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Occupational and Environmental Medicine  
Specialists caring for workers' health

## **Submission to Safe Work Australia Consultation Regulation Impact Statement**

**A joint submission by the Royal Australasian College of  
Physicians (RACP) Australasian Faculty of Occupational and  
Environmental Medicine (AFOEM) and the Thoracic Society of  
Australia and New Zealand (TSANZ)**

August 2022

## The Royal Australasian College of Physicians (RACP)

The RACP trains, educates and advocates on behalf of medical physician specialists and trainees, across Australia and Aotearoa New Zealand. The RACP represents a broad range of medical specialties including general medicine, paediatrics and child health, cardiology, respiratory medicine, neurology, oncology, public health medicine, infectious diseases medicine, occupational and environmental medicine, palliative medicine, sexual health medicine, rehabilitation medicine, geriatric medicine, and addiction medicine. Beyond the drive for medical excellence, the RACP is committed to developing health and social policies which bring vital improvements to the wellbeing of patients and the community.

## The Australasian Faculty of Occupational and Environmental Medicine (AFOEM)

The AFOEM is a Faculty of the RACP that represents and connects occupational and environmental medicine Fellows and trainees in Australia and Aotearoa New Zealand through its Council and committees. We are committed to establishing and maintaining a high standard of training and practice in Occupational and Environmental Medicine in Australia and New Zealand through the training and continuing professional development of our members and advocating on their behalf to shape the future of healthcare.

## The Thoracic Society of Australia and New Zealand (TSANZ)

TSANZ is a health promotion charity whose mission is to lead, support and enable all health workers and researchers who aim to prevent, cure, and relieve disability caused by lung disease. TSANZ is the only Peak Body in Australia that represents all health professionals working in all fields of respiratory health. The TSANZ has a membership base of over 1800 individual members from a wide range of health and research disciplines. The TSANZ is a leading provider of evidence-based guidelines for the treatment of respiratory disease in Australia and New Zealand and undertakes a large amount of professional education and training. The TSANZ is also responsible for significant research administration and coordinates an accredited respiratory laboratory program.



*We acknowledge and pay respect to the Traditional Custodians and Elders – past, present and emerging – of the lands and waters on which RACP members and staff live, learn and work. The RACP acknowledges Māori as tangata whenua and Te Tiriti o Waitangi partners in Aotearoa New Zealand.*

### **Consultant Physicians in Occupational and Environmental Medicine (OEM)**

These are doctors with specialist knowledge in work health and safety, and variously provide advice to multiple agencies: government bodies, regulators, industry bodies, workers compensation organisations, insurers, unions, employers and at the individual level: workers. Consultant Physicians in OEM promote the health benefits of good work™, the well-being of workers, and healthy workplaces and the environment that supports good work using evidence-based knowledge, tailored to the specific worksite requirements. Consultant Physicians in OEM have the clinical training and expertise necessary for the early identification of workplace hazards and also the skills in health risk assessment that are necessary to mitigate the potential to cause harm. With knowledge of the design and practical application of health surveillance and monitoring programs, they can also provide tailored case-specific management advice for the individual worker and organisation to prevent or address work-related biopsychosocial and medicolegal health issues.

### **Consultant Physicians in Respiratory medicine**

These specialists diagnose and treat the range of respiratory diseases from genetic disorders such as alpha-1 antitrypsin deficiency and cystic fibrosis to lung transplantation. They narrow the differential diagnoses to diagnose and treat the occupational respiratory diseases such as silicosis, coal workers' pneumoconiosis, asbestosis, and occupational asthma. Respiratory physicians have a long tradition of involvement in the community and workplace, and in epidemiology and preventive health.

The RACP, AFOEM and TSANZ welcomes the opportunity to provide feedback on the Safe Work Australia Consultation Regulation Impact Statement (CRIS). This submission has been led by experts in occupational and environmental medicine and in thoracic medicine.

The RACP, its AFOEM and the associated TSANZ, are the peak bodies representing specialists in respiratory medicine and consultant physicians in occupational and environmental medicine. Our members' expertise and engagement has been integral in bringing attention to the scale of incidence of accelerated silicosis and other dust diseases and developing the recommendations of the National Dust Diseases Taskforce.

As silicosis and silica related diseases are preventable diseases and within our control, stakeholders must work together to reach zero incidence. We are pleased to see Safe Work Australia seeking feedback on regulatory and non-regulatory options to reduce workplace exposures to respirable crystalline silica (RCS) and the number of cases.

As noted in the RACP [2019 submission](#) to the National Dust Diseases Taskforce, to our knowledge, there has not been a single case of silica-related disease arising in a scenario in a workplace that was compliant with the prevailing legislative requirements. The RACP and the TSANZ are supportive of a regulatory system that is fit for purpose, and in which all businesses that comprise this industry are considered.

## Key points

- We propose important amendments to the problem statement (refer to sections below)
- We disagree with the statement on the primary objective of government intervention and propose this should read "The primary objective of government intervention is prevention of workplace exposure to RCS and elimination of silicosis and silica related diseases, and premature invalidity or death of workers."
- For a life shortening disease, such as silicosis, any regulatory model based on education and awareness is fundamentally inadequate (Options 2 and 3). Protections that are founded on awareness, even when optimal, are not 100% effective. Awareness does not equate to compliance; and those who are either unaware or deliberately non-compliant, create the harm for the affected individuals.
- We support Option 4 as the minimum requirement for the high-risk industry sector associated with engineered stone. We see potential benefits by combining strategies to extend protections beyond the engineered stone sector as identified in CRIS Section 7.6.
- Any implemented regulatory option must be accompanied by adequate resources to support employer education and adoption.
- Whilst this CRIS concentrates on silicosis, silica exposure is also associated with several other diseases including lung cancer, chronic obstructive pulmonary disease (COPD), interstitial pulmonary fibrosis, autoimmune disease and potentially others. The burden on the Australian community from silicosis and these other lung diseases needs to be acknowledged and appropriately assessed.
- We recommend early implementation of a robust data collection system and then suggest a cost benefit analysis once sufficient appropriate data has been collected.
- We encourage the development of a national integrated disease focused clinical registry that can assess causation and identify factors which can lead to prevention, early intervention and improved management. An occurrence register of cases can be extracted from the disease registry.
- Health surveillance, and health monitoring of exposed workers, needs to be conducted and/or overseen by medical practitioners, such as occupational and environmental physicians, who have a knowledge of silicosis, the work and the workplaces which may cause exposure.

Additional comments are provided on selected sections of the CRIS below.

## Section 2 CRIS: Problem statement

**Question 2.1 Do you agree with the identified problem? Has the entirety of the problem been identified? Please provide evidence to support your position.**

In our view, the problem statement as written understates the nature of the problem, noting:

- All cases of silicosis detected in Australia are associated with workplace exposure.
- Currently there are increasing numbers of silicosis cases in artificial stone industries, even though there is control on dry cutting in some states the regulations are not clearly specified.
- The existing model WHS laws are inadequate in that enforcing compliance can only occur after a breach. For a worker already exposed to silica containing dust, this exposure cannot (currently) be reversed. To illustrate:
  - Enforced compliance can only occur after a breach.
  - Relies on a naïve 'person conducting a business or undertaking' (PCBU's) to undertake a risk assessment, thereby creating the opportunity for a breach.
  - Because of the breach, the worker has already been exposed to the harm; for latent diseases this harm has occurred and cannot be reversed. The only option is to minimise the potential for further harm.

We suggest the following amendments (shown in bold) to the problem statement (page 5 CRIS):

*Workplace exposures to RCS have led to a substantial increase in the number of cases of silicosis in Australian workers. **This was first identified in tertiary care and led to several deaths and a sharp rise in silicosis cases requiring consideration of lung transplantation. Case finding programs among stonemasons and engineered stone workers in several Australian states** identified that approximately 1 in 4 workers screened in the engineered stone industry in Australia currently have evidence of silicosis.*

*Silicosis is an irreversible and debilitating disease, caused by workplace exposure to RCS. Silica inhalation also causes several other lung diseases **and autoimmune disease**. The National Dust Disease Taskforce noted that silicosis is entirely preventable, **and has been** driven by the increase in use of engineered stone in Australia. They also noted that "... every case of silicosis affecting a stone benchtop worker is evidence that businesses, industry and governments need to do more to recognise and control the risks of working with engineered stone". Silicosis, and other silica related diseases, can be totally prevented by removing the exposure to silica or implementing effective controls to eliminate or minimise the generation of and exposure to RCS at the workplace.*

We also suggest the inclusion of the following from the National Dust Diseases Taskforce recommendations:

***The National Dust Disease Taskforce Recommendation 1 (d) included a full ban on the importation of some or all engineered stone products if, by July 2024:***

- ***There is no measurable and acceptable improvement in regulatory compliance rates for the engineered stone sector as reported by jurisdictions; and***
- ***Evidence indicates preventative measures are not effectively protecting those working with engineered stone from silicosis and silica-associated diseases.***

The critical importance of the necessity for health surveillance and health monitoring of workers by appropriately trained medical practitioners is demonstrated from the many examples in which workers have been exposed to RCS, along with incidences of non-compliance with regulations.

In addition to the suggested changes to the problem statement, we strongly urge consideration of a well-designed National Occupational Respiratory Disease Registry to be established, as have been established in other countries. We strongly advocate for:

- An effective national collated reporting system for the notification of occupational lung diseases.
- The establishment of a national clinical registry in order to share clinician experience to monitor and inform the treatment and management of these cases.

We suggest some amendments to Table 3 to bring it into line with the hierarchy of controls commonly used to control work health and safety risks. For the last item: *There are inadequate levels of compliance and enforcement with the current model WHS laws* we suggest this order:

- The current model WHS laws (regulations) are insufficient to ensure workers are not exposed to RCS.
- Documented non-compliance with current regulatory requirements.
- WHS regulators **are** unable (to replace “may be unable”) to adequately ensure compliance with the model WHS laws.

## **Question 2.2 Do you have further information, analysis or data that will help measure the impact of the problem identified?**

We note the data collection plan depends on the existence of the National Occupational Respiratory Disease Registry and how successfully the Commonwealth Department of Health can include silicosis as a mandatory reporting in this Registry.

The National Registry should include all States and Territories irrespective of the number of the existing artificial stone industry workplaces in the jurisdiction to ensure that workers who may have been exposed in one jurisdiction, but diagnosed in another, are picked up. The existing collected data from Victoria and Queensland will guide the Australian Government and the newly adapted National Registry for further intervention through research. The Australian Government recently funded some projects through the Medical Research Future Fund (MRFF) which we support extending so further preventive steps can be implemented.

A key issue is evidence of incomplete and waning awareness despite education and awareness raising efforts. The Quantum Market Research 2021<sup>1</sup> conducted for the National Dust Diseases Taskforce identified that despite the various awareness campaigns in 2018-2020 across all jurisdictions:

- Awareness was incomplete.
- Awareness was waning in 2021, even in the high-risk sector of engineered stone fabrication.

While ignorance does not protect the ‘person conducting a business or undertaking’ (PCBU) from legal liability, ignorance increases the hazard for the individual worker.

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<sup>1</sup> Quantum Market Research (2021) *Dust Disease Research Update*, report to Department of Health

Legislated protections founded on awareness, even when optimal, are not 100% effective because awareness needs to be accompanied by action to reduce the risk of exposure. For a life shortening disease such as silicosis, any model of health and safety protection, based on education and awareness, will be fundamentally inadequate.

Additional references useful to help measure the impact of the problem identified are provided:

- Hoy RF, Sim MR. [Correspondence on 'Demographic, exposure and clinical characteristics in a multinational registry of engineered stone workers with silicosis'](#) by Hua et al. Occupational and Environmental Medicine. 2022 Jun 23.
- Blanc PD, Annesi-Maesano I, Balmes JR, Cummings KJ, Fishwick D, Miedinger D, Murgia N, Naidoo RN, Reynolds CJ, Sigsgaard T, Torén K. [The occupational burden of nonmalignant respiratory diseases. An official American Thoracic Society and European Respiratory Society statement.](#) American journal of respiratory and critical care medicine. 2019 Jun 1;199(11):1312-34.

This meta-analysis review could be used as a model by Safe Work in Australia for a commissioned study. Workplace exposures contribute to the burden of disease across a range of non-malignant lung conditions in adults (in addition to the 100% burden for the classic occupational pneumoconioses). This study estimated that workplace exposures contribute substantially to the burden of multiple chronic respiratory diseases. These included asthma (population attributable fraction or PAF, 16%); chronic obstructive pulmonary disease (PAF, 14%); chronic bronchitis (PAF, 13%); idiopathic pulmonary fibrosis (PAF, 26%); hypersensitivity pneumonitis (occupational burden, 19%); other granulomatous diseases, including sarcoidosis (occupational burden, 30%); pulmonary alveolar proteinosis (occupational burden, 29%); tuberculosis (occupational burden, 2.3% in silica-exposed workers and 1% in healthcare workers); and community-acquired pneumonia in working-age adults (PAF, 10%).

- Mofidi A, Tompa E, Mortazavi SB, Esfahanipour A, Demers PA. [A probabilistic approach for economic evaluation of occupational health and safety interventions: a case study of silica exposure reduction interventions in the construction sector.](#) BMC public health. 2020 Dec;20(1):1-2.

This study provides important insights for decision makers about silica exposure reduction interventions in the construction sector. It also provides an overview of the potential advantages of using probabilistic modeling approach to undertake economic evaluations, particularly when researchers are confronted with a large number of uncertain variables.

- Doney BC, Miller WE, Hale JM, Syamlal G. [Estimation of the number of workers exposed to respirable crystalline silica by industry: Analysis of OSHA compliance data \(1979-2015\).](#) American journal of industrial medicine. 2020 Jun;63(6):465-77.

Exposures can be reduced below the REL by implementing the hierarchy of controls.

- Brouwer DH, Rees D. [Can the South African milestones for reducing exposure to respirable crystalline silica and silicosis be achieved and reliably monitored?](#) Frontiers in Public Health. 2020 Apr 7;8:107.

Exposure control interventions, especially in the non-mining industries, should be developed and implemented and pragmatic methods need to be put in place to identify sources of new silicosis cases for targeted intervention.

## Section 4 CRIS: Preferred option

Our preferred option is *Option 4: Implementation of a national licensing framework for PCBU's working with engineered stone for the high-risk industry sector associated with engineered stone.*

We also see potential benefits arising from combining strategies to extend protections beyond the engineered stone sector, as identified in the CRIS.

Of critical importance is that for a life shortening disease, such as silicosis, any regulatory model based on education and awareness is fundamentally inadequate (such as in Options 2 and 3). Promoting awareness is not sufficient to prevent exposure as action is needed. Some employers are either unaware or deliberately non-compliant, which can lead to harm to individuals.

Regarding the options, we note these are limited to primary prevention. We support the inclusion of secondary and tertiary prevention measures in the CRIS, see Question 3.2 below for details.

### Selected consultation questions

**Question 3.1 Do you agree with the case for government intervention? Please provide evidence to support your position.**

Yes. Government involvement is not only required for controlling the subject diseases but is also required for the future control of silica dust exposure through the continuous monitoring, surveillance and evaluation of artificial stone industries, and through periodic lung health screening of workers. The control of exposure should not be the only focus; another focus would be the control and monitoring and possible ban of importing artificial stones. Silicosis is a condition that requires long-term, mainly palliative care and support, and palliative support has not been referred to in this CRIS.

WorkSafe Victoria funded respiratory health screening in 2020 for all past and present workers in benchtop fabrication businesses in Victoria. Queensland and New South Wales (iCare) have also undertaken health screening.

In Victoria, there are an estimated 200 stone benchtop fabrication businesses and at least 1400 workers currently employed. In May 2019, the Victorian Government launched an enhanced health assessment and research programme to identify stonemasons with silica-associated disease and provide diagnosed workers with appropriate support and management. This information is available in research papers but largely omitted in this CRIS.

**Question 3.2 Do you agree with the objectives of government intervention? Please provide evidence to support your position.**

We strongly disagree with the statement. The CRIS states that *The primary objective of government intervention is to reduce workplace exposure to RCS and reduce the number of cases of preventable silicosis and silica related diseases, and premature invalidity or death of workers.*

This should be reworded as follows: *The primary objective of government intervention is **prevention of** workplace exposure to RCS and **elimination** of silicosis and silica related diseases, and premature invalidity or death of workers.*

Our comments on this are as follows:

- The objective should be to eliminate as far as is practical, and not simply 'reduce', workplace exposure to RCS and the number of cases of silicosis and silica related diseases, and premature invalidity or death of workers.
- The CRIS does not sufficiently address the costs and the benefit of preventing the premature invalidity and death of workers from diseases other than silicosis caused by RCS exposure.
- The CRIS emphasises primary prevention measures by reducing silica exposure. However, secondary and tertiary prevention approaches play an important role in meeting the objectives of government intervention. These include early intervention to prevent progression of disease, rehabilitation, and treatment of silica-related disorders. Given their potential impact and significant costs, we suggest any regulation impact statement on this set of diseases should address secondary and tertiary prevention.
- In addition, there needs to be a change to a more incentivising approach towards employers for improving occupational health. These are detailed as objectives in the International Labour Organisation (ILO) [definition of occupational health](#) and by the [World Health Organisation](#).

**Question 4.2 Are there any other non-regulatory or regulatory options you think should be considered to address the problem?**

We support the following options being considered:

- 1) More work is required to understand how uncontrolled processing of artificial stone is monitored on building sites, especially, for small businesses. In addition, there are issues such as lack of control and adequate management, monitoring, and evaluation of the small business.
- 2) The cost of air monitoring was mentioned in the CRIS; however, lack of ventilation in small business, also needs to be considered.
- 3) Targeting educational/vocational institutions and including silica dust education as part of the education programs for trades could build a knowledge foundation which could be expanded through further education-oriented strategies.

**Question 6.5 Do you have further information regarding the costs to the public health system for silicosis and silica related diseases?**

- 1) We would like to highlight the lack of information on this area and the importance of obtaining accurate data. As noted above we strongly support establishment of a National Registry (as distinct from an occurrence reporting register) and point out that this is just the first stage in enabling an accurate assessment of the true costs of silica-related diseases.

The case finding studies from Victoria and Queensland currently hold data on more than 2000 workers who have been carefully assessed, and these data sets are likely to hold important intelligence that would be helpful to understanding the disease. There is potential value in linking this data with the National Registry with some additional funding.

Additional references for information provided:

- A recently released report by R Carey, L Fritschi, et al, 2022 [The future burden of lung cancer and silicosis from occupational silica exposure in Australia: A preliminary analysis](#). Curtin University.

This suggests an estimate of between 83,090 and 103,860 cases of silicosis resulting from current occupational exposure to RCS in Australia, noting this did not include autoimmune disorders or tuberculosis.

- Cullinan P, Muñoz X, Suojalehto H, Agius R, Jindal S, Sigsgaard T, Blomberg A, Charpin D, Annesi-Maesano I, Gulati M, Kim Y. [Occupational lung diseases: from old and novel exposures to effective preventive strategies](#). The Lancet Respiratory Medicine. 2017 May 1;5(5):445-55.
- 2) Benefits, costs and impact analyses rely on obtaining accurate baseline data for comparison and discerning trends.
- An important point to highlight is that because silica related diseases are long latency diseases, this means that currently collected data relates to circumstances in which workers were exposed 15-20 years ago.
  - Silica-related disorders and occupational lung diseases in general are underdiagnosed and unfortunately there is no central data collection on this issue. The various states and territories collect different data sets which are difficult to compare and meta-analyse.
  - Some data is yet to be analysed: for example, as analysis of the total number of cases of lung transplantations for occupational lung disease has not yet been undertaken in Australia. Estimates could be made of the likely number of diseases which might occur based on respirable dust measurements, but currently these are also not collected.
- 3) It is likely that the costs arising from silicosis and silica-related diseases are high and impose a significant burden on the healthcare system.

Please refer to international experience:

- Blanc PD, Annesi-Maesano I, Balmes JR, Cummings KJ, Fishwick D, Miedinger D, Murgia N, Naidoo RN, Reynolds CJ, Sigsgaard T, Torén K. [The occupational burden of nonmalignant respiratory diseases. An official American Thoracic Society and European Respiratory Society statement](#). American journal of respiratory and critical care medicine. 2019 Jun 1;199(11):1312-34.
- Mofidi A, Tompa E, Mortazavi SB, Esfahanipour A, Demers PA. [A probabilistic approach for economic evaluation of occupational health and safety interventions: a case study of silica exposure reduction interventions in the construction sector](#). BMC public health. 2020 Dec;20(1):1-2.
- Doney BC, Miller WE, Hale JM, Syamlal G. [Estimation of the number of workers exposed to respirable crystalline silica by industry: Analysis of OSHA compliance data \(1979-2015\)](#). American journal of industrial medicine. 2020 Jun;63(6):465-77.
- Brouwer DH, Rees D. [Can the South African milestones for reducing exposure to respirable crystalline silica and silicosis be achieved and reliably monitored?](#). Frontiers in Public Health. 2020 Apr 7;8:107.
- Rosental PA, editor. Silicosis: a world history. JHU Press; 2017 Apr 25.

## Closing remarks

Given our physicians have an instrumental role in addressing this disease in the workplace, and are at the frontline of the diagnosis and management of affected workers, we encourage early and ongoing involvement of our peak bodies' expert advice.

Early and continued engagement of the medical profession is foundational to any regulatory strategy on this workplace health issue. This would be consistent with the International Labor Organisation (ILO) Occupational Health Services [Recommendation R171](#), which states that

occupational health services should consist of multidisciplinary teams, and include technical personnel with specialised training and experience in fields such as occupational medicine.<sup>2</sup>

We welcome continued engagement on regulatory strategies.

We thank Safe Work Australia for considering our submission and look forward to contributing to this work further.

Should you require any further information about this submission, please contact [policy@racp.edu.au](mailto:policy@racp.edu.au) and [graham.hall@thoracic.org.au](mailto:graham.hall@thoracic.org.au).

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<sup>2</sup> International Labour Organization: R171—Occupational Health Services Recommendation, 1985 (No. 171). 1985. [https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\\_ILO\\_CODE:R171](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R171) (refer paragraph 36) [accessed 1 August 2022]