ACT Asbestos Health Study: Cross Sectional Survey Report

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Summary

The Australian Capital Territory (ACT) Government commissioned the Australian National University to undertake a study to improve understanding of the health risks of loose-fill asbestos insulation, which was installed in over 1,000 Canberra residences between 1968 and 1979. These residences are commonly referred to as 'Mr Fluffy' houses. This report on the *ACT Asbestos Health Study: Cross Sectional Survey* is the third component of the *ACT Asbestos Health Study*. The report describes the health and social impact of living in a Mr Fluffy house for both current and recent residents, along with former residents.

The survey was conducted between May—June 2016 to understand the potential exposure to asbestos and health concerns among current or recent residents of Mr Fluffy houses. Current or recent residents were defined as households who were registered with the ACT Asbestos Response Taskforce at 28 October 2014; the date the Buyback of affected properties was announced. The study team developed the survey form based on focus group discussions with residents in July 2015, along with standardised questions from other surveys. The ACT Asbestos Response Taskforce sent out a letter inviting residents to participate in either an online survey or a telephone interview.

In total, 363 current or recent residents from 262 households responded to the survey. The mean age of respondents was 55 years old (range: 68 years) and 58% of survey respondents were female. Ten percent of respondents lived in the house when the asbestos insulation was installed and 30% lived in the house when it was removed through the remediation program. A high proportion (82%) reported renovations to the affected property, with a low proportion reporting that precautions were taken during renovations. One third of respondents sought professional help with physical or mental health issues relating to living in a Mr Fluffy home. Approximately one quarter of survey respondents reported high levels of psychological distress. The majority of respondents reported having sufficient information about the health risks of exposure to loose-fill asbestos. Ten per cent of residents reported health effects from living in a Mr Fluffy home, with most of these being psychological in nature. People who were female, had children living in the house, or perceived that they did not have enough health information reported higher levels of psychological distress.

The study team identified similar findings in a survey of 204 former residents of Mr Fluffy houses at some time in the past. A lower proportion (59%) of past residents reported renovations to the property. Approximately one in five past residents appeared to have high psychological distress, although only 7% had sought help from a professional for their physical or mental wellbeing.

This survey of 567 current, recent and past residents of houses insulated with loose-fill amosite asbestos provides information into health concerns and potential exposures from the domestic setting. There were several limitations to the survey, including:

- a low response rate to the survey from affected households;

- the time between announcement of the buyback and the survey meaning that results reflect current recollection of exposure and concerns; and
- a low rate of referral of survey invitations within households meaning that responses largely reflected one individual per household.

From the survey, it is evident that people living in a Mr Fluffy house have experienced high levels of psychological distress and health concerns. The survey highlights potential risks to health due to the high proportion of respondents reporting renovations and entering roof and underfloor spaces. People who had received health information relating to exposure to asbestos reported lower levels of psychological distress and concern.

Background

The Australian Capital Territory (ACT) Government commissioned the Australian National University (ANU) to conduct the ACT Asbestos Health Study to improve understanding of the health risks of living in a house containing loose-fill asbestos insulation. This cross sectional survey is the third of four components of the ACT Asbestos Health Study.

Loose-fill asbestos insulation in the ACT

Between 1968 and 1979, D. Jansen & Co. Pty Ltd and its successor firms—commonly and collectively referred to as 'Mr Fluffy'—insulated homes in the ACT and southern New South Wales (NSW). The contractor blew asbestos, mainly amosite, in a ground raw form (loose-fill asbestos) into roof spaces. [1]

Between 1988 and 1993, a Commonwealth Government audit visually checked some 65,000 houses in the ACT for the presence of loose-fill asbestos insulation. More than 1,000 houses were identified as containing this insulation and an extensive remediation program was undertaken, in which the loose-fill asbestos was removed from the roof spaces. [1] In recent years concerns were raised about resident safety after asbestos fibres were found in living spaces of some remediated houses. In addition, there have been news media reports of cases of mesothelioma in people who had lived in affected residential properties (ARP) at some time in the past and in an electrician who worked on ARPs.

In June 2014, the ACT government established The Asbestos Response Taskforce to respond to impacts of loose-fill asbestos insulation on affected residents and the broader ACT community. [2] The Taskforce provides a single point of contact for ACT residents concerned about loose-fill asbestos insulation. The Taskforce provided advice to the ACT Government on the long term management of this issue in the Territory and has subsequently administered the ACT Government's voluntary Loose Fill Asbestos Insulation Eradication Scheme (including a buyback program as well as providing wellbeing, financial and information support to those affected). The Taskforce facilitated the demolition of properties acquired under the Scheme and informed and engaged the community on management of ARP. The Taskforce also recorded contact details for those exposed to, or concerned about, loose-fill asbestos insulation in Canberra homes, including current and former home owners and tenants, tradespeople, real-estate and other professionals and members of the general community.

Domestic asbestos exposure and health

Asbestos is a naturally occurring silicate mineral that occurs in a variety of fibrous forms. The fibres have fire-resistant properties and have been used in building materials and for insulation, among other things. After World War II, asbestos cement products were commonly used as building materials in Australia, and until the 1960s, a quarter of all new homes were clad in asbestos cement. [3] From the 1970s, the use of asbestos was slowly phased out in Australia, with asbestos products manufacture ceasing in 1987, and the sale, use and manufacture of asbestos products banned since 2003. [4]

The main forms of asbestos are chrysotile, actinolite, amosite and crocodilite, which vary in their propensity to cause disease in humans. Asbestos is a risk to health when fine fibres are inhaled. The risk to health increases with intensity and duration of exposure, and depends on the type of asbestos. [5-7] Inhalation of asbestos fibres is the predominant cause of malignant mesothelioma, and is an important contributor to risk of lung, laryngeal and ovarian cancer in people who are exposed to asbestos. Asbestos exposure can also cause non-malignant lung conditions such as asbestosis and pleural plaques. [8, 9]

There is a lack of published literature on health effects of exposure to asbestos-containing products in the household or domestic setting. [4, 10] The literature on domestic exposure has mainly reported on exposure to fibres released from bonded products (generally asbestos cement) through deterioration or during the course of renovation, or through para-occupational exposure of family members. Some Australian researchers have raised concerns about home renovation exposure as a cause of mesothelioma. [11]

In a recent survey of householders in NSW, almost a quarter of respondents had done “do-it-yourself” renovations. [12] An estimated one-third of all homes built in Australia contain some asbestos products. [13] Renovating older homes containing weathered asbestos products may increase exposure to asbestos if safety precautions are not taken. Tradespeople and residents may be exposed to fibres during the process of demolition or maintenance of houses, out-buildings and fences. The process of renovation or demolition of asbestos cement-clad buildings measurably increases the exposure to asbestos fibres for workers. [14] Studies have also revealed that, while tradespeople and home renovators have been aware that they were working with asbestos containing materials, they do not always take safety precautions. [12, 15] In WA, 5% (87/1631) of mesothelioma cases were attributed to asbestos exposure during home maintenance and renovation, with an apparent increase in the proportion of such cases. [11]

Asbestos-based home insulation, specifically, has been recognized as a health concern for residents living in houses containing this material, and for tradespeople who may have worked in the houses, but there is a lack of data to quantify potential health risks. [16]

Objectives of the study

The primary aims of the ACT Asbestos Health Study: Cross-sectional survey (referred to throughout as the survey) were to assess the health concerns of the residents of ARPs as well as measure levels of psychological distress in residents and compare these levels of distress with the general ACT population. Secondary aims were to describe levels of potential exposure to loose-fill asbestos in residents, in terms of length of time residing in an ARP and occurrence of high risk activities, such as renovations and maintenance of ARPs.

The specific research questions were:

1. What are the concerns regarding possible health problems associated with living in a Mr Fluffy house?
2. What are the current levels of psychological health distress and how do these compare to the general ACT population?
3. What is the average amount of time spent living at an affected residence?
4. What is the prevalence, nature and scale of high-risk asbestos-related activities, such as renovation and entry into the roof space and/or sub-floor areas that residents have undertaken?

Methods

Study population

The study population was all current and recent residents of Mr Fluffy households. To be eligible, the households had to be registered with the ACT Asbestos Response Taskforce as at 28 October 2014—the date when the Buyback of ARPs was announced by the ACT Government. There were 1,022 known ARPs in the ACT, around 120 of which were tenanted rather than owner-occupied on 28 October 2014. The total number of residents in ARPs was unknown. All adults (i.e. those over the age of 18 years) from these houses were eligible to provide information as part of the survey. Where there were children living in the house, the adult identifying as the main carer was asked to provide information on these children.

In addition, we invited past residents who had recorded their contact details with the ACT Asbestos Response Taskforce to complete a similar shorter survey. As the total number of people who reside or have ever resided in an ARP is unknown, it was not possible to identify a denominator population for individual participation rates.

Study recruitment

The ACT Asbestos Response Taskforce emailed a letter of invitation to the named household contact person for each residence on behalf of the study team. The letter outlined the rationale for the study, the potential risks of participation, details of study investigators, and information about the overarching study. A sample letter of invitation is attached at Appendix 1.

The email invitation contained a unique household identification number (HHID). The unique HHID assisted with identifying the specific ARP and the household to which respondents

belonged. The registered household contact was invited to complete the two-part, online survey questionnaire. The invitation letter requested that the householder ask other household members over the age of 18 to also complete the survey, with the main carer of children asked to complete sections of the survey for people between the ages of 5 and 18 years.

The ACT Asbestos Response Taskforce sent a hardcopy letter to households where this was the primary means of communication requested by the household. These residents were offered the opportunity to complete a telephone interview, rather than the online survey, as many did not have access to, or were not comfortable with using computers for communication. A toll free number was supplied for residents to call to organise an interview time that was suitable. Additionally, some residents who initially received an email invitation with a link to the online survey completed a telephone interview.

Response rates to surveys have been declining over time throughout the world. [17] In this instance, we expected the response rate to be relatively high due to the relevance of the survey to survey participants. We estimated that the response rate (the proportion of at least one household member responding) would be over 60%.

To maximize participation in the survey, the study team:

- Promoted the survey through the ACT Asbestos Response Taskforce during the lead up to the survey in the Taskforce newsletter, and on the Taskforce website and facebook page.
- Prepared media releases indicating that the survey was underway when the invitations were sent out, as well as promoting the survey on local radio and television news media.

To protect the privacy of residents, the Asbestos Response Taskforce issued all the invitations to participate. The study team held no contact details for any residents, unless the resident contacted the study team to discuss the study. The Taskforce Communications Team sent email invitations to 904 households during 4–5 May 2016. An additional 67 households were posted a letter informing them that the online survey had started and they would be receiving a hard copy letter of invitation to participate in a telephone interview in 2 weeks' time. The hard copy letters of invitation were mailed to the 67 applicable households on 23 May 2016. Residents were advised to call a toll free number to organise a suitable time for an interview. These residents were also given the phone number for the study manager who was able to facilitate the organisation of the telephone interviews.

Of the 1,022 houses registered with the Taskforce, 53 were not issued an invitation due to them being deceased estates, properties with no resident at the time of the buyback, or properties that had been occupied by tenants where contact information was unavailable.

Reminder emails for the online survey were sent out on weeks beginning 16 May and 30 May 2016. An additional email was sent out the week beginning 20 June 2016 advising residents

that the survey had been extended and would remain open until 8 July 2016. Reminder letters for the telephone interviews were sent on 6 June 2016 and the week beginning 20 June 2016 advising residents that the survey had been extended and would remain open until 8 July 2016. Regular reminders were also issued through the ACT Asbestos Response Taskforce's facebook page.

Past residents were also able to participate in the survey, with a slightly shorter version of the online questionnaire being made available. Invitations were emailed to 442 people on the week beginning 16 May 2016. Past residents were not able to access a telephone interview. Reminder emails were sent to past residents on 30 May 2016 and they were again emailed the week beginning 20 June 2016 advising them that the survey had been extended and would remain open until 8 July 2016.

Table 1 Response rate to the ACT Asbestos Health Study survey, ACT 2016

	Current/recent residents		Past residents
	Online survey	Telephone interview	Online survey
Household invitations issued	904	67	442
Individual surveys completed*	345	18	199
Unique households completing survey	262		+
Household response rate	27.0%		+

*Includes partial completions where consent was given and at least some information regarding length of time spent in the ARP was given. This figure is for individual responses, not household responses.

+ A household response rate for past residents could not be calculated, as invitations were issued to individuals, not households, and participants were able to send a link to other household members to complete the survey

Survey conduct

The survey data were collected through:

1. An online survey, or
2. Computer Assisted Telephone Interview (CATI) for respondents who preferred not to complete the survey online (5% of participants).

The Australian Consortium for Social and Political Research Incorporated's (ACSPRI) survey centre, Academic Surveys Australia (ASA), administered both the CATI and online surveys, using LimeSurvey software. To ensure the integrity of the questionnaire, it was tested on some 20 staff from ANU, ACT Health and the ACT Asbestos Response Taskforce before the invitations to participate were issued.

Survey details

The research team designed the survey instrument from analysis of results from focus groups held with randomly selected residents who took part in one of two focus groups held in July 2015.

The survey used a range of standardised questions to gather demographic information as well as several validated scales to assess levels of anxiety and depression. Both current/recent and former residents were invited to participate in the survey, with former residents completing a shorter version of the questionnaire. The sections of the survey instrument included:

- the number of ARP and dates of living in the properties;
- the details of other people, including children, who lived in the ARP;
- potential exposures to asbestos (e.g, through renovation or occupation);
- present health status;
- health effects from living in an ARP;
- measures of distress from living in an ARP;
- health seeking behaviour in response to living in an ARP;
- information sources on asbestos; and
- demographic details, including age, sex, Aboriginal and Torres Strait Islander status and income.

At the end of the survey, we requested permission to collect the respondent's full name, address, Medicare number and date of birth to allow matching of survey data to disease outcomes in the future. The full questionnaire is attached at Appendix 2.

Deviations from the study protocol

There were minor deviations from the study protocol developed in July 2015. The study team originally planned to manage the survey in-house but decided to contract Academic Surveys Australia (ASA) to collect survey data due to the complexity of data gathering.

The protocol stated that registered residents would be contacted by telephone up to 4 times, at different times of the day, and on weekends, if they had not responded to the survey. Only email and post were used to contact participants, no reminder phone calls were issued. A hard copy of the questionnaire was not issued to participants invited to complete the survey through a telephone interview as stated in the protocol.

Although not in the protocol, residents who received an invitation to participate by email but did not wish to complete the survey online, were asked to contact the study team to organise for a telephone interview to be conducted.

The study team had intended to weight the survey data to allow for better comparison with the ACT population. However, given lower response rates than expected, we decided not to weight data and present crude percentages for most survey responses, with some age and sex adjustment for others.

Data cleaning and recoding

Two separate data files were received from ASA, one for the current/recent residents and one for past residents of an ARP. The data were received in both Excel and Stata format, and included data on all attempted entries into the survey. The original data file for the

current/recent residents contained 667 responses, the past residents' data file contained 357 responses. Approximately 33% (223/667) of responses in the current/recent residents file and 45% (161/357) in the past residents file were immediately deleted as they contained no data—respondents had logged in, but did not proceed past the information provided at the beginning of the survey.

Table 2 Response completions and duplicate records for the ACT Asbestos Health Study survey, ACT 2016

	Current/recent residents	Past residents
Responses received	667	357
Incomplete responses – logged in but no questions answered and consent missing	223	161
Incomplete responses – consent given, no questions answered	47	7
Consent not given		3
Consent initially missing – survey questions answered*	2	
Test responses**	4	
Duplicate records	7	5
Responses removed and added to past residents data file	38	
Responses removed and added to current/recent residents data file		15
Responses with consent and partial answers+	41	24
Responses with consent and fully completed survey	322	180

*2 responses that had submitted their survey data with missing consent, both participants were contacted to confirm their participation in the study, and their data was amended to reflect consent

** test responses for administrative check of survey form

+ Partial completions comprise records where consent was given and at least some information regarding length of time spent in the ARP was given.

Duplicate records were identified by checking all responses where there was more than one response per household. Demographic data was compared between the records, and if the incomplete records did not have demographic data completed, answers to questions regarding occupation and occupational history, dates the respondent lived in the ARP, and the number of household members recorded were compared. Answers to open ended questions were also compared to identify duplicate records. In all instances of a duplicate record being found, a complete submitted record for the same person could be identified in the datasets. The record that was considered to be the duplicate, and that was deleted from the dataset, was an incomplete record.

Additionally, several respondents in both the current/recent residents data file and the past residents data file were found to have completed the incorrect questionnaire. There were 38

identifiable respondents who completed the current/recent residents questionnaire who should have completed the past residents questionnaire. These respondents were mostly children of residents who had lived in the Mr Fluffy house while growing up (33 responses), with an additional 5 respondents who had not specified ownership of the house. They had all moved out of the home prior to the Buyback Program being introduced (the month and year they had moved out was recorded at Q4_A and Q4_B). Their data was extracted and added to the past residents data file. Similarly, there were 15 respondents who had completed the past residents questionnaire who should have completed the current/recent residents questionnaire. These respondents were all still living in the home at the time the Buyback Program was introduced, and in all but one instance they were the sole respondent for their household.

Once all duplicate records were removed from the datasets and the respondents completing the incorrect version of the question were corrected the data were checked for out of range answers to questions. Data with open ended responses (and 'Other – please specify' categories) were checked and recoded for analytical purposes. New response categories were created for some variables where there were 5 or more respondents providing the same answer in an 'Other – please specify' text field. Some binary variables were recoded from responses 1-'Yes', 2-'No', 7-'Not applicable' 8-'Don't know', .-(missing) to 1-'Yes' 0-all other responses. Composite variables were also derived in instances where respondents could answer in days, weeks or months, for example, length of time to complete a renovation. And finally, new variables were created for multi-part questions where several respondents provided the same answer in an 'Other – please specify' text field. A full list of the variables that were recoded is provided in Appendix 3.

Analysis

This report describes the population sample, key factors related to respondents' level of exposure to asbestos (length of time living in the premises, renovation history on the house and access to both the roof and sub-floor spaces), as well as the health concerns expressed by respondents in relation to living in a Mr Fluffy house. We examined simple cross tabulations of responses where appropriate and used Chi square tests to assess $p < 0.05$ as statistically significant results. This descriptive analysis is presented for the current/recent residents and separately, for the past residents of Mr Fluffy houses.

Comparisons to self-reported health measures and distress levels from the ACT and Australian general populations were made, although limited inferences can be made due to the low response rate in the ACT Asbestos Health Study survey data. We compared results from the survey for specific health outcomes (e.g. self-assessed overall health, psychological distress) to other studies, such as the PATH project, [18] or the ABS Australian Health Survey, [19] and the ACT General Health Survey. [20]

A series of analyses examined which sociodemographic and asbestos exposure factors were associated with reporting high levels of concern about the health effects of living in a 'Mr

Fluffy' house. A series of tabulations examined the percentage of each sociodemographic and exposure group who reported high concern.

Psychological distress was measured in the survey with two separate measures: the Distress Questionnaire-5 (DQ-5) and the Kessler 6 (K6). Both are valid screening tools for psychological distress in the general population and can identify individuals who met diagnostic criteria for psychological disorders with a reasonable degree of certainty. [21, 22] Chi-square tests were used to determine whether the overall association between these factors and high concern were significant, after excluding missing responses.

In order to make inferences about the psychological health of Mr Fluffy residents, comparisons were made with data on the general ACT population using information from the most recent Australian Health Survey. [19] Data were obtained from the Australian Bureau of Statistics (ABS) which measured psychological distress with the Kessler 10 (K10). The K10 is a slightly longer version of the K6, containing 10 questions about symptomology within the past 4 weeks. Scores on the K10 range from 10 to 50 and those with a score of equal to or greater than 22 are categorised as having high psychological distress.

Residents who reported having resident children aged 5-17 years old were asked to rate, for each child, their children's level of worry about living in a Mr Fluffy house. The adults reported the level of worry on a 5 point scale, from 'not at all worried' to 'extremely worried'. There were a number of adults from the same household likely reporting on the level of worry from the same children. In order to prevent double counting children, we randomly selected one adult from each household to report on the level of worry about their children.

Multivariate logistic regression was used to quantify the relationship between high concern and sociodemographic and exposure factors. First, we estimated odds ratios adjusting for age and sex, taking into account clustering within households. We then estimated odds ratios after adjusting for all other sociodemographic and asbestos exposure factors, taking into account clustering. All factors were added into the model and variables with a p value <0.05 were considered statistically significant. Respondents with missing data on any of the variables were excluded from the analyses.

All analyses were performed using Stata, version 14.1.

Ethics and funding

This project was approved by the ACT Health Human Research Ethics Committee (ETH.9.15.181) and the ANU Human Research Ethics Committee (Protocol no. 2015/668). The ACT Government provided funding for this study under the ACT Asbestos Health Study contract.

Results: Current/recent residents

Sociodemographic characteristics of the sample

The final sample of current or recent residents (referred to as 'residents') included 363 respondents from 262 households. Of the residents who reported their gender (n=334), 140 (41.9%) were men and 194 (58.1%) were women. The mean age of participants was 55 years old (range, 68 years old). Figure 1 shows the number of people in the sample by age group and sex.

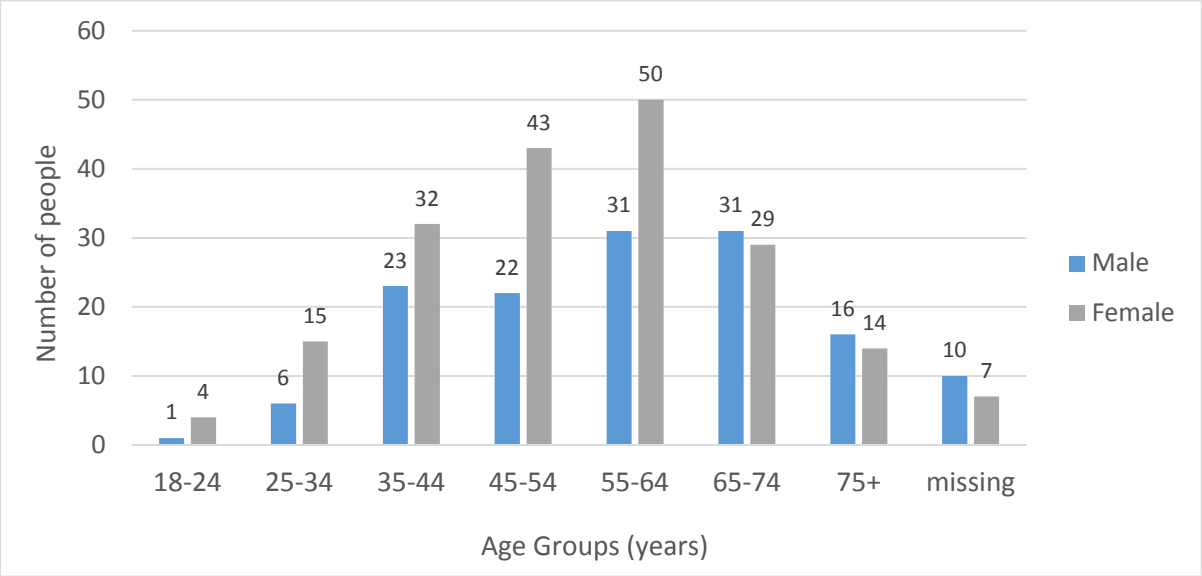

Figure 1 Number of men and women by age in the sample of current or recent residents. NB. Numbers do not include 28 respondents whose age and sex was unknown.

Tables 1–9 (Appendix tables 1) report sociodemographic characteristics of the population sample. Most residents reported living in a married (65.2%) or de facto (9.1%) relationship. A smaller number were single because they had never married (16.4%), been separated (1.2%) or divorced (2.1%) or had been widowed (5.5%).

The sample was highly educated. More than one-third (34.5%) reported postgraduate qualifications and another quarter (27.3%) reported attaining a bachelor's degree. Approximately 16% reported their highest educational qualification as a high school certificate or less.

More than half (57.1%) of the residents were employed on either a full- or part-time basis. However, 34.9% were not employed, as they were studying (1.8%), responsible for home duties (3.6%) or retired (29.6%). A small number were self-employed (6.8%) or unemployed (1.2%).

Residents were asked to report their average household weekly income before tax from all sources. There was a wide range of incomes reported by the residents, with relatively even numbers of respondents in each of the six possible outcome categories. Approximately 15%

(14.5%) reported incomes of less than $1000 per week and another 21.2% reported earning more than $3000 per week.

The average number of people living in the affected property was 3 persons. Approximately 11% of the properties were inhabited by just one person, 30.6% were occupied by two people and 58.7% had three or more occupants. More than one-third of residents reported having children aged under 18 years old living in the ARP. Almost three-quarters of residents (73.1%) had never smoked, another 22.2% were past smokers and 4.8% were current smokers.

Current/ Recent Residents Key Sociodemographic Characteristics	
363 residents from 262 households	Married or de facto: 74.3%
Average number of people per house: 3	Tertiary educated: 61.9%
Women: 58.1%	Household with resident children: 38.4%
Employed: 57.1%	Current smokers: 4.8%

Exposure to asbestos

Tables 10–46 in Appendix tables 1 describe the residents' exposure to asbestos. Most residents had lived in their affected properties for a considerable period of time. Forty-two residents were still living in the affected property at the time of completing the survey. Of those who had vacated their properties, the average length of residency was 19.3 years. A considerable number (21.6%) had lived in their properties for 30 or more years.

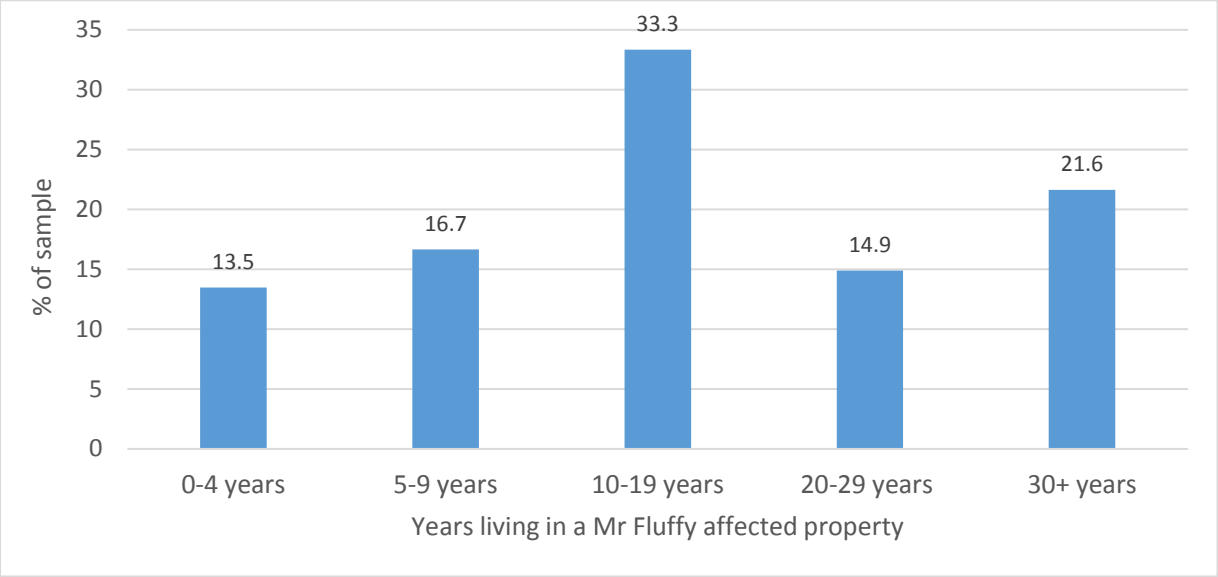

Figure 2 Percentage of residents by years living in Mr Fluffy affected property (if already vacated property)

Approximately 10% of the residents reported living in the property when the loose-fill asbestos was installed. These residents reported installation occurring between 1968 and 1979. One third (29.9%) of residents reported living in the affected property when the

Commonwealth and ACT Governments joint program removed the loose-fill asbestos insulation. These remediation processes were reported to have occurred between 1989 and 1993.

It was common for the residents to report entering roof or under-floor spaces while living in their property. More than half (58.5%) reported entering the roof space at some point and one quarter (25.9%) entered this space on more than 10 occasions. A significantly higher proportion of males (85%) reported entering the roof space compared to women (41%, $p<0.001$). Fifty one percent of males reported entering the roof space greater than ten times, with 15% entering more than 50 times. Similarly, a significantly higher proportion of males (86%) reported entering the under-floor space in the ARP compared to women (62%, $p<0.001$). Approximately three-quarters of the residents reported entering the under-floor space at some point during their residency, including 27.7% who reported entering that space on 50 or more occasions.

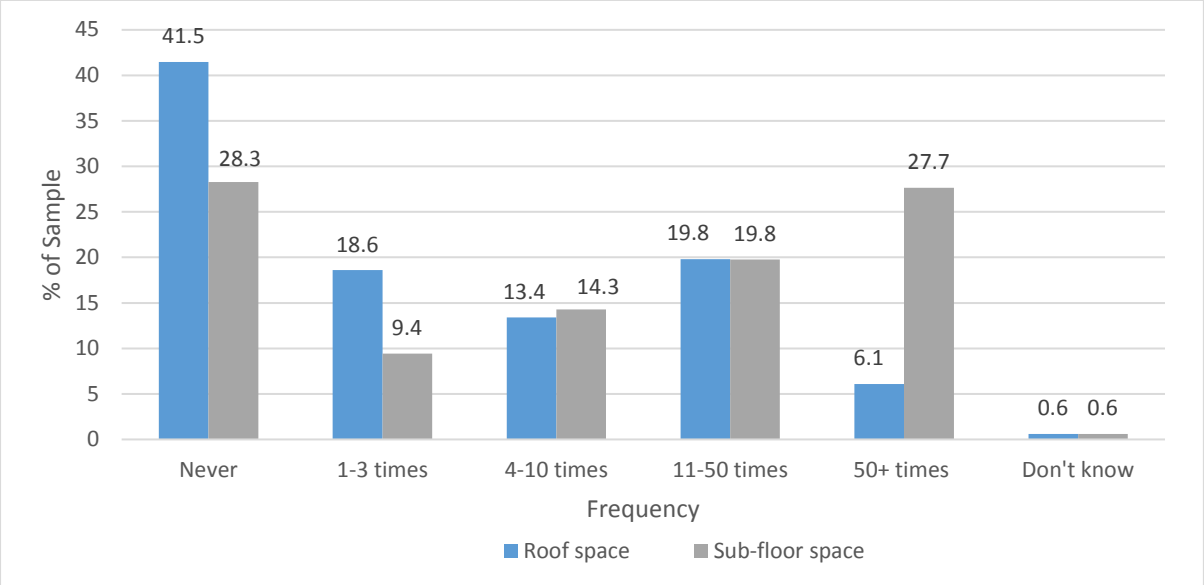

Figure 3 Frequency of entering roof and sub-floor spaces while living in a Mr Fluffy property

Renovations

Renovations to affected Mr Fluffy properties were reported by 81.8% of residents. It was common for residents to report doing the renovations themselves, with approximately 41%of those reporting renovation indicating that they took part in at least one of the renovations done to the affected property.

Respondents were asked to recall the duration of up to five renovations done to the affected property. The duration of the renovations are reported in table 41 (Appendix tables 1). The mean length of first (most recent) to fifth renovations ranged from just less than one month (23 days) to just over four months (136 days) (table 3).

Table 3 Length of each renovation (in days)

	Mean	Median	25-75th percentile
Renovation #1 (n=252)	135.7	56	14-120
Renovation #2 (n=148)	58.8	21	7-77
Renovation #3 (n=61)	36.4	14	5-42
Renovation #4 (n=28)	36.3	14	3.5-45.5
Renovation #5 (n=12)	23.3	7	4-17.5

Of those who reported renovations and examining all five possible renovations together, almost one-quarter (22.6%) reported the asbestos was not disturbed during the renovations. However, 21.5% were aware that they had disturbed the asbestos and another 55.9% were unsure if asbestos had been disturbed or not.

Precautions to prevent asbestos exposure during renovations

Residents who renovated were asked whether they themselves or their builders took any 'precautions to prevent asbestos exposure, including the use of dust masks…'. No residents reported taking precautions to prevent asbestos exposure for all renovations. More than half (57.6%) reported that precautions had not been taken but a smaller number reported that precautions had been used for at least some renovations.

More than one-third reported not knowing whether their builders used precautions when renovating their properties. However, for those who were able to report, approximately 50% reported that their builder did not take precautions. Figure 4 describes whether residents and their builders used precautions to prevent asbestos exposure.

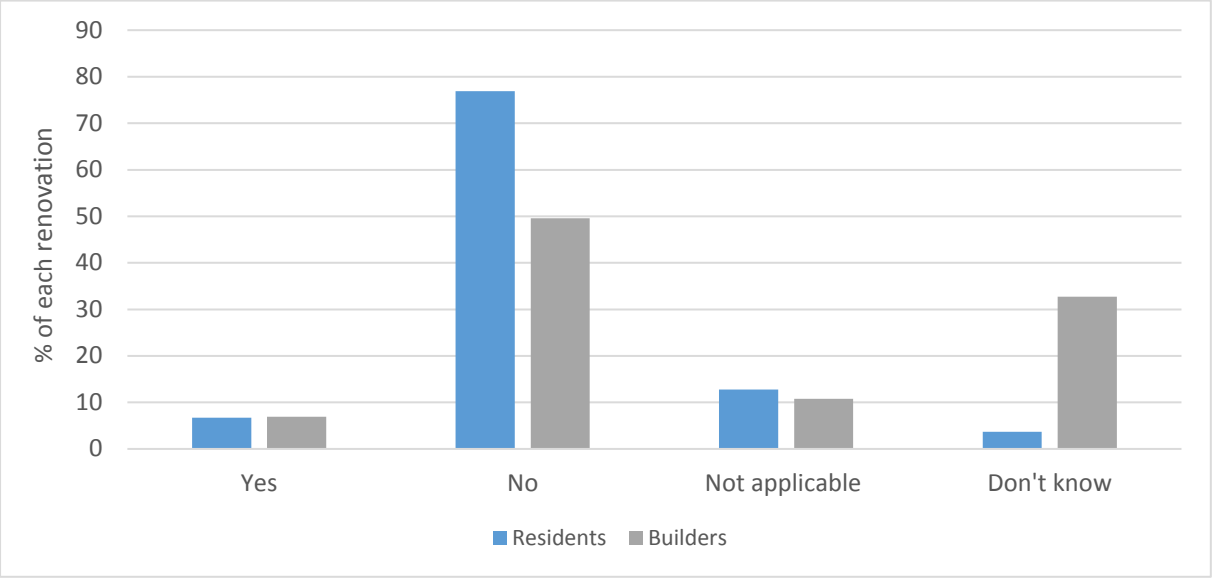

Figure 4 Residents responses to whether precautions were taken to prevent asbestos exposure for themselves and their building during all reported renovations.

Asbestos fibre detection in the affected property

Just over half (53.2.0%) of residents reported that asbestos fibres had been detected in the living areas of the homes. When asked where the fibres had been detected, the most common response was built-in cupboards (67.0%), followed by a bedroom (30.3%) and heating or cooling ducts or returns (23.8%). A smaller number of residents reported fibres being detected in the kitchen (17.3%), main living area (15.1%) or bathroom (9.7%). Although not defined outcome categories listed on the questionnaire, a number of residents noted in the 'other' category that fibres were detected in the laundry (4.9%), hallway (3.8%) or garage (2.7%). More than half (53.0%) reported that fibres were detected in two or more areas of the home.

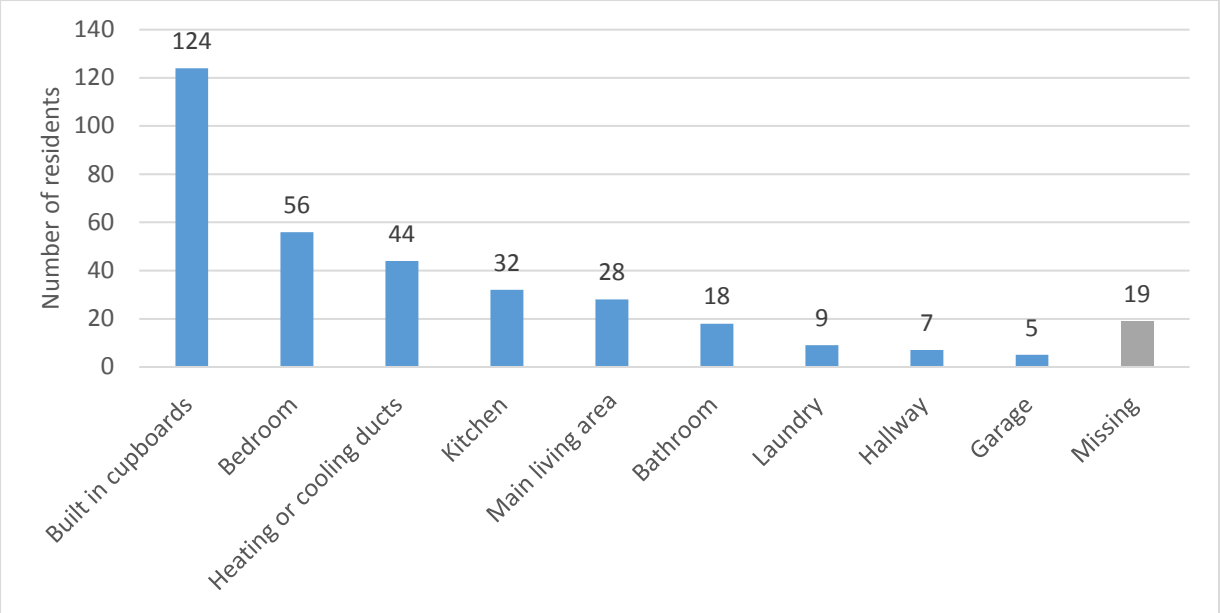

Figure 5 Frequency of living areas where loose-fill asbestos was detected. NB: respondents could select more than one area.

Just over 10% of residents were advised to vacate their house by the asbestos assessor after the 2014/2015 asbestos assessment. All respondents were also asked if they had left belongings when they left their properties. Approximately one-quarter (23.7%) reported taking all their belongings with them. However, more than two-thirds (67.6%) of residents reported leaving some items behind and a small number (8.7%) reported leaving all their belongings in the house.

Health Information

Information on the health risks of exposure

Almost one in five (18.2%) residents did not feel as though they had received enough information about the health risks of exposure to loose-fill asbestos and another 15.4% reported that they were unsure ("don't know") if the information they had was sufficient.

However, more than half (66.5%) of residents reported that they felt they had received enough information.

When asked about the source of the information they received, 70.2% reported that they had received information from the ACT Government. Internet searches, the Mr Fluffy home owners group and medical and health professionals were also common sources of information.

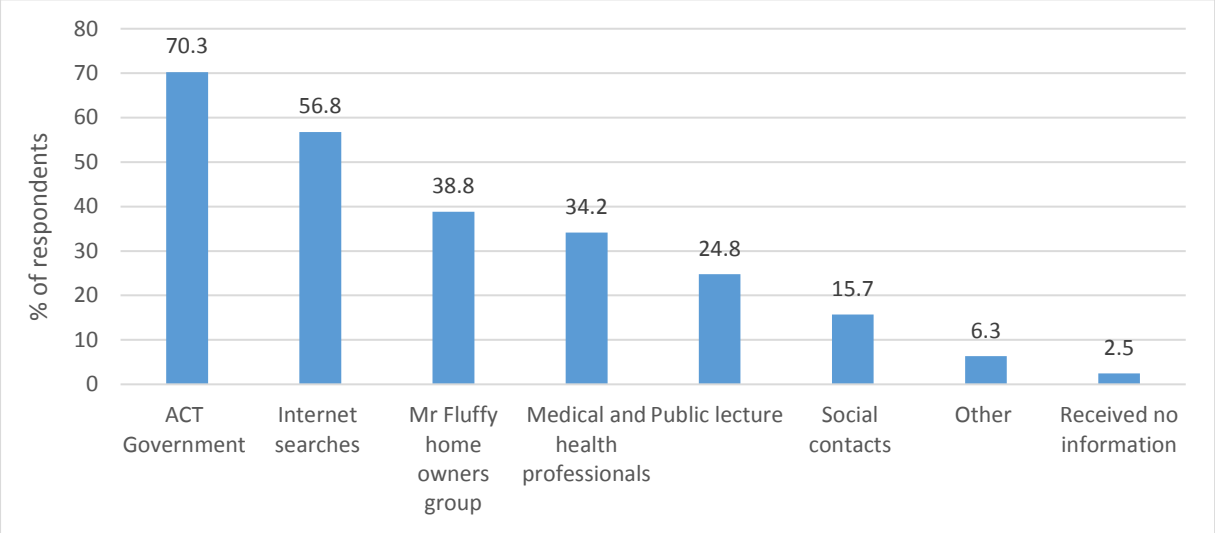

Figure 6 Percentage of respondents reporting each source of information on the health effects from asbestos exposure. NB: respondents could select more than one source.

Seeking help from health professionals

One-third (31.7%) of residents reported that they had sought help from a health professional to help manage their physical or mental health in relation to living in an ARP. Residents were asked to indicate what kind of professional they sought help from, with the option of selecting more than one source. The majority of these residents sought help from their GP (77.4%). Accessing a psychologist (33.0%) or counsellor (35.7%) was also relatively common.

Health measures

Tables 51-59 in Appendix tables 1 present data on the health of residents in the sample.

Psychological distress

The cut points for identifying those with high levels of psychological distress are presented in table 4 below. Approximately one-quarter of the sample reported high psychological distress.

Table 4 Cut points for the psychological distress measures and the % of the ACT Asbestos Health Study survey reporting distress

	Score range	Cut point	% with high distress
DQ-5	5-25	≥14	24.77
K6	6-30	≥13	25.84

There was relatively high concordance between the measures. Of the 326 residents who had valid scores on both the K6 and DQ-5, 225 (69.0%) were classed as having low distress on both measures and 64 (19.6%) were classed as having high levels of distress. Approximately 5% of residents were classed as having high distress on one measure but low distress on the other.

Comparisons with the Australian general population by age categories suggest that there was a higher proportion of recent Mr Fluffy residents who reported high psychological distress compared to the Australian population. However, caution should be taken when interpreting these results. The ACT Asbestos Health Study sample had a relatively low response rate (hence potential for selection bias), relatively small numbers of people in each category, and the cut points used were based on different measures of distress to those used in the Australian Health Survey.

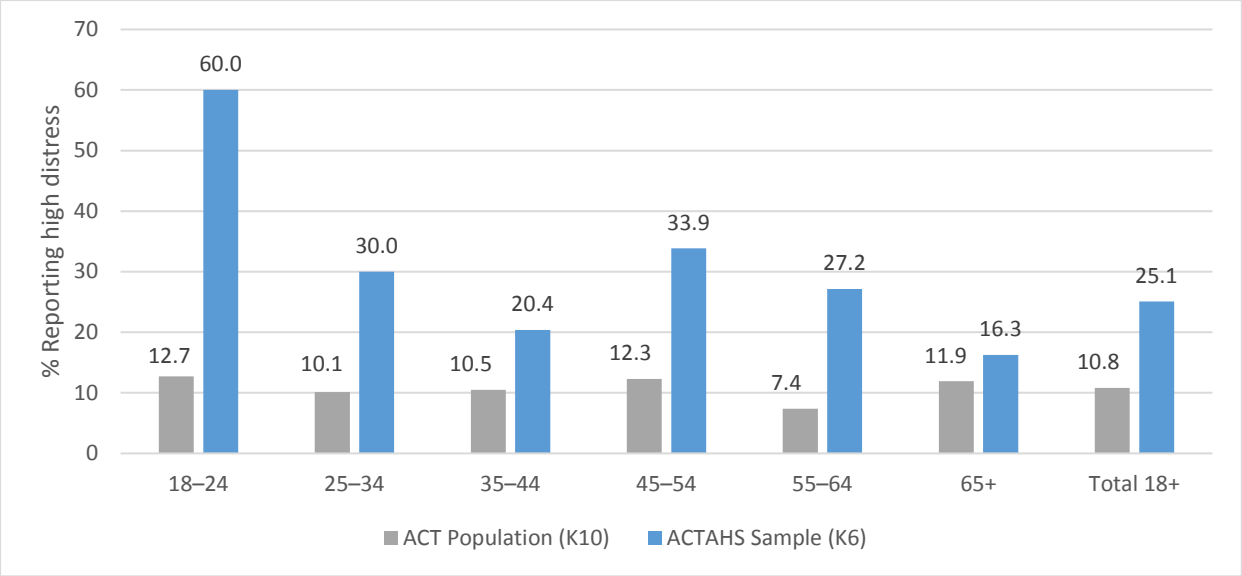

Figure 7 % reporting high psychological distress by age groups in the ACT Asbestos Health Survey sample compared to ACT population.

Source: ACT Asbestos Health Survey and National Health Survey 2014-2105, Australian Bureau of Statistics.

Self-rated health

Most residents reported being in good health. More than half (57.6%) of the sample recorded their overall health as either 'excellent' or 'very good' and a further 28.1% reported that their health was 'good'. Just 14.3% recorded their health as 'fair', 'poor' or 'very poor'. At the time of writing, comparable statistics for the general ACT population were not available.

However, data was available on the Australian general population from the latest national Australian Health Survey. [19] Comparisons with these data revealed that the percent of respondents to this survey reporting excellent or very good health by age were comparable, if not slightly better than the general Australian population up until age 65. Figure 8 presents the percentage reporting excellent or very good in the general Australian population and the ACT Asbestos Health Study resident's sample. The percentage reporting excellent or very

good health in the 65–74 and 75–84 was considerably higher in the ACT Asbestos Health Study survey sample. However, as noted before, caution should be applied in making these comparisons given the low relatively low response rate and small sample sizes (e.g. 65–74: n=60; 75–84: n= 30).

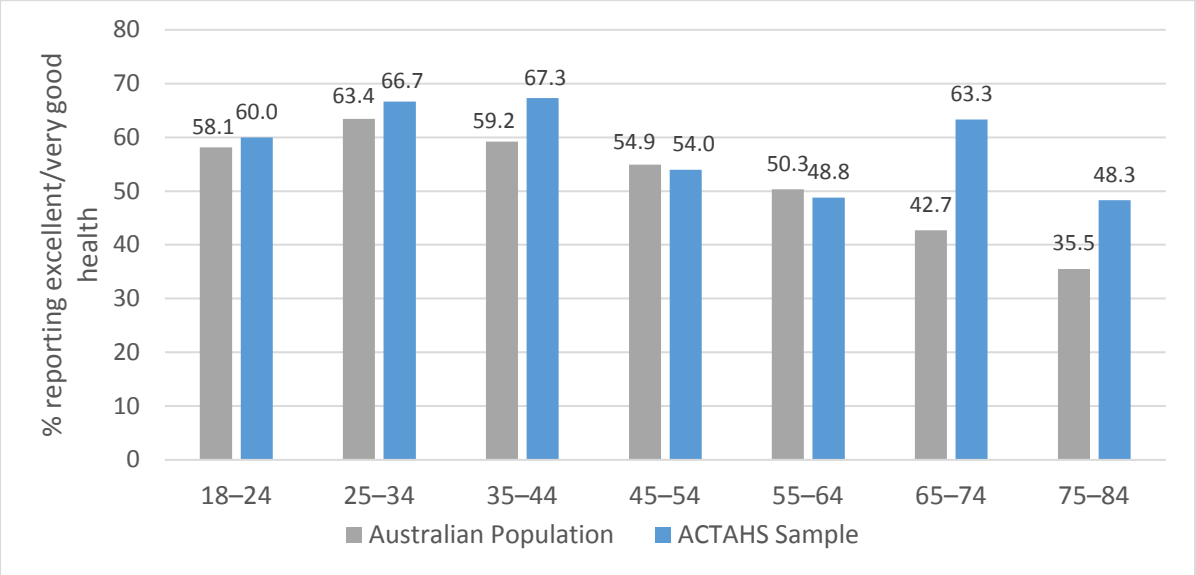

Figure 8 % reporting excellent or very good self-rated health by age groups in the ACT Asbestos Health Study sample compared to Australian population.
Source: ACT Asbestos Health Study and National Health Survey 2014-2105, Australian Bureau of Statistics.

Health problems attributed by residents to asbestos

Residents were asked to indicate whether they had experienced any specific health problems that they attributed to asbestos exposure. If they reported 'yes' to this question, residents were then asked to list their health problems. Less than 10% (7.4%) indicated that they had experienced health concerns related to asbestos. The most common health conditions listed by the residents was stress or anxiety, followed by depression and sleep problems.

Residents were also asked whether they have ever been diagnosed by a doctor with a condition that is known to be due to exposure to asbestos. Three residents reported that they had been diagnosed with a condition; two with pleural plaques and one with lung cancer. No resident reported that they had been diagnosed with mesothelioma or asbestosis.

The health concerns of children

Sixty-one adult respondents reported on the level of worry of 115 children (Figure 9). Most children had relatively low levels of worry: 19.1% were not at all, 41.7% were only slightly worried and another 24.4% were moderately worried. However 14.8% reported being very (9.6%) or extremely (5.2%) worried.

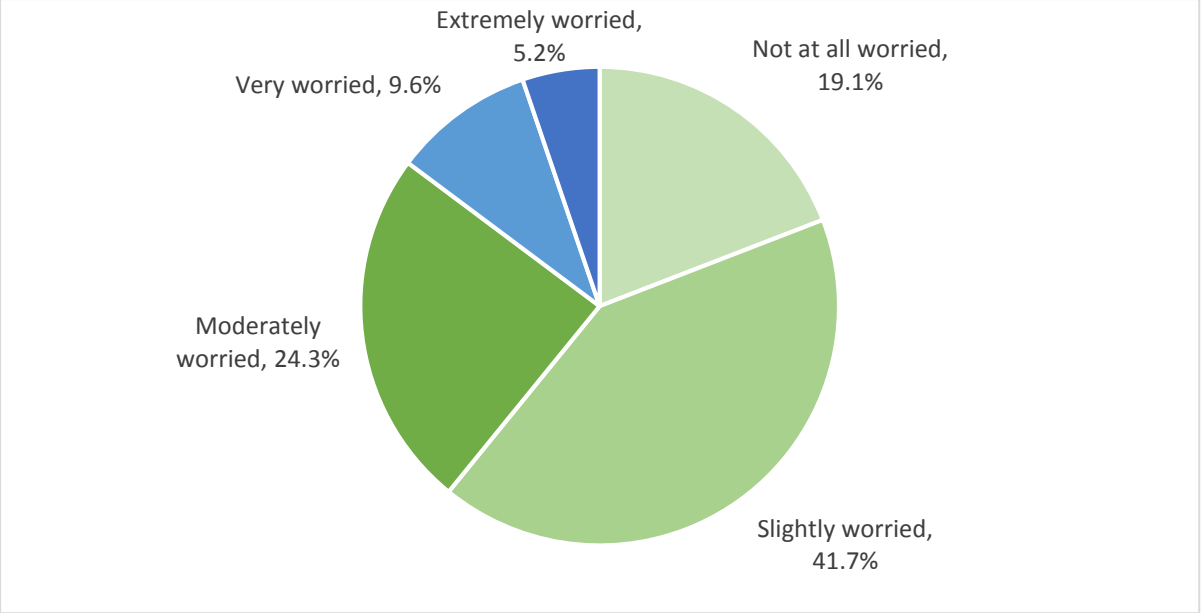

Figure 9 Parents report of their children's (aged 5-17 years) level of worry about living in a Mr Fluffy house. Figures are based on 61 adults' reports of 115 children.

Residents' concern with the health effects of living in a Mr Fluffy house

Residents were asked to rate their level of concern about the health effects of living in a Mr Fluffy house on a five point scale, from 'unconcerned' to 'extremely concerned' (Figure 10).

Most residents reported at least some level of concern about the health effects of living in property affected by loose fill asbestos. Less than 10% (9.2%) reported being unconcerned about the health effects. Slight concern was registered by 23.3% of residents and moderate concern was reported by another 24.0%. However, a substantial proportion of the residents reported being very (17.7%) or extremely (25.9%) concerned.

Residents were categorised into those with low-moderate concern (unconcerned, slightly concerned or moderately concerned) or high concern (very or extremely concerned). Using this measure, just over one-third (43.5%) of residents were classed as reporting high concern and one half (56.5%) we classed as reporting low or moderate concern (the remaining residents chose not to report their concern).

Respondents were also asked to respond using a yes or no format, if they were concerned about their own, their partners and their children's health as a result of living in a Mr Fluffy house. Missing data on these items was high, even after excluding respondents who did not have a partner or children: 12.2% did not report on their level of concern for their own health, almost one-fifth (19.5%) of those with a partner did not rate their concern for their partners health and 17.8% of residents with children did not rate their concern for their health.

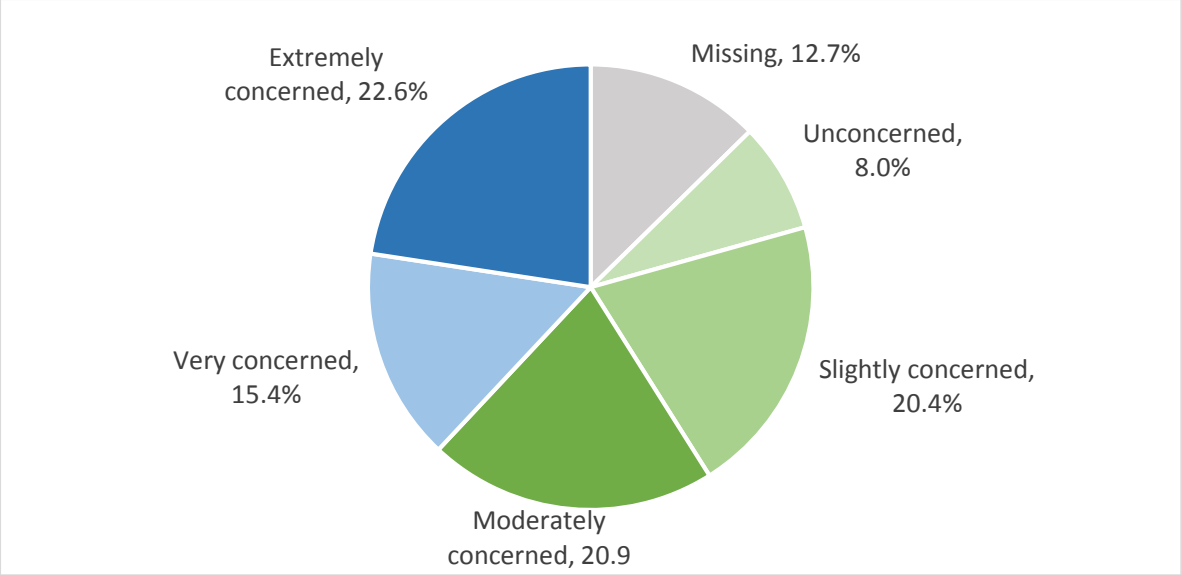

Figure 10 Residents level of concern related to the health effects of living in a Mr Fluffy affected property

Of those who did respond, levels of concern were high. Almost three-quarters (72.4%) reported that they were concerned about their own health. Almost three-quarters (74.7%) of those who had a partner reported being concerned for their health and more than three-quarters (78.8%) of those with children reported that they were concerned for their children's health. The health concerns of residents are presented in tables 60-65 in Appendix tables 1.

Factors associated with reporting high concern

Tables 66-76 (Appendix tables 1) present the percent of each sociodemographic and asbestos exposure category reporting high concern. There were significant differences in concern by: gender (χ^2=7.92, p=0.005), age group (χ^2=20.34, p=0.001), having children (χ^2=19.28, p<0.001), renovations (χ^2=9.51, p=0.009) and not receiving enough information about the health effects (χ^2=56.69, p<0.001). In contrast, level of concern did not differ between education levels (p=0.91), smoking status (p=0.920), years lived in the Mr Fluffy affected property (p=0.054), whether asbestos fibres were detected (p=0.197), or those who entered roof (p=0.714) or sub-floor spaces (p=1.00).

More women (50.0%) than men (34.1%) reported high concern. The lowest levels of concern were reported by the youngest (20.0% of 18-24 year olds) and the oldest respondents (26.4% of ≥65 years old), whereas the highest concern was reported in the middle age groups (60.4% for 35-44 year olds). High concern was also more common among respondents with children (59.1%) than those without (34.2%), as well as those who had renovated (48.0%) compared to those who had not (24.5%). Almost 85% of residents who reported that they had not received enough information about the health effects reported high level of concern compared to 30.0% of residents who felt they had adequate information.

Logistic regression analyses of factors associated with high health concern

Results from the age- and sex-adjusted logistic regression are presented in table 77 (Appendix tables 1). Factors significantly associated with reporting high concern were: having children in the house (OR=3.62, p=0.001), entering the sub floor space (OR=2.35, p=0.005), reporting that fibres were detected in the home (OR=1.66, p=0.05), renovating (OR=3.75, p=0.001) and reporting not having enough information on the health effects (OR= 12.53, p<0.001). Factors not significantly associated with high concern were education level, smoking status, years resident in the house and entering the roof space.

Multivariate logistic regression predicting high health concern

Table 5 shows the final model of this set of multivariate analyses. After adjusting for all factors in the model, being a woman, having children living in the house, and not having enough information on the health effects were all significantly associated with having high level of concern for the potential health effects of asbestos. All other factors were not significantly associated with high concern after adjusting for sociodemographic and exposure factors.

Future Health Research

In total, 84.6% (307/363) of current or recent residents indicated that they would be willing to participate in future research relating to asbestos exposure.

Table 5 Multivariate odds ratios for factors significantly associated with reporting being 'very' or 'extremely concerned' about the health effects of living in a Mr Fluffy house.

	Concerned/Total	OR (95%CI)	p-value
Sex			
Male	36/98	1.00	
Female	63/134	2.64 (1.26-5.54)	0.010
Age groups			
25-34	8/15	2.67 (0.4-17.88)	0.311
35-44	22/37	1.68 (0.38-7.53)	0.497
45-54	19/49	0.45 (0.13-1.58)	0.211
55-64	34/63	2.09 (0.79-5.52)	0.139
65+	16/68	1.00	
Education level			
Postgraduate degree	37/89	1.00	
Bachelor's degree	20/53	1.23 (0.45-3.32)	0.687
Certificate/ diploma	26/54	1.43 (0.56-3.7)	0.457
High school or below	16/36	2.29 (0.76-6.95)	0.142
Children in the house			
No children	49/147	1.00	
Children in the house	50/85	2.94 (1.01-8.58)	0.048
Smoker status			
Never smoked	71/172	1.00	
Current smoker	19/47	2.87 (0.71-11.55)	0.137
Previous smoker	9/13	0.86 (0.4-1.85)	0.704
Years resident			
0-4 years	16/32	1.00	
5-9 years	17/34	1.34 (0.37-4.89)	0.654
10-19 years	36/68	1.84 (0.45-7.44)	0.395
20-29 years	12/36	1.35 (0.28-6.45)	0.704
30+ years	18/62	1.14 (0.21-6.13)	0.878
Entered floor space			
Did not enter floor space	23/68	1.00	
Entered floor space	76/164	1.52 (0.68-3.36)	0.306
Entered roof space			
Did not enter roof space	33/91	1.00	
Entered roof space	66/141	2.09 (0.91-4.78)	0.081
Fibres found			
Not found	37/101	1.00	
Found	58/122	1.33 (0.69-2.58)	0.397
Don't know	4/9	2.09 (0.34-12.9)	0.429
Renovations took place			
No	11/39	1.00	
Yes	88/193	1.44 (0.56-3.69)	0.449
Received enough information			
Yes	47/160	1.00	
No	36/40	18.43 (6.31-53.8)	<0.001
Don't know	16/32	1.99 (0.78-5.07)	0.151

Note. Estimates are based on data from 240 residents who did not have missing information on any of the predictor variables. ORs are adjusted for all factors in the table.

Results: Past residents

Sociodemographic characteristics

There were 204 past residents (62.4% women, 37.0% men, 0.6% unknown) who completed the survey. The mean age of past residents was 51 years (range 60 years). Two-thirds (64.3%) of past residents reported postgraduate (37.4%) or bachelor's (26.8%) degrees. Most past residents were employed on a full- (46.5%) or part- (19.1%) time basis, however, a substantial proportion (29.0%) were also not employed. The majority (74.2%) of past residents reported living in a married or de facto relationship but a small percentage (25.8%) were single. The average number of people living in the house was 3.7, and 60.7% reported having children under the age of 18 years. Most past residents were non-smokers, with only 6.6% reported that they were current smokers. Tables 79-87 in Appendix tables 2 present the sociodemographic characteristics of the past resident sample.

Past Residents Key Sociodemographic Characteristics, N=204	
Average age: 51 years	Married or de facto: 74.2%
Average number of people per house: 3.7	Tertiary educated: 64.3%
Women: 62.4%	Households with resident children: 60.7%
Employed: 65.6%	Current smokers: 6.6%

Asbestos exposure

Almost half (49.0%) of past residents had lived in an ARP for over a decade. The average length of residency in the affected property for past residents was 11.0 years and a substantial proportion (17.9%) lived in the property for 20 or more years. Almost one-third (30.4%) were living in the house when the loose-fill asbestos was installed and almost one-third (31.8%) reported living in the property when it was remediated.

Entering the roof space and sub-floor spaces was also common among past residents. More than one-third (36.4%) of residents reported entering the roof space at some time, with 12.0% reporting entering the space on at least 10 occasions. Entering the sub-floor space was more common: more than half (53.2%) of past residents entered the space, more than one-third (33.5%) of whom entered on more than 10 occasions.

More than half (58.6%) of past residents reported that the property had been renovated while they lived there (a further 11.9% reported that they did not know if there had been renovations). When asked if asbestos was disturbed during those renovations, almost one-third (29.8%) reported that it had been disturbed during at least one renovation and only 11.5% reported that no disturbance had occurred. Few past residents reported that they took precautions to minimise exposure to asbestos during renovations; for each renovation, approximately two-thirds reported that they had not taken precautions and another 10% reported that they did not know. More detailed information on asbestos exposures is presented in tables 89-109 in Appendix tables 2.

Health of past residents

Similarly to recent residents, psychological distress was measured with two separate measures, the DQ-5 and the K6. Using the cut points described above, approximately one-in-five (22.7%) past residents were classed as having high psychological distress using the K6 and one in six (15.6%) was classified as distressed on the DQ-5.

Most past residents were in good health. More than half (51.9%) reported their health as 'excellent' or 'very good'. Another 29.7% reported their health to be 'good' and just 18.4% reported their health as either 'fair', 'poor' or 'very poor'.

Just 12 (6.5%) past residents reported that they had sought help from a professional for their physical or mental wellbeing. When asked which professionals they sought help from, most reported that they sought help from their GP (n=11, 91.7%), however 4 (33.3%) past residents also reported seeing a psychologist or counsellor. The health of the past residents sample is presented in tables 110-121 in Appendix tables 2.

Ten past residents (4.9%) reported health problems that they attributed to asbestos exposure. When asked to report the conditions, respondents listed conditions such as asthma, breathing difficulties and chest infections, stress, anxiety and sleeping difficulties and skin complaints. When asked if they had ever been diagnosed by a doctor with a condition known to be due to asbestos exposure, five (2.5%) reported that they had. Two past residents had been diagnosed with pleural plaques, one with mesothelioma, another with lung cancer and one with nodules in the lungs.

Health concerns as a result of living in a Mr Fluffy house

Past respondents were asked to respond using a yes or no format, if they were concerned about their own, their partners and their children's health as a result of living in a Mr Fluffy house. Missing data on these items was high, even after excluding respondents who did not have a partner or children: 14.2% did not report on their level of concern for their own health, almost one-quarter (23.0%) of those with a partner did not report their degree of concern for their partner's health and 16.7% of past residents with children did not report their degree of concern for their health.

Of those who did respond, levels of concern were relatively high. Almost two-thirds (63.4%) reported that they were concerned about their own health. More than one-third (37.9%) of those who had a partner reported being concerned for their health and almost half (48.9%) of those with children reported that they were concerned for their children's health. The health concerns of past residents are presented in tables 121-123 in Appendix tables 2.

Future Health Research

In total, 81.4% (166/204) of previous residents indicated that they would be willing to participate in future research relating to asbestos exposure.

Discussion

Summary and implications

This survey of 567 current, recent and past residents of houses insulated with loose-fill amosite asbestos provides information into health concerns and potential exposures from the domestic setting. Most current and recent residents responding to the survey had lived in their houses for at least a decade and most entered the roof and sub-floor spaces. Almost 80% reported that they had renovated their house at some point. When renovations were done, many reported that they didn't use dust protection, although it was common to report that they didn't know if asbestos was disturbed during the process.

Most of the residents reported being in relatively good health with low anxiety and low psychological distress, although the distress levels overall for this sample appear to be higher than the general Australian population. At the time of this survey, no current/recent residents reported being diagnosed with mesothelioma (although the spouse of one respondent was said to have died due to this disease). However, one resident had been diagnosed with lung cancer and two with pleural plaques. Given the cross-sectional nature of the survey and small sample size, it is impossible to establish whether these illnesses can be attributed to exposure to loose-fill asbestos insulation or were due to other exposures, such as smoking.

Almost two-thirds of respondents reported that they felt had enough information on the health effects of living in a Mr Fluffy house. It was common for respondents to have sought information on the health effects from health professionals (mostly commonly their GP). Factors that were associated with being very or extremely concerned about the health effects of living in Mr Fluffy house were: being female, reporting that children lived in the house, entering the sub-floor space and reporting having inadequate information on the health effects.

Renovation of premises

Approximately 80% of respondents in the main survey (and just over half of the past resident respondents) indicated that their home had been renovated while they lived there (with most remaining in the home during the renovation period). Approximately 40% of respondents in our survey indicated that they had been involved in at least one renovation on their home; including people who had performed the full renovation themselves or were assisted in the renovation. It is likely that many respondents and tradespeople were exposed to asbestos fibres, as half of the respondents entered the roof space at least once, and almost two thirds entered the sub-floor space during the time they lived in the homes, and most did not use any form of protection while renovating.

Risks from disturbing asbestos

Disturbing asbestos is potentially hazardous and precautions should be taken minimise potential exposure to asbestos fibres. [23] In regard to levels of exposure to asbestos fibres for residents of ARP, the data from our study indicated that approximately half of the homes tested positive for asbestos fibres in the living areas, which matches preliminary data from

the ACT Asbestos Response Taskforce. [1] These tests were not conducted during renovation periods, but were completed during 2014 and 2015 after the buyback program was announced. Air samples to determine the number of fibres present were not carried out, so it is difficult to determine the level of risk at that time. A study that did measure an air sample of an office building in the ACT in a room with man-hole access to a roof space with 'loose floc' insulation contained 0.022 fibres per mL. [24] This measurement falls below that recorded during renovations to asbestos cladded buildings, with measurements of between 0.1 and 0.2 fibres per mL in the air. [25] Respondents in the ACT Asbestos Health Study survey were asked if asbestos fibres were disturbed during any renovations, and most responded that asbestos fibres were not visibly disturbed. Respondents, however, had to rely on recall of events that in some instances had occurred decades before, and at which time they may not have noticed any disturbances.

The risk of contracting mesothelioma is highest for those who have had intense and repeated exposures to asbestos fibres. [5, 8] For most residents in our survey, the risk of inhaling fibres would have been low most of the time, however, any disturbance of insulation could have resulted in fibres being inhaled. These disturbances may have occurred during renovations, or when residents entered either the roof or sub-floor spaces.

Implications for tradespeople

Respondents in the survey were asked if they were concerned about the health of themselves or other people. Respondents were able to indicate which specific people they were concerned about; 21.5% of respondents indicated they were concerned about builders or tradespeople who had been involved in the renovations of their homes. Respondents were asked if they observed their builder wearing protective masks or if they used other protection during the renovation and in most instances the response was that the builders or tradespeople did not protect themselves from potential asbestos exposure. Given the high number of renovations on ARP reported in the survey, it is likely that a large number of builders and tradespeople have been exposed to loose-fill asbestos over time, knowingly or unknowingly.

A report by the Australian Safety and Compensation Council [15] cited two studies showing that despite having knowledge of asbestos in buildings they were working on, some tradespeople did not use optimal safety precautions on the job. This would increase the likelihood of inhaling asbestos fibres. At this time, the number of tradespeople who have completed renovations on these houses in the ACT is unknown, however, the ACT Asbestos Response Taskforce has set-up a Mr Fluffy Record and Information Form where tradespeople (and others) can register their details for each affected property where they have worked (or resided). This is a self-nominating procedure, so complete numbers of exposed tradespeople may never be known.

Concerns

Health and children

Even with most respondents indicating their health was currently good, very good or excellent, over one third reported they were 'extremely' or 'very concerned' about the health effects of living in a Mr Fluffy house. It can take 20-50 years for symptoms of mesothelioma to develop, so for half the residents in our study, they would not yet reached the approximate minimum 20 year lag period for symptoms to appear. The uncertainty around exposure to asbestos and the long time between exposure and symptoms of disease may explain the large number of respondents reporting high levels of concern.

Also of concern to respondents of the survey was the health impact on their children, whether the children were currently living in the home, or whether they grew up in the home and had since moved out. More than three-quarters of the respondents indicated they were concerned about their children's health, with 6% of respondents specifically mentioning they were concerned about the health of their grandchildren.

A study by Baum *et al* on the type of stress and different types of disasters showed that a loss of control after a man-made disaster can lead to lasting feelings of helplessness, compared to the lack of control experienced during and after a natural disaster. [26] The authors compared behavioural and physiological measures of stress of flood victims, people living near a leaking toxic waste dump and a control group. Their findings suggest that the uncertainty of the long term effects of the toxins and the inability to measure the extent of the exposure could combine to cause chronic stress problems. We surveyed residents' concerns about health and did not explore other issues that are important for community resilience, such as financial implications, scientific expertise, authority of government, and matters of inequality. [27, 28] However, concerns about health identified in this survey explains, in part, the high levels of concern about potential health impact of asbestos exposure in the residents of Mr Fluffy homes.

Those with the highest levels of concern included women, those who had children living in the home, and those who hadn't received enough information about the risk of asbestos exposure. Many residents may feel concerned about being exposed to asbestos, particularly since they have a potential 50 year time period before symptoms of mesothelioma could appear. [28] It is expected that having children in the house increases the level of concern. Ensuring residents are kept informed about the risks of their exposure could help to relieve some of the concerns they hold, along with provision of ongoing assistance into the future.

Comparisons of results with the Australian Health Survey

The self-reported health of the respondents in our study was similar to the Australian population. The ACT Asbestos Health Study survey population reporting slightly better subjective health than the general Australian population. Due to the low numbers in our study it is difficult to make robust comparisons and examine the significance of the differences. A comparison of the K6 measure used in this survey and the Australian Health Survey K10

measure for distress shows higher levels of distress in Mr Fluffy residents. Again, it was difficult to make robust comparisons due to the low response rate for the ACT Asbestos Health Survey. However, it is reasonable to assume that the respondents in the ACT Asbestos Health Study survey would have higher levels of distress than they otherwise would have due to the changes in their lives over the last two years.

Survey of past residents

Almost half of the past residents surveyed had lived in their houses for at least a decade. The number of past residents who had entered the roof and sub-floor spaces was fewer than for the survey of current/recent residents, with half indicating they had never entered the roof space and just over one third indicated they had never entered the sub-floor space. Just over half reported that they had renovated at some point; a much lower proportion than for the current and recent residents. As with the current/recent resident survey, when renovations did occur, many reported that they did not use dust protection, and again it was common to report that they did not know if asbestos was disturbed during the process.

Past residents reported being in relatively good health on average, with low anxiety and low psychological distress. Past residents showed slightly lower levels of concern (for themselves, their partners and their children) about the health impact of being exposed to the loose-fill insulation than current/recent residents. One past resident reported they had been diagnosed with mesothelioma, one with lung cancer and two with pleural plaques. Again, it is impossible to establish whether these illnesses could be attributed to any specific asbestos exposure and/or other important factors, such as smoking.

Limitations of the study

Low response rate

The response rate for both surveys was lower than expected, with only 27% of households for current and recent residents responding to the invitation to participate. Given the nature of the survey and the importance of the results to the Canberra community, we had anticipated a higher response rate. Several reminders were issued to residents to participate in the study through email communication, the Taskforce facebook page, the Canberra Times, local radio stations and the ANU website.

There is a possibility that the method of delivering the invitations played a factor in the low response rate. Invitations from the ACT Asbestos Response Taskforce sent on behalf of the ACT Asbestos Health Study team to residents. This was to ensure the privacy of residents, as residents had not given permission for their contact details to be released to a third party. It is possible that some residents did not realise that the communication was from the ANU study team, and never responded to the invitation. However, the Study team made substantial efforts to ensure that residents were aware of the survey, and that the email from the Taskforce related to the survey.

It is possible that the low response rate biased the results of the study, as residents who responded to the survey may be different to residents that did not respond. For example,

those who responded may be more concerned about the health effects of Mr Fluffy than those who did not respond, or vice-versa. It was not possible to determine whether the sample was biased, as we did not have information on the non-responders. However, the profile of the study sample was broadly similar in terms of household population structure based on Component 4 of the ACT Asbestos Health Study (Unpublished data).

Poor internal referral

More than half of the responses to the current and recent residents survey were from households with a sole respondent. There were 57 households that had two residents respond to the survey, and a further 14 households had three or four household members respond to the survey. In the study design, we requested that the primary householder to forward on the email request with the unique household ID to other household members. It is clear that this method of referral for survey conduct was not as successful as we had anticipated.

The data for the past residents was collected in a different manner, and unless respondents provided dates of living at the address it was difficult to determine whether responses were from the same household. A rough estimate, based on the responses with dates for living in the premises, is that 79 responses were from households with only one respondent, 50 households had two residents respond, and a further 29 households had three or four members respond to the survey.

Time elapsed from buy back to survey

The nature of cross sectional surveys means that they represent a single point in time, even if they refer to events in the past. In this survey, we asked people about their health concerns and levels of psychological distress. These measures change over time and may not reflect the level of community concern among ARP residents closer to the Government announcement of the buyback of affected properties. The Study team intended to deploy the survey earlier, but it was important to incorporate the findings of the focus groups (Component 2), and to avoid various other events, such as holiday periods. The effect of this time elapsed, is that the survey results reflect the health concerns and psychological effects almost 18 months after the announcement of a key intervention to minimise exposure to asbestos.

Differences in response depending on who responded

The survey captured information from individuals, however, many of the questions within the survey instrument related to households. The questions regarding the number, length and type of renovations were answered individually, but these questions could have been answered as a household. The same is also true for questions regarding the health concerns of children in the household. Further analyses of these questions would require careful consideration, as many respondents of joint households provided different information about renovations (number of renovations, room renovated, and length of time it took to complete the work), and the questions regarding the level of concern for individual children also collected varied results.

Missing data

For some survey questions, there was substantial missing data. This can affect the representativeness of the results, as people who respond are different from those who do not. The reasons for the missing data is unclear, but may relate to people's sensitivity to certain questions or concerns about how data may be used. In the results, we present results only in an aggregated form and from non-missing responses. In the appendices we have provided all information in summary tables.

Possibilities for future analyses

Future analyses could look more in depth at the extent of exposure through renovations, keeping in mind that the data were collected at the individual level. The differences between the current/recent and past resident responses to the renovation questions could also be explored; it may be that there was a higher proportion of tenants in the past residents sample, which would explain the lower number of renovations and access to both the roof and sub-floor spaces in this group.

An analysis of the text responses to some of the questions is worth exploring further, particularly for Q92 at the end of the survey where many respondents provided qualitative information about their experience of living in a Mr Fluffy house. A large number of respondents also provided information about changes to their routines in Q77, which includes information about relocating from their homes, changing jobs, and children changing schools and the impact that had on themselves and their families.

Finally, a high proportion of survey respondents indicated a willingness to participate in future research regarding asbestos exposure. It may be important to follow up survey respondents in future years to examine any future health effects or changes to levels of concern. Additionally, there may be opportunities to validate the methodological approach and findings of the data linkage study (Component 4) that will include all residents of ARP since 1984.

Conclusions

In this survey of 363 current and recent residents, and 204 past residents, of homes insulated with amosite asbestosis in the ACT, we observed:

- A high proportion of people reporting renovations to the affected property, with few respondents reporting taking precautions during renovations;
- Many people reported having sufficient health information about the health risks of exposure to loose-fill asbestos;
- One third of people sought professional help for physical or mental health relating to living in a Mr Fluffy home;
- Approximately one quarter of people surveyed reported high levels of psychological distress;

- Ten per cent of residents reported health effects from living in a Mr Fluffy home, with most of these being psychological in nature; and
- People who were female, had children living in the house, and those who did not have enough health information reported higher levels of psychological distress.

There were several limitations to the survey, including a low response rate, the time between announcement of the buyback and the survey, and poor referral of invitations within households. Despite these limitations, the survey represents an important source of information for the community and government in managing potential health risks from asbestos.

Acknowledgements

The ACT Asbestos Health Study team thanks the ACT Asbestos Health Study Steering Committee for their guidance and feedback on the study design. The Study team thanks the ACT Asbestos Response Taskforce for their help in sending out invitations to residents to participate in the research. The Study team thanks individuals from the ANU, the Taskforce and ACT Health, who assisted with piloting the survey instrument.

Most importantly the Study team thanks all of the survey participants for their time in completing the survey and reflections on a range of health and social issues that have affected them in relation to living in a Mr Fluffy house.

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Glossary

ARP	Affected residential property that was at one time insulated with loose-fill amosite insulation in the Australian Capital Territory.
Chi square test	A statistical test to examine if there are differences between the proportions among two or more groups.
Current/recent residents	People living in an ARP or registered with the ACT Asbestos Response Taskforce at the time of the buy back on 24 October 2014.
HHID	A household identification code to enable the study team to identify respondents who lived in the same ARP.
Logistic regression	A statistical modelling technique that allows comparison of multiple factors influencing a binary outcome, such as ill or not ill, or low concern or high concern.
Mesothelioma	A rare form of cancer affecting the lining of the lung or peritoneum. Mesothelioma is primarily associated with exposure to different forms of asbestos.
Past residents	People living in an ARP at a time previous to the time the government buy back was announced on 24 October 2014. It ma.
Pleural plaques	Non-cancerous changes to the membrane surrounding the lungs and chest cavity.
Response rate	The proportion of the study population responding to a survey.

Appendices

Appendix 1 – Invitation letter

ACT Asbestos Health Study: Cross Sectional Survey

Dear <First name>,

The National Centre Epidemiology and Population Health at the Australian National University is conducting a study funded by the ACT Government, on the health effects of living in a Mr Fluffy house. As part of this study we are conducting a survey to determine health-related concerns and likely levels of exposure to asbestos insulation.

I am writing to invite you to complete the online survey. If you need any support in completing the survey online, due to English being a second language, concerns with technology or any other barrier to completing the survey, please contact the research team, contact details are provided below. Alternatively, if you have received a paper copy of this letter by mail you can complete the survey during a telephone interview, please contact the research team to arrange for this. The survey is entirely voluntary and there are no consequences for not taking part.

To ensure we have the correct respondents for the survey we have issued you with a unique household identifier. This ID number is linked to your Mr Fluffy address, and you will need to enter this number when you access the survey via the link in the email you have received from the Taskforce. If the address listed below is not correct please contact the research team at act.asbestos.health.study@anu.edu.au or call Sue Trevenar on 6125 6079.

<hhid>	<Unit> < Streetnumber1> < Streetname> < Streettype>, < Division>

Please note that the University's ACT Asbestos Health Study team does not have access to any personal identifying information about you or the people in your household. This will continue to be the case even if you complete the survey, unless you provide such information to us in order to participate in further research about the health effects of living in a Mr Fluffy house.

We would also like to assure you that only members of the study team will have access to the information you provide in the survey. The survey data will not be supplied to other people or organisations, including the ACT Government.

The Asbestos Response Taskforce will not have access to any survey responses. The Taskforce has dispatched this letter on our behalf using its address database (which has not been provided to us), but has no other role in the study.

The survey will be open for completion from 2 May 2016 to 17 June 2016. All members of affected households (who are aged 18 years and over) can participate. It is important that we collect separate information from each household member as you will have different health related, and exposure to asbestos information to provide. As the contact person for your

household we will ask you to send an invitation at the beginning of the survey to other household members to participate. It will take approximately 30 to 45 minutes to complete the survey.

We will ask you about:

- The amount of time you lived/have lived in a Mr Fluffy house
- Whether you own/owned or rent/rented the Mr Fluffy house
- Who lives/lived with you in this house
- Particular exposure to asbestos you may have had in the house (e.g., whether you have renovated it, and, if so, whether you did it yourself)
- Children who have lived in the house with you
- Your present health
- Distress that you may have experienced through living in the house
- Your views on information about health effects of Mr Fluffy houses the ACT Government has distributed
- Your smoking status
- Your household income
- Your age, sex, Aboriginal and Torres Strait Islander status, marital status, country of birth, language spoken at home, educational attainment, occupation and number of residents in your household)
- Whether we may contact you in the future for further health studies relating to living in a Mr Fluffy house.

Your privacy is important to us. If you agree to take part in further research we will ask for your name, date of birth, phone number, email address and Medicare number so that we can contact you in the future and ensure we are talking to the right person, however, we will not store those details with the survey data that is collected. All reported information will be combined so individuals cannot be identified. The information you provide as part of this survey will be stored securely on ANU servers for five years and then archived unless you consent to future studies.

Privacy Notice:
The ANU Privacy Policy can be found at
https://policies.anu.edu.au/ppl/document/ANUP_010007 and contains information about how you can

- Have access or seek correction to your personal information,
- Complain about a breach of an Australian Privacy Principle (APP) by ANU and how ANU will handle the complaint.

This is an opportunity for you to tell us about the impact of living in a Mr Fluffy house, as well as possible exposure to asbestos. The information collected will be used to examine levels of exposure to loose-fill asbestos and health concerns for residents of these houses.

On behalf of the study team, I sincerely hope that you and all eligible household members will complete the survey.

Yours sincerely,

Martyn Kirk

For further information please contact us by email or phone.

Associate Professor Martyn Kirk

T: (02) 6125 5609

E: Martyn.Kirk@anu.edu.au

Ms Sue Trevenar

T: (02) 6125 6079

E: Susan.Trevenar@anu.edu.au

Concerns or complaints

The Australian National University and ACT Government Health Directorate Human Research Ethics Committees have approved the ethical conduct of this research (ANU HREC protocol 2015/668, ACT Health Ethics Committee ETH.9.15.181). If you have concerns regarding the way this research was conducted please contact either of the following:

Ethics Manager

The ANU Human Research Ethics Committee

The Australian National University

Chancelry 10B, Lower Ground Floor

T: (02) 6125 3427

E: Human.Ethics.Officer@anu.edu.au

Manager - Human Research Ethics

ACT Health Directorate Research Office

Building 10 Level 6

Canberra Hospital

T: (02) 6174 7968

E: acthealth-hrec@act.gov.au

Appendix 2 – Questionnaire

Welcome to the ACT Asbestos Health Survey

What is the survey about?

This survey is part of the ACT Asbestos Health Study that the National Centre for Epidemiology and Population Health at the Australian National University (ANU) is conducting on behalf of ACT Health. Associate Professor Martyn Kirk leads the study. It will provide a 'snapshot' of the health experience and potential exposure to asbestos of people who have lived in Mr Fluffy houses in the ACT.

Who is funding the study?

The ACT Government funds the study (contract reference number: KH626309).

Who is asked to take part?

We would like all people in houses registered with the ACT Asbestos Taskforce (as at 28 October 2014) to take part in the survey. Multiple members from each household (aged 18 years and over) are able to participate. Past residents of Mr Fluffy houses who completed an e-registration form through the Taskforce following the release of the list of affected addresses on 1 July 2015 will also be invited to complete the survey.

What will you be asked to do?

We will ask you to complete an online survey. If you would prefer we can organise for an interview to be conducted over the phone. The survey will take approximately 30 to 45 minutes.

What questions will you be asked?

We will ask you about:

- The amount of time you lived or have lived in a Mr Fluffy house
- Whether you own or owned or rent or rented the Mr Fluffy house
- Who lives or lived with you in this house
- Particular exposure to asbestos you may have had in the house (e.g, whether you have renovated it, and if so, whether you did it yourself)
- Children who have lived in the house with you
- Your smoking status
- Your present health
- Distress that you may have experienced through living in the house
- Your views on information about health effects of Mr Fluffy houses the ACT Government has provided to date
- Your household income

- Your age, sex, Aboriginal and Torres Strait Islander status, marital status, country of birth, language spoken at home, educational attainment, occupation and number of residents in your household
- Whether we may contact you in the future for further health studies relating to living in a Mr Fluffy house.

Do I have to take part?

No. Your participation is voluntary and there are no consequences for not taking part. You can refuse to answer any question(s), and can withdraw from the survey at any time. If you choose to withdraw, we will remove any data collected from you from the database.

Privacy protection

Your privacy is important to us. We will not collect identifying information from you in the survey and we will protect your privacy as far as the law allows. If you agree to take part in further research we will ask for your name, date of birth, phone number, email address and Medicare number so that we can contact you in the future. We will not store these details with the survey information you give us. You will not be identified in any reports of the survey's results.

The information you give us will be stored securely on ANU servers for five years and then archived.

Privacy Notice:

The ANU Privacy Policy can be found at https://policies.anu.edu.au/ppl/document/ANUP_010007 and contains information about how you can

- Have access or seek correction to your personal information,
- Complain about a breach of an Australian Privacy Principle (APP) by ANU and how ANU will handle the complaint.

Are there any risks if I participate?

You may experience some distress when answering questions about the impact of living in a Mr Fluffy house. If you become anxious or depressed you can contact the New Access program at Beyond Blue on 6287 8066, Lifeline on 13 11 14 or your GP to ask about the HealthinMind program. The Capital Health Network will give priority access to the New Access and HealthinMind programs to people registered with the ACT Asbestos Response Taskforce.

Your participation (or non-participation) will not affect your position at work, or your use of any ACT Government service. It is entirely voluntary and there are no consequences for not taking part. We will not give anyone information about whether or not you took part in this survey.

What are the benefits?

We hope to be able to provide a clearer understanding of the health risks (both physical and psychological) associated with living in a Mr Fluffy house. Any benefit is likely to be for the community, rather than for individuals specifically. This is an opportunity to have input. The results from the study may contribute to the future development of policy related to Mr Fluffy houses.

How will the survey findings be used?

The results will be described in a report for ACT Health and the ACT Asbestos Health Study Steering Committee. The study team will also aim to publish findings in scientific journals.

Findings will be communicated to national and international news media through a coordinated media release between the ANU, the ACT Asbestos Response Taskforce and ACT Health. All reports will be uploaded to the study web page.

Questions

If you have any questions, do not hesitate to contact us (the researchers who are conducting the survey) by email or phone.

Assoc Prof Martyn Kirk

T: (02) 6125 5609

E: Martyn.Kirk@anu.edu.au

Ms Sue Trevenar

T: (02) 6125 6079

E: Susan.Trevenar@anu.edu.au

Concerns or complaints

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Manager - Human Research Ethics

ACT Health Directorate Research Office

Building 10 Level 6

Canberra Hospital

T: (02) 6174 7968

E: acthealth-hrec@act.gov.au

Please confirm the Household ID number supplied to you by the Taskforce

[Prefilled Household ID will be displayed]

Please confirm the address of the Mr Fluffy house you live in now or have lived in most recently.
[Prefilled address will be displayed]

If this address is incorrect, please select the correct address from this drop down menu.

Please forward this **invitation** to anyone else in your house who is 18 or over who has lived in a Mr Fluffy house.

Please give your agreement to take part here
I have read and understood the above information about the research project, have had the opportunity to ask questions or express concerns about it and had any questions and concerns I had about the project (listed here

_____

_____)

addressed to my satisfaction.

I understand that the data from the survey may be subpoenaed if there were to be legal actions related to Mr Fluffy houses.

I agree to take part in the ACT Asbestos Health Survey YES ☐

I do not agree to take part in the ACT Asbestos Health Survey NO ☐

The ACT Asbestos Health Survey

As you advance through the survey it may appear that you have missed some questions. This is because the questionnaire automatically skips questions not relevant to you, based on responses you have already given. For example, if you indicate there were no children (aged 5-17 years) in the household, we won't ask you questions about children in the household. Similarly, if you indicate that you have not held a job where you were exposed to asbestos we will not ask further questions about jobs in which you were exposed.

Household and housing information

Q 1. Have you lived in more than one Mr Fluffy house?

Yes ☐ 1

No ☐ 2 Go to Q 3

Q 2. How many Mr Fluffy houses have you lived in?

_____

Q 3. When did you first move into the present or most recent Mr Fluffy house?

☐☐ ☐☐☐☐

M M Y Y Y Y

Don't know ☐ 999998

[Q 3a not asked of past residents]

Q 3a. Are you still living there?

Yes ☐ 1

No ☐ 2

Q 3XX. For each Mr Fluffy house you have lived in could you please provide dates you were living in the house, starting with the most recent house.

[Loop through Q 3XX to Q 4XX until last Mr Fluffy house recorded – the number of houses is recorded at Q 2]

[For each Mr Fluffy house recorded loop through Q 17 to Q 26 until last renovation recorded]

When did you first move into the Mr Fluffy house?

☐☐ ☐☐☐☐

M M Y Y Y Y

Don't know ☐ 999998

Q 4 XX. And when did you move out of the house?

☐☐ ☐☐☐☐

M M Y Y Y Y

Don't know ☐ 999998

Q 5. Including yourself, how many people lived in the present or most recent Mr Fluffy house? Please refer to people living in the house at the time the Buyback Scheme was announced (October, 2014) and use the age of each person at that time.

a. Usual number of adults 18 years of age and older ☐☐ 1

b. Usual number of children 5-17 years of age ☐☐ 2

c. Usual number of children 0-4 years of age ☐☐ 3

Q 6. [If there are children aged 0-17 (Q 5) in the house continue, otherwise skip to Q 7]
Are you the main carer of the children living with you?

Yes, main carer ☐ 1

Yes, equal shared carer ☐ 2

No ☐ 3

Q 7. Are or were you the owner of the house (ownership includes mortgaged houses)?

Joint owner of the house with partner ☐ 1

Sole owner ☐ 2

Rental ☐ 3

Other ☐ 4

Please specify: _____

Q 8. Were you living in any Mr Fluffy house when the asbestos was installed?

Yes ☐ 1 Go to Q 9

No ☐ 2 Go to Q 10

Q 9. What month and year was the asbestos installed?

☐☐ ☐☐☐☐

M M Y Y Y Y

Don't know ☐ 999998

Q 10. Were you living in any Mr Fluffy house when the Commonwealth and ACT Governments joint program removed loose-fill asbestos insulation from it (between 1989 and 1993)?

Yes ☐ 1 Go to Q 11

No ☐ 2 Go to Q 12

Q 11. What month and year did the removal of loose-fill asbestos begin?

☐☐ ☐☐☐☐

M M Y Y Y Y

Don't know ☐ 999998

Q 12. For the most recent Mr Fluffy house when did you first become aware of the asbestos insulation? [Ask only if both Q 8 and Q 10 were answered no]

☐☐ ☐☐☐☐

M M Y Y Y Y

Don't know ☐ 999998

[Q 13 not asked of past residents]

Q 13. After the 2014/2015 asbestos assessment of your home did the asbestos assessor advise you to vacate the home immediately due to the particular findings at your house?

Yes ☐ 1

No ☐ 2

Don't know ☐ 8

[Q 14 not asked of past residents]

Q 14. If you vacated the house, with or without the asbestos assessor's advice, did you leave any belongings behind?

Yes, I left everything in the house ☐ 1

Yes, I left some items behind ☐ 2

Please specify in broad terms_____

_____

No ☐ 3

[Q 15 not asked of past residents]

Q 15. Where in the living areas of the house was loose-fill asbestos detected? Please check all that apply.

No asbestos fibres found in living areas ☐ 1

Main living area ☐ 2

Kitchen ☐ 3

Bathrooms ☐ 4

Bedrooms ☐ 5

Built in wardrobes or cupboards ☐ 6

Heating or cooling ducts or returns ☐ 7

Other ☐ 8

Please specify where: _____

_____

Don't know ☐ 98

Note: findings in sub-floors, roof and ceiling spaces and wall cavities are assumed for all affected properties.

Q 16. Were any renovations made to the house while you were living there and after the loose-fill asbestos was installed? Renovations include removal of walls or sections of walls, accessing crawl spaces either in the ceiling or under the floor, or any activity that may have allowed asbestos fibres to enter the room being renovated.

Yes ☐ 1

No ☐ 2 Go to Q 27

Don't know ☐ 8 Go to Q 27

We now have some questions for you concerning each renovation to your house. Please start with the first renovation on the house and end with the most recent renovation.
[Loop through Q 17 to Q 26 until last renovation recorded]

Q 17. In what year was the renovation started?

Year ☐☐☐☐

Don't know ☐ 999998

Q 18. How long did the renovation take?

a. Answer in days ☐☐☐ **OR**

b. Answer in weeks ☐☐☐ **OR**

c. Answer in months ☐☐☐

Don't know ☐

Q 19. In which rooms did this renovation take place? Please check all that apply.

Main living area ☐ 1

Kitchen ☐ 2

Bathroom ☐ 3

Bedroom ☐ 4

Other ☐ 5

Please specify where: _____

_____

Q 20. Did you live in the house during this renovation?

Yes ☐ 1

No ☐ 2

Q 21. Did you do any of this renovation yourself?

Yes ☐ 1

No ☐ 2

Q 22. Did you or someone else disturb asbestos insulation that you could see during this renovation?

Yes ☐ 1

No ☐ 2

Don't know ☐ 8

Q 23. Please estimate the total amount of time that you spent in contact with asbestos insulation during this renovation.

a. Answer in hours ☐☐☐ **OR**

b. Answer in days ☐☐☐ **OR**

c. Answer in weeks ☐☐☐

Don't know ☐

Q 24. Did you or the builder take any precautions to prevent asbestos exposure, including the use of a dust mask, during renovations?

	Yes 1	No 2	Not applicable 7	Don't know 8
a. Myself	☐	☐	☐	☐
b. Builder(s)	☐	☐	☐	☐

Q 25. Did the builder advise you to protect yourself during the renovations?

Yes ☐ 1

No ☐ 2

Not applicable ☐ 7

Don't know ☐ 8

Q 26. Did you do any other renovations on the house?

Yes ☐ 1 Go back to Q 17

No ☐ 2 Go to Q 27

Don't know ☐ 8 Go to Q 27

Q 27. Did you ever enter the roof space of any Mr Fluffy house you lived in, including during a renovation or at any other time?

Yes ☐ 1

No ☐ 2 Go to Q 30

Don't know ☐ 8 Go to Q 30

Q 28. How many times did you enter the roof space?

Once ☐ 1

2-3 times ☐ 2

4-10 times ☐ 3

11-50 times ☐ 4

More than 50 times ☐ 5

Don't know ☐ 8

Q 29. Please estimate the total amount of time that you spent in the roof space?

a. Answer in hours ☐☐☐ **OR**

b. Answer in days ☐☐☐

Don't know ☐

Q 30. Did you ever enter the space under the floor of any Mr Fluffy house you lived in, including during a renovation or at any other time?

Yes ☐ 1

No ☐ 2 Go to Q 33

Don't know ☐ 8 Go to Q 33

Q 31. How many times did you enter the space under the floor?

Once	☐	1
2-3 times	☐	2
4-10 times	☐	3
11-50 times	☐	4
More than 50 times	☐	5
Don't know	☐	8

Q 32. Please estimate the total amount of time that you spent in the space under the floor?

a. Answer in hours	☐☐☐	**OR**
b. Answer in days	☐☐☐	
Don't know	☐	

Occupation

We will now ask you some questions about your work. We are interested in finding out if you have been exposed to asbestos in any of your previous jobs.

Q 33. Of the following categories, which best describes your current employment status?

Full-time employee	☐	1	
Part-time employee	☐	2	
Self-employed – not employing others	☐	3	
Self-employed – employing others	☐	4	
Employed – unpaid work in a family business	☐	5	
Unemployed – seeking full-time work	☐	6	Go to Q 37
Unemployed – seeking part-time work	☐	7	Go to Q 37
Not employed – student	☐	8	Go to Q 37
Not employed – home duties	☐	9	Go to Q 37
Not employed - retired	☐	10	Go to Q 37

Q 34. What kind of work do you do in your (main) job?

Manager	☐ 1
Professional	☐ 2
Technician and Trade Worker	☐ 3
Community and Personal Service Worker	☐ 4
Clerical and Administrative Worker	☐ 5
Sales Worker	☐ 6
Machinery Operator or Driver	☐ 7
Labourer	☐ 8
Other (Specify)	☐ 9
Don't know	☐ 98

Q 35. When did you start working in your current job?

☐☐ ☐☐☐☐

M M Y Y Y Y

Don't know ☐ 999998

Q 36. Are you exposed to asbestos in your current job?

Yes	☐ 1	Go to Q 38
No	☐ 2	Go to Q 37
Don't know	☐ 8	Go to Q 37

Q 37. Did you previously work in a job where you have been exposed to asbestos?

Yes	☐ 1	Go to Q 38
No	☐ 2	Go to Q 44
Don't know	☐ 8	Go to Q 44

Q 38. [Loop through Q 38 to Q 43 for each job where the respondent was exposed to asbestos]

Start with the most recent job where you were exposed to asbestos, including your current job (if applicable), and work backwards to the first job you had where you were exposed to asbestos.

[For first loop through if Q 36 is yes ask]

What is your current occupation

– i.e., what is the name or kind of job you work in?

[For first loop through if Q 36 is no or don't know ask, for all subsequent loops ask]

What was your occupation in the job you had when exposed to asbestos

– i.e., what was the name or kind of job you worked in?

_____

_____

_____

Q 39. [For first loop through if Q 36 is yes ask]

In your job, what kind of activities do you do most of the time?

[For first loop through if Q 36 is no or don't know ask, for all subsequent loops ask]

In that job, what kind of activities did you do most of the time?

_____

_____

_____

Q 40. [For first loop through if Q 36 is yes ask]

What is the industry in which you work – i.e., what kind of production or function is performed at your workplace (e.g. Wholesale trading, Retail trading, Education, Public administration)?

[For first loop through if Q 36 is no or don't know ask, for all subsequent loops ask]

What was the industry in which you worked – i.e., what kind of production or function was performed at that workplace (e.g. Wholesale trading, Retail trading, Education, Public administration)?

_____

_____

_____

Q 41. When did you start working in that job?

☐☐ ☐☐☐☐ [For first loop through if Q 36 is yes go to Q 43]

M M Y Y Y Y

Don't know ☐ 999998

Q 42. When did you stop working in that job?

☐☐ ☐☐☐☐

M M Y Y Y Y

Don't know ☐ 999998

Q 43. Have you worked in any other job where you were exposed to asbestos?

Yes ☐ 1 Go to Q 38

No ☐ 2 Go to Q 44

Don't know ☐ 8 Go to Q 44

Q 44. Have you had any specific exposure to asbestos that was not from a Mr Fluffy house or a job you had?

Yes ☐ 1

Please specify: _____

_____

No ☐ 2

Health and Wellbeing

We are now going to ask you some questions about your health and wellbeing.

Q 45. In general would you say that your health is excellent, very good, good, fair, poor or very poor?

Excellent ☐ 1

Very good ☐ 2

Good ☐ 3

Fair ☐ 4

Poor ☐ 5

Very poor ☐ 6

Q 46. How would you rate your overall quality of life?

Excellent	☐	1
Very good	☐	2
Good	☐	3
Fair	☐	4
Poor	☐	5
Very poor	☐	6

Q 47. The following questions are about tobacco smoking. This includes cigarettes, cigars and pipes.
Which of the following best describes your smoking status?

I smoke daily	☐	1	Go to Q 48
I smoke occasionally	☐	2	Go to Q 48
I don't smoke now, but I used to	☐	3	Go to Q 48
I've tried it a few times but never smoked regularly	☐	4	Go to Q 52
I've never smoked	☐	5	Go to Q 52

Q 48. How old were you when you started smoking regularly?

☐☐

Don't know ☐ 98

[If Q 47 is 'I don't smoke now, but I used to' Go to Q 50]
[If Q 47 is 'I smoke daily' or 'I smoke occasionally' Go to Q 49]

Q 49. On average how many cigarettes do you smoke per day/week/month?

a. Answer in cigarettes per day	☐☐☐	Go to Q 52
b. Answer in cigarettes per week	☐☐☐	Go to Q 52
c. Answer in cigarettes per month	☐☐☐	Go to Q 52
Don't know	☐ 998	Go to Q 52

Q 50. On average how many cigarettes did you smoke per day/week/month?

a. Answer in cigarettes per day ☐☐☐ Go to Q 51

b. Answer in cigarettes per week ☐☐☐ Go to Q 51

c. Answer in cigarettes per month ☐☐☐ Go to Q51

Don't know ☐ 998 Go to Q51

Q 51. [If Q 47 is 'I don't smoke now, but I used to' ask…]
How old were you when you stopped smoking?

☐☐

Don't know ☐ 98

Q 52. How often does anyone, including yourself, smoke inside your home?

Daily ☐ 1

Weekly ☐ 2

Monthly ☐ 3

Less than monthly ☐ 4

Never ☐ 5

Don't know ☐ 8

Q 53. Have you sought professional assistance, such as a GP or counsellor, to help you manage your physical or mental health in relation to living in a Mr Fluffy house?

Yes ☐ 1

No ☐ 2 Go to Q 54

Q 54. From what kind of professional did you seek assistance, and did you find this assistance helpful?

	Yes, I found this to be helpful 1	Yes, but did not think it was helpful 2	I did not seek this assistance 3
a. a GP	☐	☐	☐
b. a psychologist	☐	☐	☐
c. a counsellor	☐	☐	☐
d. Lifeline or another telephone counselling service	☐	☐	☐
e. Other	☐	☐	☐

Please specify: _____

_____

Q 55. Since February 2014 have you done any of the following…

	Yes 1	No 2	Don't know 8
a. Taken up smoking or increased your smoking	☐	☐	☐
b. Taken up drinking or increased your drinking	☐	☐	☐
c. Been using prescription medication to help you sleep	☐	☐	☐
d. Reduced the amount exercise you normally do	☐	☐	☐
e. Made some other changes that might not be good for your health	☐	☐	☐

Please specify: _____

_____

Q 56. Have you experienced any specific health problems that you attribute to exposure to asbestos?

Yes ☐ 1

No ☐ 2 Go to Q 58

Don't know ☐ 8 Go to Q 58

Q 57. Please list the health problems you have experienced that you attribute to exposure to asbestos.

_____

_____

_____

_____

Q 58. Have you ever been diagnosed by a doctor with a condition that is known to be due to exposure to asbestos?

Yes ☐ 1

No ☐ 2 Go to Q 60

Don't know ☐ 8 Go to Q 60

Q 59. Did the doctor diagnose any of these conditions? Please answer yes or no to each.

	Yes 1	No 2
a. Mesothelioma	☐	☐
b. Asbestosis	☐	☐
c. Pleural plaque	☐	☐
d. Lung cancer	☐	☐
e. Other asbestos related problem	☐	☐

Please specify: _____

_____

Q 60. Are you concerned about your or other people's health in the future as a result of living in Mr Fluffy house?

	Yes 1	No 2	Not applicable 7
a. Concerned about my health	☐	☐	
b. Concerned about my partner's health	☐	☐	☐
c. Concerned about my children's health	☐	☐	☐
d. Concerned about others' health	☐	☐	☐

Please specify who you are concerned about: _____

_____

Q 61. Describe your first reaction to finding out that a house you had lived in was one of the 'affected premises'?

Unconcerned	Slightly concerned	Moderately concerned	Very concerned	Extremely concerned
1	2	3	4	5
☐	☐	☐	☐	☐

Q 62. Please tell us about your feelings in the last 30 days. In the last 30 days:

	Never 1	Rarely 2	Sometimes 3	Often 4	Always 5
a. my worries overwhelmed me	☐	☐	☐	☐	☐
b. I felt hopeless	☐	☐	☐	☐	☐
c. I found social settings upsetting	☐	☐	☐	☐	☐
d. I had trouble staying focused on tasks	☐	☐	☐	☐	☐
e. anxiety or fear interfered with my ability to do the things I needed to do at work or at home	☐	☐	☐	☐	☐

Q 63. In the last 30 days how often have you felt…

	None of the time 1	A little of the time 2	Some of the time 3	Most of the time 4	All of the time 5
a. nervous	☐	☐	☐	☐	☐
b. hopeless	☐	☐	☐	☐	☐
c. restless or fidgety	☐	☐	☐	☐	☐
d. so depressed that nothing could cheer you up	☐	☐	☐	☐	☐
e. that everything was an effort	☐	☐	☐	☐	☐
f. worthless	☐	☐	☐	☐	☐

Q 64. Over the past two weeks, how often have you been bothered by any of the following problems?

	Not at all 0	Several days 1	More than half the days 2	Nearly every day 3
a. Little interest or pleasure in doing things	☐	☐	☐	☐
b. Feeling down, depressed, or hopeless	☐	☐	☐	☐
c. Feeling nervous, anxious or on edge	☐	☐	☐	☐
d. Not being able to stop or control worrying	☐	☐	☐	☐

Q 65. The next group of questions are about your relationships with other people.

	Often 1	Sometimes 2	Rarely 3	Never 4
a. How often do friends make you feel cared for?	☐	☐	☐	☐
b. How often do they express interest in how you are doing?	☐	☐	☐	☐
c. How often do friends make too many demands on you?	☐	☐	☐	☐
d. How often do they criticise you?	☐	☐	☐	☐
e. How often do friends create tensions or arguments with you?	☐	☐	☐	☐
f. How often do family make you feel cared for?	☐	☐	☐	☐
g. How often do family express interest in how you are doing?	☐	☐	☐	☐
h. How often do they make too many demands on you?	☐	☐	☐	☐
i. How often do family criticise you?	☐	☐	☐	☐
j. How often do they create tensions or arguments with you?	☐	☐	☐	☐

[Q 66 not asked of past residents]

Q 66. How important has social support from your partner, friends, extended family, co-workers and others been to helping you through the Mr Fluffy experience?

	Not at all important 1	Somewhat important 2	Very important 3	Not applicable 7
a. Partner	☐	☐	☐	☐
b. Friends	☐	☐	☐	☐
c. Extended family	☐	☐	☐	☐
d. Co-workers	☐	☐	☐	☐
e. Mr Fluffy home owners groups	☐	☐	☐	☐
f. Others	☐	☐	☐	☐

Please specify who: _____

_____

[Q67a and Q67b were asked of past residents only, so that only those people with young children currently would answer Q67 to Q72]

Q 67a Are any of the children who lived with you in a Mr Fluffy house still aged between 5 and 17 years of age?

Yes ☐ 1

No ☐ 2 Go to Q 73

Don't know ☐ 8 Go to Q 73

Q 67b How many children do you have living with you who are aged 5 to 17 years old?

☐☐

[Use the number given at Q 67b to determine the number of loops for Q67 to Q72]

[If there are children aged 5-17 (Q 5) in the house continue, otherwise skip to Q 73]
[Loop through Q 67 to Q 72 for each child in the household]
[Ask of main carer only – if Q 6 is 'Yes' – options 1 or 2]

Q 67. What sex is this child?

Male ☐ 1

Female ☐ 2

Other ☐ 3

Q 68. What age is this child now?

5-9 years ☐ 1

10-14 years ☐ 2

15 years or older ☐ 3

Q 69. Has this child been worried about living in a Mr Fluffy house?

No at all worried	Slightly worried	Moderately worried	Very worried	Extremely worried
1	2	3	4	5
☐	☐	☐	☐	☐

Q 70. Has your child experienced any specific health problems that you think were due to exposure to asbestos?

Yes ☐ 1

No ☐ 2 Go to Q 72

Don't know ☐ 8 Go to Q 72

Q 71. Please list the health problems this child has experienced that you attribute to exposure to asbestos.

_____

_____

_____

_____

Q 72. Has your child ever been diagnosed by a doctor with a condition that is known to be due to exposure to asbestos?

Yes ☐ 1

Please specify the diagnoses_____

No ☐ 2

Don't know ☐ 8

Q 73. How much of an impact has living in a Mr Fluffy house had on the following areas of your life?

	No impact 1	Small impact 2	Moderate impact 3	Large impact 4	Very large impact 5
a. Social contact with other people	☐	☐	☐	☐	☐
b. Your relationship with your partner or spouse	☐	☐	☐	☐	☐
c. Your relationship with your family	☐	☐	☐	☐	☐
d. Your relationship with your friends	☐	☐	☐	☐	☐
e. Your finances	☐	☐	☐	☐	☐
f. Concern about developing mesothelioma	☐	☐	☐	☐	☐
g. Concern about developing other health problems	☐	☐	☐	☐	☐

[Q 74 not asked of past residents]

Q 74. At any time in the past couple of years, have your concerns about your Mr Fluffy house caused you to:

	Yes 1	No 2	Not applicable 7
a. reduce your work hours	☐	☐	☐
b. lose time from work	☐	☐	☐
c. be unable to carry out normal activities	☐	☐	☐

[Q 75 not asked of past residents]

Q 75. If you have reduced your work hours, what changes have you made?

	Yes 1	No 2
a. Reduced work hours in my job	☐	☐
b. Changed my job to one with less hours	☐	☐
c. I stopped working all together	☐	☐

d. Other (please specify)_____

[Q 76 not asked of past residents]

Q 76. If you have needed to take time off work because of the Mr Fluffy issue could you please estimate the number of days you have taken off work?

_____Days off work

Don't know ☐ 98

[Q 77 not asked of past residents]

Q 77. Have you made any other changes to your regular routine?

Yes ☐ 1

Please describe the changes you have made_____

No ☐ 2

Don't know ☐ 8

Health Advice for Loose-fill Asbestos in the ACT

We are now going to ask you some questions about the response to the loose-fill asbestos problem in the ACT.

[Q 78 not asked of past residents]

Q 78. Do you think you have received enough information about the health risks of exposure to loose-fill asbestos?

Yes ☐ 1

No ☐ 2

Please specify the information you would like_____

_____

Don't know ☐ 8

[Q 79 not asked of past residents]

Q 79. Where did you get information about the health risks of exposure to loose-fill asbestos? Please tick all that apply.

a. I have no information about the health risks ☐

b. ACT Government (i.e. ACT Health, Taskforce) ☐

c. Internet searches ☐

d. Medical and health professionals ☐

e. Social contacts (e.g. family, friends, neighbours) ☐

f. Mr Fluffy home owners groups ☐

g. Public lecture ☐

h. Other ☐

Please specify where you got your information_____

_____

[Q 80 not asked of past residents]

Q 80. Do you think you need more information about the health risks of exposure to loose-fill asbestos?

Yes ☐ 1

Please specify what information you would like_____

_____

No ☐ 2

Don't know ☐ 8

[Q 81 not asked of past residents]

Q 81. In regard to living in a Mr Fluffy house how concerned have you been about the following issues?

	Unconcerned 1	Slightly concerned 2	Moderately concerned 3	Very concerned 4	Extremely concerned 5	Not applicable 7
Health effects	☐	☐	☐	☐	☐	
Mental health impacts	☐	☐	☐	☐	☐	
Stigma of living in an affected house	☐	☐	☐	☐	☐	
The general uncertainty of living in an affected house	☐	☐	☐	☐	☐	
Moving to a new neighbourhood	☐	☐	☐	☐	☐	☐
Financial impact	☐	☐	☐	☐	☐	
Time costs	☐	☐	☐	☐	☐	
Work disruption	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	

Please specify_____

_____

[Q 82 not asked of past residents]

Q 82. Considering your Mr Fluffy experience, how have these ACT groups contributed to your wellbeing?

	Positively	Somewhat positively	Neutrally	Somewhat negatively	Negatively	Not applicable	Don't know
a. The media	☐	☐	☐	☐	☐	☐	☐
b. Real estate agents	☐	☐	☐	☐	☐	☐	☐
c. Property valuers	☐	☐	☐	☐	☐	☐	☐
d. Friends	☐	☐	☐	☐	☐	☐	☐
e. Neighbours	☐	☐	☐	☐	☐	☐	☐
f. The general public	☐	☐	☐	☐	☐	☐	☐
g. Mr Fluffy home owners groups	☐	☐	☐	☐	☐	☐	☐
h. Other	☐	☐	☐	☐	☐	☐	☐

Please specify _____

_____

Background information

Q 83. Please write your age in years.

☐☐☐

Q 84. Are you…

Male ☐ 1

Female ☐ 2

Other ☐ 3

Q 85. What is your marital status?

Married ☐ 1

De facto ☐ 2

Single ☐ 3

Other ☐ 4

Please specify _____

_____

Q 86. In what country were you born?

_____

Q 87. Are you of Aboriginal or Torres Strait Islander origin?

No	☐	1
Yes, Aboriginal	☐	2
Yes, Torres Strait Islander	☐	3
Yes, both Aboriginal and Torres Strait Islander	☐	4
Don't know	☐	8

Q 88. Which language do you mainly speak at home?

English	☐	1
Other	☐	2

Please specify the language: _____

Q 89. What is the highest level of schooling you have completed?

Year 12 or equivalent	☐	1
Year 11 or equivalent	☐	2
Year 10 or equivalent	☐	3
Completed primary school	☐	4
Did not complete primary school	☐	5
Did not go to school	☐	6

Q 90. What is the highest educational qualification you have completed since leaving school?

Doctorate	☐ 1
Masters' Degree	☐ 2
Graduate Certificate or Graduate Diploma	☐ 3
Bachelor degree	☐ 4
Diploma or Advanced Diploma or Associate Degree	☐ 5
Certificate I to IV	☐ 6
No post-school qualification	☐ 7
Don't know	☐ 8

Q 91. What is your usual weekly household income before tax, from all sources? Equivalent annual amounts are provided in brackets.

Nil income	☐ 1
$1-$199 ($1-$10,399)	☐ 2
$200-$299 ($10,400-$15,599)	☐ 3
$300-$399 ($15,600-$20,799)	☐ 4
$400-$599 ($20,800-$31,199)	☐ 5
$600-$799 ($31,200-$41,599)	☐ 6
$800-$999 ($41,600-$51,999)	☐ 7
$1,000-$1,249 ($52,000-$64,999)	☐ 8
$1,250-$1,499 ($65,000-$77,999)	☐ 9
$1,500-$1,999 ($78,000-$103,999)	☐ 10
$2,000-$2,499 ($104,000-$129,999)	☐ 11
$2,500-$2,999 ($130,000-$155,999)	☐ 12
$3,000 or more ($156,000 or more)	☐ 13
Don't know	☐ 98

Comments and General Information

Q 92. Do you have any comments you wish to make about the ACT Asbestos Health Study?

Yes ☐ 1

Please comment here:_____

_____

_____

_____

_____

_____

_____

_____

No ☐ 2

Q 93. Future research into the long term risks of living in a Mr Fluffy house and exposure to asbestos and the development of illnesses will provide valuable information to both residents and the Government.

Would you be willing to participate in future health research relating to asbestos exposure?

If you answer yes you will still have the right to refuse if asked to participate again.

Yes ☐ 1 Go to Q 94

No ☐ 2

This is the end of the survey for you. Thank you for taking part. If you experience anxiety or depression please contact either the New Access program at Beyond Blue on 6287 8066, Lifeline on 13 11 14 or contact your GP to ask about accessing the HealthinMind program.

Q 94. If you are willing to be included in further research please provide the following details to ensure we contact the right person for future studies.

Only the researchers will have access to these details, they will not be passed on to anyone else.

a. First Name_____

b. Surname_____

Q 95. Date of birth

☐☐ ☐☐ ☐☐☐☐

D D M M Y Y Y Y

Q 96. Mobile phone number ☐☐☐☐ ☐☐☐ ☐☐☐ **OR**

Home phone ☐☐ ☐☐☐☐ ☐☐☐☐

Q 97. Email address

_____

Q 98. Medicare number

Please note that your Medicare number is needed to link to data held by the Australian Cancer Database. Your Medicare number is also needed so that your historical address information (registered with Medicare) can be linked to the list of Mr Fluffy houses. Researchers will receive data that does not contain names or other identifying information from an approved data integration authority. Commonwealth approved data integration authorities have met stringent criteria covering project governance, capability, and data management (including privacy and confidentiality principles).

☐☐☐☐ ☐☐☐☐☐ ☐ ☐

This is the end of the survey. Thank you for your taking part.

If you experience anxiety or depression please contact either the New Access program at Beyond Blue on 6287 8066, Lifeline on 13 11 14 or contact your GP to ask about accessing the HealthinMind program.

Appendix 3 – Data cleaning and recoding

Free text fields edited to contain consistent language and to remove identifying information	
Q7o	Q7 Owner of the house - Other (specify)
14o	Q14 What did you leave behind - Other (specify)
Q15o	Q15 Asbestos fibres found - Other (specify)
Q19o_A01	Q19 Most recent house - room of first renovation Other (specify)
Q19o_A02	Q19 Most recent house - room of 2nd renovation Other (specify)
Q19o_A03	Q19 Most recent house - room of 3rd renovation Other (specify)
Q19o_A04	Q19 Most recent house - room of 4th renovation Other (specify)
Q19o_A05	Q19 Most recent house - room of 5th renovation Other (specify)
Q19o_B01	Q19 2nd most recent house - room of first renovation Other (specify)
Q19o_B02	Q19 2nd most recent house - room of 2nd renovation Other (specify)
Q44o	Q44 Any other exposure to asbestos - Other (specify)
Q54o	Q54 Sought help from - Other (specify)
Q55o	Q55 Changed behaviour - Other (specify)
Q59o	Q59 Diagnosed with - Other (specify)
Q60o	Q60 Concerned about health - Others' (specify)
Q66o	Q66 Importance of support - Other (specify)
Q75o	Q75 Reduced hours - Other (specify)
Q77o	Q77 Any other changes to regular routine - Other (specify)
Q78o	Q78 Received enough health information - Other (specify)
Q79o	Q79 Information from - Other (specify)
Q80o	Q80 Need more information - Other (specify)
Q81o	Q81 Concern - Other (specify)
Q82o	Q82 Wellbeing - Other (specify)
Additional response categories created	
Q7	Q7 Owner of the house? Additional categories were created: Parent/s owned the house Parent/s house, ownership not specified Family house, relationship not specified Joint owner with family member Partner owned the house
Q85	Q85 Marital status Additional categories were created: Separated Divorced Widowed
Variables recoded to binary (0, 1) unless otherwise stated	
recodeQ53	RECODE of Q53 (Q53 Professional help for health related to Mr Fluffy)
recodeQ54_A	RECODE of Q54_A (Q54 Sought help from - a GP)
recodeQ54_B	RECODE of Q54_B (Q54 Sought help from - a psychologist)
recodeQ54_C	RECODE of Q54_C (Q54 Sought help from - a counsellor)

recodeQ54_D	RECODE of Q54_D (Q54 Sought help from - Lifeline or another telephone counsellor
recodeQ54_E	RECODE of Q54_E (Q54 Sought help from - Other)
recodeQ55_A	RECODE of Q55_A (Q55 Changed behaviour - smoking)
recodeQ55_B	RECODE of Q55_B (Q55 Changed behaviour - drinking alcohol)
recodeQ55_C	RECODE of Q55_C (Q55 Changed behaviour - medication)
recodeQ55_D	RECODE of Q55_D (Q55 Changed behaviour - exercise)
recodeQ55_F	RECODE of Q55_F (CREATED- Q55 Changed behaviour - eating habits)
recodeQ55_G	RECODE of Q55_G (CREATED- Q55 Changed behaviour - disturbed sleeping pattern)
recodeQ55_E	RECODE of Q55_E (Q55 Changed behaviour - other changes)
recodeQ56	RECODE of Q56 (Q56 Experienced health problems due to asbestos exposure)
recodeQ58	RECODE of Q58 (Q58 Diagnosed by a doctor with an asbestos related condition)
recodeQ59_A	RECODE of Q59_A (Q59 Diagnosed with - Mesothelioma)
recodeQ59_B	RECODE of Q59_B (Q59 Diagnosed with - Asbestosis)
recodeQ59_C	RECODE of Q59_C (Q59 Diagnosed with - Pleural plaque)
recodeQ59_D	RECODE of Q59_D (Q59 Diagnosed with - Lung cancer)
recodeQ59_E	RECODE of Q59_E (Q59 Diagnosed with - Other)
recodeQ60_A	RECODE of Q60_A (Q60 Concerned about health - my own)
recodeQ60_B	RECODE of Q60_B (Q60 Concerned about health - my partner's)
recodeQ60_C	RECODE of Q60_C (Q60 Concerned about health - my children's)
recodeQ60_E	RECODE of Q60_E (CREATED- Q60 Concerned about health - Extended family)
recodeQ60_F	RECODE of Q60_F (CREATED- Q60 Concerned about health - Friends/visitors)
recodeQ60_G	RECODE of Q60_G (CREATED- Q60 Concerned about health - Grandchild/grandchildren)
recodeQ60_H	RECODE of Q60_H (CREATED- Q60 Concerned about health - Builders/tradespeople)
recodeQ60_D	RECODE of Q60_D (Q60 Concerned about health - others')
recodeQ70_01	RECODE of Q70_01 (Q70 Child 1 - health problems)
recodeQ72_01	RECODE of Q72_01 (Q72 Child 1 - diagnosed by doctor)
recodeQ70_02	RECODE of Q70_02 (Q70 Child 2 - health problems)
recodeQ72_02	RECODE of Q72_02 (Q72 Child 2 - diagnosed by doctor)
recodeQ70_03	RECODE of Q70_03 (Q70 Child 3 - health problems)
recodeQ72_03	RECODE of Q72_03 (Q72 Child 3 - diagnosed by doctor)
recodeQ70_04	RECODE of Q70_04 (Q70 Child 4 - health problems)
recodeQ72_04	RECODE of Q72_04 (Q72 Child 4 - diagnosed by doctor)
recodeQ74_A	RECODE of Q74_A (Q74 Concerns caused you to - reduce work hours)
recodeQ74_B	RECODE of Q74_B (Q74 Concerns caused you to - lose time from work)
recodeQ74_C	RECODE of Q74_C (Q74 Concerns caused you to - unable to carry out normal activities
recodeQ75_A	RECODE of Q75_A (Q75 Reduced hours - reduced hours in my job)

recodeQ75_B	RECODE of Q75_B (Q75 Reduced hours - changed job to one with less hours)
recodeQ75_C	RECODE of Q75_C (Q75 Reduced hours - stopped working altogether)
recodeQ75_D	RECODE of Q75_D (Q75 Reduced hours - other)
recodeQ77	RECODE of Q77 (Q77 Any other changes to regular routine)
recodeQ78	RECODE of Q78 (Q78 Received enough health information)
recodeQ80	RECODE of Q80 (Q80 Need more information)
Q83grouped	RECODE of Q83 (Q83 Age) Age was grouped into the following categories: 18 to 25 years 26 to 35 years 36 to 45 years 46 to 55 years 56 to 65 years Over 65 years of age
Composite variables derived from several variables	
Q5	DERIVED- Q5 Number of people in household Derived from Q5_1, Q5_2 and Q5_3
Q18_A01	DERIVED- Q18 Days for 1st reno - most recent Mr Fluffy house Derived from Q18_A01_A, Q18_A01_B and Q18_A01_C
Q23_A01	DERIVED-Q23 Hours in contact with asbestos for 1st reno - most recent Mr Fluffy Derived from Q23_A01_A, Q23_A01_B and Q23_A01_C
Q18_A02	DERIVED-Q18 Days for 2nd reno - most recent Mr Fluffy house Derived from Q18_A02_A, Q18_A02_B and Q18_A02_C
Q23_A02	DERIVED-Q23 Hours in contact with asbestos for 2nd reno - most recent Mr Fluffy Derived from Q23_A02_A, Q23_A02_B and Q23_A02_C
Q18_A03	DERIVED-Q18 Days for 3rd reno - most recent Mr Fluffy house Derived from Q18_A03_A, Q18_A03_B and Q18_A03_C
Q23_A03	DERIVED-Q23 Hours in contact with asbestos for 3rd reno - most recent Mr Fluffy Derived from Q23_A03_A, Q23_A03_B and Q23_A03_C
Q18_A04	DERIVED-Q18 Days for 4th reno - most recent Mr Fluffy house Derived from Q18_A04_A, Q18_A04_B and Q18_A04_C
Q23_A04	DERIVED-Q23 Hours in contact with asbestos for 4th reno - most recent Mr Fluffy Derived from Q23_A04_A, Q23_A04_B and Q23_A04_C
Q18_A05	DERIVED-Q18 Days for 5th reno - most recent Mr Fluffy house Derived from Q18_A05_A, Q18_A05_B and Q18_A05_C
Q23_A05	DERIVED-Q23 Hours in contact with asbestos for 5th reno - most recent Mr Fluffy Derived from Q23_A05_A, Q23_A05_B and Q23_A05_C
Q18_B01	DERIVED-Q18 Days for 1st reno – 2nd most recent Mr Fluffy house Derived from Q18_B01_A, Q18_B01_B and Q18_B01_C

Q23_B01	DERIVED-Q23 Hours in contact with asbestos for 1st reno - 2nd most recent Mr Fluffy Derived from Q23_B01_A, Q23_B01_B and Q23_B01_C
Q18_B02	DERIVED-Q18 Days for 2nd reno - 2nd most recent Mr Fluffy house Derived from Q18_B02_A, Q18_B02_B and Q18_B02_C
Q23_B02	DERIVED-Q23 Hours in contact with asbestos for 2nd reno - 2nd most recent Mr Fluffy Derived from Q23_B02_A, Q23_B02_B and Q23_B02_C
Q29	DERIVED-Q29 Hours for in roof space of any Mr Fluffy house Derived from Q29_A and Q29_B
Q32	DERIVED-Q32 Hours for in space under the floor of any Mr Fluffy house Derived from Q32_A and Q32_B
Q49	DERIVED-Q49 Number of cigarettes per day currently Derived from Q49_A, Q49_B and Q49_C
Q49round	DERIVED-Q49 Number of cigarettes per day currently (rounded) Q49 rounded
Q50	DERIVED-Q50 Number of cigarettes per day previously Derived from Q50_A, Q50_B and Q50_C
Q50round	DERIVED-Q50 Number of cigarettes per day previously (rounded) Q50 rounded
DQ5	DERIVED-Q62 Sum of DQ5 questions Derived from Q62_A, Q62_B, Q62_C, Q62D and Q62_E
Kessler6	DERIVED-Q63 Sum of Kessler6 questions Derived from Q63_A, Q63_B, Q63_C, Q63_D, Q63_E and Q63_F
GADS	DERIVED-Q64 Sum of GADS questions Derived from Q64_A, Q64_B, Q64_C, Q64_D
highed	DERIVED - Highest education Derived from Q89 and Q90
smokingyears	DERIVED –Number of years smoked Derived from Q47, Q48, Q51 and Q83
Created variables from responses given in free text fields	
Q15_9	CREATED- Q15 Asbestos fibres found – Laundry Created from responses given at Q15o
Q15_10	CREATED- Q15 Asbestos fibres found – Hallways Created from responses given at Q15o
Q15_11	CREATED- Q15 Asbestos fibres found – Garage Created from responses given at Q15o
Q19_A01_F	CREATED- Q19 Most recent house - room of first renovation LAUNDRY Created from responses given at Q19o_A01
Q19_A02_F	CREATED- Q19 Most recent house - room of 2nd renovation LAUNDRY Created from responses given at Q19o_A02
Q19_A03_F	CREATED- Q19 Most recent house - room of 3rd renovation LAUNDRY Created from responses given at Q19o_A03
Q19_A04_F	CREATED- Q19 Most recent house - room of 4th renovation LAUNDRY Created from responses given at Q19o_A04

Q55_F	CREATED- Q55 Changed behaviour - eating habits Created from responses given at Q55o
Q55_G	CREATED- Q55 Changed behaviour - disturbed sleeping pattern Created from responses given at Q55o
Q57a	CREATED- Q57 Specific health problems first mentioned Created from responses given at Q57, first mentioned health problem
Q57b	CREATED- Q57 Specific health problems second mentioned Created from responses given at Q57, second mentioned health problem
Q57c	CREATED- Q57 Specific health problems third mentioned Created from responses given at Q57, third mentioned health problem
Q57d	CREATED- Q57 Specific health problems fourth mentioned Created from responses given at Q57, fourth mentioned health problem
Q60_E	CREATED- Q60 Concerned about health - Extended family Created from responses given at Q60o
Q60_F	CREATED- Q60 Concerned about health - Friends/visitors Created from responses given at Q60o
Q60_G	CREATED- Q60 Concerned about health - Grandchild/grandchildren Created from responses given at Q60o
Q60_H	CREATED- Q60 Concerned about health - Builders/tradespeople Created from responses given at Q60o
Q66_G	CREATED- Q66 Importance of support - Neighbours/former neighbours Created from responses given at Q66o
Q66_H	CREATED- Q66 Importance of support - Health professionals Created from responses given at Q66o
Q66_I	CREATED- Q66 Importance of support – ACT Asbestos Response Taskforce Created from responses given at Q66o
Q66_J	CREATED- Q66 Importance of support - General public Created from responses given at Q66o
Q82_I	CREATED- Q82 Wellbeing - ACT Government Created from responses given at Q82o
Q82_J	CREATED- Q82 Wellbeing - ACT Asbestos Response Taskforce Created from responses given at Q82o

Appendix tables 1 – Current and recent residents

Note that the Percent column in the following tables refers to all participants and the Percent non missing refers to participants with non missing values.

Sociodemographic characteristics of current/ recent residents

Table 1 Sex (Q84)

	Freq.	Percent	Percent non missing
Male	140	38.57	41.92
Female	194	53.44	58.08
Missing	29	7.99	
Total	363	100.00	

Table 2 Age groups (Q83)

	Freq.	Percent	Percent non missing
18-24 years	5	1.38	1.57
25-34 years	21	5.79	6.60
35-44 years	55	15.15	17.30
45-54 years	65	17.91	20.44
55-64 years	82	22.59	25.79
65+ years	90	24.79	28.30
Missing	45	12.40	
Total	363	100.00	

Table 3 Marital Status (Q85)

	Freq.	Percent	Percent non missing
Married	215	59.23	65.15
De facto	30	8.26	9.09
Single	54	14.88	16.36
Other	2	0.55	0.61
Separated	4	1.10	1.21
Divorced	7	1.93	2.12
Widowed	18	4.96	5.45
Missing	33	9.09	
Total	363	100.00	

Table 4 Highest educational level obtained (Q90)

	Freq.	Percent	Percent non missing
Postgraduate degree	115	31.68	34.53
Bachelor's degree	91	25.07	27.33
Certificate/ diploma	74	20.39	22.22
High school or below	53	14.60	15.92
Missing	30	8.26	
Total	363	100.00	

Table 5 Employment status (Q33)

	Freq.	Percent	Percent non missing
Full-time employed	130	35.81	38.46
Part-time employed	63	17.36	18.64
Self-employed	23	6.34	6.80
Unemployed	4	1.10	1.18
Not employed – student	6	1.65	1.78
Not employed – home duties	12	3.31	3.55
Not employed – retired	100	27.55	29.59
Missing	25	6.89	
Total	363	100.00	

Table 6 Household weekly income (before tax) (Q91)

	Freq.	Percent	Percent non missing
$1-999	41	11.29	14.49
$1000-1500	42	11.57	14.84
$1500-1999	58	15.98	20.49
$2000-2499	48	13.22	16.96
$2500-2999	34	9.37	12.01
$3000+	60	16.53	21.20
Missing	80	22.04	
Total	363	100.00	

Table 7 Number of people living in the house (Q5)

	Freq.	Percent	Percent non missing
1	38	10.47	10.67
2	109	30.03	30.62
3	54	14.88	15.17
4	101	27.82	28.37
5+	54	14.88	15.17
Missing	7	1.93	
Total	363	100.00	

Table 8 Number of children living in the house (Q5)

	Freq.	Percent	Percent non missing
None	218	60.06	61.58
1	37	10.19	10.45
2	70	19.28	19.77
3+	29	7.99	8.19
Missing	9	2.48	
Total	363	100	

Table 9 Smoking status (Q47)

	Freq.	Percent	Percent non missing
Current smoker	16	4.41	4.79
Previous smoker	74	20.39	22.16
Never smoked	244	67.22	73.05
Missing	29	7.99	
Total	363	100.00	

Exposure to asbestos

Table 10 Years living in current Mr Fluffy house (excluding the people who were still residing in their property) (Q3/4)

	Freq.	Percent	Percent non missing
0-4 years	38	10.47	13.48
5-9 years	47	12.95	16.67
10-19 years	94	25.90	33.33
20-29 years	42	11.57	14.89
30+ years	61	16.80	21.63
Missing	39	22.31	
Total	321	100.00	

Table 11 Living in the house when the asbestos was installed? (Q8)

	Freq.	Percent	Percent non missing
Yes	40	11.02	11.36
No	312	85.95	88.64
Missing	11	3.03	
Total	363	100.00	

Table 12 Living in the house when the asbestos was remediated? (Q10)

	Freq.	Percent	Percent non missing
Yes	106	29.20	29.94
No	248	68.32	70.06
Missing	9	2.48	
Total	363	100.00	

Table 13 Year that remediation took place? (Q11)

	Freq.	Percent	Percent non missing
1989	9	8.49	9.68
1990	20	18.87	21.51
1991	30	28.30	32.26
1992	26	24.53	27.96
1993	8	7.55	8.60
Missing	13	12.26	
Total	106	100.00	

Table 14 Number of times entered the roof space (Q28)

	Freq.	Percent	Percent non missing
Never entered the roof space	136	37.47	41.46
1-3 times	61	16.80	18.60
4-10 times	44	12.12	13.41
11-50 times	65	17.91	19.82
50+ times	20	5.51	6.10
Don't know	2	0.55	0.61
Missing	35	9.64	
Total	363	100.00	

Table 15 Number of times entered the sub-floor space (Q30)

	Freq.	Percent	Percent non missing
Never entered sub-floor space	93	25.62	28.27
1-3 times	31	8.54	9.42
4-10 times	47	12.95	14.29
11-50 times	65	17.91	19.76
50+ times	91	25.07	27.66
Don't know	2	0.55	0.61
Missing	34	9.37	
Total	363	100.00	

Table 16 Was the house renovated while you lived there? (Q16)

	Freq.	Percent	Percent non missing
Yes	288	79.34	81.82
No	53	14.60	15.06
Don't know	11	3.03	3.13
Missing	11	3.03	
Total	363	100.00	

Table 17 Did you do any of the renovations yourself? (Q21) Renovation #1

	Freq.	Percent	Percent non missing
Yes	94	32.64	33.81
No	184	63.89	66.19
Missing	10	3.47	
Total	288	100.00	

Table 18 Did you do any of the renovations yourself? (Q21) Renovation #2

	Freq.	Percent	Percent non missing
Yes	46	28.05	29.68
No	109	66.46	70.32
Missing	9	5.49	
Total	164		

Table 19 Did you do any of the renovations yourself? (Q21) Renovation #3

	Freq.	Percent	Percent non missing
Yes	13	19.70	20.31
No	51	77.27	79.69
Missing	2	3.03	
Total	66		

Table 20 Did you do any of the renovations yourself? (Q21) Renovation #4

	Freq.	Percent	Percent non missing
Yes	6	19.35	20.00
No	24	77.42	80.00
Missing	1	3.23	
Total	31	100.00	

Table 21 Did you do any of the renovations yourself? (Q21) Renovation #5

	Freq.	Percent	Percent non missing
Yes	3	10.34	20.00
No	12	41.38	80.00
Missing	14	48.28	
Total	29	100.00	

Table 22 Did you live in the house while you renovated? (Q20) Renovation #1

	Freq.	Percent	Percent non missing
Yes	257	89.24	92.45
No	21	7.29	7.55
Missing	10	3.47	
Total	288	100.00	

Table 23 Did you live in the house while you renovated? (Q20) Renovation #2

	Freq.	Percent	Percent non missing
Yes	148	90.24	94.27
No	9	5.49	5.73
Missing	7	4.27	
Total	164	100.00	

Table 24 Did you live in the house while you renovated? (Q20) Renovation #3

	Freq.	Percent	Percent non missing
Yes	60	90.91	93.75
No	4	6.06	6.25
Missing	2	3.03	
Total	66	100.00	

Table 25 Did you live in the house while you renovated? (Q20) Renovation #4

	Freq.	Percent	Percent non missing
Yes	30	96.77	96.77
No	1	3.23	3.23
Total	31	100.00	

Table 26 Was asbestos disturbed during first renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	50	17.36	18.25
No	81	28.13	29.56
Don't know	143	49.65	52.19
Missing	14	4.86	
Total	288	100	

Table 27 Was asbestos disturbed during second renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	12	7.32	7.79
No	54	32.93	35.06
Don't know	88	53.66	57.14
Missing	10	6.1	
Total	164	100	

Table 28 Was asbestos disturbed during third renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	6	9.09	9.52
No	20	30.3	31.75
Don't know	37	56.06	58.73
Missing	3	4.55	
Total	66	100	

Table 29 Was asbestos disturbed during fourth renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	4	12.9	12.90
No	12	38.71	38.71
Don't know	15	48.39	48.39
Total	31	100	

Table 30 Was asbestos disturbed during fifth renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	1	3.45	6.67
No	5	17.24	33.33
Don't know	9	31.03	60.00
Missing	14	48.28	
Total	29	100	

Table 31 Did you take precautions to prevent asbestos exposure during first renovation (if the house was renovated) (Q24)

	Freq.	Percent	Percent of applicable and non missing
Yes	17	5.9	6.56
No	195	67.71	75.29
Not applicable	32	11.11	12.36
Don’t know	15	5.21	5.79
Missing	29	10.07	
Total	288	100	

Table 32 Did you take precautions to prevent asbestos exposure during second renovation (if the house was renovated) (Q24)

	Freq.	Percent	Percent non missing
Yes	10	6.1	6.90
No	113	68.9	77.93
Not applicable	20	12.2	13.79
Don't know	2	1.22	1.38
Missing	19	11.59	
Total	164	100	

Table 33 Did you take precautions to prevent asbestos exposure during third renovation (if the house was renovated) (Q24)

	Freq.	Percent	Percent non missing
Yes	5	7.58	8.20
No	47	71.21	77.05
Not applicable	8	12.12	13.11
Don't know	1	1.52	1.64
Missing	5	7.58	
Total	66	100	

Table 34 Did you take precautions to prevent asbestos exposure during fifth renovation (if the house was renovated) (Q24)

	Freq.	Percent	Percent non missing
Yes	1	3.23	3.57
No	24	77.42	85.71
Not applicable	3	9.68	10.71
Missing	3	9.68	
Total	31	100	

Table 35 Did you take precautions to prevent asbestos exposure during (all renovations) (Q24)

	Freq.	Percent	Percent non missing
Yes, for all	0	0	0
No, never worn	209	57.58	57.58
Dust protection sometimes worn	79	21.76	21.76
Missing	75	20.66	
Total	363	100.00	

Table 36 Did your builder take precautions to prevent asbestos exposure during first renovation (if the house was renovated)?

	Freq.	Percent	Percent non missing
Yes	17	5.9	6.80
No	122	42.36	48.80
Not applicable	27	9.38	10.80
Don't know	84	29.17	33.60
Missing	38	13.19	
Total	288	100	

Table 37 Did your builder take precautions to prevent asbestos exposure during second renovation (if the house was renovated)?

	Freq.	Percent	Percent non missing
Yes	12	7.32	8.28
No	67	40.85	46.21
Not applicable	18	10.98	12.41
Don't know	48	29.27	33.10
Missing	19	11.59	
Total	164	100	

Table 38 Did your builder take precautions to prevent asbestos exposure during third renovation (if the house was renovated)?

	Freq.	Percent	Percent non missing
No	35	53.03	70.00
Not applicable	6	9.09	12.00
Don't know	18	27.27	36.00
Missing	7	10.61	
Total	66	100	

Table 39 Did your builder take precautions to prevent asbestos exposure during fourth renovation (if the house was renovated)?

	Freq.	Percent	Percent non missing
Yes	4	12.9	15.38
No	14	45.16	53.85
Not applicable	1	3.23	3.85
Don't know	7	22.58	26.92
Missing	5	16.13	
Total	31	100	

Table 40 Did your builder take precautions to prevent asbestos exposure during fifth renovation (if the house was renovated)?

	Freq.	Percent	Percent non missing
Yes	1	3.45	6.67
No	9	31.03	60.00
Not applicable	1	3.45	6.67
Don't know	4	13.79	26.67
Missing	14	48.28	
Total	29	100	

Table 41 Length of each renovation (in days) (Q18)

	Mean	Median	25-75th percentile
Renovation #1 (n=252)	135.7	56	14-120
Renovation #2 (n=148)	58.8	21	7-77
Renovation #3 (n=61)	36.4	14	5-42
Renovation #4 (n=28)	36.3	14	3.5-45.5
Renovation #5 (n=12)	23.3	7	4-17.5

Table 42 Were asbestos fibres found? (Q15)

	Freq.	Percent	Percent non missing
Not found	148	40.77	42.53
Found	185	50.96	53.16
Don't know	15	4.13	4.31
Missing	15	4.13	
Total	363	100.00	

Table 43 Where fibres were found (if fibres were found, n=185) (Q15)

Area	Freq.	Percent
Main living area	28	15.14
Kitchen	32	17.30
Bathroom	18	9.73
Bedroom	56	30.27
Built in cupboards	124	67.03
Heating or cooling ducts	44	23.78
Laundry	9	4.86
Hallway	7	3.78
Garage	5	2.70
Missing	19	10.27

NB respondents could select more than one area so numbers do not sum to 100%

Table 44 Number of areas fibres were detected (if fibres were found) (Q15)

	Freq.	Percent	Percent non missing
0 (missing)	19	10.27	
1	78	42.16	46.99
2	48	25.95	28.92
3	24	12.97	14.46
4	7	3.78	4.22
5	5	2.70	3.01
6	4	2.16	2.41
Total	185	100.00	

Table 45 Were you advised to leave the house? (Q13)

	Freq.	Percent	Percent non missing
Yes	34	9.37	10.15
No	294	80.99	87.76
Don't know	7	1.93	2.09
Missing	28	7.71	
Total	363	100.00	

Table 46 Did you leave items behind (if not still living in affected property)? (Q14)

	Freq.	Percent	Percent non missing
Yes, I left everything in the house	18	5.61	8.70
Yes, I left behind some items	140	43.61	67.63
No	49	15.26	23.67
Missing	114	35.51	
Total	321	100	

Information on the health effects

Table 47 Do you think you received enough information about the health risks of exposure to loose-fill asbestos? (Q78)

	Freq.	Percent	Percent non missing
Yes	212	58.40	66.46
No	58	15.98	18.18
don't know	49	13.50	15.36
Missing	44	12.12	
Total	363	100.00	

Table 48 Where did you get information on the health risks? (Q79)

Source	Freq.	Percent
Received no information	9	2.48
ACT Government	255	70.23
Internet searches	206	56.75
Medical and health professionals	124	34.16
Social contacts	57	15.70
Mr Fluffy home owners group	141	38.84
Public lecture	90	24.79
Other	23	6.34

NB respondents could select more than one so numbers do not sum to 100%

Table 49 Have your sought help from a health professional related to Mr Fluffy (Q53)

	Freq.	Percent	Percent non missing
Yes	115	31.68	34.64
No	217	59.78	65.36
Missing	31	8.54	
Total	363	100.00	

Table 50 What kind of professional did you seek help from (if sought help, n=115) (Q54)

	Freq.	Percent
GP	89	77.39
Psychologist	38	33.04
Counsellor	41	35.65
Lifeline or other telephone service	7	6.09
Other	6	5.22

NB respondents could select more than one so numbers do not sum to 100%

Health measures

Table 51 Psychological distress (measured with the DQ-5) (Q62)

	Freq.	Percent	Percent non missing
Low anxiety (5-13)	246	67.77	75.23
High anxiety (14+)	81	22.31	24.77
Missing	36	9.92	
Total	363	100.00	

Table 52 Psychological distress (measured with the K6) (Q63)

	Freq.	Percent	Percent non missing
Low distress (6-12)	244	67.22	74.16
High (13+)	85	23.42	24.84
Missing	34	9.37	
Total	363	100.00	

Table 53 Overall self-rated health (Q46)

	Freq.	Percent	Percent non missing
Excellent/very good	193	53.17	57.61
Good	94	25.90	28.06
Fair/poor/very poor	48	13.22	14.33
Missing	28	7.71	
Total	363	100.00	

Table 54 Have you experienced any specific health problems that you attribute to exposure to asbestos (Q56)

	Freq.	Percent	Percent non missing
No	336	92.56	92.56
Yes	27	7.44	7.44
Total	363	100	

Table 55 Ever diagnosed by a doctor with a condition that is known to be due to exposure to asbestos?

	Freq.	Percent	Percent non missing
No	360	99.17	99.17
Yes	3	0.83	0.83
Total	363	100	100

Table 56 Diagnosed with mesothelioma?

Mesothelioma	Freq.	Percent	Percent non missing
No	3	100	100
Yes	0	0	0
Total	3	100	100

Table 57 Diagnosed with Asbestosis

	Freq.	Percent	Percent non missing
No	3	100	100
Yes	0	0	0
Total	3	100	

Table 58 Diagnosed with pleural plaque

	Freq.	Percent	Percent non missing
No	1	33.33	33.33
Yes	2	66.67	66.67

Total	3	100

Table 59 Diagnosed with lung cancer

	Freq.	Percent	Cum.
No	2	66.67	66.67
Yes	1	33.33	100
Total	3	100	

Table 60 Concerned about own health (Y/N) (Q60)

	Freq.	Percent	Percent non missing
Yes	231	63.64	72.41
No	88	24.24	27.59
Missing	44	12.12	
Total	363	100	

Table 61 Concerned about partner's health (Y/N) (Q60)

	Freq.	Percent	Percent non missing
Yes	198	54.55	74.72
No	67	18.46	25.28
Not applicable	34	9.37	
Missing	64	17.63	
Total	363	100	

Table 62 Concerned about children's health (Y/N) (Q60)

	Freq.	Percent	Percent non missing
Yes	204	56.2	78.76
No	55	15.15	21.24
applicable	48	13.22	
Missing	56	15.43	
Total	363	100	

Table 63 How concerned have you been about the health effects? (Q81)

	Freq.	Percent	Percent non missing
Unconcerned	29	7.99	9.15
Slightly concerned	74	20.39	23.34
Moderately concerned	76	20.94	23.97
Very concerned	56	15.43	17.67
Extremely concerned	82	22.59	25.87
Missing	46	12.67	

Total	363	100.00

Table 64 Level of concern in two categories (outcome of logistic regression) (Q81)

	Freq.	Percent	Percent non missing
Unconcerned- moderately concerned	179	49.31	56.47
Very or extremely concerned	138	38.02	43.53
Missing	46	12.67	
Total	363	100.00	

Table 65 Adults report of their children's level of worry about living in a Mr Fluffy house (Q69)

	Freq.	%
Not at all worried	22	19.1
Slightly worried	48	41.7
Moderately worried	28	24.3
Very worried	11	9.6
Extremely worried	6	5.2
Total	115	100.0

Analysis of factors associated with being 'very' or 'extremely concerned' (high concern)

Table 66 Level of concern by sex, n(row%)

	Low-moderate concern	High concern	Total
Male	87 (65.9)	45(34.1)	132
Female	92 (50.0)	92 (50.0)	184
Total	179 (56.6)	137 (43.4)	316

χ^2=7.92, p=0.005

Table 67 Level of concern by age, n(row%)

	Low-moderate concern	High concern	Total
18-24	4 (80.0)	1 (20.0)	5
25-34	13(61.9)	8 (38.1)	21
35-44	19 (39.6)	29 (60.4)	48
45-54	35 (54.7)	29 (45.3)	64
55-64	36 (46.8)	41 (53.3)	77
65+	64 (73.6)	23 (26.4)	87
Total	171 (56.6)	131 (43.4)	302

χ^2=20.34, p=0.001

Table 68 Level of concern by educational qualifications, n(row%)

	Low-moderate concern	High concern	Total
Postgraduate degree	62 (56.4)	48 (43.6)	110
Bachelors' degree	56 (67.5)	27 (32.5)	83
Certificate/ diploma	34 (47.9)	37 (52.1)	71
High school or below	27 (52.9)	24 (47.1)	51
Total	179 (56.7)	136 (43.4)	315

χ^2=6.47, p=0.091

Table 69 Level of concern by whether there are children in the house, n(row%)

	Low-moderate concern	High concern	Total
No children	133 (65.8)	69 (34.2)	202
Children in the house	46 (40.4)	68 (59.7)	114
Total	179 (56.7)	137 (43.4)	316

χ^2=19.28, p<0.001

Table 70 Level of concern by smoking status, n(row%)

	Low-moderate concern	High concern	Total
Current smoker	5 (31.3)	11 (68.8)	16
Previous smoker	42 (60.9)	27 (39.1)	69
Never a smoker	131 (57.5)	97 (42.5)	228
Total	178 (56.9)	135 (43.1)	313

χ^2=4.76, p=0.091

Table 71 Level of concern by years resident in a Mr Fluffy property, n(row%)

	Low-moderate concern	High concern	Total
0-4 years	20 (54.1)	17 (46.0)	37
5-9 years	21 (53.9)	18 (46.2)	39
10-19 years	37 (46.8)	42 (53.2)	79
20-29 years	23 (59.0)	16 (41.0)	39
30+ years	34 (64.2)	19 (35.9)	53
Total	135 (54.7)	112 (45.3)	247

χ^2=9.29, p=0.054

Table 72 Level of concern by whether fibres were found in the house, n(row%)

	Low-moderate concern	High concern	Total
Not found	85 (62.0)	52 (38.0)	137
Found	87 (51.8)	81 (48.2)	168
Don't know	7 (58.3)	5 (41.7)	12
Total	179 (56.5)	138 (43.5)	317

χ^2=3.25, p=0.197

Table 73 Level of concern by whether respondents had been in the roof space, n(row%)

	Low-moderate concern	High concern	Total
Did not enter roof	76 (60.3)	50 (39.7)	126
Entered roof space	97 (55.8)	77 (44.3)	174
Don't know	1 (50.0)	1 (50.0)	2
Total	174	128	302

χ^2=0.67, p=0.714

Table 74 Level of concern by whether respondents had been in the sub floor space, n(row%)

	Low-moderate concern	High concern	Total
Did not enter sub floor space	57 (66.3)	29 (33.7)	86
Entered sub floor space	114 (52.8)	102 (47.2)	216
don't know	1 (50.0)	1 (50.0)	2
Total	172	132	304

χ^2=4.60, p=0.100

Table 75 Level of concern by whether respondents renovations, n(row%)

	Low-moderate concern	High concern	Total
Yes renovated	132 (52.0)	122 (48.0)	254
Not renovated	37 (75.5)	12 (24.5)	49
Don't know	7 (63.6)	4 (36.4)	11
Total	176 (56.0)	138 (44.0)	314

χ^2=9.51, p=0.009

Table 76 Level of concern by whether respondents felt they had enough information on the health effects, n(row%)

	Low-moderate concern	High concern	Total
Yes adequate information	147 (70.0)	63 (30.0)	210
No not enough information	9 (15.5)	49 (84.5)	58
Don't know	23 (47.9)	25 (52.1)	48
Total	179 (56.7)	137 (43.4)	316

χ^2=56.69, p<0.001

Table 77 Age and sex adjusted odds ratios, predicting very or extremely concerned about the health effects of living in a Mr Fluffy house.

	High concern/n	OR (95%CI)	p-value
Education level			
Postgraduate degree	46/106	1.00	
Bachelors' degree	25/77	0.72 (0.36-1.41)	0.333
Certificate/ diplo	36/69	1.53 (0.83-2.83)	0.173
High school or below	21/47	1.38 (0.64-2.97)	0.408
Children in the house			
No	64/194	1.00	
Yes	65/106	3.62 (1.72-7.63)	0.001
Smoker status			
Never smoked	91/217	1.00	
Current smoker	10/15	2.09 (0.67-6.53)	0.207
Previous smoker	26/65	0.91 (0.50-1.66)	0.755
Years resident in the house			
0-4years	17/36	1.00	
5-9years	19/38	1.20 (0.41-3.49)	0.843
10-19years	45/84	2.18 (0.73-6.46)	0.197
20-29	14/42	1.33 (0.37-4.72)	0.934
30+ years	21/68	1.82 (0.51-6.46)	0.601
Entered the sub floor space			
No	27/83	1.00	
Yes	97/204	2.35 (1.30-4.26)	0.005
Don't know	1/2	2.69 (0.25-28.71)	0.412
Entered the roof space			
No	46/119	1.00	
Yes	73/165	1.68 (0.95-2.96)	0.074
Don't know	1/2	1.53 (0.19-12.36)	0.690
Were fibres found			
No	46/127	1.00	
Yes	79/162	1.66 (1.00-2.77)	0.052
Don't know	5/12	0.94 (0.20-4.37)	0.940
Renovations			
No	114/240	1.00	
Yes	12/47	3.75 (1.67-8.43)	0.001
Don't know	4/11	2.65 (0.63-11.21)	0.185
Enough information			
Yes	60/201	1.00	
No	45/53	12.53 (5.61-27.97)	<0.001
Don't know	24/46	2.22 (1.10-4.46)	0.026

Table 78 Multivariate odds ratios for factors significantly associated with reporting being 'very' or 'extremely concerned' about the health effects of living in a Mr Fluffy house.

	Concerned/Total	OR (95%CI)	p-value
Sex			
Male	36/98	1.00	
Female	63/134	2.64 (1.26-5.54)	0.010
Age groups			
25-34	8/15	2.67 (0.4-17.88)	0.311
35-44	22/37	1.68 (0.38-7.53)	0.497
45-54	19/49	0.45 (0.13-1.58)	0.211
55-64	34/63	2.09 (0.79-5.52)	0.139
65+	16/68	1.00	
Education level			
Postgraduate degree	37/89	1.00	
Bachelor's degree	20/53	1.23 (0.45-3.32)	0.687
Certificate/ diploma	26/54	1.43 (0.56-3.7)	0.457
High school or below	16/36	2.29 (0.76-6.95)	0.142
Children in the house			
No children	49/147	1.00	
Children in the house	50/85	2.94 (1.01-8.58)	0.048
Smoker status			
Never smoked	71/172	1.00	
Current smoker	19/47	2.87 (0.71-11.55)	0.137
Previous smoker	9/13	0.86 (0.4-1.85)	0.704
Years resident			
0-4 years	16/32	1.00	
5-9 years	17/34	1.34 (0.37-4.89)	0.654
10-19 years	36/68	1.84 (0.45-7.44)	0.395
20-29 years	12/36	1.35 (0.28-6.45)	0.704
30+ years	18/62	1.14 (0.21-6.13)	0.878
Entered floor space			
Did not enter floor space	23/68	1.00	
Entered floor space	76/164	1.52 (0.68-3.36)	0.306
Entered roof space			
Did not enter roof space	33/91	1.00	
Entered roof space	66/141	2.09 (0.91-4.78)	0.081
Fibres found			
Not found	37/101	1.00	
Found	58/122	1.33 (0.69-2.58)	0.397
Don't know	4/9	2.09 (0.34-12.9)	0.429
Renovations took place			
No	11/39	1.00	
Yes	88/193	1.44 (0.56-3.69)	0.449
Received enough information			
Yes	47/160	1.00	
No	36/40	18.43 (6.31-53.8)	<0.001
Don't know	16/32	1.99 (0.78-5.07)	0.151

Note. Estimates are based on data from 240 residents who did not have missing information on any of the predictor variables. ORs are adjusted for all factors in the table.

Appendix tables 2 – Past residents

Note that the Percent column in the following tables refers to all participants and the Percent non-missing refers to participants with non-missing values.

Sociodemographic characteristics

Table 79 Sex (Q84)

	Freq.	Percent	Percent non missing
Male	67	32.84	37.02
Female	113	55.39	62.43
Other	1	0.49	0.55
Missing	23	11.27	
Total	204	100	

Table 80 Age Groups (Q83)

Age groups	Freq.	Percent	Percent non missing
18-24	1	0.49	0.62
25-34	14	6.86	8.70
35-44	40	19.61	24.84
45-54	40	19.61	24.84
55-64	37	18.14	22.98
65+	29	14.22	18.01
Missing	43	21.08	
Total	204	100	

Table 81 Education (Q90)

	Freq.	Percent	Percent non missing
Postgraduate	67	32.84	37.43
Bachelors' degree	48	23.53	26.82
Certificate/ diploma	47	23.04	26.26
High school or below	17	8.33	9.50
Missing	25	12.25	
Total	204	100	

Table 82 Employment status (Q33)

	Freq.	Percent	Percent non missing
Full-time employed	85	41.67	46.45
Part-time employed	35	17.16	19.13
Self-employed	9	4.41	4.92
Unemployed	1	0.49	0.55
Not employed	53	25.98	28.96
Missing	21	10.29	
Total	204	100	

Table 83 Weekly household income (Q91)

	Freq.	Percent	Percent non missing
$1-999	26	12.75	15.85
$1000-1500	20	9.8	12.20
$1500-1999	23	11.27	14.02
$2000-2499	22	10.78	13.41
$2500-2999	31	15.2	18.90
$3000+	42	20.59	25.61
Missing	40	19.61	
Total	204	100	

Table 84 Relationship status (Q85)

	Freq.	Percent	Percent non missing
Married	105	51.47	58.99
De facto	27	13.24	15.17
Single	34	16.67	19.10
Separated/divorced	6	2.94	3.37
Widowed	6	2.94	3.37
Missing	26	12.75	
Total	204	100	

Table 85 Number of people living in the house (Q5)

	Freq.	Percent	Percent non missing
1	9	4.41	5.49
2	17	8.33	10.37
3	30	14.71	18.29
4	59	28.92	35.98
5 or more	49	24.02	29.88
Missing	40	19.61	
Total	204	100	

Table 86 Number of children living in the house (Q5a)

	Freq.	Percent	Percent non missing
None	77	37.75	39.29
1	30	14.71	15.31
2	53	25.98	27.04
3+	36	17.65	18.37
Missing	8	3.92	
Total	204	100	

Table 87 Smoking Status (Q47)

	Freq.	Percent	Percent non missing
Current smoker	12	5.88	6.59
Previous smoker	53	25.98	29.12
Never smoked	117	57.35	64.29
Missing	22	10.78	
Total	204		

Exposure to asbestos

Table 88 Years lived in Mr Fluffy house (Q3/4)

	Freq.	Percent	Percent non missing
0-4 years	62	30.39	31.63
5-9 years	38	18.63	19.39
10-19 years	61	29.9	31.12
20+ years	35	17.2	17.86
Missing	8	3.92	
Total	204	100	

Table 89 Were you living in the house when loose-fill asbestos was installed? (Q8)

	Freq.	Percent	Percent non missing
Yes	55	26.96	30.39
No	126	61.76	69.61
Missing	23	11.27	
Total	204	100	

Table 90 Were you living in the house when it was remediated? (Q9)

	Freq.	Percent	Percent non missing
Yes	61	29.90	31.77
No	131	64.22	68.23
Missing	12	5.88	
Total	204	100	

Table 91 How many times did you enter the roof space? (Q28)

	Freq.	Percent	Percent non missing
None	104	50.98	56.52
1-3times	23	11.27	12.50
4-10times	22	10.78	11.96
11-50times	18	8.82	9.78
50+	4	1.96	2.17
Don't know	13	6.37	7.07
Missing	20	9.8	
Total	204	100	

Table 92 How many times did you enter the floor space? (Q30)

	Freq.	Percent	Percent non missing
None	72	35.29	41.62
1-3times	14	6.86	8.09
4-10times	20	9.8	11.56
11-50times	20	9.8	11.56
50+	38	18.63	21.97
Don't know	9	4.41	5.20
Missing	31	15.2	
Total	204	100	

Table 93 Was the house renovated when you lived there? (Q16)

	Freq.	Percent	Percent non missing
Yes	113	55.39	58.55
No	57	27.94	29.53
Don't know	23	11.27	11.92
Missing	11	5.39	
Total	204	100	

Table 94 Was asbestos disturbed during first renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	29	25.66	27.88
No	16	14.16	15.38
Don't know	59	52.21	56.73
Missing	9	7.96	
Total	113	100	

Table 95 Was asbestos disturbed during the second renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	6	16.67	18.18
No	8	22.22	24.24
Don't know	19	52.78	57.58
Missing	3	8.33	
Total	36	100	

Table 96Was asbestos disturbed during the third renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	1	12.5	14.29
No	3	37.5	42.86
Don't know	3	37.5	42.86
Missing	1	12.5	
Total	8	100	

Table 97 Was asbestos disturbed during fourth renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	2	28.57	28.57
No	1	14.29	14.29
Don't know	4	57.14	57.14
Total	7	100	

Table 98 Was asbestos disturbed during fifth renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes	1	1.11	50.00
Don't know	1	1.11	50.00
Missing	88	97.78	
Total	90	100	

Table 99 Was asbestos disturbed during any renovation (if the house was renovated) (Q22)

	Freq.	Percent	Percent non missing
Yes for any renovation	31	27.43	29.81
No for all renovations	12	10.62	11.54
Other	61	53.98	58.65
Missing	9	7.96	
Total	113	100	

Table 100 Did you take any precautions to prevent asbestos exposure during the first renovation (Q24)

	Freq.	Percent	Percent non missing
Yes	3	2.65	3.26
No	68	60.18	73.91
Not applicable	10	8.85	10.87
Don't know	11	9.73	11.96
Missing	21	18.58	
Total	113	100	

Table 101 Did you take any precautions to prevent asbestos exposure during the second renovation (Q24)

	Freq.	Percent	Percent non missing
Yes	0	0	0
No	23	63.89	76.67
Not applicable	4	11.11	13.33
Don't know	3	8.33	10.00
Missing	6	16.67	
Total	36	100.00	

Table 102 Did you take any precautions to prevent asbestos exposure during the third renovation (Q24)

	Freq.	Percent	Percent non missing
Yes	0	0	0
No	4	50.00	57.14
Not applicable	3	37.50	42.86
Missing	1	12.50	
Total	8	100.00	

Table 103 Did you take any precautions to prevent asbestos exposure during the fourth renovation (Q24)

	Freq.	Percent	Percent non missing
Yes	0	0	0
No	4	57.14	57.14
Not applicable	3	42.86	42.86
Total	7	100.00	

Table 104 Did your builder take any precautions to prevent asbestos exposure during the first renovation (Q24)

	Freq.	Percent	Percent non missing
Yes	7	6.19	7.37
No	32	28.32	33.68
Not applicable	9	7.96	9.47
Don't know	47	41.59	49.47
Missing	18	15.93	
Total	113	100	

Table 105 Did your builder take any precautions to prevent asbestos exposure during the second renovation (Q24)

	Freq.	Percent	Percent non missing
Yes	1	2.78	3.13
No	7	19.44	21.88
Not applicable	3	8.33	9.38
Don't know	21	58.33	65.63
Missing	4	11.11	
Total	36	100	

Table 106 Did your builder take any precautions to prevent asbestos exposure during the third renovation (Q24)

	Freq.	Percent	Percent non missing
No	2	25.00	40.00
Don't know	3	37.5	60.00
Missing	3	37.5	
Total	8	100	

Table 107 Did your builder take any precautions to prevent asbestos exposure during the fourth renovation (Q24)

	Freq.	Percent	Percent non missing
Yes	1	14.29	14.29
No	3	42.86	42.86
Don't know	3	42.86	42.86
Total	7	100	

Table 108 Did your builder take any precautions to prevent asbestos exposure during the fifth renovation (Q24)

	Freq.	Percent	Percent non missing
Don't know	2	2.22	100.00
Missing	88	97.78	
Total	90	100	

Table 109 Length of each renovation (in days) (Q18)

	Mean	Median	25-75th percentile
Renovation #1 (n=68)	155.31	72	14-180
Renovation #2 (n=27)	100.00	28	7-90
Renovation #3 (n=6)	7.50	6	4-14
Renovation #4 (n=6)	7.33	7	1-14
Renovation #5 (n=2)	14.00	14	14-14

Health Measures

Table 110 Anxiety (measured with the DQ-5) (Q62)

	Freq.	Percent	Percent non missing
Low	151	74.02	84.36
High	28	13.73	15.64
Missing	25	12.25	
Total	204	100	

Table 111 Psychological distress (measured with the K6) (Q63)

	Freq.	Percent	Percent non missing
Low	136	66.67	77.27
High	40	19.61	22.73
Missing	28	13.73	
Total	204	100	

Table 112 Overall self-rated health (Q46)

	Freq.	Percent	
Excellent/very good	96	47.06	51.89
Good	55	26.96	29.73
Fair/poor/very poor	34	16.67	18.38
Missing	19	9.31	
Total	204	100	

Table 113 Sought help from professional (Q53)

	Freq.	Percent	Percent non missing
Yes	12	5.88	6.52
No	172	84.31	93.48
Missing	20	9.8	
Total	204	100	

Table 114 What kind of professional did you seek help from (if sought help, n=12) (Q54)

	Freq.	Percent
GP	11	91.67
Psychologist	3	25.00
Counsellor	1	8.33
Lifeline or other telephone service	0	0.00
Other	3	25.00

NB respondents could select more than one so numbers do not sum to 100%

Table 115 Have you experienced any specific health problems that you attribute to exposure to asbestos? (Q56)

	Freq.	Percent	Percent non missing
No	194	95.1	95.1
Yes	10	4.9	4.9
Total	204	100	

Table 116 Have you ever been diagnosed by a doctor with a condition that is known to be due to exposure to asbestos? (Q58)

	Freq.	Percent	Percent non missing
No	199	97.55	97.55
Yes	5	2.45	2.45
Total	204	100	

Table 117 Diagnosed with mesothelioma (If diagnosed with a condition by a doctor) (Q59)

	Freq.	Percent	Percent non missing
Yes	1	20.00	33.33
No	2	40.00	66.67
Missing	2	40.00	
Total	5	100	

Table 118 Diagnosed with Asbestosis (If diagnosed with a condition by a doctor) (Q59)

	Freq.	Percent	Percent non missing
Yes	0	0.00	0.00
No	2	40.00	100.00
Missing	3	60.00	
Total	5	100.00	

Table 119 Diagnosed with pleural plaque (If diagnosed with a condition by a doctor) (Q59)

	Freq.	Percent	Percent non missing
Yes	2	40.00	66.67
No	1	20.00	33.33
Missing	2	40.00	
Total	5	100.00	

Table 120 Diagnosed with lung cancer (If diagnosed with a condition by a doctor) (Q59)

	Freq.	Percent	Percent non missing
Yes	1	20.00	33.33
No	2	40.00	66.67
Missing	2	40.00	
Total	5	100.00	

Table 121 Concerned about own health (Q60)

	Freq.	Percent	Percent non missing
Yes	111	54.41	63.43
No	64	31.37	36.57
Missing	29	14.22	
Total	204	100	

Table 122 Concerned about partner's health (Q60)

	Freq.	Percent	Percent non missing
Yes	47	23.04	37.90
No	77	37.75	62.10
Not applicable	33	16.18	
Missing	47	23.04	
Total	204	100	

Table 123 Concerned about children's health (Q60)

	Freq.	Percent	Percent non missing
Yes	66	32.35	48.89
No	69	33.82	51.11
Not applicable	35	17.16	
Missing	34	16.67	
Total	204	100	