Submission to the Senate Select Committee on Health Regarding the Re-emergence of Coal Workers Pneumoconiosis (CWP)

Preamble

The Thoracic Society of Australia and New Zealand (TSANZ) and Lung Foundation Australia (LFA) welcome the opportunity to provide a submission to the Select Committee on Health on the Re-emergence of Coal Workers Pneumoconiosis (CWP).

The TSANZ mission is to lead, support and enable all health workers and researchers who aim to prevent, cure and relieve disability caused by lung disease. The TSANZ is the Peak Body representing all health professionals working in all fields of respiratory health. As such, we provide the Australian Government with direct access to professional expertise and highly credible engagement with respiratory health care specialists in all disciplines across Australia. The TSANZ has a membership base of 1400+ individual members from a wide range of health and research disciplines and has a database of approximately 3000 contacts. The TSANZ is a leading provider of evidence based guidelines for the treatment of respiratory disease in Australia, undertakes a large amount of professional education and training, is responsible for significant research administration and coordinates an accredited respiratory laboratory program.

LFA is the patient advocacy body whose vision is to make lung health a priority for all in Australia. It achieves this by implementing community awareness programs; providing patient support services and resources; promoting equitable access to evidence-based management, particularly in the primary care and allied health spaces; supporting research; and advocating on behalf of our patients.

Respiratory disease is a leading cause of premature death in Australia and a key contributor to hospital expenditure. Until recently, Australia was thought to have largely eradicated occupationally acquired coal workers pneumoconiosis. We are concerned that there are now reported confirmed cases of this condition which have not been previously identified through routine screening.

1. <u>About Coal Workers Pneumoconiosis (CWP)</u>

1.1 CWP is a type of pneumoconiosis (or fibrotic lung disease due to dust inhalation), and is an occupational lung disease solely caused by the inhalation of coal mine dust. Prolonged inhalation of coal mine dust is associated with the development of several chronic lung diseases including CWP, silicosis, mixed dust pneumoconiosis and chronic obstructive pulmonary disease. Inhalation of sufficient crystalline silica has also been recognised as an occupational carcinogen by the International Agency for Research on Cancer (IARC), and by WorkSafe Australia, as a cause of lung cancer. In 2013, pneumoconiosis resulted in 260,000 deaths globally. Of these deaths, 46,000 were due to silicosis,

24,000 due to asbestosis and 25,000 due to CWP.[1] Most of these cases occurred in the setting of poor occupational hygiene and limited systems for dust control.

1.2 Pneumoconiosis is a deemed disease by Safe Work Australia. However, because it has a long latency period, often not presenting with symptoms until many years after the worker has retired, the relationship between the development of lung disease and its association with work may not be identified.

1.3 The risk of developing CWP is directly related to the magnitude and duration of exposure to coal mine dust.

1.4 The World Health Organisation has set a target to eliminate pneumoconiosis by 2030.

1.5 In the Australian context, new cases of pneumoconiosis were largely thought to have been eradicated although 37 silicosis presentations were recorded in the Safe Work NOSI database (2001-2003). The Dust Diseases Board reported 186 NSW workers receiving compensation for silicosis in the financial year 2002-3.[2]

1.6 Based on currently available data, which is dated and incomplete, it is not possible to ascertain the true extent of pneumoconiosis cases in Australia. In addition to probable under diagnosis, there is inconsistent data collection and reporting of pneumoconiosis cases across Australia.

1.7 There are no national data relating to people diagnosed with pneumoconiosis.

> *The National Occupational Health and Safety Commission maintains a national workers' compensation statistics database, based on the National Data Set for Compensation-based Statistics. This database contains information on new cases of compensable work-related injury and disease, thereby providing some estimation of the incidence of such diseases. Between 2001 and 2003, approximately 750 new cases of pneumoconiosis were reported. Pneumoconiosis is not a large contributor to mortality in Australia. There were 92 deaths in 2003 where pneumoconiosis was identified as the underlying cause of death. All but two of these deaths were of males, probably reflecting the male dominated nature of the occupations, such as mining and manufacturing, in which workers are mostly exposed to dusts and fibres. The average age at death by pneumoconiosis in 2003 was 77 years. The pneumoconiosis death rate has fallen sharply since the early 1950s when the male age-standardised rate peaked at 3.9 deaths per 100,000 population. For the last quarter-century, the death rate has been less than or about one per 100,000 population. The sharp decline and eventual levelling of the death rate is probably due to decreased exposure to hazardous dusts*

[1] *GBD 2013 Mortality and Causes of Death, Collaborators (17 December 2014).* "Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013."

[2] Sourced at : http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/114/OccupationalrespiratoryDiseases_Australia_2006_ArchivePDF.pdf

and fibres in the workplace (as a result of legislation, and improved technology and occupational health practices) and to the increased time lag between exposure and death. [3]

1.8 Previously, voluntary notification schemes for occupational lung disease existed in Victoria and NSW (SABRE schemes), but these had poor response rates and funding difficulties. A national notification scheme is needed with mandatory reporting.

2. Diagnosis and Screening.

2.1 The number of primary practice encounters for CWP is too small to provide an accurate indication of the extent of the condition. Most cases of CWP are likely to be diagnosed during specialist respiratory physician consultations.

2.2 Early diagnosis of CWP is difficult as the first stages of the condition are not associated with any respiratory symptoms. As the condition progresses, patients may present with breathlessness and cough. Symptoms are highly variable and can range from no respiratory complaints at all to severe impairment.

2.3 CWP may progress from a non-symptomatic condition into life-threatening, complicated pneumoconiosis, a debilitating condition, called Progressive Massive Fibrosis (PMF) where large masses of fibrous tissue develop in the lung. The prevalence of PMF after a working lifetime of exposure to coal dust in underground miners was estimated to be between 1.3 and 2.9 % in Australia, based on data from the UK and the USA, respectively.[4] PMF has largely been eradicated due to improvements in dust exposure, yet there has been a resurgence of cases in the USA and new cases described in Europe largely due to changes in dust exposure controls.

2.4 Early detection of asymptomatic CWP is vital as workers who are removed from exposure can be prevented from developing PMF.[5] Screening of all workers exposed to coal mine dust through a well-designed program of chest radiography and respiratory function testing, aims to detect the earliest stage of CWP to reduce the risk of development of chronic lung disease.

2.5 The latency between exposure and development of CWP may be prolonged but decreases with increases in dust inhalation levels. Thus, more intensive screening is required if dust exposures are determined to be above acceptable levels.

2.6 The current international standard for diagnosis and staging is chest radiography using the International Labour Office (ILO) standardised method (ILO 2000 revised classification). However, this system has not been revised for many years, and does not take into account new developments in medical imaging. There are data which suggest screening using low dose computed tomography (CT) may be superior in detecting early disease. A recent study confirmed the greater sensitivity of high-

[3] Sourced at http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442459695
[4]Sourced at http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/114/OccupationalrespiratoryDiseases_Australia_2006_ArchivePDF.pdf

resolution CT (HRCT) scanning in detecting small parenchymal changes, interstitial fibrosis and pleural abnormalities in workers with chest X-rays considered normal (ILO profusion category 0/0).[5]

Wherever possible, we strongly support the mandatory use of screening and the ILO classification checklist for screening of miners. However, the TSANZ is not of the opinion that the images need to be sent off-shore to designated X-ray B-readers. The TSANZ and LFA support the initiative of the Royal Australian and New Zealand College of Radiologists (RANZCR) in the compilation of a register of clinical radiologists who can report to the ILO classification of radiographs of pneumoconiosis.

Emerging technology including low-dose CT may be of more benefit when patients are reviewed by skilled and interested Respiratory Physicians and radiologists.

2.7 Coal miner participation in voluntary screening programs has been estimated to be as low as 40%.[6] The UK has had a very effective mandatory screening programme for almost 100 years and this has resulted in a huge decrease in incident cases. We support implementation of mandatory screening of all workers exposed to coal mine dust.

2.8. International recommendations exist for the screening of workers exposed to coal dust and silica. The World Health Organization (WHO) recommends that all such workers should undergo lifelong health surveillance.[7] They advise that a baseline chest X-ray should be obtained at the start of employment, with a repeat chest X-ray performed after 2–3 years. A screening chest X-ray should then be performed every 2–5 years thereafter. Spirometry and symptom questionnaires should also be obtained annually from the start of employment and should result in prompt referral to specialist respiratory services if any abnormality is detected (WHO). CT scanning is however likely to be more effective in detecting abnormalities, and low dose CT scanning (which minimises radiation exposure for patients) is now widely available throughout Australia.

2.9. The standards for occupational exposure limits for the respirable fraction of coal mine dust standard are inconsistent in Australia. For example, they are set at 2.5mg/m^3 in NSW and 3.0mg/m^3 in Qld. By contrast, the standard in the USA is 2.0mg/m^3. There are also differences in testing protocols between NSW and Qld.[8] We recommend a thorough review of the exposure limits for coal mine dust based on current state of the art knowledge of CWP and review of international standards.

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[5] Meijer E, Tjoe Nij E, Kraus T et al. Pneumoconiosis and emphysema in construction workers: results of HRCT and lung function findings. Occup Environ Med 2011;68:542–546.

[6] G.J. Joy, J.F. Colinet and D.D. Landen. Coal workers' pneumoconiosis prevalence disparity between Australia and the United States sourced at http://www.cdc.gov/niosh/mining/UserFiles/Works/pdfs/cwppd.pdf

[7] World Health Organization, Wagner GR. Screening and Surveillance of Workers Exposed to Mineral Dust. http://www.who.int/occupational_health/publications/oehmineraldust.

[8] G.J. Joy, J.F. Colinet and D.D. Landen. Coal workers' pneumoconiosis prevalence disparity between Australia and the United States sourced at http://www.cdc.gov/niosh/mining/UserFiles/Works/pdfs/cwppd.pdf

3. The Occupational Environment

3.1 Occupational respiratory diseases are challenging to identify and to manage. The best approach is through prevention, by ensuring stringent control of hazards in the workplace. This is important for both workers and employers when an industry is under external financial pressure. Symptomatic workers can fear loss of employment at a time of employment insecurity and mining companies can be under pressure to cut costs – including costs associated with activities that mitigate dust exposure.

3.2 Factors influencing miners' risks include the effectiveness of ventilation and methods of dust suppression. It is therefore highly concerning that the Qld Mines Inspectorate Annual Report in 2014-15 noted up to 70 per cent of Australian mine workers are exposed to cancer-causing substances or agents at work. At the same time, the report notes that the "*significant upward trend over the last two years in average dust exposures for longwall and development mining across most sites. Sixty per cent of mines exposed longwall operators to levels equal to or greater than the adjusted regulatory exposure limit during 2014, compared with 10 per cent in 2012. The average dust exposure for longwall operators at one mine was found to exceed twice the adjusted regulatory exposure limit. The average dust exposure for development operators has risen sharply at a number of mines. In 2012 the average exposure at all mines was below the adjusted regulatory exposure limit, compared with 25 per cent rising well above this limit in 2014. Where exceedances in development activities have occurred they have been significant and average exposures have increased by 250 to 450 per cent between 2012 and 2014.*"[9] These are issues which need to be urgently addressed.

4. Recommendations

The TSANZ and LFA strongly support consistent, nation-wide action to protect workers from dust diseases by (a) enhancement of the current framework for regulation of dust management and (b) surveillance of exposed workers for respiratory disease. This will require adequate and sustainable funding. The framework should include monitoring of adherence to the regulations and outcomes. We make these recommendations particularly in the context of evolving mining technologies, some of which may increase rather than reduce workers' exposure to respirable dusts.

We further advise:

- Mandatory participation of coal miners and workers exposed to respirable free silica in a regular screening program.
- Ongoing discussions in relation to development of the optimal construct of a screening program, including radiological interpretation and respiratory function testing, that is best suited for the Australian context.

[9]Sourced at https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0008/311498/qld-mines-inspectorate-annual-performance-report-2014-15.pdf

- Referral for all coal miners presenting with respiratory symptoms for assessment to a respiratory specialist physician; ideally with qualifications in occupational lung disease.
- Closer surveillance of respirable dust exposures, to coal and silica, that is nationally consistent and based on standardised sampling and screening practices.
- The publication of Australian jurisdictions' current screening practices.
- The development of GP training materials to identify and refer coal miners, including retired workers with respiratory disease, to a respiratory specialist.
- The establishment and mandatory reporting of pneumoconiosis cases of all types (not only CWP) to a national registry.

Approval and Contact Details

This submission has been reviewed and approved by the Board of the Thoracic Society of Australia and New Zealand and the Board of Lung Foundation Australia.

We are happy to expand on any of the matters raised in this submission.

For further information please contact the CEO, Ms Tanya Buchanan at The Thoracic Society of Australia and New Zealand Ltd (TSANZ).

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