The Thoracic Society of Australia and New Zealand's response to the New South Wales Review of the Dust Diseases Scheme.

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NSW Parliamentary Council Law and Justice Committee 2024 Review of the Dust Diseases Scheme Hearing: Supplementary Questions

Following the TSANZ's submission to the 2024 Review of the Dust Diseases Scheme (the 2024 Review) in New South Wales (NSW) on 4 October 2024, TSANZ representative experts Dr Aruvi Thiruvarudchelvan and Dr Hayley See attended the 29 November 2024 Hearing to give evidence pertaining to the 2024 Review.

The 2024 Review examines two critical questions regarding the Dust Diseases Scheme:

1. *the support mechanisms available to younger workers, specifically how they can access resources to maintain or extend their working lives in suitable duties, and*
2. *the financial and medical assistance provided by the scheme when dust disease hinders their ability to work.*

On the 6th of December, the Committee contacted TSANZ responses to the following post-hearing supplementary questions:

1. *If the scheme were to include non-lung diseases related to silica exposure, what specific diagnostic criteria should be used to establish causality and eligibility for benefits?*

2. *It was mentioned that there was an overrepresentation of silicosis cases for workers working on sites that used a roadheader. Can you provide any further data or information on the prevalence of silicosis in different tunnelling roles and the specific risk factors associated with each role?*

3. *Can you provide more information on the potential long-term health effects of even low-level silica exposure?*

4. *Can you provide further details on the current research and evidence regarding the link between silica exposure and autoimmune diseases?*

5. *You discussed the challenges faced by workers who wish to return to their jobs after being diagnosed with silicosis. What specific guidelines and support mechanisms can be put in place to ensure their safe return to the workplace?*

6. *You highlighted the lack of a central repository for health surveillance results. How can such a system be implemented to improve monitoring and tracking of workers' lung health throughout their careers?*

The Committee has granted TSANZ a response deadline of 13 January 2025.

The TSANZ's recommendations

The TSANZ's comprehensive response to the six supplementary questions is outlined below.

1. *If the scheme were to include non-lung diseases related to silica exposure, what specific diagnostic criteria should be used to establish causality and eligibility for benefits?*

It would not be difficult to include non-lung diseases related to silica exposure in the scheme. Currently, in such cases, the Medical Authority Panel (MAP) for iCare Dust Diseases requests the opinion of a rheumatologist for a disability assessment. There is an existing format for such assessment by the NSW State Insurance Regulatory Authority (SIRA). It should be noted that the Australian Medical Association (AMA) Guidelines for evaluation of disability for musculoskeletal disorders have been updated in 2024 and could also provide information for updating any new evidence-based system.

TSANZ suggests that consultation with Arthritis Australia and the Australian Rheumatological Society (ARA) would be valuable on this area.

TSANZ would be happy to collaborate with other medical organisations to accelerate development of the criteria for causality, noting that the ARA has led the field in exploring the link between silica exposure and rheumatological disease in the past.

It is recommended that independent research is commissioned to enable the rapid development of evidence-based recommendations.

2. *It was mentioned that there was an overrepresentation of silicosis cases for workers working on sites that used a road header. Can you provide any further data or information on the prevalence of silicosis in different tunnelling roles and the specific risk factors associated with each role.*

The incidence of silicosis in the different roles would be proportional to cumulative RCS exposure. TSANZ experts are aware that the dust produced by road headers is reported by workers to be significantly higher than that produced by use of the tunnel boring machine (TBM). However, it should be noted that RCS is invisible and therefore visible dust is only a surrogate for actual RCS levels. Measured dust levels need to be assessed.

Currently, the SafeWork NSW Silicosis dashboard does not contain sufficiently detailed information to enable this important question to be answered.

This could be examined by commissioning an independent NSW research project into existing iCare, SafeWork data, to also include data from any relevant Person Conducting a Business or Undertaking (PCBUs). Ideally, such research would include data from other medical monitoring schemes (e.g., respiratory surveillance performed by independent medical contractors for the employers) which are not publicly available. However, it might be possible to recruit such contractors for an academic project.

Such a project is important and needs to be initiated without delay.
TSANZ asserts that this important information should be available from the following sources:

1. SafeWork NSW.

   In NSW, dust monitoring is mandatory for tunnelling and in industries where significant silica exposure is likely. One or more exceedances above the 8hr exposure standard of 0.05mg/m^3 must be reported to SafeWork NSW. However, there is no public access to this data and no linkage to individual workers as far as TSANZ is aware.

   Obtaining such data from SafeWork would enable identification of the tunnels in which exceedances were occurring and could be linked with whether TBMs or road headers were being used.

   TSANZ considers also that SafeWork should also have access to this information from their workplace inspections and from their knowledge of the working environment with different contractors in NSW.

2. Silica exposure histories from iCare Dust Diseases case applications and from the iCare screening program.

   Detailed information about silica exposure is usually obtained for each case assessed by iCare Dust Diseases during their industrial history assessment, and a careful occupational history is obtained during iCare screening of exposed workers. This usually includes details regarding work with road headers and TBMs.

   TSANZ suggests that a retrospective study of all cases of silicosis submitted for compensation over the last 20 years, also including all those who were screened for silicosis by iCare, would be an excellent start. This would obtain data on differences in silicosis rates between road headers and TBMs which could then be explored further in broader studies.

3. Occupational hygienists are employed to routinely monitor dust levels for employers and gather detailed data on individual and task-based dust exposures. Currently, this information is held by employers and is usually kept confidential to them. Confidentiality concerns have been raised regarding release of such data in the past.

   TSANZ is aware that the Australian Institute of Occupational Hygiene has an interest in this area and many members who could potentially assist with these endeavours. Also, the Australian Tunnelling Society includes occupational hygienists and could probably contribute significantly to gathering such data.

   There is no reason, in TSANZ's view, for such valuable information to not be anonymised and analysed as group data, as is common in medical research.

4. Respiratory surveillance programs from medical providers employed by PCBUs.

   There are several independent occupational medical providers who examine workers on a contractual basis for PCBUs. Important information is gathered at such examinations which can include information on working conditions such as TBM vs road header exposure.

Currently, such information is confidential but provided appropriate guarantees were given regarding privacy and other issues, there is no reason why de-identified information should not be forthcoming. This is the sort of data which is often accessed in medical research.

5. Unions may hold data on conditions within tunnels or construction sites.

   Workers are often scared to discuss dust levels with employers as they fear for their jobs. Unions are often consulted on these matters, although union membership is by no means complete. It would be important to collaborate with all key stakeholders to obtain as complete as dataset as possible.

Also, information reporting to the NSW SafeWork silicosis dashboard (notification) scheme has been reduced by the Department of Health's email to practice managers suggesting that state notification is no longer necessary in view of the National Occupational Respiratory Disease Registry (NORDR).

3. *Can you provide more information on the potential long-term health effects of even low-level silica exposure?*

This is a complex area with a huge body of potential evidence. In summary, the risk of development of silicosis risk is dose dependent but the data on other lung diseases is less clear. One recent dose-response paper is that of Howlett P *et al.*[1]

The presence of silicosis (i.e., the characteristic interstitial lung fibrosis due to silica exposure) is no longer believed to be required for a worker to have a raised risk of lung cancer. Concomitant smoking is additive to the raised risk of lung cancer produced by silica inhalation.

High level exposure is not a requirement for an increased risk of lung cancer although there is a dose-response relationship. Low dose silica exposure is related to lung cancer, autoimmune diseases, TB, fungal and probably also renal diseases. **Effects of silica exposure are, in general, significantly underestimated.**

ANSES in France have recently reviewed the health hazards[2], and the IIAC in the UK have recently reviewed pneumoconiosis[3]. Kyle Steenland's article in the American Journal of Industrial Medicine looks at exposure-response data and comparative risks of different outcomes following silica exposure[4].

TSANZ suggests this would be an excellent topic for review by an independent expert panel.

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[1] Howlett P, Gan J, Lesosky M, Feary J. Relationship between cumulative silica exposure and silicosis: a systematic review and dose-response meta-analysis. Thorax. 2024 Sep 18;79(10):934-942. doi: 10.1136/thorax-2024-221447. PMID: 39107111; PMCID: PMC11503121.

[2] French Agency for Food, Environmental and Occupational Health & Safety. (2019, April 25). ANSES Opinion Request No 2015-SA-0236 – Crystalline silica: Opinion of the French Agency for Food, Environmental and Occupational Health & Safety on "Updating knowledge on the hazards, exposures and risks associated with crystalline silica." Maisons-Alfort. Accessed: https://www.anses.fr/fr/system/files/AIR2015SA0236EN.pdf

[3] Industrial Injuries Advisory Council (IIAC). (2023). *Review and update of prescribed disease D1: Pneumoconiosis*. UK Government. Retrieved from: https://assets.publishing.service.gov.uk/media/6554f65cd03a8d000d07f9e5/cp964-review-and-update-of-prescribed-disease-d1-pneumoconiosis.pdf

[4] Steenland, K. (2005). One agent, many diseases: Exposure-response data and comparative risks of different outcomes following silica exposure. *American Journal of Industrial Medicine, 48*(1), 26–40. Retrieved from: https://doi.org/10.1002/ajim.20181

4. *Can you provide further details on the current research and evidence regarding the link between silica exposure and autoimmune diseases?*

There is currently a large pool of continuing research in this field. The growing consensus is that certain autoimmune disorders such as scleroderma and rheumatoid arthritis are linked to occupational silica exposure and this relationship has been accepted by several international agencies (e.g. ANSES).

The potential mechanisms for such an effect have been summarised in several papers[5,6,7]. There are also several recent papers by Australian researchers[8,9] and the following[10], co-authored by TSANZ OELD Working Party Co-Chair Prof Deborah Yates and TSANZ member, Dr Susan Miles.

5. *You discussed the challenges faced by workers who wish to return to their jobs after being diagnosed with silicosis. What specific guidelines and support mechanisms can be put in place to ensure their safe return to the workplace?*

The major issue for workers who are diagnosed with silicosis is that they should not be further exposed to silica dust. They have often hold skilled, highly paid jobs, and it is not easy for them to transition to an equivalent which does not entail dust exposure. Employers need to create flexibility to enable such workers to remain employed, and this is easier for larger companies than smaller PCBUs.

1. TSANZ believes that specific clinical pathways and return to work guidelines are urgently needed for NSW (similar to the Queensland Guidelines[11] for coal mine dust). TSANZ would be happy to assist with guideline development.

2. To enable transfer to alternative employment, bridging financial support is needed. The UK system of Reduced Earnings Allowance (REA) is one possibility. This is a payment which covers the difference between a new employment and the old for a period of 2 years, enabling the worker to make an easier transition to a safer job. This enables retraining and assists with financial pressure.

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[5] Vojdani, A., Pollard, K. M., & Campbell, A. W. (2014). Environmental triggers and autoimmunity. *Autoimmune Diseases, 2014*, 798029. Retrieved from: https://doi.org/10.1155/2014/798029

[6] Fireman, E. M., & Fireman Klein, E. (2024). Association between silicosis and autoimmune disease. *Current Opinion in Allergy and Clinical Immunology, 24*(2), 45–50. Retrieved from: https://doi.org/10.1097/ACI.0000000000000810

[7] Pollard, K. M. (2016). Silica, silicosis, and autoimmunity. *Frontiers in Immunology, 7*, 97. Retrieved from: https://doi.org/10.3389/fimmu.2016.00097

[8] Patel, S., Morrisroe, K., Proudman, S., Hansen, D., Sahhar, J., Sim, M. R., Ngian, G.-S., Walker, J., Strickland, G., Wilson, M., Ferdowsi, N., Major, G., Roddy, J., Stevens, W., Nikpour, M., & The Australian Scleroderma Interest Group. (2020). Occupational silica exposure in an Australian systemic sclerosis cohort. *Rheumatology, 59*(12), 3900–3905. Retrieved from: https://doi.org/10.1093/rheumatology/keaa376

[9] Tomic, D., Hoy, R. F., Sin, J., Jimenez Martin, J., Gwini, S. M., Barnes, H., Nikpour, M., Morrisroe, K., Lim, Y. Z., & Walker-Bone, K. (2024). Autoimmune diseases, autoantibody status and silicosis in a cohort of 1238 workers from the artificial stone benchtop industry. *Occupational and Environmental Medicine, 81*(8), 388–394. Retrieved from: https://doi.org/10.1136/oemed-2024-109526

[10] Yates, D., & Miles, S. (2022). Silica and connective tissue disorders: The important role of the dermatologist. *Dermatology Journal*. Retrieved from https://www.dermatoljournal.com/public/articles/silica-and-connective-tissue-disorders-the-important-role-of-the-dermatologist.pdf

[11] WorkSafe Queensland. (n.d.). *Mine dust lung disease guidelines*. Queensland Government. Retrieved from https://www.worksafe.qld.gov.au/__data/assets/pdf_file/0029/88913/mine-dust-lung-disease-guidelines.pdf

3. Support mechanisms need to be enhanced, in particular retraining workers for new employments. A list of potential new jobs needs to be developed as well as a scheme whereby workers could try out jobs to see if these were suitable for them. Employment in comparable industries would be possible e.g., electricity, postal work, or in local government, health with appropriate re-training. Other work e.g., TAFE teaching, driving instruction, office work could be considered. Large employers need to examine work roles to develop appropriate low-dust exposure jobs.

6. You highlighted the lack of a central repository for health surveillance results. How can such a system be implemented to improve monitoring and tracking of workers' lung health throughout their careers?

A centralised repository would be of great assistance and enable long term monitoring of workers' health. This would be best done by:

1. Mandatory unified respiratory surveillance methods (see TSANZ position paper 2020[12]). Ideally, these would be harmonised within Australia and enable transfer of relevant information between states.

2. Mandatory reporting to NSW centralised database via specialised software systems (which already exist).

3. It would be optimal if measured exposure levels and exceedances were also reported for individual workers.

4. It is essential that such a centralised system should be INDEFINITE (including funding) because the latency period for disease is so LONG.

5. Because of the long-term nature of this database, this would be best lodged within a government agency e.g. iCare or managed within the academic environment (e.g., the Australian mesothelioma register).

[12] Perret, J.L., Miles, S., Brims, F., Newbigin, K., Davidson, M., Jersmann, H., Edwards, A., Zosky, G., Frankel, A., Johnson, A.R. and Hoy, R., 2020. Respiratory surveillance for coal mine dust and artificial stone exposed workers in Australia and New Zealand: a position statement from the Thoracic Society of Australia and New Zealand. *Respirology*, *25*(11), pp.1193-1202. Retrieved from https://onlinelibrary.wiley.com/doi/full/10.1111/resp.13952

Concluding remarks

The TSANZ continues to advocate for evidence-based health policy and practice. We stress the importance of continued monitoring and improvement of the Dust Diseases Scheme, the NORDR, and the federal ban on engineered stone and its implementation in NSW as well as new or not yet well understood dust disease threats, imposing serious health risks on Australian workers.

The TSANZ's Occupational and Environmental Lung Disease Working Party (OELD WP) – co-chaired by Prof Hubertus Jersmann and Prof Deborah Yates - are renowned Australian experts in occupational and environmental lung health with wide-ranging expertise. The TSANZ OELD WP continues to offer its support and expertise to the NSW Government and Health Department to improve health outcomes for Australian workers.

Professor Anne E. Holland
President
Thoracic Society of Australia and New Zealand