Australian Government
Department of Health

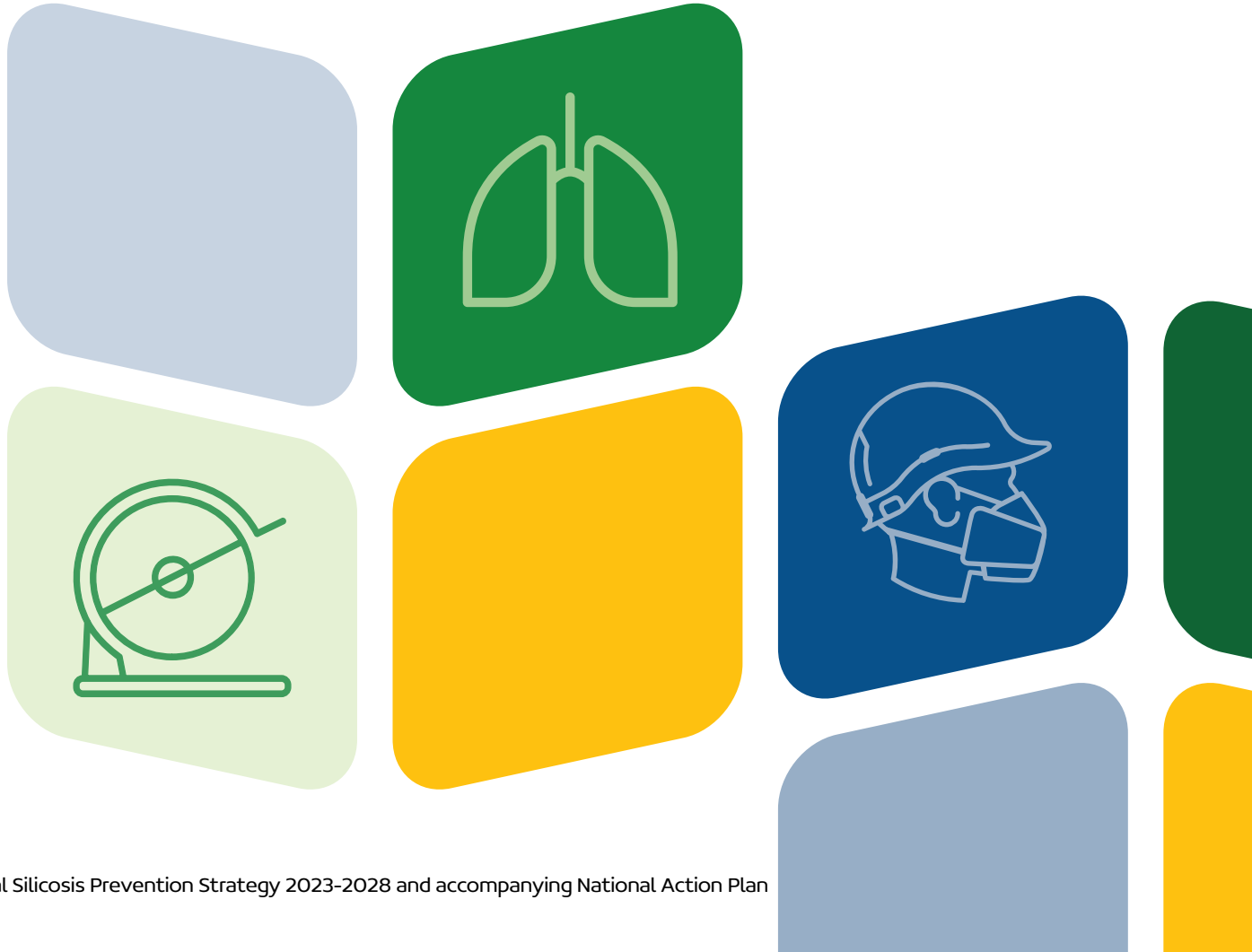
National Silicosis Prevention Strategy 2023-2028 and accompanying National Action Plan

June 2023

The development of the National Silicosis Prevention Strategy 2023-2028 and accompanying National Action Plan was led by Lung Foundation Australia with funding received from the Australian Government Department of Health and Aged Care.

Acknowlegement of Country

We acknowledge Aboriginal and Torres Strait Islander peoples and pay respects to their Elders, past and present. We do so in a spirit of reconcilliation, recognising that Aboriginal and Torres Strait Islander peoples across Australia are significantly overrepresented in lung disease and lung cancer. We commit to partnering with communities to address this and Close the Gap.



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Foreword

Silicosis is an irreversible lung disease caused exclusively by workers' exposure to silica dust. It is an entirely preventable condition. Each and every time an individual is diagnosed with silicosis, it reflects the failure of our current work, health and safety systems to adequately protect workers. Urgent change is needed. This *National Silicosis Prevention Strategy 2023-2028 and accompanying National Action Plan* has the potential to protect workers – and must be used for this purpose.

The recent surge in the number of diagnosed cases of silicosis in Australia has spurred stakeholders including governments, health professionals, businesses, unions, and workers to call for safer workplaces. There is now considerable work being undertaken across a number of jurisdictions. While these steps should be acknowledged, there remains a pressing need for further urgent action in workplaces Australia wide.

In 2019, the Australian Government Department of Health established the National Dust Disease Taskforce (referred to as the Taskforce throughout this report), adding to the work of several federal and state or territory committees and parliamentary inquiries into occupational dust diseases. The Taskforce was charged with undertaking an independent review of the systems in place to protect Australians at risk of occupational dust disease. It subsequently recommended a national approach to the prevention, early identification, control and management of occupational dust diseases. The Strategy and National Action Plan represent a crucial component of the Taskforce's recommendations to stop the silicosis crisis within Australia. The time has come to move on from inquires, committees and reports and to progress to rapid implementation.

The risks related to silica exposure – and the deaths and disability caused by silicosis – have been well known in Australia for more than a century. Sadly, the lessons of the past have been forgotten, with dire consequences for today's workers. It is indisputable that the prevention of exposure to Respirable Crystalline Silica (RCS) prevents the development of silicosis. There are, additionally, many other debilitating diseases caused by RCS exposure, including lung cancer and autoimmune diseases, and these, too, need greater recognition.

The engineered stone benchtop sector has been at the forefront of the silicosis crisis. However, it is only one of a number of industries in which workers are exposed to RCS. Other at-risk industries employing thousands of workers include quarrying, construction, tunnelling, mining and many manufacturing processes. In any of these industries, hazardous levels of RCS exposure can result in workers developing silicosis, after just a few months on the job. Often the effects of exposure may not become apparent for decades, potentially after those affected have left at-risk industries. This is why the National Silicosis Prevention Strategy 2023-2028 and accompanying National Action Plan is intended to cover all industries where RCS exposure is occurring, and both current and former RCS-exposed workers.

Prevention of silicosis will require a comprehensive approach that takes in fail safe preventive measures, the enforcement of strong legislation and regulation, expanded air monitoring programs, and improved health monitoring methods. The elimination of a workplace hazard is clearly the most effective means of disease prevention. There is no doubt the introduction of high silica content engineered stone into Australia over 20 years ago, has resulted in untold harm to potentially thousands of Australian workers. The most time critical recommendation in the National Action Plan is for federal, state and territory governments to decide regarding an importation ban on engineered stone products. A line in the sand must be drawn, which is why observing all of the timelines in the National Action Plan is so critical.

A lack of investment in occupational disease research and surveillance in Australia has made it impossible to accurately quantify the prevalence of silicosis or determine its short- and long-term effects on workers and their families. A failure to protect workers from RCS has resulted in hundreds of Australians contracting a potentially fatal lung disease, through the simple act of going to work. It is our responsibility to ensure these workers are now provided with the best possible care. This must include urgent research to identify new treatment options.

History tells us no shortcuts can be taken in addressing this issue, either now or in the future. It is critical an all-of-governments approach is adopted. Such an approach will require collaboration between regulators, health professionals, employers, unions, workers, and business, all with the shared goal of protecting workers health. The lives of Australian workers depend on drastic improvements in a system that has proved wanting.

We gratefully acknowledge the invaluable input of the numerous people and organisations across many sectors who have contributed to the creation of this Strategy and National Action Plan.

It is incumbent on all to pursue this Strategy with vigour and implement the National Action Plan without delay. Prevention of exposure to RCS will prevent silicosis.

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Co-Chair, NSPS Expert Steering Committee

Executive summary

Silicosis is a serious and irreversible occupational lung disease that causes permanent disability. There is no effective treatment for the condition, and it is often fatal. Available data indicates the prevalence of silicosis is increasing in all states and territories and across several industries. The actual rate of silicosis is likely to be higher than reported due to undiagnosed and unrecorded cases.

It is estimated that up to 600,000 Australian workers are potentially being exposed to silica dust each year across a wide range of industries.

The Australian Government and the various state and territory governments all support the development of the National Silicosis Prevention Strategy (NSPS) 2023-2028 and accompanying National Action Plan (NAP).

The goal of the NSPS is to prevent and ultimately eliminate silicosis as an occupational disease in Australia.

The development of the NSPS and associated NAP is one of a number of recommendations from the Taskforce (specifically, recommendation 3a.) These initiatives rely on the most up-to-date evidence and aim to build on the foundation of bodies of work underway in various other jurisdictions. All levels of government involved agree there is a need for urgent reform and to enable measures that will keep workers and their families safe and healthy.

The NSPS and NAP identify five priority areas for action to prevent, and ultimately eliminate, silicosis in Australia.

Priority area 1: Workplace risk reduction

Objectives:

- Strengthen work health and safety (WHS) measures to give greater protection to workers
- Support employers to effectively manage the risks posed by RCS exposure in the workplace, comply with WHS duties and implement safe systems of work
- Eliminate hazardous RCS exposure in Australian workplaces
- Ensure the multi-sector and multidisciplinary workforce required to eliminate silicosis in Australia is suitably trained, resourced and distributed.

Priority area 2: Education and awareness

Objectives:

- Increase awareness and knowledge of the risks of RCS exposure in all sectors
- Increase knowledge of safe work practices and compliance with WHS duties
- Increase consumer awareness of the risks when choosing a high silica content product, such as engineered stone, to inform consumer choice
- Influence stakeholder behaviours across the supply chain to reduce RCS exposure and better protect workers.

Priority area 3: Health monitoring, screening and surveillance

Objectives:

- Improve the quality, frequency and coverage of health monitoring and surveillance for current and former RCS-exposed workers
- Implement a nationally consistent workplace health monitoring and surveillance program for silicosis, supported by a national information system
- Enhance evidence-based screening and surveillance to optimise health outcomes for Australian workers.

Priority area 4: Governance

Objectives:

- Establish a cross-jurisdictional governance mechanism to coordinate and monitor a comprehensive national program of reform and preventative measures, designed to fundamentally address the risks facing workers in industries that generate RCS
- Drive greater consistency across jurisdictions in WHS policy, practices, behaviours and information.

Priority area 5: Research and development

Objectives:

- Develop a strategic national approach to silicosis prevention research and development
- Build the evidence base for silicosis prevention as well as the capability of the research sector
- Enhance the capabilities of population-level monitoring and surveillance of silicosis and other occupational lung diseases in Australia
- Translate silicosis knowledge into WHS policy, practices, behaviours and information to better protect workers from RCS exposure.

To be successful in achieving these goals, the NSPS and NAP must represent a coordinated, national approach to silicosis prevention that engages government, national organisations representing employers and workers, and other partners concerned in its active implementation.

A comprehensive approach involving all of government, business, unions and the community is required. This includes fail safe preventive measures, strong legislation and regulation that is consistently enforced, coordinated surveillance and monitoring, expanded air monitoring programs and improved health screening methods.

The National Action Plan is built on extensive stakeholder consultation, building on Taskforce collaborations and overseen by a multidisciplinary and multi-sector Expert Steering Committee.

The National Action Plan recommendations must be delivered in parallel or in conjunction with a number of Australian, state or territory occupational health and safety frameworks and activities underway. It should be noted that inconsistency of approaches and lack of harmonisation pose a serious risk to its successful implementation. It is also important to recognise that due to the transient nature of the workforces involved, many people do not experience symptoms until they have left the industry connected to their RCS exposure, or many years later, such as during their retirement years.

A comprehensive governance framework, and evaluation and monitoring framework is proposed to ensure the National Action Plan remains front of mind for all stakeholders.

To be effective, a whole of government, industry, community, and business response is required that follows health and WHS evidence and the most up-to-date research. This should be independently monitored and reported on in a manner which is transparent and frequent. At its very core should be the goal of preventing death and disability.

Part one: **Introduction**

1.1 Background

The National Silicosis Prevention Strategy (NSPS) 2023-2028 and accompanying National Action Plan (NAP) has been developed in response to the re-emergence of silicosis in Australia. Silicosis is a debilitating and often fatal occupational lung disease caused by the inhalation of silica dust particles. It is entirely preventable. There are several other diseases, including lung cancer, which can be caused by silica exposure which are under-recognised and under-compensated in Australia.[1]

In recent years, a number of Senate and Ministerial inquiries into silica dust and other hazardous and toxic workplace exposures have taken place.[2,3,4] However, there has been a lack of progressive, sustained action with regard to prevention.

On 26 July 2019, the Australian Government announced the establishment of the National Dust Disease Taskforce. The role of the Taskforce was to inform a national approach to the prevention, early identification, control and management of dust diseases in Australia.[5] The Taskforce focused its review on accelerated silicosis and engineered stone, but also recognised the need for broader action across the spectrum of occupational dust diseases. The Taskforce's Final Report, handed to the Minister for Health and Aged Care in June 2021 (referred to as the Final Report throughout this report), recognised the recent progress being made by Safe Work Australia members, including federal and state and territory governments, representatives of employers and representatives of workers. It noted that existing regulatory frameworks have not effectively protected workers and that reform is urgently required.[6]

Immediate action is required to better protect workers from hazardous exposures, reduce the burden of occupational respiratory disease, and ensure Australia has strong, responsive and fit for purpose arrangements that identify occupational respiratory hazards early and ensure safe workplaces.[6]

The federal, state and territory governments subsequently developed the *All of Governments' Response* to the *Final Report of the National Dust Disease Taskforce* (referred to as the All of Governments' Response throughout this report). This document was published in April 2022 and agreed in principle to the Taskforce's recommendations. All governments support the prioritisation of investment in prevention activities and the finalisation and implementation of the NSPS and accompanying NAP. See Box 1.

All governments support the Taskforce's view that further decisive action is required to better protect workers in dust-generating industries and to better support affected workers and their families.[7] The All of Governments' Response noted that joint deliberate action is required from all levels of government, industry, unions and workers to drive change, with the shared objective of eliminating silicosis amongst workers and increasing quality of life for those already impacted, and their families.[7]

Box 1: All of Governments' Response to the Final Report of the National Dust Disease Taskforce, April 2022[7]

Taskforce Recommendation 3a. Finalise and implement the National Silicosis Prevention Strategy and associated National Action Plan.

Australian governments support this recommendation.

The Commonwealth Government is currently developing the National Silicosis Prevention Strategy (NSPS) and accompanying National Action Plan (NAP) in recognition of the need for a more effective prevention system for silicosis in Australia. The NSPS and NAP aim to drive coordination and create linkages between existing and planned prevention activities being undertaken by Commonwealth, state and territory Health departments, WHS policy agencies, and regulators, industry and unions. The NSPS and NAP will promote information sharing, improve consistency in practice and information, avoid duplication and reduce gaps in prevention efforts. The NSPS and NAP are being designed in close consultation with relevant stakeholders including representatives of state and territory governments and is expected to be finalised in 2022.

As part of the development of the NSPS and NAP, stakeholders will identify and commit to progressing specific initiatives.

In February 2023, WHS ministers agreed to implement a number of reforms in response to Safe Work Australia's 2023 Decision Regulation Impact Statement: Managing the risks of respirable crystalline silica at work (referred to as Safe Work Australia's 2023 Decision RIS throughout this report).[8]

The Australian Government allocated $10.0 million over four years from 2023-24 (and $1.9 million per year ongoing) in the 2023-24 Budget to further support action within the Employment and Workplace Relations portfolio to address the rise of silicosis in workers.[9] This will support the delivery of several actions agreed to by WHS ministers in February 2023[8] and will complement the work being progressed within the Department of Health and Aged Care, including the development of the NSPS and NAP.

1.2 About the strategy

The NSPS and accompanying NAP is the first national plan designed to prevent and ultimately eliminate silicosis as an occupational disease in Australia.

The NSPS and NAP outline a coordinated, national approach to silicosis prevention that engages government, national employers' and workers' organisations, as well as other partners concerned in its active implementation.

The scope of the Strategy includes:

- Primary prevention (preventing and reducing workplace exposure and risk) and secondary prevention (early detection and screening of at-risk workers)
- All forms of silicosis (acute, accelerated and chronic)
- All industries, occupations and tasks where workers are at risk of silicosis and silica-related diseases
- Workplaces of all sizes, including micro businesses, small to medium enterprises (SMEs) and larger businesses
- Each step in the supply chain of high silica-containing products, such as engineered stone, to ensure coverage (e.g., importing, supplying, manufacturing and disposal of engineered stone benchtops)
- Opportunities for intervention across the health care system.

Audience

This Strategy has been developed for policy makers at all levels of government and a range of non-government stakeholders including industry, unions, workers, employers, regulators, medical and health professionals and researchers.

Consultation and development

Consultation processes undertaken by Lung Foundation Australia to develop the NSPS and NAP between January 2022 and May 2023 included workshops, key opinion leader interviews, patient/carer interviews, an open consultation process, and surveys. Extensive consultation was undertaken with stakeholders including affected workers and their families, with input from governments, industry, unions, workers, employers, regulators, medical and health professionals, researchers and peak bodies. The process was overseen by a multi-disciplinary and sector Expert Steering Committee (see members) with advice and input from a Reference Group (see members).

The NSPS and NAP were informed by the large body of silicosis and occupational lung diseases work undertaken over many years both in Australia and internationally. They are a direct result of the Taskforce's Final Report[6] and the All of Governments' Response.[7] The NSPS and NAP draw on contemporary public health, disease prevention, respiratory health, and work health and safety literature.

This work was informed by the All of Governments' Response, Stocktake of Silicosis Prevention Activities (unpublished) and the ***NSPS Scientific and Evidence Report - Silicosis in Australia.***

NSPS Scientific and Evidence Report – Silicosis in Australia

The NSPS and NAP are aligned with the joint International Labour Organization (ILO)/World Health Organization (WHO) Global Programme for the Elimination of Silicosis (GPES),[10] which calls for the elimination of silicosis worldwide by 2030.

Other parallel work items considered during development of the NSPS and NAP include:

- Safe Work Australia's 2022 Consultation Regulation Impact Statement: Managing the risks of respirable crystalline silica at work (CRIS) (referred to as Safe Work Australia's 2022 CRIS throughout this report)[11] and Safe Work Australia's 2023 Decision RIS[12]
- Reforms agreed to by WHS ministers in February 2023[8]
- Occupational Dust Diseases Monitoring and Evaluation Approach, developed by the Australian Government Department of Health and Aged Care.

1.3 Policy context

National efforts to prevent and ultimately eliminate silicosis in Australia occur within a complex and multi-sectorial policy environment that includes population health and work health and safety.

The NSPS and NAP aligns with key policy documents, including:

- National Strategic Action Plan for Lung Conditions February 2019[13]
- National Preventive Health Strategy 2021-2030[14]
- Australia's Long Term National Health Plan[15]
- National Strategic Framework for Chronic Conditions[16]
- National Aboriginal and Torres Strait Islander Health Plan 2021-2031[17]
- National Agreement on Closing the Gap[18]
- Australia's Primary Health Care 10 Year Plan 2022-2032[19]
- Stronger Rural Health Strategy[20]
- Australian Work Health and Safety Strategy 2023-2033[21]
- Safe Work Australia Occupational Lung Diseases 2022 work plan[22]
- National Strategic Plan for Asbestos Awareness and Management 2019-2023[23]
- Blueprint for Mentally Healthy Workplaces[24]
- National Tobacco Strategy 2022-2030 (in consultation)
- State and territory policies and strategies, as per the 'State and Territory Work Health and Safety Portfolio' section of the Stocktake of Silicosis Prevention Activities (unpublished).

The NSPS and NAP supports achievement of the Australian Work Health and Safety Strategy 2023-2033 target of no new cases of accelerated silicosis by 2033.[21] It should be noted that the NSPS and NAP covers all types of silicosis (acute, accelerated and chronic).

The NSPS and NAP will support Australia's international commitments as a member of the ILO, including the recent adoption of a resolution to add the principle of a safe and healthy working environment to the ILO's Fundamental Principles and Rights at Work. This landmark decision in June 2022 means that all ILO member states commit to respect and promote the fundamental right to a safe and healthy working environment, whether they have ratified the relevant conventions or not.[25]

1.4 The growing burden of silicosis in Australia

Re-emergence of an old disease

Silicosis is one of the oldest known occupational diseases,[26,27] and it remains a risk in many Australian workplaces. [28,29] In recent years, there has been a major re-emergence of silicosis in Australia, particularly associated with the engineered (artificial) stone benchtop industry.[29,30]

There is a total lack of comprehensive data capturing the incidence, prevalence and outcomes of silicosis in Australia. Most data is sourced from workers' compensation claim and cause-of-death statistics.[27,31] As such, the full scale and impact of silicosis in Australia is unknown. However, available data indicates the prevalence of silicosis is increasing in all states and territories and across a number of industries. Furthermore, the actual rate is likely to be higher due to undiagnosed and unrecorded cases.

A 1992 study predicted that 1,010 silicosis cases would occur over 40 years in Australia,[32] but this is likely to be an underestimate. A 2012 survey of the Australian working population found that 6.6% of the Australian workforce (329,000 workers) were exposed to RCS and 3.7% were exposed to high levels when carrying out tasks at work, with exposure particularly common among miners and quarry workers (91.7% exposed), and construction workers (80% exposed).[33] Over the past 10 years, government investment into infrastructure has increased dramatically, with one result being an increased number of workplaces with RCS exposures.[34] At the same time, the use of engineered stone has increased considerably.[30]

A recent Australian study suggests a sharp rise in levels of exposure, with approximately 584,050 Australian workers currently occupationally exposed to RCS. Between 83,090 and 103,860 silicosis cases and 10,390 lung cancers are expected to result from current RCS exposure.[35] Insurers are now adjusting their forecasts due to the predicted increase in cases of silicosis.[36]

Australians living with silicosis

Best estimates of the current scale of the problem in relation to engineered stone are drawn from data collected and reported by some jurisdictions. Evidence suggests that there are at least 579 Australians living with silicosis currently.[37] The number of identified silicosis cases in Australia associated with work in the stone benchtop industry as of May 2022 is provided in Table 1. Current reports indicate the potential for widespread undiagnosed disease in the engineered stone industry.[38]

As of July 2022, WorkCover Queensland had completed the health screening of 1,053 stonemasons exposed to RCS from engineered stone – 253 of whom were diagnosed with a work-related lung condition. Of the workers screened, 204 (19.4%) have silicosis, including 36 with a diagnosis of progressive massive fibrosis. A total of 13 have a respiratory condition that is not silicosis.[39]

Health screening conducted by some jurisdictions in recent years indicates that nearly one in four engineered stone workers who have been in the industry since before 2018, are suffering from silicosis or other silica dust related diseases.[6]

Table 1: *Silicosis cases in the Australian engineered stone industry as of May 2022*[37]

Jurisdiction	Number of silicosis cases
Queensland	238
Victoria	175
New South Wales	121
Western Australia	24
South Australia	18
Tasmania	3
Northern Territory	No publicly available data
Australian Capital Territory	No publicly available data

Silicosis causes permanent disability and can be fatal

Silicosis is a serious, irreversible occupational lung disease that causes permanent disability. There is no effective treatment for the disease, and it is often fatal.

Silica dust particles when inhaled – RCS – can travel deep into the lungs and lead to a range of respiratory diseases, including:

- Silicosis – acute, accelerated and chronic (progressive massive fibrosis)
- Chronic Obstructive Pulmonary Disease (COPD), including chronic bronchitis
- Lung cancer.

Silica dust also increases an individual's risk of developing chronic kidney disease, autoimmune disorders, and other adverse health effects. These include an increased risk of activating latent tuberculosis, as well as fungal infections, eye irritation and eye damage.[40]

Silicosis and silica-related diseases can have a long latency (the lag between the first exposure to the hazard and when the disease is diagnosed clinically). Damage to the lungs from silica dust may not appear for many years. Silica-related lung cancer is often fatal.[41]

Australians living with silicosis and their carers report physically and psychologically debilitating symptoms as well as significant unmet needs.[6, 42, 43]

> *"[At the] end of every day I am buggered. My chest is sore, it hurts to breathe, my feet and hands hurt … that's my daily life."*
>
> **Former geologist, 48 years old, living with chronic silicosis and sarcoidosis**

> *"It's like a black cloud over your head every day."*
>
> **Former tiler, 61 years old, living with silicosis**

There is no cure for silicosis. However, there is good progress being made in the treatment of occupational lung diseases. Early detection offers the best chance of long-term survival.

Occupational exposure is the predominant source of RCS. Occupational exposure to RCS and other hazardous airborne contaminants contributes substantially to the burden of lung disease in Australia and internationally.[6,44]

Silicosis is preventable

Silicosis is an entirely preventable occupational lung disease.

It can be prevented by eliminating or minimising the generation of – and exposure to – RCS in workplaces. See Box 2 for further details on how silica dust can penetrate deep into the lungs causing permanent damage that can lead to serious illness or death.

Box 2: Silica dust can penetrate deep into the lungs

Silica is silicon dioxide, a naturally occurring and widely abundant mineral that forms the major component of most rocks and soils. There are non-crystalline and crystalline forms of silicon dioxide. It is found in natural stones like granite and sandstone and is used to create manufactured products like tiles. Different types of rock and rock products can contain different amounts of silica. Engineered stone is an artificial product that is defined in relation to the percentage of silica contained in the material, however definitions vary across states and territories. Depending on the product and manufacturer, engineered stone can contain less than 10% silica or up to 97% silica.

Silica dust is generated in workplace mechanical processes such as crushing, cutting, drilling, grinding, sanding, sawing or polishing of natural stone or man-made silica containing products. Workers are exposed to silica dust whenever it is airborne and they can breathe it in.

Silica dust can have a range of sizes, from very small (less than 10 micrometres [µm] in diameter) to larger particles that can be seen with the naked eye. Silica particles that are less than 10 µm in diameter are known as RCS as they are small enough to breathe in and penetrate deep into the lungs. These dust particles can be so small that they cannot be seen under normal lighting or with the naked eye and stay airborne for long periods of time. When inhaled, RCS dust particles can travel deep into the lungs causing permanent damage that can lead to serious illness or death. The non-crystalline or amorphous forms of silica are less toxic but can also cause similar lung damage at high exposure levels.

Many workers are at greater risk of exposure to silica dust

It is estimated up to 600,000 Australian workers are potentially being exposed to silica dust each year across a wide range of industries.[6] Between 83,090 and 103,860 silicosis cases and 10,390 lung cancers are expected to result from current RCS exposure.[35]

Generally, workers are at risk of silica exposure if any material containing quartz is liberated from the natural environment (for example, through mining and quarry work), or when silica is used in industrial and manufacturing processes. Silica is used in an ever-expanding range of industrial processes and materials due to its inherent chemical properties, its abundance and its low cost.

The cumulative dose of silica exposure is the most important factor in development of silicosis.[45] Workers exposed to high levels of silica dust are at risk of silicosis and other silica-related diseases. Workers are also at risk in industries where relatively low amounts of RCS is present.

In one study, occupations with the highest exposure, in order of mean exposure, were miners, construction workers, engineers, plumbers, handypersons, heavy vehicle drivers, farmers, machine operators, animal and horticultural workers, scientists, metal workers, and electrical workers. The occupations with the highest proportion of workers exposed to high levels of silica dust were miners, construction workers,

plumbers, handypersons, and engineers.[33] Workers are also at risk in industries where relatively low amounts of crystalline silica are present, such as those involved in jewellery polishing, dental prosthesis production and ceramics production.

In the absence of comprehensive national health monitoring data on silicosis, Australia is very reliant on workers' compensation statistics to monitor disease trends, a source which has well known limitations.[31] Between 2000 and 2019, accepted silicosis workers' compensation claims recorded by Safe Work Australia were predominantly in the manufacturing and construction industries (41% each), followed by mining (8%), and electricity, gas, water and waste services (5%), with other industries accounting for the remainder.[6]

Recently, due to the identification of numerous workers contracting silicosis in the stone benchtop fabrication and installation industry, the very high risk of exposure to silica dust from engineered stone has been revealed.[26, 30, 38, 44, 46, 47, 48]

A complete, up-to-date understanding of which industries currently expose workers to harmful levels of silica dust is lacking in Australia.

Part two: **The strategy**

2.1 Goal

The goal of this Strategy is to prevent and ultimately eliminate silicosis as an occupational disease in Australia.

2.2 Principles

The following guiding principles will drive future action to address silicosis and other occupational lung diseases:

- **Workers' rights to a healthy and safe working environment**. All Australian workers have a fundamental right to a healthy and safe working environment. Such rights are recognised both nationally and internationally[25, 49]
- **Embracing an all-of-governments and whole-of-government approach**. Coordinated, decisive action and leadership is required by federal, state and territory governments. Comprehensive, coordinated action is needed across government departments and portfolios
- **Working in partnership**. Stakeholders need to cooperate and take deliberate action. This includes federal, state and territory health departments, Safe Work Australia and WHS regulators, industry, unions and medical and health professionals
- **Robust scientific evidence-base for silicosis prevention**. Action must be evidence-informed, where knowledge exists. There must be a focus on generating new knowledge to address gaps.

2.3 Enablers

The enablers that will assist in achieving this Strategy include:

- **Governance and leadership**. Clear governance and strong leadership are required, as is evidence-informed decision making, collaboration and information sharing
- **Adequate legislative and regulatory frameworks**. Nationally consistent WHS frameworks are needed including implementation by jurisdictions, as well as strong adherence to safe work practices and compliance with WHS duties
- **Research, data and information.** Research and use of data and information are needed to build knowledge, enable monitoring, inform action and drive improved consistency in practice and information. This will help to avoid duplication and reduce gaps in prevention efforts
- **The use of technology**. Using existing technology and developing new technologies is required to generate new knowledge and initiatives for effective and accessible silicosis prevention
- **Resources**. Adequate allocation, appropriate distribution and efficient use of resources is required to eliminate silicosis as an occupational lung disease in Australia.

2.4 Priority areas for action

The Strategy identifies five priority areas for action to prevent and ultimately eliminate silicosis in Australia:

- Priority area 1: Workplace risk reduction
- Priority area 2: Education and awareness
- Priority area 3: Health monitoring, screening and surveillance
- Priority area 4: Governance
- Priority area 5: Research and development.

2.5 Outcome

> *"Silicosis is an entirely preventable lung disease. It is critical that we not only eliminate silicosis in Australia but that we sustain its elimination over time."*
>
> **Dr Ryan Hoy, Respiratory and Sleep Physician**

The desired outcome of this Strategy is the sustained elimination of silicosis as an occupational lung disease in Australia.

The comprehensive and evidence-informed suite of activities in the NSPS and NAP all contribute to the achievement of this overarching outcome.

National Silicosis Prevention Strategy 2023-2028 and accompanying National Action Plan

Goal: To prevent and ultimately eliminate silicosis as an occupational disease in Australia.

Problem: Australia's re-emergence of silicosis – a debilitating and often fatal occupational lung disease caused by inhalation of silica dust particles, that is entirely preventable.

Priority Areas for Action

Priority Area 1 Workplace Risk Reduction

Objectives:

- Strengthen work health and safety (WHS) measures to give greater protection to workers
- Support employers to effectively manage the risks posed by RCS exposure in the workplace, comply with WHS duties and implement safe systems of work
- Eliminate hazardous RCS exposure in Australian workplaces
- Ensure the multi-sector and multidisciplinary workforce required to eliminate silicosis in Australia is suitably trained, resourced and distributed.

Priority Area 2 Education and Awareness

Objectives:

- Increase awareness and knowledge of risks of RCS exposure in all sectors
- Increase knowledge of safe work practices and compliance with WHS duties
- Increase consumer awareness of the risks when choosing a high silica content product, such as engineered stone, to inform consumer choice
- Influence stakeholder behaviours across the supply chain to reduce RCS exposure and better protect workers.

Priority Area 3 Health Monitoring, Screening and Surveillance

Objectives:

- Improve the quality, frequency and coverage of health monitoring and surveillance for current and former RCS-exposed workers
- Implement a nationally consistent workplace health monitoring and surveillance program for silicosis, supported by a national information system
- Enhance evidence-based screening and surveillance to optimise health outcomes for Australian workers.

Priority Area 4 Governance

Objectives:

- Establish a cross-jurisdictional governance mechanism to coordinate and monitor a comprehensive national program of reform and preventative measures, designed to fundamentally address the risks facing workers in industries that generate RCS
- Drive greater consistency across jurisdictions in WHS policy, practices, behaviours and information.

Priority Area 5 Research and Development

Objectives:

- Develop a strategic national approach to silicosis prevention research and development
- Build the evidence base for silicosis prevention as well as the capability of the research sector
- Enhance the capabilities of population-level monitoring and surveillance of silicosis and other occupational lung diseases in Australia
- Translate silicosis knowledge into WHS policy, practices, behaviours and information to better protect workers from RCS exposure.

Strategic Outcomes

- Silicosis eliminated in Australia
- Improved worker health and wellbeing
- Safe and healthy workplaces with supportive and positive culture
- Reduced cost to Government and communities
- Increased productivity

Enablers

- Governance and leadership
- Adequate legislative and regulatory frameworks
- Research, data and information
- The use of technology
- Resources.

Principles

- Workers' rights to a healthy and safe working environment
- Embracing an all-of-governments and whole-of-government approach
- Working in partnership
- Robust scientific evidence-base for silicosis prevention.

Silicosis in Australia

Silicosis, caused by exposure to silica dust, **is on the rise in Australia.**

Silicosis is entirely preventable. It causes permanent disability and premature death. Beyond the physical health impacts are a range of psychosocial and financial implications.

There are three types of silicosis which are determined by length of exposure.

Acute silicosis
develops after weeks to **5 years**

Accelerated silicosis
develops after less than **10 years**

Chronic silicosis
develops after over **10 years**

What is the impact

Data capturing the incidence and prevalence of silicosis in Australia is not available. As such, **the full scale and impact of silicosis is unknown.**

Who is impacted

Approximately **584,050 Australian workers** are currently **exposed to silica dust in the workplace**. Between **83,090 and 103,860 silicosis cases** are expected to result from this exposure.

Where is the impact

Men and women of all ages working in a variety of occupations and industries are affected, including:

Mining | Quarrying | Tunnelling | Manufacturing | Stonemasonry | Construction

Currently, **almost 1 in 4** stonemasons are suffering from silicosis or other silica dust related diseases.

Why has this happened

A lack of:

- **Fail safe preventive measures in line with the Hierarchy of Controls**
- **Strong legislation and regulation that is consistently enforced**
- **Coordinated surveillance and monitoring**
- **Air monitoring programs**
- **Effective health screening methods.**

Priority area 1: **Workplace risk reduction**

Australia's WHS laws

WHS in Australia is a shared responsibility between governments, employers and workers, as set out in the Safe Work Australia Act. States and territories are responsible for WHS regulation, including the implementation and enforcement of WHS laws in their jurisdiction. Australia has model WHS laws that have been adopted in all jurisdictions except Victoria, which has similar laws in place.

The model WHS laws, developed and maintained by Safe Work Australia, comprise the model WHS Act,[51] model WHS Regulations,[52] and model Codes of Practice.[46] Safe Work Australia develops national policy relating to WHS and workers' compensation, while the Australian Government, states and territories regulate and enforce WHS laws in their jurisdictions.

These elements are supported by the National Compliance and Enforcement Policy (NCEP)[53] which sets out principles on how WHS regulators monitor and enforce compliance with WHS laws.[53]

Under the model WHS laws, businesses must eliminate or minimise risks to workers, so far as is reasonably practicable, including the risks from exposure to hazardous airborne contaminants like RCS. A combination of different control measures is required to eliminate or minimise the generation of RCS in the workplace. Examples include the use of wet cutting methods, local exhaust ventilation, shift rotation, and personal protective equipment (PPE). Businesses must also:

- Comply with the prescribed maximum workplace exposure level for hazardous airborne chemicals like RCS
- Conduct air monitoring if there is any uncertainty that the Workplace Exposure Standard (WES) for RCS is being exceeded or to find out if there is a risk to a worker's health, and
- Organise and pay for health monitoring so any changes to workers' health can be detected.[53]

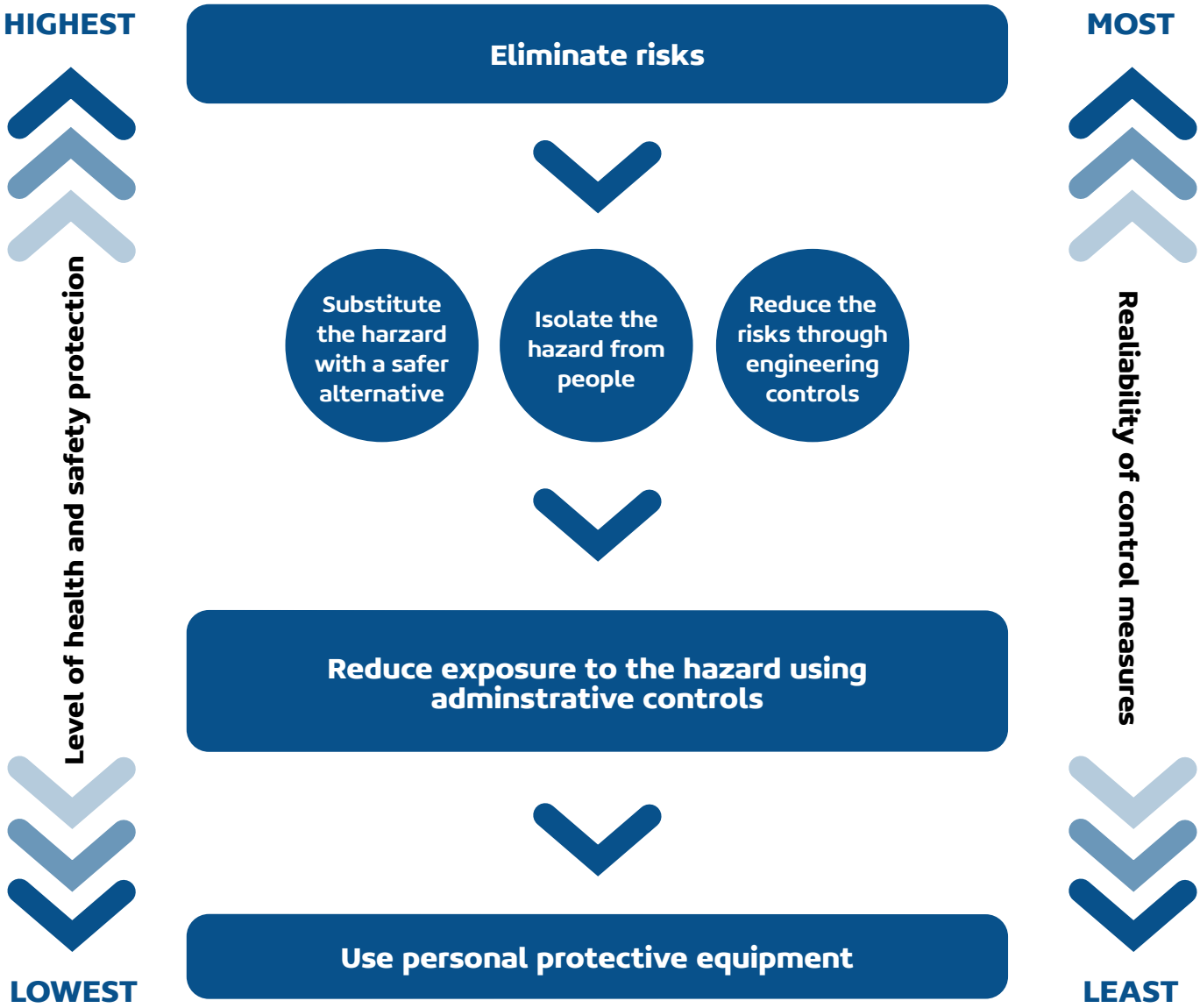
> *"There is no good reason why an advanced economy such as Australia should have workers suffering from silicosis and accelerated silicosis. The current situation results from a failure of regulation in learning from the past and responding to new consumer demands, and a lack of understanding by employers and workers of the risks associated with exposure to respirable silica dust, including in new forms combined with resins and plastics in manufactured stone".*
>
> **The Australian Institute of Health and Safety.**[50]

Hierarchy of control measures for silicosis prevention

Controlling exposures to hazards in the workplace is vital to protecting workers. The hierarchy of control measures (Figure 1) ranks control measures from the highest level of protection and reliability to the lowest.

The hierarchy of control measures requires that a 'person conducting a business or undertaking' (PCBU) must first aim to eliminate a risk. If it is not reasonably practicable to eliminate a risk, the risk must be minimised by substituting the hazard with something safer, isolating the hazard, or using engineering control measures. If risks still remain, they must be minimised, so far as is reasonably practicable, using administrative control measures. Any remaining risks must be minimised with suitable PPE. Using this hierarchy can lower worker exposure to RCS and reduce risk of silicosis, illness and injury.[54]

Figure 1: Hierarchy of Control Measures[46]



Current activity and investment

Safe Work Australia has undertaken substantial work to address the recent increase in silicosis cases through its Occupational Lung Diseases work plan.[22] The WES for RCS has been halved, and the model WHS laws are being amended to expressly prohibit uncontrolled dry cutting of engineered stone. A model Code of Practice, *Managing the risks of respirable crystalline silica from engineered stone in the workplace*[46] has been published to provide practical guidance on WHS duties and safe work practices, and can be used by courts as evidence of what businesses should be doing to keep workers safe.[46]

Jurisdictions have also taken immediate steps to address the increase in silicosis cases, including through legislative changes, development of Codes of Practice, education and awareness campaigns and compliance audits. Collaborative mechanisms, such as the Heads of Workplace Safety Authorities (HWSA) working group on silicosis,[7] have also been established. In 2022, Victoria commenced the first licencing scheme for businesses working with engineered stone.

As part of the All of Governments' Response, WHS ministers tasked Safe Work Australia to consider the Taskforce's findings as part of a regulatory impact analysis (RIA) on regulatory and non-regulatory options to minimise the risks of silica dust in all silica dust generating industries. Safe Work Australia's 2023 Decision RIS was presented to WHS ministers in February 2023.

Maintaining the status quo is not acceptable

Systemic failures and low compliance with existing WHS regulation is putting Australian workers' health and safety at risk. In particular, non-compliance in the stone benchtop industry is evident, as noted during the Taskforce consultation[6] and documented elsewhere (see Box 3). Further regulatory reform is urgently needed, along with increased and sustained compliance and enforcement by regulators to ensure businesses are complying with their WHS duties and implementing safe practices.

Box 3: Documented failures of control in the stone benchtop sector

In the stone benchtop sector, there have been numerous documented failures of control associated with the surge in silicosis cases. Some of these failures include:

- Use of high silica-content material and the failure to identify the hazard of crystalline silica
- Failure to manage the risk of / control exposure
- Failure to provide the correct respiratory protective equipment
- Failure to provide training in the use, maintenance and storage of personal protective equipment
- Failure to conduct personal air monitoring
- Failure to provide health monitoring for workers.[55]

Government commitment

In 2021, the Taskforce recommended strengthening WHS measures to ensure workers are protected from exposure to RCS and its devastating consequences. All Australian governments support this in principle.[7]

In February 2023, WHS ministers agreed to implement a number of reforms in response to Safe Work Australia's 2023 Decision RIS, including stronger regulation of high-risk crystalline silica processes for all materials across all industries, further analysis and consultation on a prohibition of the use of engineered stone under the model WHS laws, and exploration of an import ban on engineered stone.[8] The Australian Government provided $10.0 million over four years to address the rise of silicosis in workers in the 2023-24 Budget.[9]

Priority activities

Reform is urgently needed.

Processes to implement a full **ban on the importation of some or all engineered stone products** should commence if, by July 2024, there have been no demonstrable and acceptable improvements in regulatory compliance rates for the engineered stone sector in all Australian jurisdictions and/or preventive measures are determined to be ineffective.

Consideration of a ban will require federal, state and territory governments to work together to develop a comprehensive framework to evaluate the effectiveness of compliance with WHS duties and the effectiveness of measures to protect workers, including measures implemented following Safe Work Australia's regulatory impact analysis process[12] and the reforms agreed to by WHS ministers in February 2023.[8] The decision regarding the ban on importation of engineered stone products is to be based on an objective assessment of the requirements established under the framework.

Further analysis and consultation on a **prohibition of the use of engineered stone under the model WHS laws**, including consideration of silica content levels and other risk factors, is urgently needed. Following the WHS ministers meeting in February 2023, Safe Work Australia undertook public consultation on the prohibition on the use of engineered stone during March and April 2023. The decision regarding the prohibition of the use of engineered stone under the model WHS laws, including any related implementation timeframes, will be informed by *Safe Work Australia's Decision Regulation Impact Statement on the prohibition on the use of engineered stone*, which is expected to be provided to WHS ministers by August 2023.

It is important to consider definitions, timing and impacts on affected workers and businesses when examining any prohibitions.[8]

Investment in measures to address gaps in silicosis knowledge and to ensure comprehensive and centralised data is available to inform the ban decision is imperative. This is addressed in activities throughout the NSPS and NAP. Required data to be available includes data on occupational RCS exposures, incidence of silicosis, uptake of and effectiveness of control measures, and regulatory compliance with WHS duties in Australia.

While an express prohibition on uncontrolled dry cutting of engineered stone with power tools has not been implemented in all jurisdictions, it is not permitted under WHS laws, as dry cutting would typically exceed the WES for RCS. Safe Work Australia members have agreed to amend the model WHS regulations to clarify the prohibition of uncontrolled dry cutting of engineered stone. Once finalised, jurisdictions should urgently take action to implement the prohibition under their WHS laws.

As well as engineered stone, unacceptable exposures to RCS are occurring in other industries such as mining, quarrying, construction and tunnelling,[56] and workers from industries not associated with engineered stone are being diagnosed with silicosis. One example of this is shown in the NSW Dust Disease Register where at least 10 workers in heavy and civil engineering construction and site preparation services/ earthmoving work were diagnosed with silicosis in 2021-2022.[57] The prior year approximately 43% of workers who were diagnosed with silicosis in NSW were from industries outside of engineered stone.[58] At the NSW Budget Estimates, SafeWork NSW disclosed that 21 workers developed silicosis from tunnelling work in NSW in the last five years.[59] Controlling the dust at the source is necessary regardless of whether it is artificial stone, natural stone, concrete or other silica-containing products.

Recent modelling conducted by Curtin University modelled the impact of various interventions, one of which was the use of wet cutting methods during all concrete cutting and grinding tasks. The modelling showed that the use of wet cutting methods was estimated to result in a reduction of between 5,090 and 6,360 cases of silicosis, in addition to 640 cases of lung cancer.[35] There is strong evidence demonstrating the reduced exposures associated with controlled cutting.[60, 61, 62, 63]

> *"Without a prohibition on uncontrolled dry cutting of silica-containing materials, we risk failing an at-risk group larger in size than the engineered stone industry."*
>
> **Ms Kate Cole OAM, Certified Occupational Hygienist**

Implementation of a **national prohibition on uncontrolled dry cutting or processing of silica-containing materials** is required, with an accompanying compliance strategy to support the elimination of dry cutting of silica-containing products.

Following the pending July 2024 decision regarding the importation ban on engineered stone products (activity 1.1), development and implementation of a **national licensing framework** to support the introduction of jurisdictional licensing schemes for businesses working with engineered stone should effectively achieve many prevention goals.[6] Licensing would restrict access to the product to those businesses that can demonstrate the ability to effectively manage the risks associated with engineered stone, by implementing necessary controls and educating their employees. A national licensing framework would support the introduction of jurisdictional licensing schemes for businesses working with engineered stone. Licensing would need to span all of the supply chain to be effective and to be enforced by WHS regulators, with a publicly available database of licence holders.[6] WorkSafe Victoria introduced an engineered stone licence requirement in 2021 which allows businesses (both employers and self-employed persons) to work with engineered stone if they meet the necessary safety requirements.[64]

Safe Work Australia's 2022 CRIS noted that a system developed to administer a licensing framework could also be used to collate health and air monitoring data.[11] Further consideration of a national licensing system for products that are not subject to a ban or are legacy products is being considered in Safe Work Australia's public consultation on the prohibition on the use of engineered stone.[65]

Measuring workers' exposure to RCS via **air monitoring (or exposure monitoring)** is necessary to establish compliance with the WES for RCS and to determine if control measures are working as planned. Exposure monitoring to determine a worker's exposure involves measuring the level of silica dust in the breathing zone of workers using a personal sampler during their usual shift activities (including routine breaks). This is performed by qualified occupational hygienists.[28]

Despite exposure monitoring being the key way that businesses determine compliance with the WES, very few businesses in the stone benchtop industry have undertaken the necessary monitoring.[55] This is due to a number of factors including perceived cost as a barrier, confusion about how to meet WHS obligations, and lack of access to appropriately qualified certified occupational hygienists.[6] Measures to enhance air monitoring and reporting in relation to RCS are required to ensure employers regularly carry out air monitoring to assess RCS exposure.

> *"It is the contention of the [National Dust Disease Taskforce] that cost is a barrier, but industry is extremely profitable. Mining and construction are profitable businesses – importers of engineered stone are profitable international companies. The cost of WHS compliance is part of doing business. It appears that this cost isbeing, at times, transferred to SMEs and workers."*
>
> **Ms Deborah Vallance, Australian Council of Trade Unions**

Safeguarding the validity of air monitoring relies on the capabilities of qualified occupational hygienists. A disparity in the level of experience and qualifications of those conducting air monitoring and inspections has been highlighted as a real issue by medical professionals, support groups and certified occupational hygienists.[6] A requirement for air monitoring to be carried out under the governance of a Certified Occupational Hygienist (COH)® will help to standardise air monitoring to promote data integrity and ensure the effective implementation of WHS obligations by competent professionals.[6]

A systemic, national approach to air monitoring data collection and sharing is required to optimise the role of air monitoring in supporting WHS compliance. There are examples of this occurring in Queensland where mines and quarry sites routinely measure RCS and report on it to the regulator.[66] A centralised national exposure registry is required to report on compliance with the WES, with a requirement for mandatory reporting of exceedances of the WES for RCS to jurisdictional regulators, and immediate regulatory action in response to exceedances of the standard. The exposure registry must align with the National Occupational Respiratory Disease Registry (referred to as the Registry throughout this report).

In February 2023, WHS ministers agreed on a requirement to conduct air monitoring and report WES exceedances to the relevant regulator.[8]

PCBUs would be further supported in fulfilling their WHS duties in relation to managing the risks of RCS in the workplace through increased awareness of current Safe Work Method Statement (SWMS) requirements. Another measure would be the introduction and/or extension of **requirements for a SWMS** or similar Statement to be completed in all at-risk industries before carrying out work that includes a risk of exposure to RCS. This approach would also provide greater protection to workers.

A requirement for a SWMS for work that includes a risk of exposure to RCS could utilise an existing WHS document to provide greater protections to workers. This would be similar to existing documents and templates currently in place across jurisdictions, industries and issues, such as the WorkSafe Victoria Engineered Stone Control Plan, and Asbestos Management Plans.

The **Workplace Exposure Standard (WES) for RCS** determines the maximum acceptable level of silica dust exposure that is not expected to cause adverse effects on the health of an exposed worker. This level must not be exceeded under WHS laws. Businesses adopt a combination of controls to prevent worker exposure to RCS above the WES.[46,67]

The WES for RCS was recently reviewed and all jurisdictions have implemented the new WES (8-hour TWA of 0.05 mg/m^3) under their WHS laws. It is important that the WES for RCS (both the level and methodology) and other airborne contaminants are reviewed regularly (at least every five years). A further reduction to a health-based WES for RCS of 0.02 mg/m^3 should be implemented. Further research is needed to enable lower standards to be effectively measured.

Existing WHS laws specify requirements for the provision of information to enable the safe use of products. It is important to improve the availability and visibility of **product labels and Safety Data Sheets (SDS)** across the supply chain to ensure that data on silica content is readily available to inform both worker safety and customer behaviours. The first step is to conduct a rapid desktop review of legal requirements across jurisdictions for SDS and product labelling for materials and products that contain silica in order to identify current practices and inconsistencies. A recent NSW review recommended a mandated, consistent format for product labels and SDS for manufactured stone products.[4]

Designers, manufacturers, importers and suppliers do not currently have a duty to provide information such as a SDS for solid products that contain crystalline silica, such as engineered stone. However, SDS are an effective way to communicate information downstream about the risks when working with engineered stone, and it is considered good practice to make them available.[28] The implementation of a national requirement for a consistent format for SDS and product labels for materials and products that contain silica, including engineered stone, is necessary. This should be accompanied by a national compliance education and awareness campaign targeting product and chemical suppliers and SDS for silica-containing products. SWMS will play an important role in ensuring businesses are complying with their WHS duties and implementing safe systems of work.

Development and implementation of a **workforce plan** is required to ensure the multi-sector and multidisciplinary workforce required to reduce RCS exposure and eliminate silicosis in Australia is suitably trained, resourced and distributed. The workforce to be covered in the workforce plan includes, but is not limited to:

- Medical and healthcare practitioners including general practitioners (GPs), consultant physicians in occupational and environmental medicine, respiratory physicians, radiologists and B-readers with special expertise in occupational lung disease, and allied health professionals. These professionals all have an important role in identifying and assessing workers exposed to RCS dust with engineered stone (case identification) and carrying out health assessments and surveillance[68]
- Occupational hygienists who undertake air monitoring and recommend suitable control measures
- The WHS workforce, including inspectors.

The workforce plan should include measures to increase the supply of occupational hygienists in Australia in collaboration with higher education providers, states and territories, peak bodies and workplaces. Recruitment pathways can be strengthened by raising awareness of the occupation and promoting occupational hygiene as an attractive career choice. Adequate resourcing of the WHS workforce, including inspectors, is imperative for a comprehensive and robust compliance and enforcement regime.

The development of best-practice regulatory compliance and enforcement principles in relation to the risks associated with RCS is required to support WHS monitoring and compliance activities where workers are at risk of RCS exposure.

Objectives:

- Strengthen WHS measures to give greater protection to workers
- Support employers to effectively manage the risks posed by RCS exposure in the workplace, comply with WHS duties and implement safe systems of work
- Eliminate hazardous RCS exposure in Australian workplaces
- Ensure the multi-sector and multidisciplinary workforce required to eliminate silicosis in Australia is suitably trained, resourced and distributed.

National Action Plan
Priority area 1: Workplace risk reduction

Activity	Success measure
1.1. Commence processes to implement an importation ban on some or all engineered stone products if, by July 2024, there: • Have been no demonstrable and acceptable improvements in regulatory compliance rates for the engineered stone sector in all Australian jurisdictions and/or • Preventative measures are determined to be ineffective.	A comprehensive framework to evaluate the effectiveness of compliance with WHS duties and the effectiveness of measures to protect workers is developed Comprehensive national data is available to monitor regulatory compliance rates and the effectiveness of measures to protect workers in the engineered stone sector Australian Government to have made and implemented a decision regarding an importation ban on engineered stone products into Australia.
1.2. Further analysis and consultation on a prohibition of the use of engineered stone under the model WHS laws, including consideration of silica content levels and other risk factors. To include consideration of a national licensing system for products that are either not subject to a ban or are legacy products.	An extensive analysis and public consultation process on the prohibition on the use of engineered stone is undertaken by Safe Work Australia Safe Work Australia's Decision Regulation Impact Statement on the prohibition on the use of engineered stone is provided to WHS ministers for their consideration WHS ministers decision regarding a prohibition on the use of engineered stone, including any related implementation timeframes.
1.3. Implement a national prohibition on uncontrolled dry processing of silica-containing materials and develop and implement an accompanying compliance strategy.	Nationally consistent implementation of a prohibition on uncontrolled dry cutting or processing of silica-containing materials Delivery of compliance strategy directed toward the elimination of uncontrolled dry cutting or processing of silica-containing materials.
1.4. Following the July 2024 decision regarding the importation ban on engineered stone products (activity 1.1), develop and implement a national licensing framework to support the introduction of jurisdictional licensing schemes for businesses that continue to work with engineered stone.	Development of a national licensing framework for businesses working with engineered stone Introduction of jurisdictional licensing schemes for businesses working with engineered stone Publicly available database of licence holders.
1.5. Implement measures to enhance air monitoring and reporting in relation to RCS to ensure: • Employers regularly carry out air monitoring to assess exposure to RCS • Air monitoring is carried out under the governance of a Certified Occupational Hygienist (COH)® • Mandatory reporting of exceedances of the WES for RCS to the relevant regulator • Immediate regulatory action is taken in response to exceedances of the WES for RCS • A national register is established that reports on compliance with the WES for RCS.	Frequency of air monitoring is defined in legislation Requirement for air monitoring to be overseen by a COH® and exceedances reported to the relevant regulator documented in legislation National exposure registry for RCS and other airborne contaminants established Increase in workplace air monitoring by PCBUs Visibility at a national level on the level of compliance across industry.

Outcome	Responsibility	Timeframe
Decision regarding a ban on the importation of engineered stone products based on an objective assessment of the requirements established under the framework.	Australian Government	Framework developed by September 2023 A decision regarding the importation ban of engineered stone products into Australia made by July 2024 Commence importation ban processes by July 2024 if there are no measurable and acceptable improvements in regulatory compliance rates for the engineered stone sector and/or preventative measures are determined to be ineffective.
Decision regarding a prohibition on the use of engineered stone informed by Safe Work Australia's Decision Regulation Impact Statement on the prohibition on the use of engineered stone.	Safe Work Australia WHS ministers	*Decision Regulation Impact Statement on the prohibition on the use of engineered stone* provided to WHS ministers by August 2023 Decision regarding a prohibition on the use of engineered stone by December 2024.
High compliance with prohibition Reduced RCS exposure in businesses working with silica-containing materials.	Safe Work Australia Federal, state and territory governments	2023-24
Access to engineered stone limited to PCBUs who meet the required licensing standards or competencies Reduced RCS exposure in businesses working with engineered stone.	Federal, state and territory governments Safe Work Australia	2024-25
Over-exposures to RCS are reported Enhanced compliance with model WHS laws, including Regulation 49 and the WES for RCS Reduced RCS exposure in workplaces.	Safe Work Australia Employers Researchers including proposed CRE in Silicosis Prevention (activity 5.2) Individual jurisdictions	2023-24

National Action Plan
Priority area 1: Workplace risk reduction

Activity	Success measure
1.6. Increase awareness of current Safe Work Method Statement (SWMS) requirements and introduce and/or extend requirements for a SWMS or similar Statement to be completed before carrying out work that includes a risk of exposure to RCS. This includes consultation with relevant stakeholders to identify existing requirements and where gaps exist.	Increased awareness of current SWMS requirements Current gaps in WHS requirements across at-risk industries, sectors and jurisdictions identified and addressed Requirement for SWMS or similar Statement to be completed in at-risk industries before carrying out work that includes a risk of exposure to RCS adopted into WHS laws across all jurisdictions Adoption of SWMS or similar Statement by workplaces within at-risk industries.
1.7. Implement measures to ensure that the WES for RCS protects exposed workers from adverse health effects, including: • Reviewing the WES maximum level of exposure at least every five years • Reviewing WES methodology • Further research to enable lower standards to be effectively measured.	Regular review of WES for RCS and other airborne contaminants WES methodology reviewed New air monitoring technologies developed.
1.8. Improve the availability and visibility of product labelling (e.g., label/SDS) across the supply chain by: • Conducting a rapid desktop review of legal requirements across jurisdictions for SDS and product labelling for materials and products that contain silica • Implementing a national requirement for a consistent format for SDS and product labels for materials and products that contain silica, including engineered stone products • Implementing a national compliance, education and awareness campaign targeting product and chemical suppliers and safety data sheets for silica-containing products.	Product labelling available and visible across the supply chain.
1.9. Develop and implement a workforce plan to ensure the multi-sector and multidisciplinary workforce required to eliminate silicosis in Australia is suitably trained, resourced and distributed, including measures to: • Increase the supply of the occupational hygiene, health and medical workforce in Australia • Ensure adequate resourcing of the WHS workforce, including inspectors.	Workforce plan developed.
1.10. Development of best practice regulatory compliance and enforcement principles in relation to the risks associated with RCS.	Development of best practice regulatory compliance and enforcement principles Nationally consistent implementation of best practice principles.

Outcome	Responsibility	Timeframe
Increased uptake of safe work practices and compliance with WHS duties Reduced RCS exposure in workplaces.	Safe Work Australia Federal, state and territory governments PCBUs	2024-25
Evidence-based WES to protect exposed workers from adverse health effects.	Safe Work Australia State and territory governments Industry/occupational hygiene sector	Review by 2028
Workers and consumers aware of risks associated with engineered stone products.	Federal, state and territory governments Safe Work Australia Industry	2024-25
Workforce suitably trained, resourced and distributed.	Australian Government Health and medical professional groups	2025-26
High compliance with WHS duties Reduced RCS exposure in businesses working with engineered stone.	Heads of Workplace Safety Authorities (HWSA) Safe Work Australia State and territory governments	Mid 2024

Priority area 2: **Education and awareness**

The implementation of targeted silicosis prevention education, awareness and behaviour change initiatives is essential if Australia is to make real headway in eliminating silicosis.

Education and awareness key in the fight against silicosis

The gaps in knowledge relating to silicosis and its prevention and management are significant and evident among Australian businesses, workers and the broader community.

There is a lack of understanding and awareness of the hazardous nature of working with silica-containing products, including engineered stone. Some workers had never heard of silicosis before their diagnosis.[6]

Limited information and awareness about the most effective available control measures for reducing or eliminating RCS exposure, and a lack of understanding about how to implement effective controls is also evident. The lack of consistency across jurisdictions in WHS practice and information and more importantly, lack of consistent guidance material, mean that businesses are not receiving consistent messaging and are not clear about their requirements.

> *"I always wore my mask but there was no enforcement of it. They put warning signs on the finished products to warn consumers, but there was no understanding, no training, no monitoring."*
>
> **Worker**[43]

The importance of education and awareness to prevent silicosis by raising awareness of effective control measures has been highlighted by findings that most early cases of engineered stone-associated silicosis occurred in small businesses with deficiencies in workplace control measures, including inadequate ventilation, lack of provision of appropriate respiratory protection, and dry processing of engineered stone.[38] A lack of knowledge of the control measures, and how to implement them, is also evident.

Under the model WHS laws, businesses must eliminate or minimise risks to workers, so far as is reasonably practicable, that arise from the work they are performing, including the risks from exposure to hazardous airborne contaminants like silica dust.

A 46-year-old former labourer currently living with complex silicosis and progressive massive fibrosis explained that no company they had worked for ever mentioned anything about their risks [of working with RCS or developing silicosis]. "The companies I was working for, you do your work, you hurry up… you don't worry about the rest."

A recent editorial noted that, "Of the few reports on silicosis … most circle back to education as a tool in the fight against the disease".[69] There is strong support among all stakeholders for effective education, awareness and behaviour change initiatives.[6]

Government commitment

In April 2021, the Taskforce recommended the implementation of a national, targeted education and communication campaign, using lessons learned from jurisdictions and key stakeholders, by the end of 2021.[6]

In the All of Governments' Response, Australian governments supported the Taskforce's recommendation.[7]

Safe Work Australia's 2023 Decision Regulation Impact Statement (DRIS) recommended implementation of national awareness and behaviour change initiatives to minimise the risks of RCS exposure.[12] In February 2023, WHS ministers adopted the DRIS recommendations and agreed to implement the "delivery of national awareness and behaviour change initiatives, in partnership with employers and unions."[8]

Current activity and investment

A number of silicosis education and awareness campaigns have been delivered by federal, state and territory governments and non-government organisations (NGOs). Safe Work Australia and state and territory regulators have undertaken education and awareness raising campaigns targeting businesses with risks of exposure to RCS to ensure they are meeting their WHS duties. For example, in 2021, Safe Work Australia ran a national education and awareness campaign for occupational lung diseases that targeted duty holders in the construction, agriculture, manufacturing, and engineered stone industries. The 'Clean Air. Clear Lungs.' campaign ended in December 2021.

The Australian Government is currently funding specific education and awareness campaigns to prevent the risk of exposure to occupational lung diseases. This includes funding to Lung Foundation Australia to improve awareness and understanding of lung conditions for population groups considered to be at an increased risk of experiencing poor lung health in Australia.

Federal funding was allocated in the 2022-23 Budget for further education and awareness raising activities targeting high-risk employees, high-risk industries, carers and families of those impacted and culturally and linguistically diverse employees and employers.

The 2023-24 Budget supports further education and training activities to be delivered through Safe Work Australia's social partners, with $1.2 million over two years from 2023-24.[9] These activities are intended to support the decision by WHS ministers in February to deliver national awareness and behaviour change initiatives, in partnership with employers and unions.[8] Funding is aimed at persons conducting a business or undertaking (PCBUs) and workers, to improve their understanding of the risks arising from silica dust and to support better work practices relating to managing silica dust in the workplace.[9]

The Australian Government has funded the development of silica safety awareness training and competency frameworks for inclusion in relevant national training products, such as those relating to demolition, bricklaying and stonemasonry.

Current education and awareness activities include the Thoracic Society of Australia and New Zealand/ Lung Foundation Australia's Occupational Lung Disease Short Course and Online Module, funded by the Australian Government, and the 10830NAT Course in Crystalline Silica Exposure Prevention.

Core audiences for silicosis prevention education and awareness

Education, awareness and behaviour change initiatives must be targeted at a range of different stakeholders in order to achieve meaningful change and eliminate silicosis in Australia. The core audiences for silicosis prevention education and awareness activities are identified in Box 4 with a brief description of how the focus of activities will vary for different stakeholder groups.

Box 4: Core audiences for silicosis prevention education and awareness activities

Education and awareness activities targeting a range of different stakeholders are required.[6] These should educate and inform:

- Workers and families about risks, workers' rights and preventive measures, including the stories of workers previously exposed to silica dust and retired workers (due to the latency period of the disease)
- Businesses, including employers and PCBUs about risks, control measures and legislative requirements
- Medical and healthcare practitioners about occupational risk, symptoms, presentation and evidence-based diagnostic techniques to help early diagnosis of silicosis. The avenues to support those affected and to enable rapid referral for support should be addressed
- WHS inspectors about risks and control measures, and their role in providing advice, assisting workplaces to resolve health and safety issues, and enforcing legislative requirements
- Manufacturers, suppliers, importers and designers to ensure compliance with WHS duties including promoting safe practices through labelling, provision of SDS for each stage of the supply chain and taking a lead role in product stewardship
- The housing and construction industry (e.g., architects, engineers, designers, builders), as well as home renovators of kitchen and bathrooms and the general public, about the risks associated with using silica-containing products when they are not handled safely, and to encourage consideration of safer alternatives
- Consumers about the risks associated with silica-containing products when appropriate control measures are not used and to encourage consideration of safer alternatives.

Priority activities

A deep understanding of core audiences is needed to ensure silicosis prevention education and awareness activities are tailored to the audience and effective at influencing behaviour. **Behavioural insights research** with the range of core stakeholders is required to build on the research by Quantum Market Research commissioned by the Taskforce in 2019 and 2021,[42, 43] and should form part of all education and awareness activities.

A **national, comprehensive and targeted education, communication and awareness program** is required to support the provision of healthy and safe working environments and better protect workers from RCS exposure. Tailored strategies and messages based on the insights, needs and roles of stakeholders are imperative.

Education, communication and awareness activities should:

- Target industries where workers are at risk of silicosis due to RCS exposure
- Align with existing WHS duties and legislative requirements
- Account for various levels of literacy as well as culturally and linguistically diverse audiences
- Consider and apply existing behavioural insights to ensure a focus on the best ways to prevent or reduce behaviours that increase risk of workplace RCS exposure
- Include content on the legal rights and responsibilities of different stakeholders
- Include the development of practical guidance and tools for use in workplaces in a variety of modalities.

Education, communication and awareness activities will have a strong focus on workers and businesses at each step of the supply chain in order to reduce the risk of RCS exposure. For example, activities targeting the engineered stone industry would be delivered at each step of the supply chain, including extraction, crushing and grinding, manufacturing, import, packaging and labelling, transport, storage, sale, fabrication, installation, and demolition.[70]

The significant rise in cases of silicosis has been associated with the increased importation and use of engineered stone in Australia.[71] Education,

communication and awareness activities should also target consumers and other professionals (e.g., architects, builders) to raise awareness about the risks associated with silica.

The implementation of a **national requirement for accredited silicosis prevention and silica management education and training** to be provided to workers at risk of RCS exposure is critical to better protecting Australian workers. The development and implementation of a national **accreditation system** for silicosis prevention and silica management education and training, and an accompanying competency and learning framework, are pivotal to effective implementation of this requirement.

The Australian Government funded silica safety awareness training and competency framework may, upon completion, inform the national accreditation system (activity 2.3) and the national licensing framework for businesses working with engineered stone (activity 1.4).

Different measures are required to ensure that silicosis prevention education and awareness activities are available for businesses in at-risk industries, such as **education and training subsidies** to increase access and affordability and the establishment of a centralised **online directory of accredited education and training** providers and opportunities. The opportunity to provide self-guided options and scale up existing activities need to be explored.

Objectives:

- Increase awareness and knowledge of the risks of RCS exposure in all sectors
- Increase knowledge of safe work practices and compliance with WHS duties
- Increase consumer awareness of the risks when choosing a high silica content product, such as engineered stone, to inform consumer choice
- Influence stakeholder behaviours across the supply chain to reduce RCS exposure and better protect workers.

National Action Plan
Priority area 2: Education and awareness

Activity	Success measure
2.1. Undertake behavioural insights research to inform the development of targeted education, awareness and behaviour change initiatives.	Behavioural insights research undertaken with priority groups for silicosis prevention Audience insights used to inform the development of targeted education, awareness and behaviour change initiatives.
2.2. Develop and deliver targeted education, awareness and behaviour change initiatives, in partnership with employers and unions.	Evidence-based campaigns developed based on audience insights and behaviour change theory Campaigns co-designed with core audiences for silicosis prevention including subject matter experts Regular and ongoing education, communication and awareness activities, including dissemination of information and materials Robust evaluation of campaigns undertaken to monitor for effectiveness and inform ongoing delivery.
2.3. Implement a national requirement for accredited silicosis prevention and silica management education and training to be provided to workers who are at risk of RCS exposure. To include: • Developing and implementing a national accreditation system for silicosis prevention and silica management education and training • Subsidising silicosis education and training to increase access and affordability • Establishing a centralised online directory of accredited education and training.	Requirement for information, instruction and training to be provided to workers who are likely to be exposed to risks associated with undertaking high-risk crystalline silica work adopted into WHS laws across all jurisdictions Accreditation system and competency and learning framework in place Alignment of existing education and training with the competency framework Online directory of accredited education and training Uptake of training among employers and workers in at-risk industries.

Outcome	Responsibility	Timeframe
Deep understanding of priority groups for silicosis prevention gained.	Government, unions, employers NGOs construction, design, architecture and industry professional associations	2023
Increased awareness, knowledge and behaviour change among core audiences, including: • Increased awareness by workers and families about risks, workers' rights and preventive measures • Improved understanding by businesses about risks, control measures and legislative requirements, leading to increased uptake of safe work practices and reduced RCS exposure in workplaces • Suitably trained and equipped medical and healthcare professional workforce • Increased awareness by consumers and other professionals about the risks associated with silica.	Government, industry, employers unions NGOs	2023 and ongoing
Improved understanding of control measures Improved uptake of safe work practices Improved compliance with WHS duties.	Federal, state and territory Governments Jobs and skills councils Safe Work Australia Health and industry professional associations and societies	2023-24

Priority area 3:
Health monitoring, screening and surveillance

> *"Nationally consistent and frequent health monitoring of workers at risk of silica exposure is critical for early detection of silicosis. All workers with silicosis must be rapidly provided individualised specialist care. Every diagnosis of silicosis is evidence of failure to protect that worker which must be fully investigated. The adverse health effects of silica exposure may develop between months to decades after exposure. Therefore there is a need to ensure health monitoring is provided for both current and former workers."*
>
> **Dr Ryan Hoy, Respiratory and Sleep Physician**

Health monitoring

Health monitoring is a statutory requirement under WHS laws.

Health monitoring is provided by a person conducting a business or undertaking (PCBU) for a worker. It involves using medical tests to monitor and protect a worker's health because of exposure to hazardous chemicals.[72]

Health monitoring is referred to as health surveillance in Western Australia and is also known as respiratory surveillance in the medical literature.

Health monitoring of current workers

The purpose of occupational health monitoring is to detect an adverse effect from workplace exposure at an early, pre-clinical stage which allows interventions to protect the health of the worker. The identification of any worker with an adverse health effect is also an indicator of failure to control the exposure at the workplace, thereby putting other workers at risk. The aim is to have zero adverse health effects. Even one affected worker requires a thorough review of preventive measures to protect other workers at the workplace.

Under the model WHS regulations, employers and PCBUs have a legal obligation to "provide health monitoring for workers if they carry out ongoing work using, handling, generating or storing crystalline silica, and there is a significant risk to the worker's health because of exposure."[73] RCS is identified under Schedule 14 of the WHS regulations to be a hazardous substance requiring provision of health monitoring.

Under the model WHS laws, PCBUs/employers have a duty to determine if significant risk is present and to decide if health monitoring is necessary. This requires knowledge of the product and its risks, and judgement by the PCBU. Significant risk decisions are made taking into consideration the likelihood of exposure to a hazardous chemical, including air monitoring results, in conjunction with the known health effects of the chemicals. In the case of RCS, the likelihood of exposure when working with silica-containing materials is high and the known health risks are many and serious.[6]

While health monitoring is required under the model WHS laws, there are concerns about the lack of a nationally consistent approach to implementation of health monitoring, and accessibility of health screening assessments for occupational respiratory dust diseases.[6]

Active screening of workers

In recent years, several jurisdictions in Australia have provided active health monitoring programs for workers in the stone benchtop industry. However, there is inconsistency in the approaches taken by jurisdictions due to a lack of overarching national guidance.[6]

These free programs have been extremely important, in particular as a means of identifying workers with silicosis (who are often asymptomatic) and providing appropriate management.

> *"I got my lungs checked in a SafeWork program back in 2019 after close to two decades of being exposed to silica at work. No-one I worked for ever talked to me about getting my lungs checked. And the very first time I had them looked at I found out I had silicosis."*
>
> **Former labourer, 46 years old, living with silicosis**

The programs have also provided further knowledge about the benchtop industry in Australia and engineered stone-associated silicosis. As an indication of the extent of silicosis in the benchtop industry, in July 2022 the Queensland program completed assessments of 1,053 workers and identified 204 (23%) with silicosis, including 36 with progressive massive fibrosis, the most severe form of silicosis.[39] A similar pattern of silicosis prevalence has been found in the Victorian stonemason screening registry.[37]

Ongoing respiratory surveillance is imperative

Lifetime health monitoring and ongoing respiratory surveillance of workers who currently have, or previously had, exposure to RCS will help to identify the disease earlier, prevent further RCS exposure and play an important role in reducing the adverse consequences of a diagnosis. Importantly, the symptoms of silicosis may not appear for many years after exposure, which is why continued health surveillance beyond workers currently employed in at-risk industries is critical.[74, 75]

Ongoing respiratory surveillance also provides an opportunity to raise awareness of the risks of silica and to educate workers about the need to correctly apply protective controls to reduce their risk of developing silicosis. Important advice regarding other respiratory hazards (e.g., smoking and vaping) can also be provided. It is important that contemporary methodologies such as low dose high resolution computed tomography (HRCT) scans and enhanced respiratory function testing be included, wherever practicable, as the minimum requirement for health monitoring.[48]

Despite convincing evidence regarding the prevalence of occupational RCS exposure in Australia and internationally, the evidence base supporting standard screening methods requires further enhancement. This includes further research into the role of modern lung function testing and radiological techniques.

It is important that health monitoring and surveillance is undertaken effectively. The lessons learned from the re-emergence of black lung (Box 5) and the need for the most effective health monitoring and surveillance need to be applied to the workforce exposed to silica to avoid the same mistakes.[73]

Box 5: Lessons learned from the re-emergence of black lung

The review into the respiratory component of the health monitoring program for Queensland coal miners undertaken due to the re-emergence of black lung (coal worker's pneumoconiosis) resulted in improvements to many aspects of the program, including:

- Suitable training of the doctors
- Better quality control and auditing processes
- Use of higher quality and more effective screening techniques
- Better and more accessible recording of findings, to allow for longitudinal surveillance.[76]

Government commitment

In April 2021, the Taskforce made a number of recommendations relating to health monitoring, screening and surveillance.

In the All of Governments' Response, Australian governments supported the following Taskforce recommendations:

- Urgently conduct a regulatory impact analysis that must consider strengthening the health monitoring requirements to include contemporary methodologies such as low dose high resolution computerised tomography (HRCT) scans, and to cover all workers at risk of exposure to RCS (Recommendation 1c)
- Develop national guidance to identify people at risk from RCS exposure and improve the quality, frequency and coverage of health screening assessments for current and former workers (Recommendation 2)
- Design and implement an Early Detection and Rapid Response Protocol to identify emerging workplace risk using data from the National Occupational Respiratory Disease Registry when it becomes operational, and other sources (Recommendation 3c)[6,7]
- Regarding Taskforce recommendation 5, Better support medical, health and other related professionals to improve the diagnosis and management of workers affected by silicosis, Australian governments supported recommendation 5b and 5c, noting recommendation 5a.[7]

Safe Work Australia's 2022 CRIS considered the replacement of chest X-ray with low dose HRCT in the minimum regulatory requirements for health monitoring but assessed it as infeasible[11] and it was not included. The health monitoring, screening and surveillance activities outlined in Priority area 3 are also not included.[11]

The 2023-24 Budget included $4.7 million over four years from 2023-24 (and $0.8 million per year ongoing) to establish a dedicated occupational lung disease team in the Australian Government Department of Employment and Workplace Relations to oversee implementation and investigate long-term reforms for an improved national framework for occupational lung diseases.[9]

Priority activities

Conducting a **rapid desktop review of current health monitoring, screening and surveillance requirements and practices** for RCS exposed workers across all jurisdictions and at-risk sectors will clearly describe current practice, including gaps and variations. It will also create a roadmap for optimising best practice for health monitoring of silica-exposed workers to progress towards national harmonisation. The desktop review will build on the Stocktake of Silicosis Prevention Activity in Australia included in the All of Governments' Response.

A **comprehensive review of current evidence regarding the optimal health monitoring methodology for workers exposed to RCS** in all industries is required to inform development of evidence-based national guidelines, with particular reference to the role and methodology of HRCT imaging. The review should consider the feasibility of a Medicare Benefits Schedule (MBS) item for the health monitoring of current and former RCS exposed workers, to increase access.

The Australian Government is investing $263.8 million over four years from 2023–24 to establish and maintain a new national lung cancer screening program. The program will maximise prevention and early detection of lung cancer for at-risk Australians.[77] The feasibility to extend such program to include workers in high-risk industries should be considered.

The provision of specific health monitoring recommendations for workers in the engineered stone sector is required by **further development of the National Guidance for doctors assessing workers exposed to RCS dust with specific reference to engineered stone related silicosis** (National Guidance). Regular review of the National Guidance in consultation with experts and medical colleges, the translation of the National Guidance into evidence-based clinical guidelines, and the national dissemination of the clinical guidelines, including education and training of health and medical professionals, is required. The All of Governments' Response states the Australian Government's commitment to funding the development and implementation of resources to encourage and support general practitioners to use the National Guidance and to undertaking regular review of the National Guidance. The Australian Government Budget 2022-23 allocated funding for training to support use of the National Guidance.

A competency-based **Silica Health Monitoring Accreditation Program for medical professionals** who undertake health monitoring will ensure high quality screening is undertaken and improve the diagnosis, management and care of people with silicosis in Australia. Establishment of the accreditation program with accompanying requirement for continuing professional development, in collaboration with the relevant professional colleges and societies, and development and maintenance of a public register of accredited medical professionals, is required. The program should complement existing initiatives, such as the work of Lung Foundation Australia to develop a national, evidence-based Lung Health Competency and Education Framework for primary health care professionals that supports best practice care for people with lung disease and lung cancer.

In line with recommendations of the Taskforce and the 2021 Review of the Dust Disease Scheme in NSW,[4] it is imperative for Australia to implement measures to enhance the **health monitoring of all current and former** RCS exposed workers.[4]

Required measures include:

- Government funding to develop systems and provide access to ongoing health monitoring of RCS exposed workers who are retired or have left employment where RCS exposure occurred. It is critical that data is captured, centrally collected and reported publicly on the number of individual workers screened, the types of scans performed, and the location of silica-related cases. This functionality should form part of the ongoing, staged development of the National Occupational Respiratory Disease Registry to enable the Registry to capture health monitoring data and track current and former workers over time, with strong links to the Monitoring and Evaluation Framework currently under development
- Implementing processes to promote best practice health monitoring to all current and former exposed workers and employers
- Delivering outreach services to increase access to best practice monitoring (as determined by activity 3.2) in regional, rural and remote communities across Australia. Processes to identify and reach all workers exposed to RCS and to follow up on screening or treatment drop out is critical. It is important that screening services are supportive, accessible and free to workers, and offer a streamlined pathway to treatment and compensation where applicable
- Establishing a nationally consistent system to ensure ongoing delivery of best practice health monitoring for RCS exposed workers.

An **Early Detection and Rapid Response Protocol** is required to enable the early identification of and response to, emerging occupational respiratory risks and associated diseases, using data from the Registry when it becomes operational and other relevant sources. The All of Governments' Response supports the development of the Early Detection and Rapid Response Protocol and additional federal funding was identified in the 2022-23 Budget to support this activity.

Objectives:

- Improve the quality, frequency and coverage of health monitoring and surveillance for current and former RCS-exposed workers
- Implement a nationally consistent workplace health monitoring and surveillance program for silicosis supported by a national information system
- Enhance evidence-based screening and surveillance to optimise health outcomes for Australian workers.

National Action Plan
Priority area 3: Health monitoring, screening and surveillance

Activity	Success measure
3.1. Conduct a rapid desktop review of current health monitoring, screening and surveillance requirements and practices for RCS exposed workers across all jurisdictions and at-risk sectors.	Review completed Recommendations to strengthen health monitoring, screening and surveillance reported.
3.2. Undertake a comprehensive review of current evidence regarding the optimal health monitoring methodology for workers exposed to RCS in all industries, to inform development of evidence-based national guidelines, with particular reference to the role and methodology of HRCT imaging. Review to consider the feasibility of an MBS item for the health monitoring of current and former RCS exposed workers and the feasibility of extending the national lung cancer screening program to include workers in high-risk industries.	Best practice health monitoring methodology for workers exposed to RCS determined Evidence-based national guidelines developed Health monitoring requirements of model WHS laws updated to reflect national guidelines Increased access of current and former RCS-exposed workers to health monitoring.
3.3. Provide specific health monitoring recommendations for workers in the engineered stone sector by further development of the "National Guidance for doctors assessing workers exposed to respirable crystalline silica dust with specific reference to engineered stone related silicosis". Measures to include: • Undertaking regular review of the National Guidance in consultation with experts and medical colleges • Translate the National Guidance into evidence-based clinical guidelines • National dissemination of clinical guidelines, including education and training of health and medical professionals.	National Guidance reflects the latest research and available evidence Evidence-based clinical guidelines developed and disseminated Education and training of health and medical professionals on clinical guidelines.
3.4. Develop and implement a competency-based Silica Health Monitoring Accreditation Program for medical professionals.	Silica Health Monitoring Accreditation Program established with nationally consistent implementation Public register of accredited medical professionals operational.
3.5. Implement measures to enhance the health monitoring of all current and former RCS exposed workers, including: • Government funding to develop systems and provide access to ongoing health monitoring of RCS exposed workers who are retired or have left employment where RCS occurred • Implementing processes to promote best practice health monitoring to all current and former exposed workers and employers • Delivery of outreach services to increase access to best practice monitoring (as determined by activity 3.2) in regional, rural and remote communities across Australia, such as the Heart of Australia model • Establishing a nationally consistent system to ensure ongoing delivery of best practice health monitoring for RCS exposed workers.	National occupational health monitoring and surveillance information system established Accurate, national screening data collected centrally and reported publicly on the number of individual workers screened, the types of scans performed, and location of silica-related cases Screening services are supportive, accessible and free to workers, and offer a streamlined pathway to treatment and compensation where applicable Screening processes operational, including outreach services with an initial focus on regional, rural and remote communities Increased access to health screening assessments Increased screening participation.
3.6 Design and implement an Early Detection and Rapid Response Protocol to identify emerging workplace risks using data from the Registry when it becomes operational, and other relevant sources.	Early Detection and Rapid Response Protocol established and implemented.

Outcome	Responsibility	Timeframe
Clear understanding of current practice and identification of opportunities for optimising best practice for health monitoring of silica-exposed workers, with achievement of national harmonisation.	Federal, state and territory governments Appropriate regulators and/or research bodies Health professional associations and medical bodies	By end 2023
Evidence-based health monitoring and surveillance.	Federal, state and territory governments Appropriate regulators and/or research bodies Health professional associations and medical bodies Safe Work Australia	By end 2023
Increased provision of evidence-based care.	NHMRC Health professional societies and bodies including RACP and TSANZ	2023-24
High quality health monitoring assessments undertaken by competent, accredited workforce.	Federal, state and territory governments RACP / TSANZ	Developed 2023-24 with ongoing implementation
Early detection of disease Population level data to inform preventive measures.	Federal, state and territory governments	2023-24 and ongoing
Early identification of new and emerging occupational exposures and risks to Australian workers, and contemporary data to guide agile responses.	Australian Government Lung Foundation Australia Medical, health and occupational hygiene bodies	2024-25

Priority area 4: **Governance**

> *"There is a pressing need for national coordination of Australia's response to the current silicosis epidemic. An independent governance mechanism with the powers to effect change and keep Australian workers safe is urgently needed and long overdue."*
>
> **Dr Ryan Hoy, Respiratory and Sleep Physician**

The establishment of a robust governance mechanism to protect workers from exposure to RCS dust is supported by Australian governments[7] and stakeholders.[6] A national governance mechanism is required to improve communication and information sharing, coordinate responses and report on progress. A national governance mechanism will align efforts made by individual jurisdictions in response to the recent and alarming spike in the number of workers suffering from silicosis and other silica-related diseases in Australia and drive national consistency in the protection of workers.

Government commitment

In 2021, the Taskforce reported stakeholder concern about failures to protect workers and that few recommendations of the May 2006 Senate Inquiry into Workplace Exposure to Toxic Dust[2] had been progressed and implemented. The Taskforce identified a lack of national consistency, noting inconsistencies across jurisdictions regarding regulatory arrangements, health screening, air monitoring, guidance materials, and the interpretation, application and enforcement of WHS laws. It recommended the establishment of a cross-jurisdictional governance mechanism to coordinate responses, including the provision of annual reporting to Health and WHS ministers in all jurisdictions on the implementation of the Taskforce recommendations and the effectiveness of measures in improving compliance to prevent silicosis in workers, with the first report due in July 2022.[6]

In the All of Governments' Response, Australian governments supported the Taskforce recommendation, noting that the Australian Government is developing a Monitoring and Evaluation Framework in consultation with state and territory governments to guide federal, state and territory government agencies' data collection and reporting activities, with the first progress report to be provided in 2023.[7]

The 2023-24 Federal Budget allocated $4.2 million over four years from 2023-24 (and $1.1 million per year ongoing) to extend the Asbestos Safety and Eradication Agency's remit to include the prevention of silicosis and other silica-related occupational diseases and broaden the functions of the Asbestos Safety and Eradication Council.[9] The Asbestos Safety and Eradication Agency (ASEA) coordinates efforts to address asbestos safety and eradication in Australia.

To give effect to expanding ASEA's functions to include silicosis, legislative changes are required. The Australian Government Department of Employment and Workplace Relations (DEWR) will undertake consultation on the proposed expansion of the remit of ASEA to include silicosis and other silica-related diseases and the nature of these changes for ASEA to expand its functions to include silica dust. It is recommended that should these legislative changes come into effect, then the monitoring, evaluation and annual reporting of the NSPS and accompanying NAP is a core function of ASEA.

Governance mechanism functions and principles

> *"Australia needs a governing mechanism with teeth – one that goes beyond the collection of data and reporting. We need an independent, robust governance mechanism with the ability to influence workplace policy, practice and behaviour and drive preventive action to better protect workers. The time to act is now."*
> **Ms Kate Cole OAM, Certified Occupational Hygienist**

There is strong evidence and stakeholder consensus regarding the required functions and principles of the governance mechanism to coordinate and monitor Australia's response to the silicosis epidemic.

A key function of the governance mechanism will be administering the NSPS and accompanying NAP. This will include monitoring, evaluation and reporting on the progress and impact of individual preventative measures as well as their collective impact on worker safety and related health outcomes. Data collection and reporting activities will be informed by the Monitoring and Evaluation Framework currently under development.

For Australia's response to the silicosis epidemic to be effective, the governance mechanism must be enshrined in legislation with the ability to proactively influence WHS policy, practice and behaviour across all levels of government, including jurisdictional WHS regulators and workplaces. As noted in the All of Governments' Response, the information collected through the Registry will be a critical component of the Monitoring and Evaluation Framework currently being developed by the Australian Government, and it is important that the governance mechanism has strong links to the Registry.[7]

Appropriate resourcing and ongoing funding of the governance mechanism is imperative.

It is critical that Australia's governance mechanism is underpinned by the following:

- Prevention: A focus on the prevention of RCS exposure and the elimination of silicosis in Australia
- Independence: A commitment to serving workers by providing the highest level of protection from the risks associated with RCS exposure
- Lived experience: The meaningful engagement of workers affected by silicosis and their families
- Innovation: A remit to drive change, reform and to explore new opportunities and solutions to protect workers from exposure to RCS and its devastating consequences. Maintaining the status quo is not acceptable
- Multidisciplinary: A multidisciplinary approach with the input of relevant technical expertise (e.g., occupational hygiene, public health, medical, scientific, epidemiology)
- Representation: The input of workers and workplace parties from different industries and occupations where workers are at risk of RCS exposure.

Potential governance models

It was evident during the development of this Strategy that stakeholders continue to be concerned and frustrated by the systemic and ongoing failures to protect workers from developing silicosis. There remains strong support for reform including the establishment of a robust governance mechanism to protect workers from exposure to RCS dust.

The NSPS Expert Steering Committee considered a number of governance models during the development of this Strategy, with consideration to the functions and principles required for the governance mechanism to be effective within the Australian context. Two models were identified as viable options:

1. A Standing Ministerial Advisory Committee reporting to the Australian Government Department of Health and Aged Care and Department of Employment and Workplace Relations Ministers to be established, with a three-year interim measure until Australia's Centre for Disease Control and Prevention is fully operational and can assume responsibility
2. A new independent body to be established with the ability to influence WHS policy, practice and behaviour across all levels of government, including jurisdictional WHS regulators. It is noted that the Australian Government has made provisions in the 2023-24 Federal Budget for the Asbestos Safety and Eradication Agency (ASEA) to lead a response to silicosis although the actual details are unknown.

Priority activities

Urgent establishment of a cross-jurisdictional governance mechanism, in line with the Taskforce recommendation and All of Governments' Response, to coordinate and monitor Australia's response to the current silicosis epidemic.

Objectives:

- Establish a cross-jurisdictional governance mechanism to coordinate and monitor a comprehensive national program of reform and preventative measures designed to fundamentally address the risks facing workers in industries that generate RCS
- Drive greater consistency across jurisdictions in WHS policy, practices, behaviours and information.

National Action Plan Priority area 4: Governance				
Activity	**Success measure**	**Outcome**	**Responsibility**	**Timeframe**
4.1. Establish a cross-jurisdictional governance mechanism, in line with the Taskforce recommendation and All of Governments' Response.	Consultation on the proposed expansion of the remit of ASEA to include silicosis and other silica-related diseases Cross-jurisdictional governance mechanism established Governance mechanism enshrined in legislation, with the ability to influence WHS policy, practices, behaviours and information Governance mechanism underpinned by a focus on prevention and the coordination and monitoring of preventative measures, with input from multidisciplinary experts, workers affected by silicosis and their families, and representation of workers and workplace parties Appropriate resourcing and ongoing funding of governance mechanism.	Coordinated national response to the silicosis epidemic in Australia Improved communication and information sharing among jurisdictions Greater consistency across jurisdictions in WHS policy, practices, behaviours and information to better protect workers from RCS exposure.	Australian Government Department of Employment and Workplace Relations	Consultation by end 2023 Governance mechanism by end 2024

Priority area 5: **Research and development**

Silicosis is not a new disease yet major gaps in silicosis knowledge exist which hinder our ability to act effectively and protect workers from exposure to RCS and its devastating consequences.

Gaps in silicosis knowledge

The gaps in knowledge relating to silicosis and its prevention and management are significant and in Australia in particular, there are major gaps in the epidemiological understanding of the disease.

Currently in Australia, there is no centralised system to capture and share data on occupational RCS exposures, incidence of silicosis, uptake of and effectiveness of control measures, and regulatory compliance with WHS duties. The lack of available data and gaps in silicosis knowledge is due to a number of factors, including:

- Poor awareness of occupational lung diseases including silicosis
- The lack of an operational Registry that links with state-based registers
- The lack of an Australian air monitoring exposure registry
- The lack of a national occupational health monitoring and surveillance information system
- Reliance on workers' compensation and death-certification data, which has been repeatedly demonstrated to severely under report cases
- Delayed recognition of occupational respiratory diseases by medical professionals
- Delayed case identification due to deficiencies in occupational health monitoring programs and the use of low sensitivity methods
- The lack of a strategic national approach to research.

Current evidence gaps regarding measures to prevent silicosis are extensive and include:

- The level of compliance with health monitoring being undertaken by employers across all at-risk sectors, and the sensitivity of currently recommended health monitoring requirements, including effectiveness of screening
- The level of non-compliance with the current WES for RCS, and industries where non-compliance is occurring most frequently
- The verification of the WES for RCS of less than 0.05mg/m^3, and its evidence-based impact on workers' risk exposure
- An understanding of the differences in regulatory compliance activities across jurisdictions
- An understanding of how employers and PCBUs determine if "significant risk" of employee exposure to RCS is present and decide if exposure monitoring and health monitoring is required
- The adequacy of low levels of exposure monitoring techniques and technology, including their long-term viability
- Behavioural insights to build evidence of the best ways to prevent or reduce behaviours that increase risk of workplace RCS exposure
- An understanding of the risk profiles of different engineered stone products in relation to silica-content levels and other risk factors (e.g., chemical constituents)
- The development of safe alternative materials to substitute those currently in use, including materials currently available and new products under development.

See **NSPS Scientific and Evidence Report – Silicosis in Australia** (Section 1.11) for further gaps in silicosis knowledge and research and development priorities.

Government commitment

In recognition of the gaps in silicosis knowledge and the lack of available data, in 2021 the Taskforce recommended enhancing the silica and occupational respiratory disease evidence base and research expertise in Australia, and operationalising the Registry as soon as possible.[6]

In the All of Governments' Response, Australian governments supported the Taskforce's recommendation.[7]

As part of the Australian Government's response to the re-emergence of silicosis, a Registry is in development,[6] with an initial focus on mandatory reporting of all cases of silicosis by respiratory and occupational physicians, and voluntary reporting of other occupational respiratory diseases, such as work-related asthma. Initial reports of the Registry design indicate that it will capture and report on a range of data (i.e., numbers of new cases, causative exposures, industries of exposure, occupations and job tasks where the exposure occurred and relevant medical tests) and will determine incidence trends. This will assist in targeting and monitoring the effectiveness of interventions and preventative measures.

Current activity and investment

The Australian Government committed $6 million to silicosis research in the 2021-22 Budget. Five grants for silicosis research projects were funded through the Medical Research Future Fund (MRFF) and National Health and Medical Research Council (NHMRC), including projects on early diagnosis, silicosis treatment and management.[78] Results are expected mid-2024.

Funding was allocated in the Australian Government Budget 2022-2023 to operationalise the national Registry. Since 2019, registries of varying sophistication and capability have commenced operation in four Australian jurisdictions: Queensland, New South Wales, Victoria and South Australia.

Safe Work Australia's 2022 work plan states that they are investigating opportunities to commission research into the effectiveness of engineering controls to minimise RCS exposures in workers processing engineered stone, particularly in newer products that have lower crystalline silica content.[22]

Priority activities

Much remains to be understood about silicosis despite recent investments in silicosis research by the Australian Government and others.

Additional funding is required to address the gaps in silicosis knowledge and build evidence as well as to build the capability of the research sector. There is also a strong need to invest in comprehensive national silicosis data sources and infrastructure to enable data capture and information sharing.[31]

The **National Occupational Respiratory Disease Registry** is critical to understanding the prevalence and incidence of silicosis and other occupational respiratory diseases in Australia.

Occupational respiratory disease registries operate in countries such as Austria, Belgium, the Czech Republic, France, Finland, the United Kingdom, Brazil and some states of the United States[79] and provide useful examples to learn from and emulate.[77,78,79]

A well-resourced and functioning Registry will support the elimination of preventable occupational respiratory diseases in Australia by facilitating earlier detection, intervention and prevention.

Operationalising the Registry is a matter of urgency and it is critical that ongoing staged development is undertaken to evolve its functionality over time and build the capabilities of occupational dust diseases data collection in Australia (Box 6).

Box 6: Ongoing staged development of the Registry

Ongoing staged development will provide opportunities for the Registry to evolve over time and expand to include the following data requirements and features:

- Mandatory notifications by clinicians of all occupational respiratory diseases (e.g., work-related asthma)
- Interactivity and bidirectional data flow, including data synthesis and regular reporting of findings back to stakeholders
- Publicly available, up-to-date reports
- Registry data available to research institutions to enable research projects
- Engagement and interaction with multiple stakeholders, including high level clinical leadership
- Government commitment to sustained funding
- Responsiveness to changing requirements over time and the addition of further enhancements and/or links to other relevant databases such as workers' compensation, air monitoring and health monitoring data
- Longitudinal data including health outcomes.[80]

A strategic national approach to silicosis research that gives prominence to silicosis prevention is needed. An internationally relevant and nationally coordinated **silicosis prevention research strategy** would help to address identified gaps in silicosis knowledge and build the evidence base. The strategy would encompass disease surveillance and population health research, basic science and clinical research, behavioural and market research, implementation science and knowledge translation, and research and development (product redesign and development).

Funding of a **NHMRC Centre for Research Excellence (CRE) in Silicosis Prevention** and a comprehensive, integrated grants program building on NHMRC Partnership Grants, Australian Research Council (ARC) Linkage Grants and industry research and development activities would help to close data gaps. It would build the evidence base as well as the capability of the research sector, and support collaboration and information sharing. Furthermore, the CRE would help to generate the robust evidence required to inform the decision regarding a ban on the importation of engineered stone products, as outlined in activity 1.1.

The pillars for the CRE would reflect the National Silicosis Prevention Research Strategy and may include:

- Pillar A: Epidemiology, including health monitoring and surveillance
- Pillar B: Data including registries, patient reported outcomes and behavioural insights
- Pillar C: Product design, development and handling across the silica supply chain
- Pillar D: Prevention, risk reduction and use of control measures, including air monitoring and adaptive new technologies
- Pillar E: Research workforce capability, education and translation.

Development of a comprehensive **National Silicosis Profile** as per global best practice is necessary to enable a full understanding of the current scale and impact of silicosis in Australia and enable monitoring of change over time. The Profile should report at a minimum all 16 data recommended by the joint ILO/WHO Global Programme for the Elimination of Silicosis (GPES)[10,81] (see Box 7). Some of this data is not currently available, and additional work to establish data collection and reporting mechanisms will be required. The NSPS and NAP are a critical component of the response to silicosis in Australia and progress on other activities in the Strategy should not be delayed while the National Silicosis Profile is under development. Once developed, the Profile should be publicly available and updated annually.

Box 7: ILO/WHO Global Programme for the Elimination of Silicosis (GPES) National Silicosis Profile data[81]

1. Estimated total number of workers exposed to crystalline silica dusts in the country
2. Full list of industries where exposure to crystalline silica is present in the country and list of industries with the largest numbers of workers potentially exposed to crystalline silica dust
3. Industries with high risk of exposure (where overexposure is documented as exceeding occupational exposure limits) and estimated total number of workers at high risk
4. Prevalence of silicosis (total number of workers with diagnosed silicosis to-date) – national, with a breakdown by industries
5. Prevalence rate (total number of workers who have silicosis at a particular time or during a particular period divided by the number of workers at risk of developing silicosis at this point of time) – national and in various industries or occupations (e.g., sandblasting)
6. Number of suspected cases of silicosis (an estimate of a total number of workers exposed to crystalline silica but never having undergone health surveillance or diagnosis made)
7. Incidence of silicosis (number of new diagnosed cases yearly), with a breakdown by industries
8. Incidence rate of silicosis (rate at which new cases of silicosis occur in the population, (i.e., new cases of silicosis diagnosed during the year is the numerator and the number of total number of workers exposed is the denominator)
9. Under-diagnosis or under-reporting coefficient (where available, to make better estimate of prevalence and incidence of silicosis)
10. Acute cases of silicosis – common or uncommon, silico-tuberculosis
11. Total number of workers eligible for compensation for silicosis (per year) and the numbers of individuals compensated yearly
12. Number of deaths from silica-related diseases (per year)
13. National enforceable occupational exposure limits for crystalline silica
14. The system for inspection and enforcement of the exposure limits
15. Estimated economic losses due to silicosis (where available)
16. Major studies on epidemiology of silica-induced diseases in the country [79, 80, 81]

Objectives:

- Develop a strategic national approach to silicosis prevention research and development
- Build the evidence base for silicosis prevention as well as the capability of the research sector
- Enhance the capabilities of population-level monitoring and surveillance of silicosis and other occupational lung diseases in Australia
- Translate silicosis knowledge into WHS policy, practices, behaviours and information to better protect workers from RCS exposure.

National Action Plan
Priority area 5: Research and development

Activity	Success measure
5.1. Operationalise the National Occupational Respiratory Disease Registry (Registry) and undertake ongoing staged development to continue to enhance functionality and build the capabilities of occupational dust diseases data collection in Australia.	Registry operational High level of clinical engagement Mandatory notifications of silicosis by respiratory and occupational physicians Ongoing investment in the Registry Ongoing staged development and implementation of the Registry and expanded functionality.
5.2. Fund a NHMRC Centre for Research Excellence (CRE) in Silicosis Prevention and deliver a comprehensive, integrated grants program.	Centre for Research Excellence in Silicosis Prevention established Comprehensive, integrated grants program established and delivered Increased investment in silicosis prevention research Funded fellowships and scholarships.
5.3. Develop and implement a National Silicosis Prevention Research Strategy.	Strategy developed with widespread stakeholder and researcher involvement Identification of silicosis prevention evidence gaps and priority areas for further research funding.
5.4. Develop and maintain a comprehensive National Silicosis Profile.	National Silicosis Profile developed in line with global best practice National Silicosis Profile publicly available and updated annually.

Outcome	Responsibility	Timeframe
National, population-level monitoring and surveillance of silicosis Knowledge of the prevalence and incidence of silicosis in Australia Early identification of new and emerging occupational exposures and risks to Australian workers, and contemporary data to guide agile responses Timely responsiveness of regulators to the findings from the Registry Expanded capabilities of occupational dust diseases data collection in Australia.	Australian Government	Operational by end 2023
Greater collaboration and information sharing and partnerships across sectors including research, government and industry Improved understanding of silicosis prevention Enhanced capabilities of occupational dust diseases research in Australia.	Australian Government	2024-25
Framework to guide a strategic national approach to silicosis prevention research and development in place Improved understanding of silicosis including effective preventative measures Enhanced silica and occupational respiratory disease research expertise in Australia Translation of knowledge into WHS policy, practices, behaviours and information to better protect workers from RCS exposure.	Australian Government, in partnership with health and industry professional associations and societies	2024-25
Knowledge of the scale and impact of silicosis in Australia including changes over time.	Australian Government	2024-25 and ongoing annually

Part three: **Monitoring and reporting**

The *National Silicosis Prevention Strategy 2023-2028 and accompanying National Action Plan* provides a framework to coordinate national action to protect workers from exposure to RCS and prevent silicosis in Australia.

As outlined in Priority area 4, an independent and robust governance mechanism must oversee implementation of the NSPS and NAP, including monitoring and reporting against progress.

A comprehensive Monitoring and Evaluation framework has been commissioned by the Department of Health and Aged Care and should align with the NSPS and accompanying NAP, including agreement amongst states and territories and other parties regarding minimum reporting requirements. If the legislative changes proposed by the WHS ministers come into effect, then the monitoring, evaluation and annual reporting of the NSPS and accompanying NAP should be considered a core function of ASEA.

There is a pressing need to improve Australia's data sources on silicosis to better monitor the effectiveness of preventive measures and to monitor trends over time, including the detection of emerging respiratory threats[31]. The NSPS and NAP identify several new national data collection mechanisms required to enable comprehensive monitoring and reporting, including:

- A well-resourced and functioning National Occupational Respiratory Disease Registry (activity 5.1)
- A national exposure registry for RCS and other airborne contaminants (activity 1.5)
- A national occupational health monitoring and surveillance information system (activity 3.5)
- An Early Detection and Rapid Response Protocol (activity 3.6)
- A National Silicosis Profile in line with global best practice (activity 5.4)
- NSPS and NAP annual progress reports.

Additional health and WHS data will inform NSPS and NAP monitoring and reporting, including workers' compensation data and compliance and enforcement activity data from each jurisdiction.

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The Strategy, facilitated by Lung Foundation Australia, has benefited from the guidance of an NSPS Expert Steering Committee and Reference Group, alongside input from governments, industry, unions, workers, employers, regulators, medical and health professionals, researchers and peak bodies, as well as people impacted by silicosis, and their families.

NSPS Expert Steering Committee

- Dr Ryan Hoy – Chair
- Ms Kate Cole OAM, Australian Institute of Occupational Hygienists – Co-Chair
- Emeritus Prof Malcolm Sim AM, Royal Australasian College of Physicians
- Ms Jennifer Low, Australian Chamber of Commerce and Industry
- Ms Kim Smith, Caesarstone
- Ms Deborah Vallance, Australian Council of Trade Unions
- Prof Deborah Yates, The Thoracic Society of Australia and New Zealand and Royal Australasian College of Physicians
- Australian Government Department of Health and Aged Care (observer)
- Department of Employment and Workplace Relations (observer)

NSPS Reference Group

- Dr Robert Edwards
- Dr Graeme Edwards
- Prof Lin Fritschi
- A/Prof Deborah Glass
- Dr Ronald McCoy, The Royal Australian College of General Practitioners
- Ms Tracey Browne, Australian Industry Group
- Ms Megan Davison, Minerals Council of Australia
- Mr Tony Lopez, Housing Industry Association
- Mr Steven Pierce, Mining & Energy Union
- Ms Rebecca Sostarko, Master Builders Australia
- Mr Trevor Torrens (until December 2022), Ms Lee McCallum (from January 2023), Asbestos Disease Support Society / Silicosis Support Network
- Dr Nick Allsop, iCare
- Ms Julia Collins, Asbestos Safety and Eradication Agency
- Ms Perdita Dickson, WorkSafe Victoria
- Ms Catherine Jones, SafeWork SA
- Ms Janine McPherson (until June 3, 2022), Mr Tobias Reeves (from June 6, 2022), Office of Industrial Relations (QLD)
- Ms Alice Morris, WorkSafe Tasmania
- Ms Aklesh Nand, SafeWork NSW
- Ms Sally North, Department of Mines, Industry Regulation and Safety (WA)
- Mr Evan Pengelly, Resources Safety & Health Queensland
- Ms Jackii Shepherd, WorkSafe ACT
- Mr Ewan Wylie, Heart of Australia

Lung Foundation Australia Project Team

- Mr Mark Brooke, Chief Executive Officer
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Glossary

Common and complex terms and acronyms and their definitions.

Definitions are consistent with those used by Safe Work Australia[46, 73, 82, 83] and the Australian Government Department of Health and Aged Care.[68,84]

AIOH	Australian Institute of Occupational Hygienists
ARC	Australian Research Council
ASEA	Asbestos Safety and Eradication Agency
Burden of disease	The quantifiable impact of a disease, injury or risk factor on a population, using the disability-adjusted life year (DALY) measure.
COH	Certified Occupational Hygienist
CRE	Centre for Research Excellence
CRIS	Consultation Regulation Impact Statement
Crystalline silica	The crystalline form of the abundant naturally occurring mineral silica or silicon dioxide (SiO_2). It is present in almost all types of rocks, sand, clays, shales and gravel and in construction materials such as concrete, tiles and bricks.
Department of Health and Aged Care	An Australian government department that works to keep Australians healthy and safe.
DEWR	Department of Employment and Workplace Relations, an Australian Government department that works to enable access to quality skills, training and employment to support Australians to find secure work in fair, productive and safe workplaces.
Decision RIS / DRIS	Decision Regulation Impact Statement
Duty holder	Any person who owes a work health and safety duty under the WHS Act, including a person conducting a business or undertaking, a designer, manufacturer, importer, supplier, installer of products or plant used at work (upstream duty holder), officer or a worker.
Early intervention	The process of taking action and/or providing support to a person who is experiencing or demonstrating any of the early symptoms of illness.
Engineered stone	Engineered stone is an artificial product that is defined by describing the process through which it is created.[46] The crystalline silica content in engineered stone varies widely but it can contain up to 97% silica. Engineered stone is also known as composite stone, manufactured stone, artificial stone, reconstituted stone or quartz conglomerate.
GPES	Global Programme for the Elimination of Silicosis
GPs	General Practitioners

Health	A state of complete physical, mental, social and emotional wellbeing and not merely the absence of disease or illness.
Health literacy	The capacity to access, understand, appraise and use information to make health-related decisions in everyday life.
Health monitoring	The required monitoring of a worker while they are deployed in a role assessed to be at risk, to identify changes in their health status because of exposure to specific hazardous substances in the workplace. Health monitoring is a statutory requirement under work health and safety (WHS)/occupational health and safety (OHS) laws. Health monitoring is referred to as health surveillance in Western Australia.
Health promotion	A broad term to describe activities that enable communities and individuals increase control over and improve their health. Health promotion focuses on addressing and preventing the root causes of ill health, rather than on treatment and cure.
Health screening	The term health screening is in reference to the process of case finding and diagnosis. While this screening has recently been focused on workers in the stone industry, it does not have the same purpose and intent as health monitoring under the model WHS laws.
Health surveillance	A system of ongoing health checks.
Health system	All activities with the primary purpose to promote, restore, and maintain health.
Hierarchy of control	The hierarchy of risk control measures ranks control measures from the highest level of protection and reliability to the lowest.
HRCT	High Resolution Computed Tomography
HWSA	Heads of Workplace Safety Authorities
ILO	International Labour Organization
Incidence	The number of new cases (of an illness or event, and so on) occurring during a given period.
Life expectancy	An indication of how long a person can expect to live, depending on the age they have already reached. Technically, it is the number of years of life left to a person at a particular age if death rates do not change.
Model Code of Practice	Codes of practice are practical guides to achieving the standards of health, safety and welfare required under the model WHS Act and the model WHS Regulations in a jurisdiction. To have legal effect in a jurisdiction, a model Code of Practice must be approved as a code of practice in that jurisdiction.
Model WHS Act	Model Work Health and Safety Act. The model WHS Act forms the basis of the WHS Acts that have been implemented in all jurisdictions across Australia except Victoria. The main object of the Act is to provide for a balanced and nationally consistent framework to secure the health and safety of workers and workplaces.
Model WHS Regulations	Model Work Health and Safety Regulations. The model WHS Regulations set out detailed requirements to support the duties in the model WHS Act.
Mortality	Number or rate of deaths in a population during a given time period.
MRFF	Medical Research Future Fund
NDDT	National Dust Disease Taskforce

NGO	Non-Government Organisation
NHMRC	National Health and Medical Research Council
NORDR	National Occupational Respiratory Disease Registry (also referred to as 'Registry')
OEP	Occupational and Environmental Physician
PCBU	Person Conducting a Business or Undertaking. Under the model WHS laws in place in all jurisdictions apart from Victoria, a PCBU has specific duties, so far as reasonably practicable, to ensure the health and safety of workers while they are at work in the business or undertaking and of others who may be affected by the carrying out of the work. In Victoria OHS legislation imposes similar duties on employers.
PPE	Personal Protective Equipment. Anything used or worn by a person to minimise risk to the person's health and safety.
PPP	Public Private Partnerships
Prevalence	The number or proportion (of cases, instances, and so forth) in a population at a given time.
Prevention	Measures to keep people healthy and well and to avoid the onset of illness, disease or injury.
Primary health care	Services delivered in many community settings, such as general practices, community health centres, Aboriginal health services and allied health practices which come under numerous funding arrangements.
Primary prevention	Focuses on reducing risk factors to prevent a disease or disorder before it arises. This includes behavioural factors, biomedical factors, and specific protective factors.
Public health	Activities aimed at benefiting a population, with an emphasis on prevention, protection and health promotion as distinct from acute treatment tailored to individuals with symptoms.
RCS	Respirable Crystalline Silica (RCS). Respirable dust (less than and equal to 10 micrometres (μm)) in diameter of the following CAS numbers: – Cristobalite 14464-46-1 – Quartz 14808-60-7 – Tridymite 15468-32-3, and – Tripoli 1317-95-9. Synonyms: quartz, crystallized silicon dioxide, silica, calcined diatomaceous earth.
Registry	National Occupational Respiratory Disease Registry (also referred to as 'NORDR')
Regulatory impact analysis (RIA)	A tool used by governments, when introducing or abolishing regulation, to assess the likely impact of viable options against the default position of no change in a way that is transparent and accountable.
Risk	The possibility harm (death, injury or illness) might occur when exposed to a hazard.
Risk factor	Attributes, characteristics or exposures that increase the likelihood of a person developing a disease or health disorder.
RPE	Respiratory Protective Equipment. A type of PPE designed to protect the worker from inhaling an airborne hazardous substance. The common term for RPE is a respirator.

RTO	Registered Training Organisation
SDS	Safety Data Sheet
Secondary prevention	Focuses on the early detection and best practice management of a disease or disorder to reduce deterioration and long-term effects. This includes identifying people at risk of ill-health through screening programs, general health examinations, as well as the identification of complications and co-morbidities.
Screening (for health)	A systematic method of detecting risk factors or suspicious abnormalities among people who are symptom free, so that health problems can be either prevented or followed up, diagnosed and treated as early as possible.
SME	Small to Medium Enterprise
SWMS	Safe Work Method Statement
TSANZ	Thoracic Society of Australia and New Zealand
Wellbeing	Not just the absence of disease or illness, but a complex combination of a person's physical, mental, emotional and social factors. Wellbeing is strongly linked to happiness and life satisfaction.
WES	Workplace Exposure Standard (WES). A Workplace Exposure Standard published by Safe Work Australia in the Workplace Exposure Standards for Airborne Contaminants. A Workplace Exposure Standard for a particular chemical sets out the legal concentration limit of that chemical that must not be exceeded, known as the workplace exposure limit (WEL).
WHS	Work Health and Safety
WHS duties	WHS laws require organisations that employ paid workers ensure, so far as is reasonably practicable, the physical and mental health and safety of workers, including volunteers.
Worker	Any person who carries out work for a PCBU, including work as an employee, contractor, subcontractor, self-employed person, outworker, apprentice or trainee, work experience student, employee of a labour hire company placed with a 'host employer' and volunteers.
Workplace	Any place where work is carried out for a business or undertaking and includes any place where a worker goes, or is likely to be, while at work. This may include offices, factories, shops, construction sites, vehicles, ships, aircraft or other mobile structures on land or water.

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