UPDATE ON:

2.2 Reduced exposure to environmental asbestos

As discussed previously, there were a number of 'waves' of people in Australia over the 20th century whose health was adversely affected by their exposure to environmental asbestos, primarily by developing lung cancer and malignant mesothelioma.[1] In the earliest period following World War II, the greatest proportion of the cases represented men who were mining asbestos in the Wittenoom Gorge in Western Australia's Pilbara Region, and their families.[10] The mines in Wittenoom were closed in 1966, and over time, the number of cases from Wittenoom remained fairly constant as the number of people at risk reduced.[1] The second wave of cases of mesothelioma occurred in people who had been occupationally exposed to asbestos (such as carpenters and mechanics), and those cases were proportionally greater from the 1970s onwards.[1]

However, a 'third wave' of people at risk from asbestos-related conditions became apparent from the early 1990s. These were a growing number of people exposed to asbestos by undertaking home maintenance and/or renovation.[9] In 2009, only a third of participants in one study on residential asbestos exposure indicated they took precautions to reduce exposure to asbestos fibres and dust in their homes.[11]

In 2011, a study reported on trends in diagnosed malignant mesothelioma cases (sourced from the Western Australian Mesothelioma Register) caused by exposure to asbestos during home maintenance and renovation.[1] In that State, 1631 people (1408 men, 223 women) were diagnosed between 1960 and 2008; and from 1981, there were 87 cases (55 in men) attributed to asbestos exposure during home maintenance and renovation, with an increasing trend in such cases, in both men and women over the period. In 2005-2008, home renovators accounted for 8.4% of all men and 35.7% of all women diagnosed with malignant mesothelioma. After controlling for sex and both year and age at diagnosis, the latency period for people exposed to asbestos during home renovation was significantly shorter than that for all other exposure groups, but the shorter follow-up and difficulty recalling when exposure first occurred in this group was thought to partly explain this.[1] The study noted that the proportion of women developing mesothelioma was much higher than men – a rise from 5% of all cases in the 1990s to 35% for the period, 2005 to 2008. Mesothelioma was very uncommon in women because their exposure to asbestos in occupational settings was so much less than men. So, as a proportion of all new cases, the percentage of women getting mesothelioma was higher, but the number of cases overall was smaller.[1]

Research in NSW indicated that the impact of an asbestos-related diagnosis on men and women exposed during home renovations and repairs, as part of the third wave of exposure to asbestos, was very different to the impact of a diagnosis on older men previously exposed to asbestos in the workplace.[26] One reason was that many people exposed to asbestos in their homes were not eligible for workers compensation or support from the NSW Dust Diseases Board, support which made a considerable financial difference to those affected and their families and carers.[26] Furthermore, the impact of an asbestos-related diagnosis on women, whether as partners and carers or increasingly, as younger women with an asbestos-related diagnosis, was significant and multi-faceted.[26] The consequences of an asbestos-related diagnosis on women within the emerging 'third wave' community were perhaps the most complex and the least understood, particularly where young children were involved.[26] Women who were unable to trace their exposure to a previous place of employment were likely to experience severe financial disadvantage, and this disadvantage was compounded for those women living in regional Australia.[26]

Like those affected before them, the risk for people renovating or undertaking DIY projects was proportional to the amount of asbestos to which they were exposed; and there was no safe level of exposure.[8] This was a source of ongoing concern, given the widespread distribution of asbestos-containing products in homes and other buildings in Australian cities and towns.[13] As one example of the possible extent of residential exposure, a private contractor from Canberra known as "Mr Fluffy" insulated over 1000 residential dwellings by pumping friable raw asbestos fibres into the roof cavities of many properties in the Canberra, Queanbeyan and surrounding regions, between 1968 and 1979.[15] Twenty-six NSW council areas were subsequently identified as potentially also affected by loose-fill asbestos. In Sydney, they included Manly, Parramatta, North Sydney, Ku-ring-gai, Bankstown, Warringah and The Hills councils.[17] A Commonwealth-funded clean-up program was undertaken in the

ACT between 1988 and 1993, but some cleared homes were subsequently found to contain remnant fibres.[16]

Following increasing public concerns about loose-fill asbestos insulation, and the findings of the early asbestos assessments (some of which saw families vacate their homes, in some cases having been so directed in a prohibition notice issued by WorkSafe ACT under the *Dangerous Substances Act 2004*), the ACT Government established its Asbestos Response Taskforce in July 2014.[18] The Taskforce's role was 'to provide a coordinated, comprehensive and compassionate response to the issue across three key functions:

- responding to the needs of affected families including by administering the ACT Government's emergency financial assistance package;
- providing information to affected families and the wider community; and
- providing advice on approaches to securing an enduring solution to the presence of loose fill asbestos insulation in the affected homes'.[18]

Caution: Building contains asbestos. Sign on a building at the Victoria-South Australia border, November 2014. [Photo: S. Gruszin]

The Taskforce concluded that demolition of affected homes was 'the only enduring solution to the health risks posed by the presence of loose fill asbestos insulation in homes, and their attendant social, financial and practical consequences'.[18] It also recommended that all owners contemplating any renovations or maintenance work on homes built before 1980 be required to have an asbestos assessment undertaken before any work commenced; and that the contract of sale for any home built before 1980 include a full asbestos assessment.[18] In October 2014, the Australian Government agreed to provide a concessional loan of up to $1 billion to the ACT to buy back and demolish about 1000 houses affected by Mr Fluffy, over five years. However, the Government refused financial assistance to NSW, indicating legal responsibility for affected homes lay with the State government.[19]

In September 2014, the NSW Parliament established a Joint Select Committee to report on loose-fill asbestos insulation in homes in that State.[20] In its report tabled in December 2014, the Committee recommended (amongst other things) that the NSW Government 'urgently establish a taskforce to develop and implement a buy-back scheme to demolish homes identified as being contaminated by loose-fill asbestos insulation in New South Wales, modelled on the approach adopted by the ACT Government'.[20]

Other public health issues related to asbestos exposure included illegal asbestos disposal (e.g., trucks illegally dumping asbestos allegedly due to high disposal fees); and asbestos inspectors issuing false clearances to renovators (e.g., 'Mr Fluffy asbestos found in Canberra home twice declared safe by inspectors').[2] In NSW, the Environment Protection Authority (EPA) established a Householders' Asbestos Disposal Scheme for home renovators to waive the waste levy or reduce tip fees in selected Councils as a 12-month trial, starting in 2014.[6]

Public health principles and practices

As the third wave of cases of malignant mesothelioma emerged, a need to quantify the likely extent of this health problem emerged. Efforts to quantify the possible number of people likely to be at risk from asbestos-related conditions as part of the 'third wave', began. One survey examined self-reported exposure to asbestos during home renovations (in NSW, January to June 2008). A total of 44% of respondents had renovated their homes, with 53.7% of these being DIY renovators, 527 of whom (61.4%) reported asbestos exposure. The study concluded that self-reported asbestos exposure during home renovation was common, placing both adults and children at risk of malignant mesothelioma, and was a 'potentially important problem'.[8:410]

In 2008, the Office of the Australian Safety and Compensation Council of the Australian Government Department of Education, Employment and Workplace Relations commissioned a project to examine trends in asbestos exposure in cases of malignant mesothelioma in Australia.[12] The authors identified that

it was 'not feasible to use the available data sources to provide an on-going direct national estimate of trends in exposure to asbestos in persons who have been diagnosed with malignant mesothelioma. Furthermore, there [did] not appear to be other data sources that would potentially be available that would allow such valid direct estimates of on-going national trends to be made.'[12] They concluded that 'a formal system for obtaining detailed information on occupational and on occupational exposure histories' was required.[12]

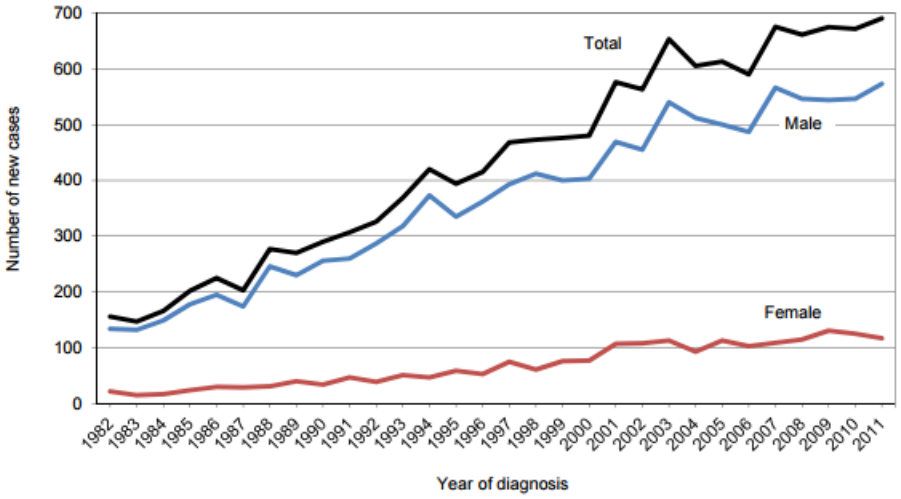
In 2012, Safe Work Australia published its second report on *Asbestos-related Disease Indicators*.[14] Only mesothelioma and asbestosis were used to describe the extent of asbestos-related disease in Australia, as asbestosis was caused exclusively by asbestos and asbestos was the only known cause of mesothelioma.[14] In addition to the report, Safe Work Australia undertook a number of initiatives to better monitor and improve the understanding of asbestos-related diseases. These included:

- the publication of the *Mesothelioma in Australia* report: a detailed examination of diagnosis and deaths data collected by cancer registries and the Australian Bureau of Statistics;
- the launch of the Australian Mesothelioma Registry (AMR) in April 2010, funded by Safe Work Australia and managed by a consortium led by the Cancer Institute of New South Wales. The AMR published annual statistical reports about mesothelioma patients' exposure to asbestos and incidence and mortality statistics; and
- research examining exposure to asbestos among construction workers and their attitudes, perceptions and behaviours relating to asbestos (Asbestos Exposure and Compliance Study of Construction and Maintenance Workers, January 2010).[14]

In 2010, the $1.5 million Asbestos Innovation Fund was established by the Australian Government in an effort to raise awareness about asbestos, assist in the management and removal of asbestos, as well as improve the treatment and support available for asbestos-related disease sufferers and their families; twelve projects were successfully completed (and the Fund was closed in March 2014).[25] By 2013, a national strategic plan was in place to improve asbestos identification and management and remove all asbestos-containing materials from government and commercial buildings by 2030.[3,4] The Asbestos Safety and Eradication Agency was established as an independent authority to support related action.[5]

Longer-term epidemiological data became available from the earlier *Asbestos Management Review*: on mesothelioma by sex and deaths.[3:13,14] In May 2015, Safe Work Australia published a report providing statistics on the incidence (for the period, 1982-2013) and mortality (for 1997-2012) of mesothelioma using data from the Australian Institute of Health and Welfare, and the Australian Mesothelioma Registry.[27] These data showed that in 2011, 690 new cases of mesothelioma were diagnosed in Australia (*Figure 1*).

Figure 1: Number of new mesothelioma cases by sex, Australia, 1982 to 2011[27]



Source: AIHW 2015

The preliminary number of diagnoses for 2013 was 575.[27] The number of new mesothelioma cases increased in most years from 1982, when national data first became available, and peaked at 690 in 2011. The age-standardised incidence rate of mesothelioma increased from 1.1 new cases per 100,000 population in 1983, to a peak of 3.2 in 2010. The rate fell to 2.8 new cases per 100 000 population in 2011.[27] In 2011, the highest age-specific incidence rate of new mesothelioma cases occurred among males aged 85 years and

above (49.9 cases per 100,000 population aged 85 years and above).[27] The majority of new cases in each year involved males; however, the proportion of female diagnoses increased from 12% of all new cases in 1982-1986 to 18% in 2007-2011.[27]In 2012, 638 deaths were attributed to mesothelioma.[27] The number of deaths resulting from mesothelioma increased between 1997 and 2012, and reached a peak of 638 in 2012. In 2012, the age-standardised mortality rate for mesothelioma was 2.5 deaths per 100,000 population. The age-standardised mortality rate remained relatively stable over the 16 years for which data were available and ranged between a minimum of 2.1 deaths per 100,000 population in 1999, with a maximum of 2.7 in 2001.[27] Due to the long latency between exposure to asbestos and diagnosis of mesothelioma, it was expected that the incidence of mesothelioma would not peak until after 2013.[27]

In the light of the need to increase knowledge of asbestos-related harms, the Government announced funding of $5 million over three years as 'one-off seed funding' to establish a National Research Centre for Asbestos Related Diseases (NCARD) in May 2005.[21] This initiative was part of the Government's $189.5m *Strengthening Cancer Care* package with measures aimed at prevention, treatment, research and support for cancer patients and their families.[21] Through the National Health and Medical Research Council (NHMRC), over $6 million was allocated by NCARD through a competitive grants process to 11 groups of investigators from a range of institutions across Australia.[21] By 2014, NHMRC funding showed an exponential increase from 2000 to 2014 (from $0.34 to $2.15 million) for research on improving diagnosis, treatment, and early intervention strategies for asbestos-related diseases, which also included cancers of the larynx and ovaries in addition to mesothelioma and lung cancer.[7,24]

Future challenges

In view of the historical use of asbestos in Australia and the latency of asbestos-related diseases, their incidence was expected to increase further; and, as exposure to asbestos was still occurring, preventive measures to eliminate ARD continued to be required to protect the health of both workers and the wider public. Research into better asbestos removal technologies, such as unmanned robotic removal and recovery systems and the use of infrared irradiation to render asbestos harmless by melting the fibres together, offered promise, as developing methods with guaranteed effectiveness were all the more urgent, as the global health impact of asbestos became increasingly evident.[22,23]

Without a range of public health actions to limit exposures and provide for safer removal and disposal among other actions, significant numbers of people were likely yet be exposed to asbestos in older domestic and other settings, leading to future costs for the Australian healthcare system.

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