

**Second-hand smoke:  
Exposure, attitudes, and behaviours:  
Monitoring trends 1999 to 2004 - preliminary findings**

**Julie Gillespie**

Health Sponsorship Council Research and Evaluation Unit

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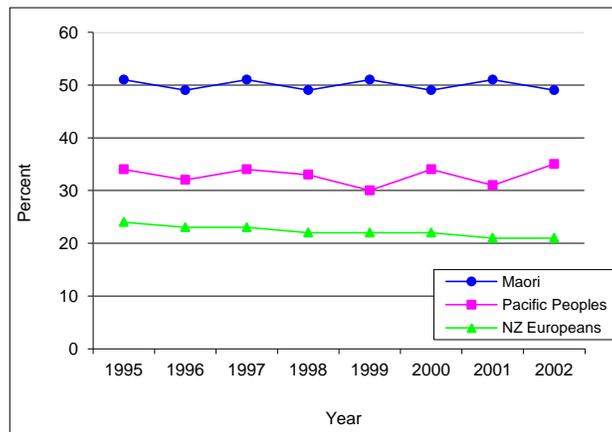
## **Abstract**

The detrimental health effects of smoking have been known for decades, but it wasn't until the mid eighties that major reviews concluded that passive smoking or exposure to second-hand smoke (SHS) was harmful to non-smokers. Recent years have seen a greater focus on reducing SHS exposure including, SHS campaigns in 2003/2004 and amendments to the Smokefree Environment Act. This study aimed to assess whether any changes have occurred over time in key variables relating to SHS exposure in New Zealand, the study spans five years from 1999 to 2004. The past five years have seen positive attitudinal changes towards total smoking bans in homes and cars. In 2003 and 2004 two-fifths of the general population were still exposed to SHS in the home, with Maori more likely than non-Maori to report SHS exposure. Over the past five years less Maori who reported smoking are smoking indoors at home however, this is not the case inside cars, with figures remaining stable. In 2003 and 2004 one-fifth of respondents were exposed to SHS at work. Respondents' views on allowing smoking anywhere in bars and pubs have strengthened since 1999, with decreasing support for allowing smoking anywhere. Support for legislation to ban smoking inside workplaces including hospitality settings has increased over the past five years.

## Introduction

According to data from the Ministry of Health the smoking prevalence among New Zealand Europeans/others has decreased by roughly three percent since the early 1990s however, this trend has slowed or stabilised over recent years. No such trend is evident for Maori and Pacific people and in 2002 Pacific peoples smoking prevalence was higher than any previous year since 1990, although it is too early to ascertain whether this is the beginning of an increasing trend. In 2002, 24.5 percent of non-Maori, 35.2 percent of Pacific people, and 49.4 percent of Maori reported being a current<sup>1</sup> cigarette smoker (MOH, 2003). Differences in the smoking prevalence between ethnicities may be partly due to the Maori and Pacific populations being relatively young, with a higher smoking prevalence found in the younger age groups (MOH, 2003).

Figure 1. Current smoking prevalence 1999 to 2004 (MOH, 2003)



Evidence of a link between second-hand smoke (SHS)<sup>2</sup> exposure and serious health effects in non-smokers was first recognised in the mid-1980s when a number of scientific committees and national organisations concluded that exposure to SHS is a cause of lung cancer (Australian National Health and Medical Research Council, 1987; National Research Council, 1986; UK Department of Health and Social Security, 1988; US

<sup>1</sup> Reported smoking at least once a month.

<sup>2</sup> Second-hand smoke or Environmental Tobacco Smoke is defined as the combination of side-stream smoke, (cigarettes, pipes, or cigars), and mainstream smoke, (US Department of Health and Human Services, 1986).

Department of Health and Human Services, 1986; US National Research Council, 1986). Since then numerous studies have shown that SHS exposure increases the risk of developing a range of other smoking-related illnesses, including heart disease, stroke, and respiratory illnesses, as well as many childhood illnesses (Action on Smoking and Health UK, 2004; Great Britain Scientific Committee on Tobacco and Health, 1998; US Environmental Protection Agency, 1992). Furthermore, a recent population cohort study conducted in New Zealand found that adults who had never smoked and who had lived with smokers had about 15 percent higher mortality than never smokers living in smoke-free households (Hill, Blakely, Kawachi, & Woodward, 2004).

The New Zealand Government has taken a number of legislative steps to reduce SHS related harms experienced by non-smoking New Zealanders. These include the passage of the Smoke-free Environments (SFE) Act in 1990 and subsequent amendments to this Act in 1993, 1997, and 2003. With the passing of the SFE Act in 1990 the Health Sponsorship Council (HSC) was established, initially the HSC's role was to replace tobacco sponsorship with positive health messages. This required comprehensive marketing with the aim of ensuring that positive health messages were positioned in the minds of people who had previously been influenced by tobacco marketing. Today the HSC uses all communication tools available to promote their tobacco control programmes and message.

As part of evaluating the impacts of any new legislation and the effectiveness of tobacco control programmes, the HSC has run biennial 'Smokefree' and 'Auahi Kore' monitoring surveys. This report uses data from the 1999, 2001, and 2003 monitors as well as a 2004 monitor that was conducted in order to evaluate the Smokefree Homes campaign (reported in another document). Investigations have been made into whether any changes have occurred in key variables related to SHS exposure between 1999 and 2004, including:

- Attitudes of smokers exposing other people to SHS at home and at work.
- Attitudes of non-smokers exposed to SHS at home and at work.

- Exposure to SHS in the home and workplace.
- Perceptions of workers rights to work in an environment free of tobacco smoke.

## **Methods**

### *Samples*

Data for this report was drawn from four surveys undertaken by TNS New Zealand (previously known as NFO New Zealand and CM Research) on behalf of the Health Sponsorship Council (HSC) in 1999, 2001, 2003, and 2004. Each survey contains two samples, the first sample is of the Maori population and the second sample is of the general population and contains all ethnicities.

The Maori sample in each case was obtained by randomly selecting Maori registered on either the Maori or general electoral rolls and then telematching their contact details with household telephone numbers. This has been found to be a cost effective method for recruiting representative samples of Maori for other similar health surveys (Dacey & Moewaka-Barnes, 2000). Only those from electoral rolls who could be matched for surname, street name, and street address were included in the final sample list. Phone numbers were then randomly selected from the list and contacted by interviewers.

The general population samples contained all ethnicities and were obtained using a random digit dialing process, in which household phone numbers were randomly generated. The eligibility criteria to be selected into either sample also included:

- The participant had to be at least 15 years of age.
- Was to have the next birthday.
- Had sufficient comprehension of the English language.
- Met quota requirements (the sample aimed to include 50% male and 50% female).

### *Research tools*

Interviews were carried out using Computer Assisted Telephone Interviewing (CATI). Data was then transferred to the HSC in SPSS version 11 for analysis.

## *Years*

### *1999 and 2001*

In 1999 and 2001, TNS New Zealand (then CM Research and NFO) carried out surveys on behalf of the HSC to monitor smoking related attitudes and beliefs of relevance to the HSC's tobacco control programme. As part of this in both 1999 and 2001 two separate samples were taken, as described above, one containing 500 Maori and the other containing 500 participants from the general population.

### *2003*

In 2003 the HSC received additional funding from the Ministry of Health (MOH) to increase the general population sample size of 500 participants in previous surveys to 1502 participants. The purpose of this increased sample was to provide quality information to aid in evaluating impact of amendments to the SFE Act, 1990. The second sample of Maori remained at 500 participants, as in previous years.

### *2004*

In addition to the Smokefree/Auahi Kore biennial survey an extra survey was conducted in 2004. This survey was carried out in order to provide baseline data as part of an evaluation for a Smokefree Homes campaign that the Ministry of Health contracted the Health Sponsorship Council (HSC) and the Quit Group to develop and deliver. The campaign aimed to reduce exposure to SHS in private settings, particularly in homes. The survey contained three samples and was conducted prior to the campaign to establish baseline measures. This survey also retained questions used in 1999, 2001, and 2003 for consistency.

The Maori sample was increased to 900 participants and was derived as described above. The second sample of the general population was selected using the random digit dialing process and similar to the 2003 survey contained 1507 participants. The final sample, a smoker/recent quitter boost, was recruited in the same way as the general population sample with the additional criteria that the respondent had to have quit tobacco smoking in the past year or was a current smoker (smoked at least once a month).

### *Procedure*

All surveys used the same core questions on a variety of smoking behaviours and attitudes towards smoking. Not all questions were asked throughout the period, so only those that have data available have been reported on. Fieldwork for all the surveys took place early in the year (February to March). Relatively short survey periods (approximately one month) may have negatively impacted on the response rates.

Data was supplied to the HSC in SPSS format. Extraneous variables were removed and new variables calculated. Frequencies of age by ethnicity for the eligible population were obtained from the 2001 census, these frequencies were divided into smokers and non-smokers using estimates from the Ministry of Health (2002). To calculate the probability weights for the general population, the estimated population frequencies by age, smoking status and ethnicity, were divided by the number of responders in each group. Thus the weights are proportional to the number of people in the population that each survey respondent represents. Probability weights applied only to the Maori sample included age and smoking status while probability weights for the current smoker/recent quitter sample included age and ethnicity.

## Results

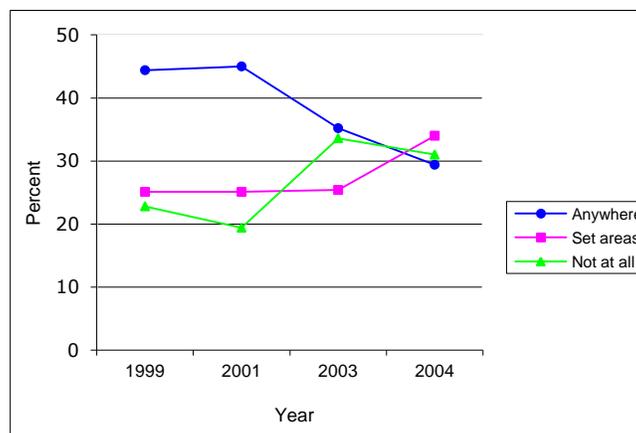
### *Smoking in domestic settings*

#### *Respondents' attitudes to where smoking should be allowed in the home*

From 1999 to 2004 respondents were asked if they felt people should be able to smoke anywhere they wanted, only in set areas, or not at all indoors at home. During this time a positive attitudinal change was seen in the general population with agreement for total smoking bans in the home increasing from 22.8 percent in 1999 to 31.0 percent in 2004,  $p < 0.001$  (See Figure 2).

Across all years surveyed respondents who smoked were the most likely group to agree that smoking should be allowed anywhere in the home. However, a downward attitudinal change towards allowing smoking anywhere in the home has occurred in the respondents who reported smoking (58.8 percent in 1999 compared to 39.6 percent in 2004) a significant difference ( $p < 0.001$ ) of 19.2 percent. Maori were the most likely group to agree across all years that smoking should be allowed in set areas within the home, as opposed to total smoking bans or allowing smoking anywhere in the home. Respondents that did not report current smoking were the most likely group to agree that smoking should not be allowed at all inside the home with this figure increasing from 28.1 percent in 1999 to 37.4 percent in 2004.

Figure 2. Attitudes of the general population towards smoking in the home, 1999-2004



### *Second-hand smoke exposure in the home*

Data on SHS exposure in the home was only available in 2003 and 2004. In 2003 most (80 percent) respondents reported that they had not been exposed to SHS in their homes during the previous seven days. Of those who were exposed to SHS in their homes the most common frequency of exposure was every day (11 percent of all respondents). Maori were more likely than non-Maori to be exposed every day to SHS, when recorded over a seven-day period (17 percent of Maori compared to 10 percent of non-Maori).

In 2004 Maori respondents were significantly more likely than non-Maori respondents (29.3 percent compared to 17.2 percent,  $p < 0.001$ ) to report SHS exposure in their home during the seven days prior to the survey. Respondents who were exposed to SHS at home were more likely to be exposed seven days a week rather than just a few days per week. Sixteen percent of Maori respondents and 7.9 percent of non-Maori respondents reported being exposed to SHS every day for seven days prior to the survey.

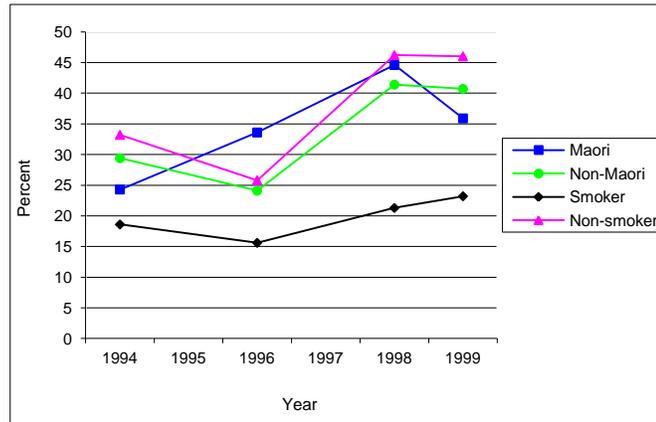
### *Respondents' attitudes to where smoking should be allowed in private cars*

As with respondents' attitudes towards allowing smoking in the home, participants' attitudes towards allowing smoking in private cars have followed a downward trend over the past five years (62.9 percent in 1999 compared to 51.0 percent in 2004,  $p < 0.001$ , see Figure 3). Respondents who currently smoked<sup>3</sup> were the most likely group to agree that people should be able to smoke in private cars and non-smokers the most likely group to agree that private cars should have total smoking bans.

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<sup>3</sup> Respondents who reported smoking at least once a month were defined as current smokers.

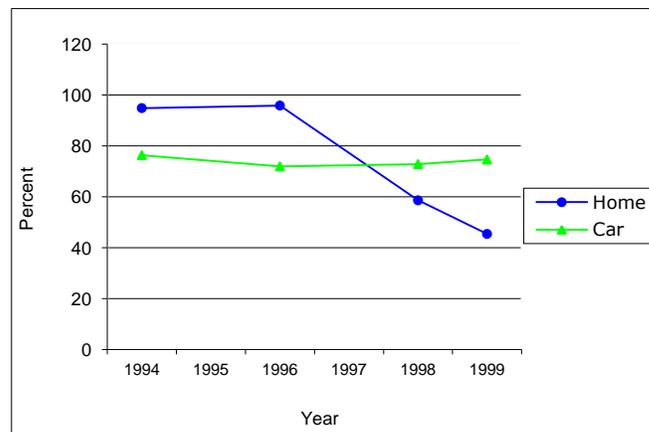
Figure 3. Respondents who think that smoking should not be allowed in private cars, 1999-2004



### Smoking behaviour

Data on smoking behaviour in domestic settings was only available for the Maori samples across all years. While significantly less Maori reported that they smoked indoors at home in 2004 than in previous years surveyed (94.8 percent in 2004 compared to 45.5 percent in 1999,  $p < 0.001$ ), the figures reported for smoking inside private cars have remained stable over the past five years (see Figure 4).

Figure 4. Maori participants who reported smoking inside domestic settings

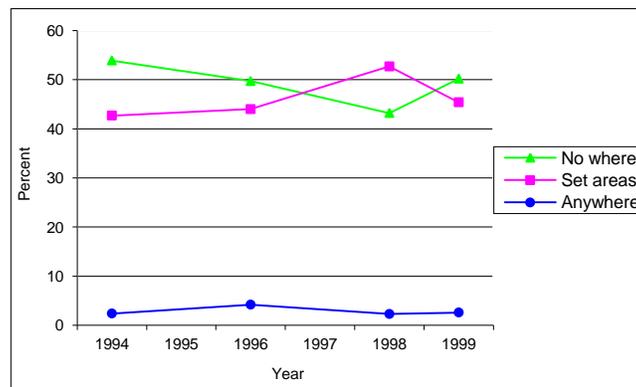


## *Smoking in the workplace*

### *Respondents' attitudes to where smoking should be allowed in the workplace*

From 1999 to 2004 respondents were asked if they felt people should be able to smoke anywhere they wanted, only in set areas, or not at all indoors in workplaces. During this time attitudes of the general population have remained fairly stable. There has been little support for allowing smoking anywhere in the workplace (2.4 percent in 1999 compared to 2.6 percent in 2004). Attitudes towards smoking restrictions in the workplace have been divided between allowing smoking nowhere or allowing smoking in set areas in the workplace (see Figure 5).

Figure 5. Attitudes of the general population towards smoking in the workplace, 1999-2004



### *Second-hand smoke exposure in the workplace*

Data on SHS exposure in the workplace was only available in 2003 and 2004. In 2003 most respondents (79.6 percent) reported that they were not exposed to SHS in the workplace during the previous seven days. Of those who were exposed to SHS in their workplace the most common frequency of exposure was every day (6.8 percent of all respondents). Maori were more likely than non-Maori to be exposed at least one day per week to SHS at work (26.6 percent compared to 19.4 percent).

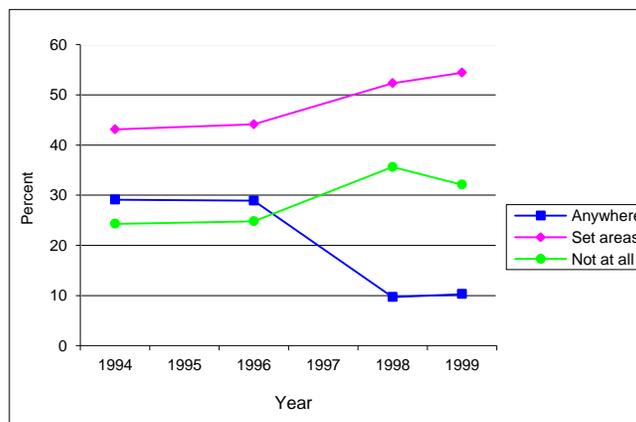
In 2004 a similar number of respondents reported being exposed to SHS while at work as did in 2003, 21.0 percent of all respondents in 2004 compared to 20.2 percent in 2003. In 2004 more non-Maori reported being exposed to SHS at least one day per week in the

workplace than Maori (21.4 percent compared to 18.5 percent). Although a similar percentage of Maori and non-Maori were in paid employment, differences in exposure may be due to the number of days the respondent had worked in the previous seven days.

*Respondents' attitudes to where smoking should be allowed in hospitality workplaces*

From 1999 to 2004 respondents were asked if they felt that people should be able to smoke anywhere they wanted, only in set areas, or not at all in hotels, bars, and pubs. Over time support appears to have increased for only allowing smoking in set areas or not at all and decreased for allowing smoking anywhere therefore, there is greater support for smoking restrictions. In 1999 29.1 percent of respondents agreed that smoking should be allowed anywhere in hotels, bars, and pubs in comparison to 10.3 percent in 2004 (see Figure 6).

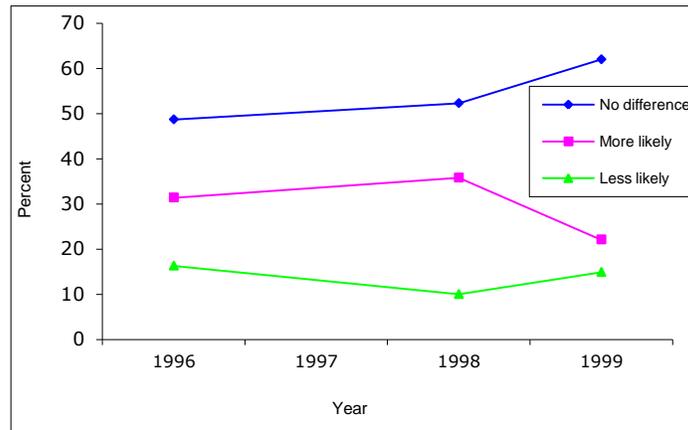
Figure 6. Attitudes of the general population towards smoking in hotels, bars, and pubs, 1999-2004



Respondents were asked to imagine that all bars and pubs were smoke-free. They were then asked if this would make any difference to whether they would go to bars and pubs. Over the years surveyed, 2001 to 2004 an increasing trend was seen, with respondents in the general population reporting that it would make no difference to the frequency that they visited bars and pubs. Those respondents that reported current smoking in 2001 were less likely to say that they would go to bars and pubs that were smoke-free, but in

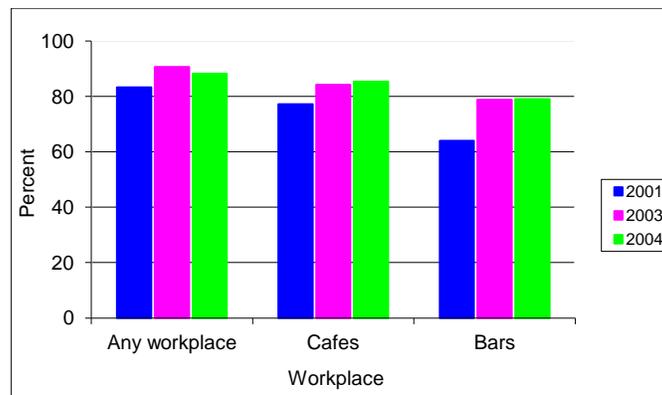
2003 and 2004 they were most likely to say it made no difference to them if the bar or pub was smokefree.

Figure 7. Likelihood of the general population going to a bar or pub if it was totally smokefree, 2001-2004



Support for the right to work in an environment free of SHS appears to have increased between 2001 and 2004, including the support for workers who work in hospitality settings (see Figure 8). In 2001 64 percent of respondents supported legislation to ban smoking inside bars compared to 79 percent in 2004. A similar trend was seen for banning smoking inside cafes and therefore protecting the workers from SHS exposure, with support increasing from 77.2 percent in 2001 to 85.3 percent in 2004.

Figure 8. Support for legislation to ban smoking inside workplaces



## **Discussion**

The detrimental health effects of smoking have been known for decades, but it was not until the mid-eighties that major reviews concluded that passive smoking or exposure to SHS was harmful to non-smokers. Recent years have seen a greater focus on reducing SHS exposure including, SHS campaigns in 2003/2004 and amendments to the SFE Act, 1990.

The past five years have seen positive attitudinal changes towards total smoking bans in homes and cars. In 2003 and 2004 two-fifths of the general population were still exposed to SHS in the home, with Maori more likely than non-Maori to report SHS exposure. Over the past five years less Maori who reported smoking are smoking indoors at home, however, this appears not to be the case inside cars, with figures remaining stable. In 2003 and 2004 one-fifth of respondents were exposed to SHS at work. Respondents' views on allowing smoking anywhere in bars and pubs have strengthened since 1999, with decreasing support for allowing smoking anywhere. Support for legislation to ban smoking inside workplaces including hospitality settings has increased over the past five years.

Results reported in this document are still preliminary and any discrepancies between years need to be further investigated. Future planning into the option of allowing smoking in set areas will also be addressed so that true representations of respondents' views on total bans can be assessed.

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## Appendix

**Table 1. Unweighted demographics – general population samples**

Demographic	1999 (n=500)	2001 (n=500)	2003 (n=1502)	2004 (n=1500)
Gender				
Male	50.0	50.0	50.0	50.0
Female	50.0	50.0	50.0	50.0
Smoking Status				
Daily smoker	26.6	24.2	15.4	16.5
Non-smoker	75.8	75.6	84.5	83.4
Ethnicity				
Maori	7.6	6.2	6.4	7.5
New Zealand European	77.4	82.2	81.6	76.8
Pacific People	1.6	2.4	3.1	3.2
Chinese	1.2	2.0	2.5	3.1
Indian	0.8	1.4	2.5	3.0
Other	4.4	4.8	5.0	9.3
Refused	-	0.4	0.5	0.2
Age				
15-18	5.2	6.4	5.3	4.3
19-25	12.0	9.8	10.5	9.4
26-35	22.0	18.8	20.6	18.5
36-45	19.0	22.2	21.1	21.9
46-55	19.4	19.6	17.2	19.2
56-65	10.6	11.4	12.6	12.3
65+	11.8	11.6	11.9	14.3

**Table 2. Unweighted demographics – Maori samples**

Demographic	1999 (n=500)	2001 (n=500)	2003 (n=500)	2004 (n=900)
Gender				
Male	45.6	49.0	50.0	50.1
Female	54.4	51.0	50.0	49.9
Smoking Status				
Daily smoker	35.8	31.4	22.4	23.8
Non-smoker	64.0	68.4	77.2	76.0
Ethnicity				
Maori	100.0	100.0	100.0	100.0
Age				
15-18	8.8	7.4	7.6	6.6
19-25	15.4	14.0	15.4	12.1
26-35	24.2	18.4	17.0	18.8
36-45	22.8	23.2	23.8	23.9
46-55	17.0	20.8	19.2	22.9
56-65	8.0	12.0	13.4	10.7
65+	3.2	4.0	3.0	4.2