SUBMISSION

Consultation Regulation Impact Statement:

Managing the risks of respirable crystalline silica at work

Instructions

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- Use the saved version to enter your responses under each question below. These questions are from the Consultation Regulation Impact Statement on managing the risks of respirable crystalline silica at work.
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Questionnaire

(Consultation RIS questions)

Statement of the problem (Chapter 2)

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

Change is needed

This is an opportunity for the whole community - employers, health care workers, WHS practitioners and others to prevent further cases of silicosis. We do have clear evidence that exposures can be hazardous.

Silicosis has been escalating and is a preventable, non-curable disease. The escalation in silicosis is frightening. Indeed, more must be done to control the risks.

Of course, we can eliminate the risk by banning activities that involve silica. This way we can prevent absolutely, the risks and health outcomes. We can prevent road deaths by banning cars, we can barricade stairways. But we can also find an alternative approach that protects health of individuals and improves work practices.

Rather than banning activities that involve silica, let's explore ways of protecting people's health, finding better work practices so we can **prevent exposure** not stop all activities involving silica. The hazard is not the grinding of stone and brick or the digging of holes per se; it is the exposure and inhaling of the dust from these activities or those around them.

We need changes to operations and changes to the thinking. This is not just about banning activities, or promoting any after-the-event screening. Let us look at what has been industry practice. Practices that are now habitual. It may be possible to change such habits. It is the **way we undertake this work** that needs change. Let's improve the work practices themselves.

The overall aim is to have good work practice on the ground so that work is undertaken with reduced risk and improved health.

We need sustained change to the way we work and the way we think about this work.

Sustained change

With the aim of preventing disease, we can create conditions and systems that people will adopt; this is a proven way to achieve change. Appropriate triggers for action can be linked to the benefits. Benefits not just to public health but also to individuals involved.

We want any such changes to be maintained in the long term and supported in the community.

'Social Norms' theory says change needs the following

- Assessment or collection of **data** to inform the message
- Selection of the **normative message** that will be distributed
- **Testing** the message with the target group to ensure it is well-received
- Selection of the **mode** (the medium) in which the message will be delivered
- Amount, or dosage, (the repetition) of the message that will be delivered
- **Evaluation** of the effectiveness of the message (how well it has been received and digested)

Much can be learned from the public messaging around COVID (how to do it **and** how not to do it).

"Embedding principles of behavioural science into public health messaging is an important step towards more effective health-risk communication during epidemics/pandemics."[1]

This paper also acknowledges that "Public health messaging is **one component of effective risk communication strategies** to ensure sustained population level behaviour change" (Bold added)

In other words, a range of measures are required to be effective.

[1]Ghio D, Lawes-Wickwar S, Tang MY*, et al,*What influences people's responses to public health messages for managing risks and preventing infectious diseases? A rapid systematic review of the evidence and recommendations, *BMJ Open* 2021;**11:**e048750. doi: 10.1136/bmjopen-2021-048750 https://bmjopen.bmj.com/content/11/11/e048750

Van Stralen et al (2011) proposed a model for behaviour change that applies to public health.[2] Their 'COM-B' model of behaviour change proposes that public health messages should be designed as "multicomponent strategies "to support

1. **Capability** (the knowledge/skills),
2. **Opportunity** (societal norms/physical resources) and
3. Motivation (the desire/habit) to act…

The same applies to managing the risks of silica in the workplace.

New Technology

Along with changes to our approach to work practices and the design of work practices there is a need for new improved technology. So, we might consider improvements to the equipment, to the technology for each practice, for each activity and for each type of work. We need support for and research into what enables the task to be done safely.

The newly developed direct readers for dust are important late-stage detection but we also need upstream designs. New equipment and technology that improves the way the work is done. Policy bodies have a fundamental responsibility to provide national advice on 'safe' work practices, and advice on what can be done. I see this as a role of SWA: the support for innovative practice and national coordination of policy demanding good practice.

Complex practices across wide range of industries

A very wide range of industries is affected, each with its own complicated tasks where workers are potentially exposed to silica. A "blanket" approach is not feasible. I worry that a complete ban on exposure is likely to subvert the fulsome adoption of better practices. The type of work ranges from fine art sculptures, to preparation of cement, to quarrying or any construction and agricultural work – too broad a church for a single approach.

What interventions are successful?

The Health and Safety Executive UK (HSE) has done some studies of the effectiveness of interventions. They say that it is important *to show what works, in what context, to what extent and for whom and, as important, what does not work and why.*

Evaluation of the proposed interventions is also important. So

- Can the intervention/s work? How do we measure it? What if any could be consequences (intentional and unintentional)
- Does the intervention/s work in practice; in this case, work in every activity?
- Is it worth it? We know the answer here is YES!

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[2] Michie S,van Stralen MM, West R . 2011 The behaviour change wheel: a new method for characterising and designing behaviour change interventions. Implement Sci 2011;**6**:42.doi:10.1186/1748-5908-6-42pmid:http://www.ncbi.nlm.nih.gov/pubmed/21513547

Of course, a nil exposure would reduce potential for harm, but a multipronged approach would be more practical and more sustainable.

In designing any approach some evaluation must also be included. It is unclear what evaluations or measurement is proposed for each of the current CRIS options.

There has been research that has shown that banning activities broadly can be counterproductive.[3] In order to develop the type of interventions that are likely to be effective, we must use the full range of options available, and work with the target group to establish evidence-based mechanisms for action. There is a need for the steps involved, the **how**, how to achieve the reduction in harm. We need improved designs that give the desired outcome – the controls to ensure safe operations.

Prevention is of course the best option. There is a spectrum in between a complete ban to prevent harm and status quo. Preventing exposure to silica is not necessarily a 'stop everything' demand; it is about providing advice (and appropriate regulation) on **how** the desired outcome can be achieved.

This does not mean strong interventions aren't required. Of course, they are. There is evidence of a growing, frightening prevalence of silicosis. However, we need to establish what kind of actions would gain the best outcome; what would gain most support and action from the community, what would give us enduring prevention of harm. Prevention of harm is not only achievable by imposing a total ban.

Clear Definitions

I am confused by the definitions for silica activities and a seeming mismatch in different sections. The definitions used need to be clear and consistent across the various regulations and standards as well as SWA documents. Estimate of costs is difficult when definitions do not match. The specific activities affected also need to be clearly and consistently listed.

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

Health and Safety Executive UK (HSE) has published a range of guidance sheets for specific industries on how to control RCS exposure. They provide a number of measures for protection under Control of Substances Hazardous to Health (COSHH) Regulations 2002 including good control practices.

Although not akin to banning of single use plastic bags, there are some learnings from a recent review of why a ban on plastic bags isn't more widely adopted. A systematic literature review,

[3] **P.F. Ricci, H. Sheng, 2013,** Benefits and Limitations of the Precautionary Principle☆ **in Reference Module in Earth Systems and Environmental Sciences,** **https://www.sciencedirect.com/science/article/pii/B9780124095489019357**

was undertaken by Muposhi et al in 2014 [4] ,it suggests the limited success of a plastic bag ban was “owing to lack of suitable alternatives, limited state capacity to monitor and enforce the ban, thriving black market, structural and instrumental power of the plastic industry”.

The availability of **suitable alternatives and capacity for monitoring** and **enforcing** could also apply to a banning of activities involving silica. Both share obvious benefit for public health with strong community support and yet banning plastic bags wasn’t as successful as hoped.

We could also look at Macintosh et al (2020). "Plastic bag bans: Lessons from the Australian Capital Territory." [5] This review on a plastic bag ban showed an unintended consequence of banning single use plastic shopping bags - people bought more bin liners. This unintended consequence is counterproductive to the desired environmental outcomes. Without alternative work practices it is foreseeable that people will seek other means, other activities.

An evaluation that includes consequences or wider cost benefit is essential, and should be undertaken before opting to ban activities that involve silica.

Occupational Safety and Health Administration (OSHA) in US has issued two respirable crystalline silica standards.[6] They have one for construction, and another for general industry and maritime. And, there are exemptions. The standard does not apply to the following:

■ *Construction work as defined by 29 CFR 1910.12(b), which is covered by the respirable crystalline silica construction standard (29 CFR 1926.1153);*

■ *Agricultural operations, which are covered by OSHA’s occupational safety and health standards for agriculture and,*

■ *Exposures that result from the processing of sorptive clays.*

And further it excludes

■ *Where the employer has objective data that employee exposure to respirable crystalline silica will remain below 25 micrograms per cubic meter of air (25 µg/m3) as an 8-hour time-weighted average (TWA) under any foreseeable conditions;*

■ *Where the employer chooses to comply with the construction standard (29 CFR 1926.1153) for tasks performed that are indistinguishable from a construction task listed on Table 1 of the construction standard, provided the tasks are not performed regularly in the same environment and conditions.*

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[4] Muposhi A, Mpinganjira M, Wait M. 2014 Considerations, benefits and unintended consequences of banning plastic shopping bags for environmental sustainability: A systematic literature review. *Waste Management & Research*. 2022;40(3):248-261. doi:10.1177/0734242X211003965 https://journals.sagepub.com/doi/full/10.1177/0734242X211003965

[5] Macintosh, Andrew, et al.2020 "Plastic bag bans: Lessons from the Australian capital territory." *Resources, Conservation and Recycling* 154 (2020): 104638.

[6] OSHA Silica Crystalline: An Overview https://www.osha.gov/silica-crystalline and fact sheets 2017
See also https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1153

Also, of note in OSHA's approach is

Exposures that will not exceed 25 µg/m3 averaged over an 8-hour day under any foreseeable conditions are excluded from the standard. Employers must have objective data demonstrating employee exposure to respirable crystalline silica associated with a particular product or material or a specific process, task, or activity will remain below this level.

Communication and collection of specific data on actions

Surveys and data would provide insights into which tasks or which industries should be the focus. It would also enable benchmarking to show effectiveness of interventions and new technologies. Information on effective changes to existing practices would also show **how** to achieve the desired outcome. Adoption of industry wide practices that have been evaluated and shown to work is likely more welcome by community and more likely adopted and sustained.

Despite proven effectiveness of masks in minimising the transmission of COVID, the adoption by community has waned. One of the learnings from this experience is to choose carefully the best way of communicating the data. This is vital to the effectiveness of any action especially for the long term.

Why is Government action needed? (Chapter 3)

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

Yes, government intervention is needed. Positive, evidence-based interventions that motivate the community to act would have the best impact. Please see above and references provided.

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

Yes, the prevention of harm is needed. To achieve a change in work practices across a wide range of activities requires an approach that looks at **how** this can be achieved. Behavioural change insights would be useful. Like OSHA, I would suggest specific target industries where there is evidence for initial focus. And then governments would have data to support exemptions for specific tasks. They could also consider mechanisms for mitigating foreseeable circumstance, they could consider action triggers and they could provide encouragement for technological changes to work practices. Please see above and references provided.

What policy options are being considered? (Chapter 4)

4.1 Do these options address the problem? Please provide evidence to support your position.

I believe that Option 1 awareness and communication is relevant to whatever options are chosen.

Option 4 may prove to be useful but should be modified. Option 4 would also be modified so education and awareness are included. Modifications with similar exemptions and focus to that used by OSHA should be considered. In addition, OSHA's findings on what works under their regime would be invaluable. OSHA use a performance option as well.

The performance option gives employers flexibility to determine the 8-hour TWA exposure for each employee based on any combination of air monitoring data or objective data that can accurately characterize employee exposures to respirable crystalline silica.

We must explore how each task can be undertaken to prevent harm. This must be specific and involve commitment from those that undertake the tasks. Inevitably this means creating new methods. Evaluating these methods and communicating effectiveness.

Like hazard assessments certain tasks or activities could be grouped albeit with re-assessment so that not everyone is repeating assessments unnecessarily. For example, on average it has been shown that x task would need y controls to protect from exposure to silica. Controls can then be immediately expected and adopted.

The SWA Options should reflect a less simplistic blanket approach.

Please refer to above and the references used.

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

Please see suggestions in this submission. Both the HSE and OSHA have grappled with this issue and have been able to produce more nuanced and workable approaches.

What is the likely impact of each option? (Chapter 6)

6.1 Is the cost modelling methodology appropriate to estimate the costs to industry and governments (Appendix D)? Please provide evidence to support your position.

Click or tap here to enter text.

6.2 Are the estimates of the number of businesses covered by each of the regulatory and non-regulatory options accurate? Please provide evidence to support your position.

Click or tap here to enter text.

6.3 Are there other factors that should be considered in the assessment of the effectiveness of each option (Section 6.5)? Please provide evidence to support your position.

What works on the ground is actually the overall objective for any intervention. So, it is **how the work is undertaken** that gives the desired outcome. Intervention should not just be banning all types of silica producing activity. It is about **changing habitual practices** to manage the exposure to prevent harm.

What works and why are important factors. **Communicating proven practical best practice** and then having compliance measures in place provide more sustainable outcomes.

As noted above – **evaluation** should be included in design of any intervention.

Action must be taken to decrease exposure to silica. Without **suitable alternative practices and improved technology**, ubiquitous banning of activities would have consequences and would constrain a wide range of industries including quarrying, construction and agriculture.

Other costs

Changes in business procedures or practices also include other indirect costs of

- seeking alternative sources of supply
- higher prices across the supply chain
- reduced access to markets
- higher prices for all goods and services

It may mean Australian businesses will be competing with imported products and disadvantaged in a global market place. Such consequences also need to be costed.

6.4 Are the cost and other estimates (including worker wage assumptions) listed in Appendix D accurate and appropriate? If not, please provide additional data to support a more accurate estimate of costs.

All options – a ban, or effective dust management and anything else that prevents exposure - will involve cost. This must be weighed against the savings not just in public health but also the cost to the individual. However, in my experience the SWA CRIS costings severely underestimate the impact, the indirect costs and some of the obvious.

An occupational hygienist could cost approximately up to $2000 per day, depending on number of samples and laboratory fees there could be even more costs associated with any atmospheric or personal monitoring. Then there is also the health monitoring and the downstream medical screenings.

This is the measuring. This is not the actual controls required to prevent exposure.

There are, and there should be, the costs of changes to work practices. Administration, training or hiring of expertise, engineers and other professionals, change in operators, new or modified equipment and monitoring of effectiveness of these controls and more. All these costs, I believe, are underestimated.

The full costs incurred in managing a total ban must be considered. This could include the importation of alternative products (and the potential for harm caused to workers overseas), the use of alternative local products (if there is adequate supply) and any resulting price rises, the delays to construction projects, -all the foreseeable, albeit unintended, flow-on costs.

Compliance and enforcement could involve very expensive monitoring, assessment, training, administration and inspectorates too. Administration, training or hiring of expertise for the regulators (as well as within companies) is not accurately represented. The cost of enforcement is underestimated.

Grouping may reduce some costs

It may be that, like other WHS assessments, it is possible to group or extrapolate for a class or group of similar tasks. This would reduce the costs involved in ongoing monitoring for each and every person or activity.

Small to Medium Enterprises (SMEs)

Many of the exposures to silica seem to arise in SMEs. These are business without the strong infrastructure and safety culture of larger organisations. In my experience, it is easier for very large companies to implement any change but SMEs struggle. The percentage cost to smaller organisations is actually much larger and already discouraging.

In 2014 SWA commissioned a report from Centre for Workplace Leadership at University of Melbourne[7]. The findings included

SMEs lack the economic, human and technological resources required to make WHS investment and manage WHS systems effectively

And

the strength of the drivers for supporting a business case – be it the traditional cost-benefit analysis or higher order strategic considerations – are likely to apply differentially to businesses of differing sizes, operating in different industries or facing different WHS risk profiles

How to effect lasting change in work practices in these organisations is important. It is these organisations that may need more support to adopt new work practices. Faced with these costs the smaller organisations may even go out of business. Apart from loss of employment, it may reduce the number of operators and create a lop-sided industry of only a few big operators.

This review also found, a number of factors are likely to be important, including:

- *difficulties in estimating the economic value of benefits and costs that accrue to programs in future periods;*
- *the potential for delayed or variable benefits that flow from new WHS programs, against upfront or fixed costs associated with the initial investment; and*
- *uncertainty in estimating the impact of future business conditions or requirements in moderating the costs or benefits associated with such programs.*

[7] Centre for Workplace Leadership, University of Melbourne, October 2014, Workplace Health and Safety Business Productivity and Sustainability

Further this review noted that *over-reliance on financial measures is also geared toward encouraging short-termism – sacrificing value in the long-run, for short-term performance.*

We want good protective work practices adopted so they become the norm and that are adopted for the long term.

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

Click or tap here to enter text.

Discussion of options (Chapter 7)

7.1 Which option or combination of the options presented is most likely to address the identified problem? Please provide evidence to support your position.

Most likely to prevent harm might be a modified Option 4. AN option with triggers, with appropriate exemptions, with a focus on particular tasks and good education and awareness, with strong support from regulators, with government led research and support for innovative technology.

As noted above I believe that Option 1 awareness and communication is relevant to any of the options are that are chosen.

Modifications to Option 4 similar to that of OSHA should be explored. Much of the US approach could be adapted that is suitable for Australian environment. In addition, OSHA's findings on what works under their regime would be invaluable. Please note that OSHA use exemptions and a performance option as well.

7.2 Are there any significant barriers to implementation of the options presented? What are those barriers? Is there a cost associated with them? How could they be overcome?

Barriers could be overcome with

- Support for innovative **technology** that would provide alternative approaches and substantially encourage uptake
- Targeting specific tasks to build **available data**. This would also help provide guidance on successful alternative practices.
- **Initially focus on performance** of **particular high-risk tasks** rather than using a broad brush for every activity in an industry
- **Available expertise** both on the ground and within the regulators is limited. Filling the hole will take time and costs. Interventions would be needed to fill the gaps and support adoption*
- **Good communication programmes, education and awareness raising**

A broad-brush approach would not **engender the long-term commitment** needed to prevent harm. Broad-brush approaches can create resentment and resistance.

As noted above in Centre for Workplace Leadership, University of Melbourne report for SWA, *over-reliance on financial measures is also geared toward encouraging short-termism – sacrificing value in the long-run, for short-term performance.* [8]

There is a **significant cost to the wide-scale monitoring** that a ban would require. This monitoring would be **better targeted at effective controls and effective technology** and at high risk tasks. (Further tasks can be added as data indicates).

Tasks could also be grouped without requiring full assessment or full monitoring each and every time. This approach is used in assessing hazards under WHS model laws at the moment.

Behavioural insights and smaller steps such as **action triggers** could be used rather than a blanket approach.

*The market size of the Occupational Health and Safety Services industry in Australia has declined 3.4% per year on average between 2017 and 2022 (IBIS World 2022)[9]

Other comment

Do you have anything further you would like to add as part of this process?

Strong interventions are indeed required. There is a frightening and growing prevalence of silicosis.

However, we need to establish what kind of actions would gain the best outcome; what would gain most support and action from the community, what would give us enduring prevention of harm. I believe a nuanced multi-faceted approach is required. An approach that targets the practices used and acknowledges

1. **Capability** (the knowledge/skills and technology available),
2. **Opportunity** (societal norms/physical resources) and
3. Motivation (the desire/habit) to act

The multi=faceted approach would consider adapting the OSHA approach for different industries and tasks involved.

[8] Centre for Workplace Leadership, University of Melbourne, October 2014, Workplace Health and Safety Business Productivity and Sustainability

[9] Occupational Health and Safety Services in Australia - Market Size 2007–2028 Updated: March 29, 2022 IBIS World 2022