CHAPTER 3

THE NATURE AND EXTENT OF ILLNESS AND DISABILITY

3.1 The Committee was informed that the true nature and extent of illness, disability and death due to toxic dust was difficult to ascertain. Data sources rely primarily on workers' compensation data which is limited in scope. While workers in some industries particularly the mining industry are monitored regularly, this is not the case for all industries. The Construction, Forestry, Mining and Energy Union (CFMEU) commented that the transient nature of the construction industry, coupled with the possible delay in developing symptoms, is an impediment to the accurate compilation of statistics. Many workers move on to other industries and in some cases lung disease is attributed to other causes for example, smoking.[1]

Data sources

3.2 Under the National Occupational Health and Safety Data Action Plan, the National Occupational Health and Safety Commission (NOHSC) maintain national occupational health and safety data. The primary data source used in Australia is the National Dataset for Compensation-based Statistics (NDS) which consists of accepted workers' compensation claims. Datasets are also maintained on notified work-related fatalities and voluntary notifications of mesothelioma cases. Other data sources include the National Hospital Morbidity data, the National Coronial Information System, national surveys of households run by the Australian Bureau of Statistics and surveys of GPs.

3.3 The Department of Employment and Workplace Relations (DEWR) noted that a review of available data sources shows that there is limited information on the extent of work-related respiratory disease in Australia. Estimations of occupational contribution to respiratory disease in society are difficult because respiratory disease can be attributable to other non-occupational factors, unless it is specifically related to a unique workplace causative factor or it can be differentiated by its clinical features. The information that is available comes from a variety of sources, including published studies; workers' compensation claims data, the Dust Diseases Board (DDB) of NSW and the two Surveillance of Australian Workplace-Based Respiratory Events (SABRE) programs in Victoria and NSW. Published general practitioner and hospital presentation data sources do not provide useable information, because respiratory disease cases are included in categories that also contain such diseases not related to work.[2]

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

2 *Submission* 11, p.5 (DEWR).

3.4 The Dust Diseases Board of NSW maintains statistical information gathered from and about individuals who have attended a medical screening or who have applied for compensation. Information includes:

- new certificates of disablement issued categorised by dust disease;
- deaths categorised by causation and average age;
- statistics relating to mesothelioma; and
- medical data on individuals such as x-rays, lung function tests etc.[3]

3.5 The SABRE project is a voluntary, anonymous notification scheme of occupational lung diseases. It has been operating in Tasmania and Victoria since 1997 and NSW since 2001. It is supported by the Dust Diseases Board of NSW and is being undertaken in collaboration with the team in London who developed the Surveillance of Work-related Occupational Respiratory Disease (SWORD) scheme. It also has links with New Zealand. The aim of the SABRE project is to determine the incidence of work-related respiratory disease and inhalation injury in NSW and Victoria and to disseminate information about the burden of occupational respiratory disease.[4]

3.6 Other witnesses commented on the lack of comparability of datasets and the reliance on workers' compensation data. The Australian New Zealand Society for Respiratory Science (ANZSRS) commented that the need for consistency of approach in collecting data is becoming increasingly important as the workforce becomes more mobile. Comparability of data would be in the interest of gaining long term trending and separating pre-existing trends from current trends.[5] WorkSafe Western Australia informed the Committee that it recognised the difficulties associated with collecting reliable data associated with toxic dust exposure, and it is working with NOHSC to improve the availability and quality of data according to the NOHS Data Action Plan.[6]

3.7 Workplace Health and Safety Queensland (WHS) commented that, in undertaking research for its submission to the inquiry, it had found it difficult to access data as there was a 'paucity of information of significance held in a readily accessible form by any organisation, including the State regulator' in all but the mining industry:

> ...there have been no identifiable programs for routine collection of exposure data of the kind which will bring great substance to these discussions…Industry, probably for reasons related to competition, has not been motivated or sufficiently organised to fund and set up any scheme for either data collection or shared data management. This situation applies not only to those in dusty industries, but to almost all fields where exposure

3 *Submission* 32, p.6 (Dust Diseases Board of NSW).

4 *Submission* 32, p.7 (Dust Diseases Board of NSW); *Submission* 28, Additional Information (ACTU).

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

6 *Submission* 12, p.2 (WorkSafe WA).

> occurs to hazardous substances with both short and long term health consequences, but particularly long term exposures with chronic diseases. Only in mining has there been a long standing arrangement of routinely collecting dust exposure data by government bodies.[7]

3.8 WHS went on to state that only government seems to be in a position to command the collection and analysis of data, however:

> Efforts to establish such collections of data in Australia on a national basis through either the National Institute for Occupational Health and Safety or the NOHSC have come to nought, because of their lack of continuity. Impartiality and independence in the national arena are now new considerations. In the case of exposures to respirable crystalline silica, the time frame must be many decades long. The Health and Safety Executive in the UK has operated a mechanism into which such critical data from across the nation can be collected and analysed.[8]

3.9 The Minerals Council of Australia (MCA) also noted that workers' compensation data lacked detail and timeliness. In addition, a worker needs to be off work for five days to be included in the workers' compensation data, whereas the minerals industry records one day off in its statistics. MCA commented that there is no central database to facilitate analysis, to establish trends or to track the health of workers as they move from one company to another, or to track any disease through their life. The data that are available are often not available in electronic form, so analysis is not easy:

> We believe that the focus has been very much on collection rather than on analysis. In some organisations that do collect data, such as government agencies, there are cupboards full of material but no resources to analyse it.[9]

3.10 MCA also referred to the difficulties of tracking the health of workers and commented that HealthConnect could be a useful means of monitoring the health of workers in certain industries. HealthConnect collects, stores, and exchanges health information under strict privacy safeguards. With amendments to include information on occupation, MCA suggested that tracking people after they had left the industry could be possible.[10]

3.11 The Australia Institute of Occupational Hygienists (AIOH) pointed to the Health Watch study of workers in the Australian oil industry. This is an independent epidemiology program which commenced in 1980. The program studies the health of about 18,000 past and present employees in the petroleum (oil and gas) industry. The Health Watch study could be adapted as a model to study the incidence of occupational disease as a consequence of exposure to toxic dusts in the workplace

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7 *Submission* 26, p.26 (WHS).

8 *Submission* 26, p.26 (WHS).

9 *Committee Hansard* 10.11.05, p.15 (MCA).

10 *Committee Hansard* 10.10.05, pp.16,18 (MCA).

(such as exposure to silica in sandblasters). However, AIOH also commented that the oil industry in Australia is made up of just a few large, well-resourced companies and an active industry association that are both able to draw upon occupational hygienists, occupational physicians and epidemiologists. Most Australians, however, are employed in small to medium sized enterprises, which do not have access to these levels of resources and as a consequence, it is difficult to characterise the precise incidence and prevalence of dust related disease in the general working population.[11]

3.12 Mr Bruce Ham commented that work had been undertaken to examine the possibility of a National Mining Health Database. The study concluded that the current large mining health databases were very similar in structure and had potential to be combined, especially for research purposes. However, the existing legislative structures made a central database unlikely. Mr Ham noted that the research potential of using existing databases was demonstrated in a joint New South Wales Heart Disease risk project. A feature of this research was the matching of the register of miners with the Deaths Index held by the Australian Institute of Health and Welfare. This has provided an important dataset for further health outcomes research.[12]

3.13 The Australian Council of Trade Unions (ACTU) and CFMEU also highlighted the need for improved data sources. The ACTU recommended improvements in data collection across the jurisdictions, including establishing a national medical registry of dust diseases cases. The ACTU commented that one possible means was to make SABRE compulsory rather than relying on workers' compensation data:

> We need to look at improving the data collection; compulsory reporting by the states, the jurisdictions, to this scheme; and perhaps expanding it to the hospitals and GPs and other groups that deal on a daily basis with people who have contracted airborne diseases. Until that happens we do not get the right figures and therefore we do not know how big this problem is and we cannot work out a good strategy, so that is essential.[13]

3.14 The Dust Diseases Board noted that:

> The SABRE Scheme plays an important role in determining which occupations and industries are likely to cause disease and why. Once known, positive strategies can be developed to prevent lung diseases in these industries and occupations. The Scheme has the potential to decrease the incidence of occupational lung disease and to be of significant public health benefit.[14]

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11 *Submission* 20, pp.21-22 (AIOH).

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

13 *Committee Hansard* 29.9.05, p.89 (ACTU); 30.9.05, p.25 (CFMEU); see also *Submission* 28, p.8 (ACTU).

14 Dust Diseases Board of NSW, *A Guide to Compensated Occupational Lung Disease in NSW*, p.13.

Incidence of disease related to toxic dust

3.15 WHS stated that during the last 100 years, exposure to dust has resulted in dust diseases which, in Australia, have claimed thousands of lives and caused some incapacity and suffering to tens of thousands of others. During the same period, control of dust exposures following increasingly stringent dust standards has, with the noted exception of asbestos, reduced present and future incidence of dust disease to a tiny fraction of that previously observed. WHS commented that the coal mining industry best illustrates the success of regulation with the prevalence of coalworkers' pneumoconiosis declining from as high as 27 per cent before World War II and 16 per cent in 1948 to virtually non-existent levels by the turn of the 21st century.[15]

3.16 DEWR provided the Committee with an overview of the estimates of the incidence of respiratory disease in Australia. Population based estimates in Australia are used to indicate the magnitude of premature mortality induced by exposure to hazardous substances in the workforce. The estimated age-adjusted mortality rates (expressed in number of deaths per million per year) were estimated to be 5 and 2 for asthma, and 8 and 0 for dust diseases, respectively in men and in women. However, these estimates only addressed mortality, not morbidity.[16]

3.17 Workers' compensation-based estimates of rates of work-related respiratory disease are limited as the information published at a national level only includes cases that result in five or more days off work. A proportion of respiratory disease cases will not be formally diagnosed or will occur in workers after they leave work, in which case the connection to work is unlikely to be established and a workers' compensation claim is unlikely to be made. Also, a sizeable minority of workers has been shown not to be represented in Australian workers' compensation statistics.[17]

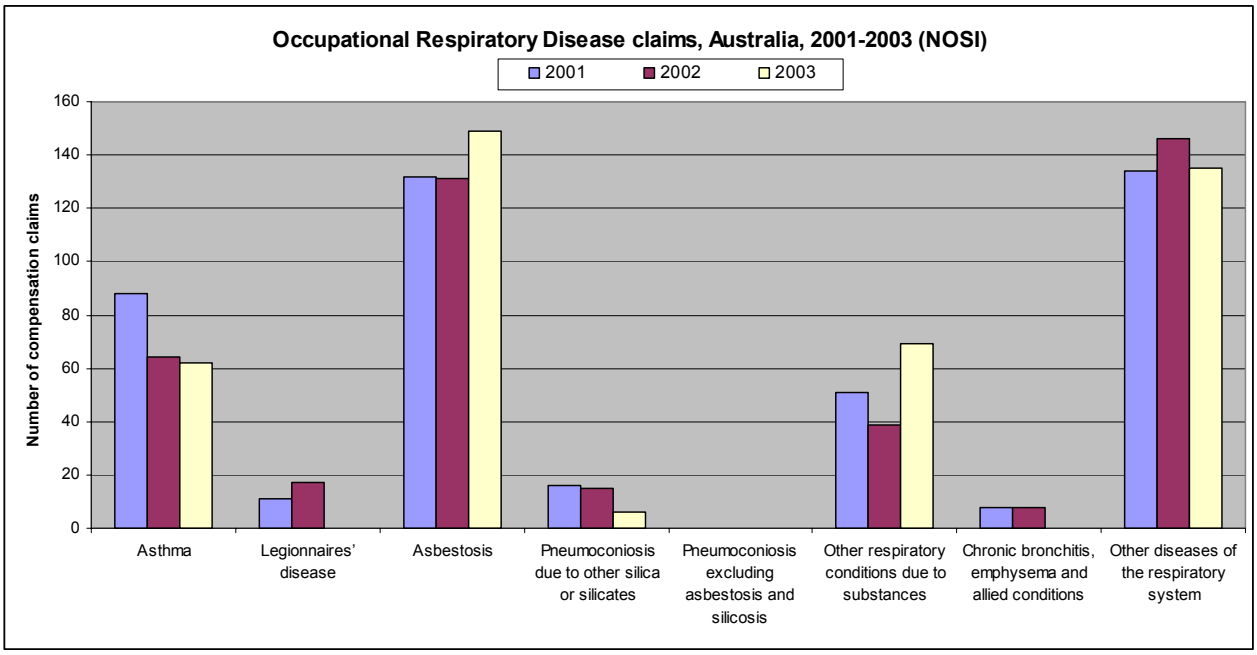
3.18 Figure 3.1 shows the numbers of cases of accepted claims for occupational respiratory diseases in Australia over the three year period of 2001-2003.

15 *Submission* 26, p.10 (WHS).

16 *Submission* 11, p.5 (DEWR).

17 *Submission* 11, p.6 (DEWR).

Figure 3.1. Occupational Respiratory Disease claims, Australia, 2001-2003 (NOSI)



Source: Submission 11, p.6 (DEWR).

3.19 The most common occupational respiratory disease is asbestosis, followed by asthma. Pneumoconiosis and chronic bronchitis are much less common. Two of the more common categories are 'Other respiratory conditions due to substances' and 'Other diseases of respiratory system'. DEWR also provided the Committee with a breakdown of 'other respiratory conditions due to substances' showing the number of accepted compensation claims against a causal chemical agent. For example, industrial fumes and gases had 225 accepted claims from 1996-97 to 2003-04 while there were 635 claims for 'dust not elsewhere classified'.[18]

3.20 The three industries with higher disease claims are manufacturing followed by education, and health and community services. In manufacturing, asbestos related-disease is the main disease group (233 claims), with asthma in the second group (59 claims). In education and health and community services, claims are mainly in the 'Other diseases of the respiratory system' group. When considering occupation groups, the higher number of claims occur in professionals, associate professionals and labourers respectively. Most claims occur in 'Other diseases of the respiratory system' for professionals, while most claims for associate professionals and labourers are asbestos-related disease.[19]

3.21 Table 3.1 shows the number of workers and dependents who received compensation under the NSW dust diseases scheme during 2004-05.

18 *Submission* 11, Additional information, 19.12.05 (DEWR).

19 *Submission* 11, p.6 (DEWR).

Table 3.1: Compensation payments during 2004-05 by disease for the NSW dust diseases scheme

Disease	Workers	Dependants	TOTAL
Asbestosis	230	308	**538**
Silicosis	188	276	**464**
Byssinosis	2	7	**9**
Hard Metal Pneumoconiosis	3	2	**5**
Farmer's Lung	0	1	**1**
Aluminosis	2	1	**3**
Bagassosis	0	0	**1**
Asbestos Related Pleural Disease (ARPD)	449	112	**561**
Silico-Tuberculosis	1	9	**10**
Asbestosis/ARPD	63	23	**86**
Talcosis	0	1	**1**
Silico-asbestosis	4	2	**6**
Mesothelioma	226	1244	**1470**
Lung cancer associated with silicosis	1	0	**1**
Silicosis/ARPD	2	0	**2**
Carcinoma of the Lung*	20	85	**105**
Silica/Lung cancer	5	16	**21**
Silicosis/mixed dust fibrosis	0	1	**1**
Plueral plaques & pain	1	0	**1**
Mixed dust with pneumoconiosis	1	1	**2**
Lung cancer in association with asbestos exposure	12	100	**112**
Peritoneal mesothelioma	16	46	**62**
TOTAL	**1226**	**2235**	**3461**

* includes Hexavalent chromium associated lung cancer, asbestosis/lung cancer & ARDP/lung cancer

Source: Dust Diseases Board of NSW, *Making a Difference Annual Report 2004/2005*, Appendix 5, p.70.

3.22 Table 3.2 shows data published by the Dust Diseases Board of NSW on deaths by causation and average age since the inception of the Workers' Compensation (Dust Diseases) Act on 29 February 1968.

Table 3.2: Deaths according to disease for the NSW dust diseases scheme since 1968

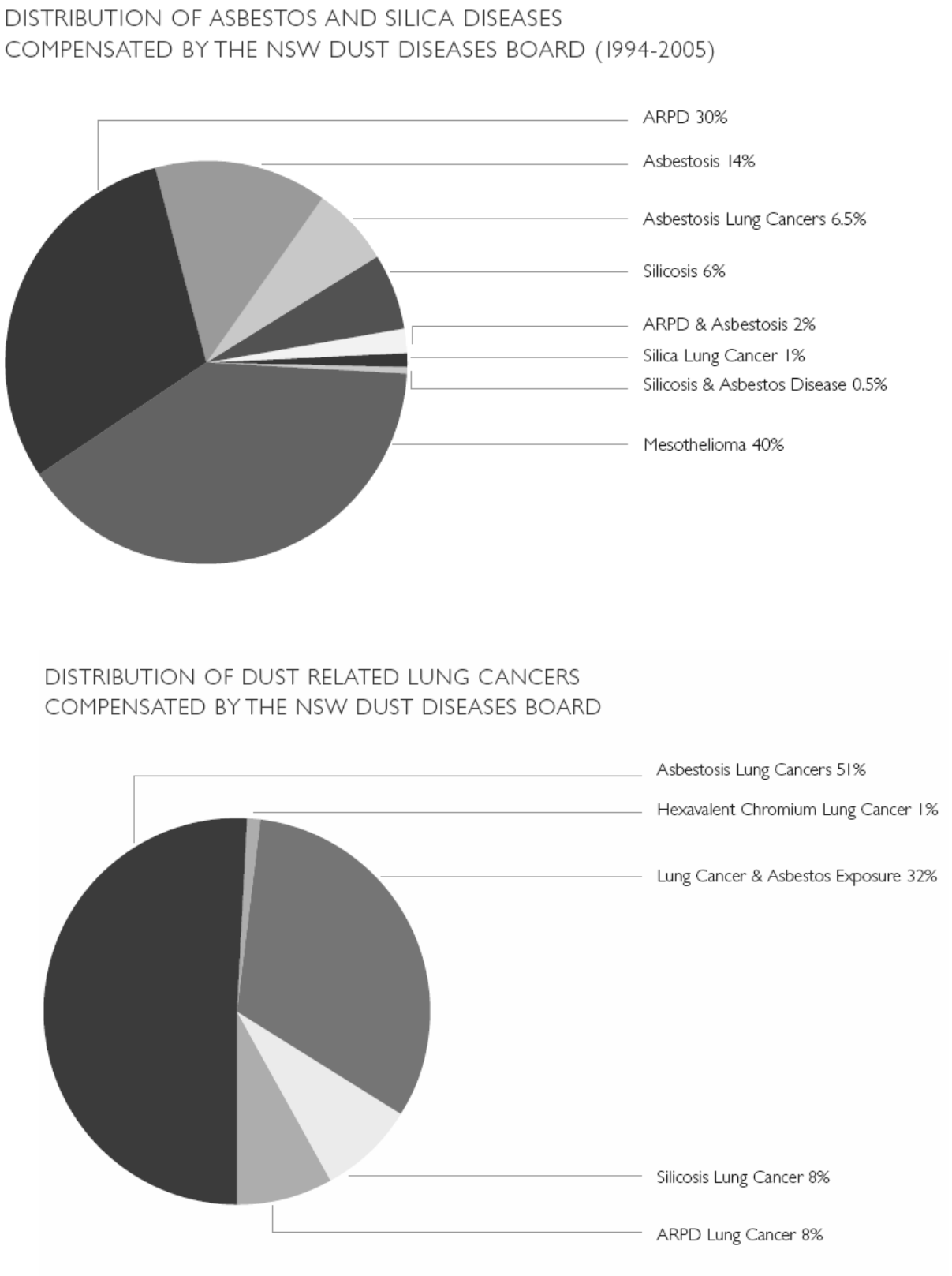
Disease	Death due to dust	Death not due to dust	Total	Average age of death due to dust
Asbestosis	402	241	643	72.57
Silicosis	435	944	1 379	70.98
Byssinosis	11	19	30	71.83
Hard Metal Pneumoconiosis	2	3	5	63.43
Farmer's Lung	1	2	3	61.17
Aluminosis	0	1	1	-
Bagassosis	0	1	1	-
ARPD	168	89	257	75.70
Silico-Tuberculosis	8	12	20	62.80
Asbestosis/ARPD	32	25	57	76.83
Emery Pneumoconiosis	0	1	1	-
Talcosis	1	2	3	65.74
Silico-asbestosis	10	4	14	67.31
Mesothelimoa	1 812	8	1 820	67.98
Peritoneal Mesothelimoa	2	0	2	63.45
Carcinoma of the Lung*	213	2	215	68.69
Silicosis/Lung Cancer	25	0	25	71.41
Silicosis/Mixed Dust Fibrosis	3	0	3	72.60
Mixed Dust Pneumoconiosis	1	0	1	61.47
Lung Cancer in Association with Asbestos Exposure	109	4	113	68.35
TOTAL	**3 235**	**1 358**	**4 593**	**68.37**

* includes Hexavalent Chromium Associated Lung Cancer, Asbestosis/Lung Cancer and ARPD/Lung Cancer

Source: Dust Diseases Board of NSW, *Making a Difference Annual Report 2004/2005*, Appendix 5, p.70.

3.23 The Dust Diseases Board also provides information on the proportion of compensation payments made for asbestos and silica diseases and all lung diseases. Figure 3.1 shows that asbestos-related compensation accounted for 90 per cent of the compensation payments made by the Board from 1994 to 2005. Silicosis lung cancer accounted for 8 per cent of the dust related lung cancers compensated by the Board in the same period.

Figure 3.1: NSW Dust Diseases Board Compensation payments 1994-2005



Source: Dust Diseases Board of NSW, *A Guide to Compensated Occupational Lung Disease in NSW,* p.15.

3.24 Information from the Dust Diseases Board only shows data for cases where compensation has been paid. Therefore, these figures do not include other lung diseases or other diseases caused by occupational exposure to dust, or unsuccessful cases for compensation.

3.25 A further source of data is the SABRE notification scheme. For Victoria and Tasmania, the most common condition reported by physicians is asthma (33 per cent of occupation respiratory events reported). The asthma incidence rate is 30.9 per million workers per year with a 2.4 times higher incidence rate in men compared to women. However, DEWR noted that SABRE in Victoria and NSW has incomplete coverage of physicians who see cases. The two most commonly reported causative agents for asthma in the SABRE (Victoria) notification scheme are wood dust and isocyanates (13.5 per cent and 5.8 per cent respectively). The finding of asthma as the most commonly reported occupational respiratory disease is similar to that found in overseas physician notification schemes. The next most commonly reported condition in Victoria and Tasmania is non-malignant pleural disease from asbestos exposure.[20]

3.26 DEWR also provided rates compensation and hospitalisation arising from inorganic dusts other than asbestos. For pneumoconioses other than asbestos, there was a decrease in the hospitalisation rate. This may be because the curves reflect different time periods in the history of the disease; or there may be better treatment available, which means less hospitalisation. In 2001-02 there were 72 hospitalisations, with 20 workers' compensation cases accepted. The hospitalisation numbers may include the same individual presenting for multiple hospitalisation during the year. Workers' compensation cases slightly increased, from 1.8 cases per million employed in 1998–1999 to 2.2 cases per million employed in 2001-02.[21]

3.27 While asbestos exposure in the workplace has decreased over the last 40 years, asbestos related disease has a period of long latency and it has been estimated that the incidence of asbestos related disease will continue for the next ten to fifteen years. Data provided by DEWR showed that asbestos-related workers' compensation cases increased from 10.1 cases per million employees in 1998-99 to 16.0 cases per million employees in 2001-02. Compensation cases for mesothelioma during the same period increased from 5.4 cases per million to employees to 7.4 cases. Hospitalisations for mesothelioma were higher.[22]

Incidence of disease related to exposure to respirable crystalline silica

3.28 Submissions noted that health problems associated with exposure to crystalline silica dust have been under investigation and control in Australia for more than a century. In 1905, investigation of the hard rock mining industry in Western

20 *Submission* 11, p.7 (DEWR).

21 *Submission* 11, p.9 (DEWR).

22 *Submission* 11, p.8 (DEWR).

Australia was carried out. In 1914 a Royal Commission was appointed to investigate safety issues in Broken Hill mines. Surveillance by the NSW Silicosis Board (now the Dust Diseases Board) and NSW Health Department resulted in the investigation and control for Sydney sandstone workers.[23] Regulations to control dust disease were enacted in Western Australia and New South Wales by the 1920s. Dust disease was largely due to silica dust and tuberculosis.[24]

3.29 An exposure standard was set for silica in 1983-84 with the National Health and Medical Research Council (NHMRC) recommending exposure standards specifically for quartz (0.2 mg/m^3), cristobalite (0.1 mg/m^3) and tridymite (0.1 mg/m^3). In 1988 the exposure standard was reconsidered and a reduction to 0.1 mg/m^3 for respirable fraction of quartz, silica (fused) and tripoli and 0.5 mg/m^3 for cristobalite and tridymite was recommended. Following public comment, it was agreed that further examination of the issue was warranted. Between 1988 and 1996 no formal national exposure standard for crystalline silica existed although some mining and OHS authorities issued their own. From 1996, NOHSC reinstated the original NHMRC exposure standard. On 1 January 2005, a revised national exposure standard of 0.1 mg/m^3 for quartz, cristobalite and tridymite came into effect.[25] (The new exposure standard is discussed further in chapter 5).

3.30 While regulations were introduced to control silica dust and appear to have had an impact on silica-related disease, NOHSC has noted that 'due to a long lag time between exposure and symptoms, it is difficult to ascertain how many people develop silica-related conditions, and when the causative exposure occurred'. In addition health statistics do not readily identify health problems related to exposure to RCS due to poor diagnosis and lag times and, as noted above, compensation data relates only to cases for which compensation has been paid.[26] (Diagnosis of dust related health problems is discussed in chapter 4).

Silicosis

3.31 It was acknowledged in evidence that regulation has had an impact on the exposure of workers to RCS, however, there was considerable discussion on the incidence of silicosis in Australia today and the incidence in particular industries. Some witnesses stated that silicosis was now not a problem while other witnesses argued that silicosis was 'the new asbestosis'.

3.32 Witnesses pointed to a number of reviews and research papers on the incidence of silicosis which indicated a decrease in the number of cases of silicosis. In 1993, a review by the National Occupational Health and Safety Commission of the

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23 *Submission* 20, p.11 (AIOH).

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

25 NOHSC *Regulation Impact Statement on the Proposed Amendments to the National Exposure Standards for Crystalline Silica*, October 2004, p.25.

26 NOHSC Regulatory Impact Statement, p.19.

state by state silicosis records indicated that there were probably less than 20-30 new cases per year and the generality was that these cases arose from uncontrolled exposure situations (that is, industries and occupations where there was minimal or negligible adherence to the legislative exposure standard and control requirements).[27]

3.33 Reviews of data on new cases of silicosis from the mining industry have indicated that the incidence of silicosis has fallen. In Western Australia, for example, there were only three cases where the person had commenced employment after 1968 and none after 1994. It was concluded that the absence of cases 'corresponds to the implantation of the 0.2 mg/m^3 respirable crystalline silica exposure standard in Western Australia…when the new cases still arising as a legacy of the past have all been accounted for, new incidences of this disease will have been virtually eradicated.'[28] Coal Services NSW also noted that for the last decade there had been no incidence of silicosis that has been brought to its attention. This reflected the safety management of companies and the educational program that has been given to coalminers.[29]

3.34 AIOH also commented that a review of the statistics commissioned by Worksafe Australia in 2004 substantiated the small number of new cases of silicosis arising from Australian industries.[30]

3.35 WHS also provided a review of known compensable cases of silica related disease in Queensland. Between 1992 and 2004 there were six claims for silicosis provided by the Queensland Employee Injury Data Base. WHS stated that the evidence related to incidence of compensable silicosis is rare and extremely limited for Queensland workers as a whole and for abrasive blasting workers in particular.[31] It noted that some early exposures to crystalline silica (prior to 1995) in sandblasting are likely to have been excessive in modern day terms, though the compensation data do not reflect any cases of silicosis.[32]

3.36 AIOH noted that silicosis numbers had declined. This was due to a combination of regular medical surveillance, and reduction in exposures such as compliance with a regulatory exposure standard, the prohibition of specific tasks associated with high risk (such as sandblasting and the use of silica flour in foundry operations) and the use of adequate dust suppression systems such as ventilation and wetting down.[33] AIOH concluded:

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27 *Submission* 20, p.11 (AIOH).

28 Wan KC and Lee E, 'Silicosis in Western Australia from 1984 to 1993', *Journal of Environmental Medicine*, 1:27-35.

29 *Committee Hansard* 20.9.05, p.53 (Coal Services).

30 *Submission* 20, p.12 (AIOH).

31 *Submission* 26, p.6 (WHS).

32 *Submission* 26, p.22 (WHS).

33 *Submission* 20, p.12 (AIOH).

> Media headlines often imply that silica is "the new asbestos". However examination of the data suggests otherwise. Silica has been under surveillance for many decades, and the morbidity and mortality of large populations of heavily exposed individuals have also been studied over many decades. Clinical silicosis is now a rarity, and elevated risk of lung cancer appears to be confined to cases where the silica exposure is of such a level that it results in clinical silicosis. Based on the number (say 10-30) of new cases of silicosis, this would amount to only 1 or 2 additional lung cancer cases per year across Australia.[34]

3.37 The Cement Concrete and Aggregates Association (CCAA) also stated that in the heavy construction materials industry 'even very early or mild cases have been very rarely seen in this industry over the past 10 years. Those which have been diagnosed in that time all result from exposures from at least 10 years ago.' CCAA concluded:

> It is CCAA's view that in the heavy construction material industries, substantial reduction of potential exposure has occurred, with predicted and proven advances in dust control. In addition, the improved use of personal respiratory protection has also reduced the risk of silicosis to workers to its present extremely low level in Australia.[35]

3.38 Dr John Bisby remarked that in Australia in the last 50 years silicosis 'has been a fairly mild disease…But it can cause incapacity, so it may reduce quality of life as opposed to reducing life expectancy, although it can reduce life expectancy particularly in severe cases'.[36] Dr Bisby, while conceding problems in certain instances like sandblasting, also stated:

> The silica issue is, in medical terms, basically over. It is a great success story. Australian industry is free of silicosis, by and large. That is not to say an occasional case may not happen, just like a truck accident happens when somebody does the wrong thing. Basically it is historical.[37]

3.39 Professor E Haydn Walters responded to this evidence and stated that:

> I suppose it is true as far as it goes, I would say. In very well regulated industries in which the conventional standards of dust exposure are maintained, I would agree that interstitial lung problems, the traditional pneumoconiosis, are now probably largely a historic issue. However, I think those industries where the regulations are not vigorously upheld – and I think a number of people have made rather off-the-cuff comments about cowboys in sandblasting and that sort of stuff – still exist, and silicosis will still appear in time because it is related to the amount in the atmosphere and

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34 *Submission* 20, p.12 (AIOH).

35 *Submission* 14, pp.2, 7 (CCAA).

36 *Committee Hansard* 30.9.05, p.6 (Dr J Bisby).

37 *Committee Hansard* 30.9.05, p.7 (Dr J Bisby).

> the length of time that you are exposed. If you are above the current threshold, then I think you are still in danger of getting silicosis.[38]

3.40 In its Regulation Impact Statement, NOHSC sounded a note of caution on the impact of the then exposure standard:

> As diseases caused by exposure to RCS are of long latency, current cases of adverse health effects could reflect the effect of past exposures, when exposures were potentially greater than they are now under the current standard. Therefore current cases may be an over-estimate of the effect of the current NES [National Exposure Standard].
>
> Conversely, the current NES…may be achieving their objectives, which is why there are few incidents of adverse health effects recorded in statistics. In addition, this could be a reflection of the under-reporting of adverse health effects resulting from RCS exposure in official health statistics.[39]

3.41 Other witnesses commented that silicosis is still a significant disease. The CFMEU pointed to data from the Dust Diseases Board which indicated that there were 200 cases each year and 'those are the ones that are actually accurately diagnosed by the medical profession as having silicosis'.[40]

3.42 Munich Holdings of Australasia provided the Committee with a recent publication from the Munich Re Group on the impact of silicosis. The paper noted that US insurers had been observing an increase in silica-related claims. It was also noted that while claims were rising strongly, the number of deaths from silicosis is declining steadily which reflected the increased workplace safeguards from the 1970s on.[41]

3.43 Other researchers have also stated that 'it is generally well known that the majority of workers exposed to crystalline silica in Australia work outside the mining industry'.[42] The particular concerns of sandblasting were raised in evidence. WHS stated that there was some evidence that during the period up to the late 1980s that some silica exposures would have been occurring during abrasive blasting operations which did not comply strictly with the regulatory requirements of the time. WHS also commented that:

> How much the silica dust exposure which did occur during the 1960s, 70s and 80s is likely to have contributed to silicosis cannot be fully identified as reliable compensation statistics have been provided only as far back as

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38 *Committee Hansard* 10.11.05, p.27 (Prof E Walters).

39 NOHSC Regulatory Impact Statement, p.21.

40 *Committee Hansard* 30.9.05, p.24 (CFMEU).

41 *Submission* 29, *Silicosis – A new claims complex in liability insurance*, p.20 (Munich Holdings of Australasia).

42 de Klerk NH, Ambrosini GL, Pang SC and Musk AW, 'Silicosis Compensation in Western Australian Gold Miners Since the Introduction of an Occupational Exposure Standard for Crystalline Silica', *Annals of Occupational Hygiene,* Vol 46, No 8, pp.687-692, 2002.

> 1992. Given that the latency of silicosis will be around 20 to 30 years (depending on years of first exposure and other factors), radiological confirmed cases ought to have been appearing from 1990 through to the present.[43]

3.44 There are now various prohibitions in place relating to free silica in abrasive blasting (NSW, WA, Tasmania); more than 5 per cent free silica in abrasive blasting (SA, WA, Tasmania, NT) and more than one per cent crystalline silica for abrasive blasting in Victoria and 2 per cent in Western Australia.[44] Mr Nickolas Karakasch noted that the United Kingdom was one of the first countries to prohibit sandblasting. NSW prohibited sandblasting in 1959, with the other States following some time later. Victoria did not prohibit this activity until 2002.[45] Blasting media that could be substituted include garnet, metal shot and aluminium oxide.

3.45 Mr Karakasch also stated that a 1987 report by the International Agency for Research into Cancer (IARC) indicated that sandblasters in the USA had the highest potential exposure to silica content of respirable dust. This ranged from 4.8 – 12.2 per cent. Mr Karakasch concluded:

> Considering the sandblasting methods in Australia and throughout the world were basically the same, it would not be unreasonable to assume that sand blasters throughout Australia were exposed to similar levels as reported in the 1987 USA report. In comparison to the Victorian figure it is between 5 to 12 times the allowable limit.[46]

3.46 AIOH also commented that the impact of the prohibition on eliminating the use of silica/silica containing materials in sandblasting is unknown. However they pointed to a 2001 report on the results of a blitz by the Department of Workplace Health and Safety on abrasive blasting operations throughout Queensland. This survey found that of 49 operations audited, two (4%) were using dry sand. Other than the two (4%) using sand, they also found that garnet was used as a major blasting medium while others used ilmenite, different types of metal refinery slags and metal shot. One operator used sodium bicarbonate. A small number were using glass. WHS concluded that 'use of quartz bearing sands is now low, but the 2 cases observed were found to contain silica between 58 – 78% free silica. These operations were issued with Prohibition Notices.'[47] AIOH also commented that most industries are now using substitutes such as garnet.[48]

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43 *Submission* 26, p.6 (WHS).

44 NOHSC Regulatory Impact Statement, pp.17-18.

45 *Submission* 19, p.3 (Mr N Karakasch).

46 *Submission* 19, p.4 (Mr N Karakasch).

47 *Submission* 20, p.10 (AIOH).

48 *Committee Hansard* 29.9.05, p.26 (AIOH).

3.47 AIOH provided details of a review of silicosis sufferers who had received compensation in NSW. This showed that only just over one per cent (less than one case per year) of people, who were receiving compensation prior to 1970 and were still alive in 1970 and those who were awarded compensation from 1970 to 1994, indicated that they did sandblasting as part of their work. Most of these sandblasting cases were exposed around 1970 or earlier.[49]

3.48 CCAA commented on the unsatisfactory practices in some industries and stated that 'the level of exposure that an unprotected sandblaster might be exposed to is several hundred times the level of the standards'.[50]

Airway disease

3.49 Professor Trevor Williams concurred that there had been 'substantial reductions in classic silicosis'. However, he stated that 'it has become apparent…that a new pattern of disease is emerging'.[51] People who have been exposed to silica are now presenting with diseases including obstructive lung diseases and pulmonary fibrosis. There is also propensity for dust such as silica to increase the risk of the development of lung cancer and stomach cancer. He commented:

> I am also concerned that many patients with so called idiopathic pulmonary fibrosis may have the genesis of their disease in exposure to fine dust such as silica and that causal link is not made because of a long delay from exposure to overt disease.
>
> I don't believe we have sufficient information to even start to understand the extent of these problems in Australia and well designed studies are urgently needed.[52]

3.50 Professor Walters also raised concerns about the incidence of COPD due to dust. He stated that the contribution of dust, particularly in occupational settings, to subtler forms of respiratory disease, and particularly to COPD, has been ignored. The Professor also stated that as cigarette smoking becomes less, and also as more vulnerable groups, particularly women, move into the workplace, the impact of these dusts upon airway disease and the acceleration of the natural ageing process of the lungs by exposure to dust is now becoming a significant feature, and that is not being represented.[53]

3.51 The Professor informed the Committee that research data are emerging that shows that these conditions of COPD related to dust, particularly in the workplace, are perhaps more common than people have thought. Research published in June 2005 in

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49 *Submission* 20, p.12 (AIOH).

50 *Committee Hansard* 30.9.05, p.3 (CCAA).

51 *Submission* 7, p.1 (Prof T Williams).

52 *Submission* 7, pp.1-2 (Prof T Williams).

53 *Committee Hansard* 10.11.05, p.27 (Prof E Walters).

the journal *Thorax* by Professor Walters and a research group in Victoria found in a random survey of 4 000 or 5 000 people working and living in the suburbs of Melbourne, aged between 45 and 65, that there was about 10 per cent COPD in the population. The Professor stated:

> …particularly amongst the women, it was quite evident that occupational exposure, particularly to biological substances but also to mineral dust, was having an impact. It was a fairly subtle impact, but a definite statistically significant impact upon their lung function. That included people like nurses and those working in bakeries and so on who were exposed to dust.[54]

3.52 However, AIOH commented that removing the smoking component from airways disease and the reduced contemporary silica dust exposures would mean only a few additional cases of airways disease per year in Australia.[55]

Costs associated with adverse health effects

3.53 NOHSC, in undertaking the review of the crystalline silica exposure standard in 2004, provided costs associated with adverse health effects. It was estimated , using NSW and national data, that the annual cost of disease related to past exposure to crystalline silica in Australia is in the order of:

- $14,022,857 in compensation payments (including medical costs, an indicator of potential cost) per annum;
- 305 hospital days per annum; and
- 60 lives per annum.[56]

NOHSC noted that health statistics used did not include non-fatal conditions, such as disease or a restriction of function that does not result in hospitalisation as these data are not available.[57]

Incidence of disease associated with beryllium

3.54 Workers in Australia have been exposed to beryllium dust. However, Mr John Edwards commented that the number who may have Chronic Beryllium Disease (CBD) is unknown as until very recently there has been no dedicated Beryllium Blood Lymphocyte Proliferation Testing (BeLPT) laboratory.[58] Workers most at risk are those in the aviation industry as well as Navy personnel as a result of the descaling of ship surfaces and workers in the alumina industry.[59]

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54 *Committee Hansard* 10.11.05, p.31 (Prof E Walters).

55 *Submission* 20, p.12 (AIOH).

56 NOHSC Regulatory Impact Statement, p.2.

57 NOHSC Regulatory Impact Statement, p.21.

58 *Submission* 45, Additional information, 19.12.05 (Mr J Edwards).

59 *Submission* 24, pp.4-5 (Dr G Pain).

3.55 In the United States, the Department of Energy (DOE) is compensating DOE workers for exposure to airborne beryllium. As at March 2006 DOE had approved 3034 beryllium claims and paid out US$303.5 million in worker compensation in addition to $91 million in medical costs. Mr Edwards argued that the exposure of Australian workers to dusts, fumes and aerosols containing beryllium materials is no different from the USA so that cases are expected to be identified in Australia with the establishment of a testing laboratory.[60]

Conclusions

3.56 Evidence received by the Committee points to a need to improve the data available for identifying the incidence of disease related to toxic dust. At the present time, there is a lack of comparability of datasets and a reliance on workers' compensation data which may not indicate the true incidence of toxic dust-related disease in Australia. Workers' compensation data only includes those workers who have had five or more days off work with a successful claim of a work-related illness. Where diagnosis occurs after a worker has left work, the connection to work is unlikely to be established and a workers' compensation claim is unlikely to be made. This may lead to significant under representation of dust disease.

3.57 Witnesses called for a more comprehensive collection system including the establishment of a national medical registry of dust diseases cases. A national registry would assist in tracking workers as they move from job to job. It would also provide more timely data to improve identification of trends in disease. One possible means suggested to the Committee was to make the SABRE system compulsory.

3.58 The Committee agrees that there is need to improve data collection. Without reliable data, the true extent of dust-related disease is unknown, trends cannot be identified in a timely manner and decision-making by government, industry, unions and the medical profession is hampered.

Recommendation 1

3.59 That the Australian Safety and Compensation Council review the National Data Action Plan to ensure that reliable data on disease related to exposure to toxic dust is readily available.

Recommendation 2

3.60 That the Australian Safety and Compensation Council extend the Surveillance of Australian Work-Based Respiratory Events (SABRE) program Australia-wide and that the program provide for mandatory reporting of occupational lung disease to improve the collection of data on dust-related disease.

60 *Submission* 45, Additional information 19.12.05, 21.3.06 (Mr J Edwards).

3.61 The incidence of toxic dust-related disease in Australia today was debated extensively in evidence. Some witnesses commented that cases of silicosis now emerging reflect past exposures and past work practices and that silicosis is now a mild disease. However, other witnesses argued that silicosis is the 'new asbestosis'. The Committee acknowledges that while the data may under represent the incidence of disease, the available data suggests that systems now in place to control dust related disease, particularly silicosis, appear to have had a positive impact on the incidence of disease. Workers' compensation cases of pneumoconioses other than asbestosis have increased only slightly since 1998-99 from 1.8 cases per million to 2.2 cases per million in 2001-02.

3.62 However, the Committee notes that with apparently low mortality from exposure to toxic dust, the economic cost of this level of disease is still significant. NOHSC estimated in 2004 that compensation costs for disease related to exposure to crystalline silica is in the order of $14 million per annum. The compensation costs for asbestos are substantially higher. Compensation costs related to exposure to other dusts such as beryllium are unknown but may be significant in the future.