

## CHAPTER 4

### HEALTH SERVICES

#### Diagnoses and medical services

There is no curative treatment for the diseases caused by exposure to coal dust and silica, in most cases early removal stops progressing with minimal long term effects.<sup>1</sup>

4.1 Witnesses noted that there were problems with the diagnoses of toxic dust-related ill health, particularly where there is a long latency period, for example with crystalline silica and if other lifestyle factors are involved, for example smoking. The Australian Lawyers Alliance (ALA) commented:

I was surprised, when we surveyed our members, by the number of potential exposures there were. I think it is a hazard and a problem that has largely gone unrecognised because of problems with identification, diagnosis, confusion with other lung conditions – including smoking related conditions and so on – and I do not think we know the extent of the hazard.<sup>2</sup>

Inevitably, in relation to dust diseases, if there is smoking difficulty will arise in determining what the contributions of the parts are. Often that problem, we identify in our submission, leads to a failure to identify the dust disease at all but, rather, have its ascription to tobacco smoking or other problems than to relate it back to the exposure.<sup>3</sup>

4.2 The Australian Council of Trade Unions (ACTU) commented that silicosis is difficult to detect in its early stages because of the absence of symptoms and cited comments by Mr Richard Gun, Senior Lecturer, Occupational and Environmental Health, University of Adelaide, that a miner 'who has been exposed to silica dust for five years can take little comfort from a normal chest film, as it provides no guarantee that they will be free of silicosis in another five years'.<sup>4</sup>

4.3 Professor Trevor Williams commented that while classic silicosis is likely to be accurately diagnosed:

...other consequences of silica exposure such as small airways disease, emphysema, stomach and lung cancer may be attributed to other causes such as asthma or exposure to cigarette smoke when in fact the predominate cause may be silica dust. Patients may also be erroneously diagnosed as

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1 *Submission 21*, p.9 (Coal Services).

2 *Committee Hansard 29.9.05*, p.46 (ALA).

3 *Committee Hansard 29.9.05*, p.50 (ALA).

4 *Submission 28*, p.7 (ACTU).

idiopathic pulmonary fibrosis when their lung disease is due to fine particle dust exposure such as silica.<sup>5</sup>

4.4 In the Regulation Impact Statement for crystalline silica, the National Occupational Health and Safety Commission (NOHSC) noted that health effects arising from respirable crystalline silica (RCS) exposure are not obvious until the manifestation of illness. Once illness is manifest, it is commonly not possible to identify when the RCS exposure occurred and at what level. Problems with attributing adverse health effects to exposure include:

- the familiarity of RCS exposure. People who have worked in dusty environments may not appreciate the risk of exposure to RCS as the adverse health effects are not immediate;
- as with asbestos and mesothelioma, irreversible and cumulative lung damage caused by RCS is hidden, until it manifests as illness; and
- damage to the lungs can worsen after exposure ceases.<sup>6</sup>

4.5 The need for an accurate diagnosis was acknowledged in evidence. The Australian and New Zealand Society of Respiratory Science (ANZSRS) noted that the critical factor is early identification of deteriorating lung function. It stated that:

One of the difficulties in respiratory medicine is that the lungs have a large reserve in function, about 33% that can be eroded before there is any symptomatic evidence of deterioration. There is good evidence linking excess loss of lung function to cumulative dust and fume exposure...Regular lung function testing will provide early detection of loss of function well before the results fall to 80% of predicted. This is important for people with lung function at the high end of the reference range for whom a 20% fall is very significant indeed.<sup>7</sup>

4.6 Coals Services stated that in the NSW coal mining industry, accurate diagnosis of disease resulting from exposure to toxic dusts is via the International Labour Organisation's international X-ray interpretation system.<sup>8</sup> Cement Concrete and Aggregates Australia (CCAA) noted it is accepted and recommended internationally that the earliest and best indicators of any signs of effects of RCS relate to scar tissue in the lung detectable by chest X-ray. Lung function tests can also be used to measure the effect of silica in the lungs. In the early stages of silicosis, the diagnosis may be uncertain, even with the extensive medical diagnostic facilities available today such as computerised tomography (CAT scanning) and lung biopsy. These services are widely available and used in Australia. However, CCAA did not

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5 *Submission 7*, p.2 (Prof T Williams).

6 NOHSC, *Regulation Impact Statement on the Proposed Amendments to the National Exposure Standards for Crystalline Silica*, October 2004, p.20.

7 *Submission 9*, p.6 (ANZSRS).

8 *Submission 21*, p.9 (Coal Services).

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see that such in-depth and invasive techniques as being appropriate for health surveillance of workers.

4.7 CCAA submitted that:

...the only rational approach to diagnosis of silicosis and other pneumoconioses (occupational dust diseases) is to follow established international criteria for these diagnoses. To do otherwise would be to prevent any contribution of Australian information to international efforts to control occupational lung disease and distort Australian health information. Australia has been an important contributor to work in this area of UN agencies such as the International Labour Organisation and World Health Organisation.<sup>9</sup>

CCAA commented that the present international recommendations on diagnosis of silicosis and screening of workers potentially exposed to silica dust are appropriate for use in Australia. These are presently established in Australia under Hazardous Substances Regulations and NOHSC Guidelines on Health Surveillance (1995). These are consistent with comparable economies including the USA, UK and Western Europe. CCAA also stated that as silicosis and other toxic dust diseases are at such low levels in Australia, that no additional or special facilities are warranted in the context of public health priorities.<sup>10</sup>

4.8 Witnesses pointed out that as some patients would not be accurately diagnosed with diseases arising from toxic dust, further research is required to fully understand the extent of diseases caused by fine dust.<sup>11</sup> The ACTU recommended that government adequately fund research into improving medical tests for dust diseases, particularly silica and asbestos related diseases, with a focus on early detection and commented:

At the moment I think that we struggle. We do not have research into early detection, nor do we have enough research dollars going towards looking for cures. They are very difficult and long-term projects, but the longer we leave it the greater the number of workers who will die, so money needs to be pushed into those areas, especially if you consider the long latency period of toxic dust diseases.<sup>12</sup>

4.9 The Construction, Forestry, Mining and Energy Union (CFMEU) noted that the medical profession was for many years reluctant to accept white asbestos (Chrysotile) as a carcinogen or cause of lung disease. The CFMEU saw an urgent

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9 *Submission 14*, p.6 (CCAA).

10 *Submission 14*, p.6 (CCAA).

11 *Submission 7*, p.2 (Professor T Williams).

12 *Committee Hansard 29.9.05*, p.88 (ACTU).

need for an effective education program to ensure this is not repeated with crystalline silica.<sup>13</sup>

4.10 Dr Thomas Faunce, Senior Lecturer at the Medical School and Law Faculty, Australian National University stated:

The message that is coming through from people like Richard [White], if I could break it down, is that there are potentially enormous numbers of Australians out there who have something wrong with them. They know something is wrong with them, they know they have worked in an industry where they have been exposed to something, whether it is silica or nanotechnology in the future, but they just do not know where to go. They go to the GPs, but the GPs do not have the expertise to diagnose it so they pass them off and say, 'You've got a bit of smoking,' a bit like the High Court did. Richard is saying that you want some centre where people know that, if they have something like this, if they have a history of industrial exposure, they can go there and get to the bottom of the problem quickly. I have mentioned enforcement standards and the importance of having medical centres of excellence.<sup>14</sup>

### **Employee health surveillance**

4.11 There was discussion in evidence on the need for health surveillance of employees exposed to toxic dust. Witnesses noted the importance of monitoring of workers who are exposed to toxic dust so that loss of lung function can be detected before symptoms are noticeable.<sup>15</sup> The ANZSRS commented:

...monitoring should be part and parcel of everybody going into an environment where there is a risk of exposure. There is no point waiting until exposure has occurred and deleterious changes have occurred. It is too late. We have to monitor everybody and get measurements on people when they are fit and healthy, not just when they are starting to get sick. The starting point is very critical.<sup>16</sup>

4.12 WHS noted that research has indicated that workers exposed to respirable crystalline silica who are regularly monitored present, on average, for compensation at a less severe stage of disease.<sup>17</sup>

4.13 Mr Bruce Ham noted the need for a register of workers and to have them undertake pre-employment and periodic health assessments: 'this does not prevent

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13 *Submission 13*, p.3 (CFMEU).

14 *Committee Hansard* p.39 (Dr Faunce).

15 *Committee Hansard* 29.9.05, p.68 (ANZSRS).

16 *Committee Hansard* 29.9.05, p.68 (ANZSRS).

17 *Submission 26*, p.3 (WHS).

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disease, but permits some understanding of the occurrence of disease and progression of disease in current workers'.<sup>18</sup>

4.14 The ACTU supported regular screening in industries where workers are exposed to toxic dust and suggested that as well as a lung capacity test, chest X-rays every two years of workers in those industries should be considered.<sup>19</sup> The ACTU also raised particular concerns about practices in sandblasting and recommended that government establish a screening program for all former workers from the sandblasting industry for dust diseases at no cost to the workers:

I think that the government and business need to take the lead on this and provide those workers with, if not peace of mind, at least detection of the disease if it has affected them. We are talking about thousands of workers here. I would suggest that it needs to be a government initiative and it needs to be done now.<sup>20</sup>

4.15 The States and Territories have all adopted hazardous substances regulations based on the national model regulations produced by the Commonwealth in 1994. The model regulations set out the requirements for health surveillance where:

- an employee is at risk from one of the 16 listed hazardous substances (including asbestos, crystalline silica and vinyl chloride); and
- an employee could be exposed to a hazardous substance and there is a disease or health effect that can be caused by that exposure; there is a reasonable likelihood that the disease or health effect could occur under the conditions of work; and there are valid ways of detecting the disease or health effect.

4.16 The health surveillance must be performed under the supervision of a legally qualified medical practitioner who is adequately trained in the tests or procedures necessary. In the case of the listed hazardous substances, the type of surveillance is specified including medical tests. For example, the requirements for crystalline silica are occupational and medical history, demographic data, completion of a standardised respiratory questionnaire, standardised respiratory function test and chest X-ray. For those working with asbestos, the health surveillance is to be conducted every two years and every five years for crystalline silica. The employee is advised of the results and the health surveillance records must be kept by the employer as a confidential record for at least 30 years.<sup>21</sup>

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18 *Submission 22*, p.4 (Mr B Ham).

19 *Committee Hansard 29.9.05*, p.94 (ACTU).

20 *Committee Hansard 29.9.05*, p.88 (ACTU).

21 NOHSC, *National Model Regulations for the Control of Workplace Hazardous Substances*, [NOHSC: 1005 (1994)]; *Guidelines for Health Surveillance*, [NOHSC: 7039(1995)]. See also *Committee Hansard 10.11.05*, p.9 (DEWR).

4.17 The Department of Employment and Workplace Relations (DEWR) noted that when the health surveillance guidelines were first released NOHSC worked with physicians to make them aware that the information was available.<sup>22</sup>

4.18 In some industries health surveillance for workers coming into contact with hazardous substances is well established. In NSW and Queensland there is provision for a centralised health surveillance program for the coal mining industry.<sup>23</sup> For example, Coal Services noted that periodic medicals are undertaken about every three to five years, and at every second medical an X-ray is taken for coal miners in NSW. Coal Services pointed to the success of their program by referring to the USA where, although the threshold level for coal dust is lower than in New South Wales, the incidence of pneumoconiosis is costing the American coal industry \$US1 billion per annum in workers' compensation.<sup>24</sup>

4.19 In NSW, the Dust Diseases Board is able to test for a range of possible diseases including asbestosis and silicosis. The service is provided free of charge to NSW workers who fall under the Dust Diseases Board compensation protocol. In addition, the Board offers an on-going commercial screening service to industry to facilitate compliance with occupational health and safety legislation. Workers can be screened at the Respiratory Assessment Centre in Sydney or on the Lung Bus. The Lung Bus provides respiratory assessment services 'on-site' for up to 64 employees per day.<sup>25</sup>

4.20 CCAA also stated that the cement, concrete and aggregates industry also conducted regular screening as required by regulation. The industry tended to undertake screening four yearly rather than five yearly to ensure that all employees are examined. However, CCAA went on to state that the five year time frame is based on the national exposure standards. If an employee was in an industry where there was very high exposure, for example, sandblasting with exposures around 15 or 20 mg/m<sup>3</sup> the worker may need an X-ray every six months.<sup>26</sup>

4.21 The Minerals Council of Australia (MCA) informed the Committee that companies generally considered legislative requirements to be the minimum and most companies completed additional health assessments.<sup>27</sup>

4.22 However, in other sectors, for example the building industry, workers are not likely to be regularly tested or do not have a centralised scheme for the data collected. The problem is exacerbated as in some industries workers change employers

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22 *Committee Hansard* 10.11.05, p.9 (DEWR).

23 *Submission* 23, p.3 (MCA).

24 *Committee Hansard* 30.9.05, pp.52, 55 (Coal Services).

25 *Submission* 32, p.5 (Dust Diseases Board of NSW).

26 *Committee Hansard* 30.9.05, pp.8, 11 (CCAA).

27 *Submission* 23, p.4 (MCA).

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frequently. The Australian Manufacturing Workers Union (AMWU) commented that while certain regulations require that health surveillance be carried out, it is 'patchy and has its difficulties, in that it is only related to a couple of particular issues, like asbestos and if the silica levels are up at a particular rate'.<sup>28</sup>

4.23 A further problem noted by the CFMEU is the lack of a central repository for the records so that they could be accessed easily.<sup>29</sup> The Minerals Council of Australia also noted the mining industry had identified a need for a central data scheme so that data can be analysed to establish trends and allow following of individuals. The MCA further commented:

There is limited exposure data held electronically and little or no correlation between health information and exposure data either at the Government or company level. The limited exposure data that is currently collected in an electronic dataset makes it difficult to establish a relationship between occupational exposure and disease particularly when there may be lifestyle factors that also affect the likelihood of disease. The data currently held in electronic data sets limits both the following of individuals and the identification of trends. If electronic data capture is to be widely established, consideration needs to be given to privacy concerns, costs and resources and the potential use of information for litigation.<sup>30</sup>

4.24 The ANZSRS also commented on the need for high quality testing and monitoring. Those doing the testing need to be highly trained and the equipment used needed to be regularly checked and calibrated for quality assurance. However, the Society indicated that 'it is well established that the quality of spirometry performed in the primary care sector is not good'. The ANZSRS also recommended that lung function reports contain certain information including flow/volume and volume/time graphics and must be of sufficient size that all information is easily read and can form part of a permanent record.<sup>31</sup> The ANZSRS concluded:

It is in the area of serial monitoring that quality assurance plays a very critical role. The physician reviewing the test results must be able to have absolute confidence that the tests have been performed to the same standard every time. The data quality must be independent of any changes in equipment, changes of staff or the time since the person doing the testing has had refresher training. Only with these guarantees can the physician concerned know that any changes are due to changes in the patient's profile. Furthermore, it is the serial changes that are crucial to successful early detection and management of any disease process that may result from workplace exposure. Negative trends can be apparent even though the absolute measures are still within the reference ranges.

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28 *Committee Hansard* 29.9.05, p.82 (AMWU).

29 *Committee Hansard* 30.9.05, p.30 (CFMEU).

30 *Submission* 23, p.4 (MCA).

31 *Submission* 9, p.7; *Committee Hansard* 29.9.05, p.68 (ANZSRS).

The need for consistency of approach is becoming increasingly important as the workforce becomes more mobile. Data from one area should be able to be compared with data from another area in the interest of gaining long term trending and separating pre-existing trends from current trends.<sup>32</sup>

4.25 Witnesses commented that pre-employment screening was important. Pre-employment screening was necessary to establish a baseline for the employee and to establish if there are any existing conditions that may make an employee more susceptible than usual to hazards in the workplace.<sup>33</sup> Witnesses advocated the need for a lung function test and a chest X-ray. The ANZSRS commented that spirometry should be seriously considered as a minimum in pre-employment screening where there are work place exposure risks. The ANZSRS added that pre-employment spirometry would also help address the questions of contributions to airway and parenchymal lung dysfunction due to volitional practices, such as smoking, from workplace exposure to dusts.<sup>34</sup>

4.26 While acknowledging the need for health monitoring, the AMWU warned that too much effort on health surveillance often means that the focus on control at source and stopping the problem before it affects employees is lost:

The problem that may well be showing up in certain sectors in terms of silicosis is not because we did not know the problem was there. We have known about silicosis...for over 50 years. The concern is that if you put a lot of effort into surveillance but then do nothing about it, what is the point? You are just picking up a lot of 'had it' lungs.<sup>35</sup>

4.27 Mr John Edwards raised with the Committee the problems of detecting Chronic Beryllium Disease (CBD). Mr Edwards noted that blood testing using the Beryllium Blood Lymphocyte Proliferation Test (BELPT) had only recently become available at the John Hunter Hospital in Newcastle. Some airline workers commenced testing in mid February 2006.<sup>36</sup>

### ***Employee records***

4.28 A number of witnesses discussed the issue of employee records. CCAA noted that under the hazardous substances regulations the employer is responsible for keeping the records. However, records are made available to workers in the concrete industry on request.<sup>37</sup> Coal Services also commented that it held the records of health

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32 *Submission 9*, p.8 (ANZSRS).

33 See for example, *Committee Hansard 30.9.05*, p.8 (CCAA); p.32 (CFMEU); p.53 (Coal Services).

34 *Submission 9*, p.5 (ANZSRS).

35 *Committee Hansard 29.9.05*, p.82 (AMWU).

36 *Submission 45*, p.2 (Mr J Edwards).

37 *Committee Hansard 30.9.05*, p.10 (CCAA).



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testing on all coal miners who enter the NSW coal mining industry and those who present for health surveillance screening assessments:

We hold onto those X-rays, but we make them available. If an individual wants to have access to them, say, to discuss them with his GP, we provide them. The reason we hang onto them is that people in the coalmining industry tend not to leave. They get paid a lot of money, and it is very difficult for them to earn as much money doing something else. So if we are going to measure the health of an individual over a period of time, we need access to these X-rays to contrast where they were 10 years ago with where they are today.<sup>38</sup>

4.29 However, some witnesses suggested that employees should hold their own records. The ANZSRS, for example commented:

If they change job or anything else, that data goes with them. It is serial history. With the increasing mobility in the work force, that is very important.<sup>39</sup>

## Conclusions

4.30 The early diagnosis of dust-related disease is difficult. Dust-related disease may be confused with other lung conditions or may be attributed to lifestyle factors such as smoking. There also appears to have been slow acceptance that exposure to crystalline silica causes health conditions other than silicosis. However, early diagnosis is important to limiting the extent of disease and ensuring that adequate treatment is provided.

4.31 While there are guidelines in place to ensure that employees working with toxic dust receive adequate and timely health checks, it appears that not all industries comply with this standard. Some employees, particularly in the non-mining industries or those who work for small companies, may not receive the level of health surveillance that their occupational exposure to toxic dust warrants.

4.32 A further problem highlighted in evidence was the need for accurate testing as without quality assurance programs for testing, the results of monitoring, particularly over time, may be questionable and of little value to the worker and their treating physician. Lung function tests should also be performed on a regular basis so that deterioration can be identified as early as possible.

4.33 The Committee considers that adequate medical services are available for those suffering the effects of toxic dust-related disease. However, the Committee considers that the particular problems of exposure to toxic dust are not well understood by medical practitioners and that subsequently not all workers with dust-related disease will be identified.

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38 *Committee Hansard* 30.9.05, p.55 (Coal Services); see also *Submission* 21, p.9 (Coal Services).

39 *Committee Hansard* 29.9.05, p.68 (ANZSRS).

**Recommendation 3**

**4.34 That the Australian Safety and Compensation Council, in conjunction with the Heads of Workplace Safety Authorities, consider mechanisms to improve health surveillance of employees, particularly those exposed to toxic dust.**

**Recommendation 4**

**4.35 That the Australian Safety and Compensation Council promote the dissemination of information concerning the health effects of exposure to toxic dust to the medical profession.**

**Recommendation 5**

**4.36 That the Australian Safety and Compensation Council examine the need for improvements in testing regimes for lung disease associated with exposure to toxic dust including the training of those conducting tests and equipment requirements.**