight and obesity... 'one kilo at a time, one miner at a time, one year at a time.'

## 3.2 Purpose

Through leadership, systems and policies, cultural change, education, training and shared action, all mine workers are supported to prevent and manage overweight and obesity and to address the associated individual, business and community impacts.



### 3.3 A Framework for Action

Building on the approach of the NSW Minerals Council Blueprint for Mental Health and Wellbeing in the Mining Industry, Figure 1 illustrates the framework underpinning the action plan for addressing overweight and obesity in the NSW minerals industry.

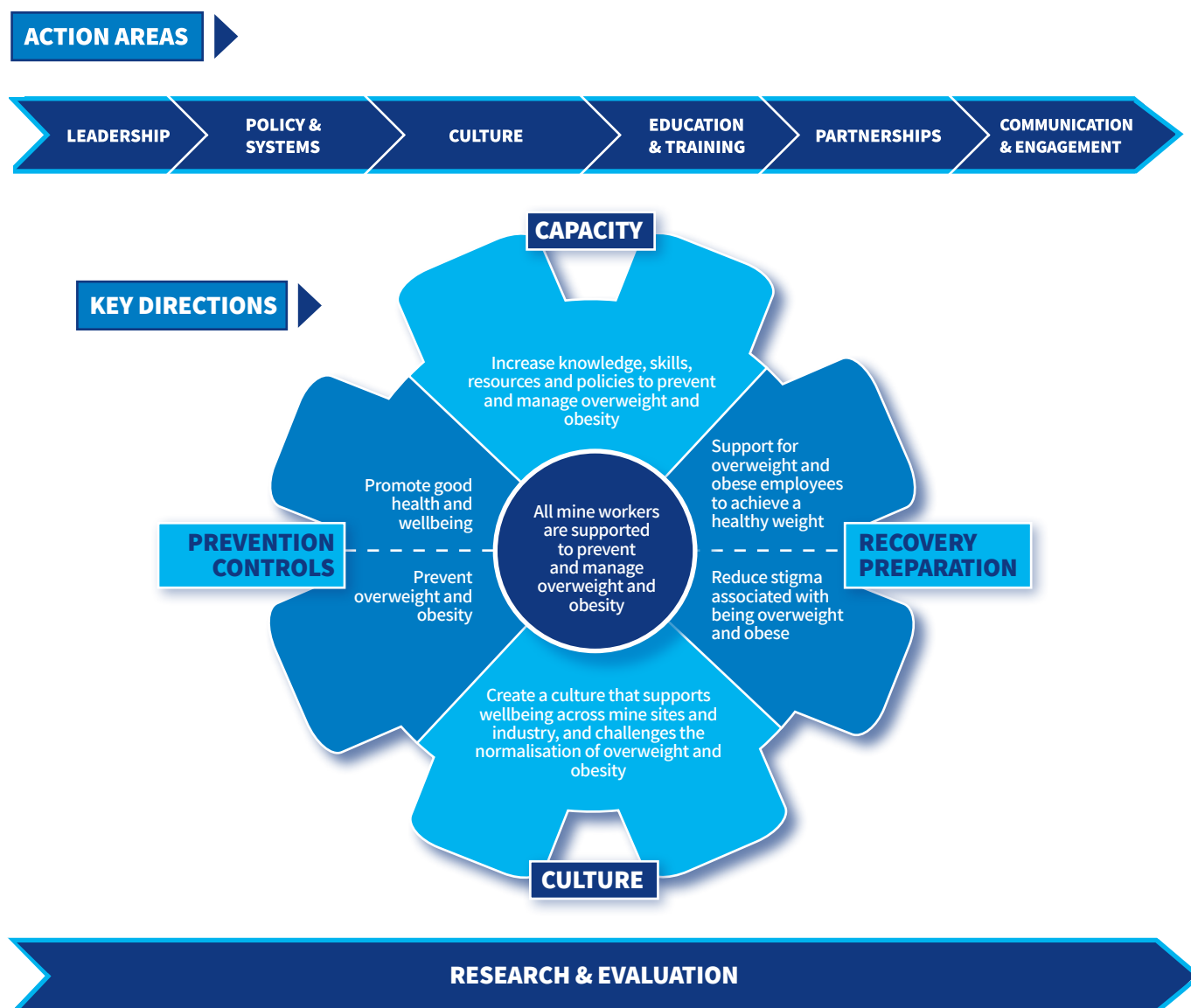


Figure 1: A framework for action: Addressing overweight and obesity in the NSW minerals industry

## 4.0 ACTION PLAN

The action plan is intended to be implemented following principles consistent with current research and best practice in workplace health in Australia [34] and in alignment with the Blueprint for Mental Health and Wellbeing in the NSW Mining Industry. Actions are listed under a framework of five directions, as presented in Figure 1, along with key indicators.

Possible activities to support the action plan are presented in the Appendix. A strategy for evaluation is essential for determining program impact and to calculate return on investment. An effective evaluation strategy includes the establishment of clear goals and objectives, valid and reliable measurements, linkage to key performance indicators (such as workers compensation costs, absenteeism) and dissemination of results to senior leadership, key stakeholders and employees. Thorough evaluation will contribute to identifying research and development opportunities, while building the evidence base and determining effective initiatives.



# ACTION PLAN

PREVENTION	<b>KEY DIRECTION 1: PREVENT OVERWEIGHT AND OBESITY</b> <b>KEY DIRECTION 2: PROMOTE GOOD HEALTH AND WELLBEING</b>	
ACTION AREA	ACTION	KEY INDICATORS
<b>Leadership, Communication and Engagement</b>	A series of industry-wide communication campaigns targeting overweight and obesity and the associated factors are developed and implemented	Financial and leadership support for campaign Campaign recognition indicators
<b>Education and Training</b>	Education and training strategies are developed and resources tailored to the industry targeting overweight and obesity and the associated factors are available	Level of industry wide participation in education and training
	Education and training strategies and resources tailored to the mining WH&S workforce for preventing and managing overweight and obesity are available	Level of industry wide participation in education and training
	Innovative approaches, such as mobile technologies for education and skills relevant to overweight and obesity are developed	Availability of accessible technologies Participation indicators
<b>Policy and Systems</b>	Point-of-purchase nutrition information is developed and available at all mine sites	Number of food outlets (including vending machines) with point-of-purchase nutrition information Recognition amongst mine employees of point-of-purchase nutrition information
	On-site health and wellbeing programs which provide evidence-based programs and accredited providers are available	Number of employees participating in programs

CAPACITY	<b>KEY DIRECTION 3: INCREASE KNOWLEDGE, SKILLS, RESOURCES AND POLICIES TO PREVENT AND MANAGE OVERWEIGHT AND OBESITY</b>	
ACTION AREA	ACTION	KEY INDICATORS
<b>Policy and Systems</b>	Obesity prevention and management strategies integrated within WH&S policies and programs at industry, company and site levels	Number of mines with WH&S policies and programs strategies integrated with obesity and overweight prevention and management strategies
	Obesity prevention and management strategies integrated with risk management strategies within mines	Number of mines with risk management strategies integrated with obesity and overweight prevention and management strategies
	Facilities and systems supporting physical activity as part of work activities are available at mine sites	Number of mines with facilities and systems which support physical activity Type of facilities and systems which support physical activity
	Healthy food and drink options in vending machines, messing facilities, food vans, kitchen/kitchenette, crib rooms, meetings and work social events are available at mine sites	Number of mines with healthy food and drink options
	Audits or checklists to assess the degree to which the workplace supports activity are developed	Number of mines with audits
	Food pricing strategies are established to encourage the purchase of healthier choices	Number of mines with food pricing strategies
	Workplace Health Committees with representatives from all sectors to plan, oversee and execute the Blueprint and associated initiatives are established at mine sites	Number of mines with specific workplace health committee addressing overweight and obesity Number of mines with Blueprint implementation plan
<b>Education and Training</b>	Weight management and exercise topics included within site training plans	Number of mines with weight management and exercise topics in site training plans
<b>Partnerships</b>	Routine measurement of weight, nutrition and physical activity is included as part of periodic health assessment	Profile of mining employees regarding weight, nutrition and physical activity
	Routine provision of brief intervention targeting weight, nutrition and physical activity is included as part of periodic health assessment	Proportion of mine employees detected as overweight and obese who receive brief intervention



CULTURE		
KEY DIRECTION 4: CREATE A CULTURE THAT SUPPORTS WELLBEING ACROSS MINE SITES AND INDUSTRY, AND CHALLENGES NORMALISATION OF OVERWEIGHT AND OBESITY		
ACTION AREA	ACTION	KEY INDICATORS
Culture	Subsidies offered for gym membership, lifestyle programs, fruit and vegetable boxes, sports equipment purchases, sporting events	Number of employees participating in subsidy programs
	Facilities for organised and informal sport and physical activity are available	Number of mines with facilities for sport
Communication and Engagement	Champions or ambassadors serve as role models or spokespeople for weight, nutrition and physical activity	Number of champions appointed

RECOVERY		
KEY DIRECTION 5: SUPPORT FOR OVERWEIGHT AND OBESE EMPLOYEES TO ACHIEVE HEALTHY WEIGHT KEY DIRECTION 6: REDUCE STIGMA ASSOCIATED WITH BEING OVERWEIGHT AND OBESE		
ACTION AREA	ACTION	KEY INDICATORS
Policy and Systems	Work site support for weight reduction for overweight and obese employees is available	Number of employees participating in programs
	Guidelines for managing employees who are overweight and obese in general and in return-to-work situations are developed	Number of mines recognising guidelines
Partnerships	Return-to-work programs include assessment of weight, nutrition and physical activity and support for weight loss in at-risk individuals	Number of employees in return to work programs participating in weight loss programs

RESEARCH & EVALUATION		
ACTION AREA	ACTION	KEY INDICATORS
Partnerships	An industry wide research strategy for overweight and obesity is developed	Ratification of research strategy at industry level
	Research projects implemented to test effectiveness of strategies	Number of research initiatives in each of the four areas: Capacity, Culture, Prevention Controls and Recovery Preparation

# APPENDIX: POSSIBLE ACTIVITIES FOR CONSIDERATION

## PREVENTION

- Encourage participation in existing public health initiatives (e.g. 'Get Healthy at Work')
- Consider offering education and training to employees' families
- Consider incorporating metrics for strategies and activities to address overweight and obesity in organisational performance reporting

## CAPACITY

- Access to facilities for 'active transport' (walking, cycling and public transport)
- Availability of resources to support active breaks (e.g. gym equipment, 'games room' promoting activity – ping pong, pool table)
- A 'red-line' route to promote lunchtime walking
- Strategic parking to promote walking
- Host 'walk and talk' meetings, this is particularly relevant when conducting site inspections or safety interactions
- Encourage physical activity breaks
- Host alcohol-free work events, such as family fun days or other work-sponsored events
- Meal plans available for all employees, including shift workers
- Motivational signage to use the stairs or drink more water
- Provision of maps for suitable walking/jogging routes during breaks

## CULTURE

- Sponsor or fund an employee's first attempt at an organised event (i.e. triathlon, 5km walk/run, etc.)
- Promote and support reduced alcohol consumption (e.g. events such as FebFast, Australia's Healthy Weight Week, Dry July and October)
- Participation in exercise events (e.g. Park Run) and social events (e.g. lawn bowls, touch footy)
- Encourage consumption of healthier options (e.g. water rather than sugary drinks)
- Lunch promotional activities (e.g. 'Yum Thursday' instead of 'Fat Thursday')

## RECOVERY

- Consider accreditation of programs, work sites and providers against criteria, such as adherence to evidence base and alignment with industry strategy
- Encourage engagement with existing services, such as GP plans through Medicare

## RESEARCH & EVALUATION

- Consider establishing set criteria for research programs to enable comparisons between studies for building the evidence base

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