List of chapters available at tobaccoinaustralia.org.au

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9.0 Introduction

Smoking is undoubtedly one of the major markers of and contributors to social disadvantage in Australia. As with most other high-risk behaviours, the prevalence of smoking is significantly higher among lower socio-economic groups, particularly so in groups facing multiple personal and social difficulties and challenges. Higher rates of smoking are one of the major factors driving poorer health status in economically disadvantaged areas and groups. Spending on tobacco products and ill-health contribute significantly to financial stress. Over long periods, spending on tobacco works against the accumulation of household savings and assets, and perpetuates intergenerational poverty. Financial stress and poverty create social conditions that may make it more difficult to successfully quit smoking. Smoking by pregnant women has far-reaching effects on the health of offspring, both as infants and much later in life. Continued high levels of tobacco use by parents and peers powerfully models smoking, thus perpetuating continuing high levels within neighbourhoods and across generations.

This chapter provides data to illustrate these trends; it analyses some of the factors that may explain the greater likelihood of smoking among disadvantaged groups; finally it draws out policy implications for addressing disparities and reducing social disadvantage associated with tobacco smoking.

9.0.1 What is social disadvantage?

Social disadvantage can be understood, defined and measured in a variety of ways. Social disadvantage is often described in terms of lower socio-economic status as measured by levels of educational attainment, unemployment, being in jobs involving low-skilled manual labour, or earning relatively low levels of income. In Australia, living in a remote as opposed to a rural or an urban area is also often regarded as a form of social disadvantage.

Socio-economic status can be determined at an individual level—based, for instance, on educational attainment, employment status or job type. Alternatively it can be determined at a household level, based on either the income or jobs status of the main income earner, or the combined household income. Or it can be defined at an area level—based on the overall percentages of individuals classified as disadvantaged within particular geographical boundaries.

Socio-economic status can also be quantified in many different ways. People may be categorised into one of two, three, four, five or an even greater number of groups:

- high, medium and low levels of income or earning an income that puts them in one of three tertiles, four quartiles, five quintiles or 10 deciles
- employed, unemployed or not in the workforce
- employed in upper white, lower white, upper blue or lower blue collar jobs or, simply white collar or blue collar
- living in an area with an index of disadvantage in one of four quartiles, five quintiles or 10 deciles.

After each five-yearly census of population and housing, the Australian Bureau of Statistics produces several socio-economic indexes for areas (SEIFA), which take into account relative levels of educational attainment, employment status and income levels of people living in each census area. The Index of Relative Socio-Economic Disadvantage is one of four such indexes currently used. This index of disadvantage summarises attributes such as low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations.

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1 For further information on the Index of Disadvantage, see Chapter 6 of National Health Survey: users’ guide – electronic, 2007–08, Australia (cat. no. 4363.0.55.001) and Adhikari 2006.
Other area-based indexes developed by the Australian Bureau of Statistics include:
- the Index of Advantage/Disadvantage, a more recently developed index which is a continuum of advantage to disadvantage
- an Index of Economic Resources which includes variables that are associated with economic resources including rent paid, income by family type, mortgage payments, and rental properties and
- an Index of Education and Occupation, which includes only education and occupation variables.

None of the indicators described above is entirely satisfactory as a measure of disadvantage. People responding to surveys are often reluctant or unable to describe their current levels of income. Highly skilled tradespeople, while traditionally thought of as ‘blue collar’ in Australia, may in recent times be earning high incomes due to skill shortages in particular sectors of the economy. Young people competing for jobs in the current decade are much more likely to be economically disadvantaged by lower levels of educational attainment than their grandparents were. Area-level indexes may not work very well in the inner suburbs of the big capital cities, where very wealthy people may live in privately owned dwellings very close to people in subsidised rental dwellings in high-density public housing estates.

Closely related to the concept of socio-economic status are concepts of social differences, social exclusion and social position, which stress people’s situation in society relative to other people, and the concept of poverty, usually defined as a measure of family income below a particular level or criteria that has been associated with material deprivation.

In contrast to the highly ordered, categorical variables described above, social disadvantage can also be thought of in terms of more meaningful but less easily quantified indicators of social deprivation, such as: not having good personal relationships and social support; not having adequate, secure and affordable housing; being subject to discrimination or racism; being in poor health; not having private health insurance or access to timely care in the public health system; not having access to good quality childcare or school education; not having work (paid or unpaid) that is fulfilling; and not having income sufficient to always be able to buy essential items and pay bills.

### 9.0.2 What is health inequality?

*Inequality or disparity refers to a state of being uneven.*

Socio-economic inequalities are evident for a wide range of high-risk behaviours and social problems, and much is written about the associated and consequent health disadvantage, health gaps and health gradients.

As part of an era of reforms for the National Health Service in Britain, ‘health equality’ has been given equal billing with ‘health gain’ in public health policy, and reducing differences in risk factors such as smoking between groups occupying unequal positions in society is a key strategy for achieving that equity. The government papers Healthy Lives, Healthy People and Equity and Excellence: Liberating the NHS have provided a foundation for the *Health and Social Care Act 2012*. This Act, and related changes under the *National Health Service Act 2006*, underpin public health reforms in Britain.

In the US, the Office of Smoking and Health within the government Centers for Disease Control and Prevention has included ‘identify and eliminate disparities among population groups’ as one of its four program goals.

Governments in Australia are also increasingly emphasising health equality.

The concept of inequality—a state of uneven or unequal enjoyment of goods that society values—can be distinguished from that of inequity, which refers to a lack of fairness in the provision of resources, particularly those resources over which governments and publicly funded agencies have control. Inequity occurs if people are discriminated against or if they are denied access to information or services because of failure of service providers to take into account factors such as limited literacy in English, less fluency in speaking English, or living in a
remote area and not having a telephone, mobile coverage or internet access. The issue of inequity is discussed in Section 9.8.

9.0.2.1 Tobacco-related disparities

Tobacco-related disparities are not just a matter of varying smoking prevalence, but can be seen in the inequality between social groups in:

- all forms of exposure to tobacco
  - foetal exposure to tobacco smoke
  - exposure to secondhand smoke in childhood and throughout life
  - exposure through own smoking
- at all points in the continuum of tobacco use
  - experimentation
  - reported numbers of cigarettes smoked and patterns of smoking established
  - intention to quit
  - attempts to quit
  - relapse or sustained abstinence or reduction in smoking
- in the relative harmfulness of the type of tobacco used
- in the intensity and duration of smoking
- in the harm that results from use of tobacco
  - financial stress, financial security and accumulation of wealth
  - diseases caused or worsened by smoking
  - deaths and reduced life expectancy.

9.0.2.2 Inequality as deficit, gap or gradient

Tobacco-related inequality can be demonstrated in a variety of ways, most simply by comparing rates of use of and exposure to tobacco in the lowest and highest socio-economic groups. Another test of inequality is the presence of a clear social gradient—for instance where the smoking rate is lower in the most advantaged quartile than in the second quartile, and lower in the second quartile than in the third, and lower in the third quartile than in the fourth (or least advantaged).

Differing understandings of disadvantage give rise to different policy goals in relation to reducing inequalities, each arising from a different set of ethical arguments and each requiring slightly different strategies and approaches.

If the policy goal is to reduce the extent of the problem of very high levels of high-risk behaviour in the lowest socio-economic group, then the strategy will be to maximise improvement in the most disadvantaged group, regardless of what happens in the more advantaged groups. In this case, the policy goal—of reducing the deficit among the disadvantaged group—could be met even if the gap between least and most advantaged groups worsened, just so long as there was a large improvement in the most disadvantaged group.

If the policy goal is to narrow the gap between the lowest and highest socio-economic group, then the strategy might be to focus efforts in the lowest socio-economic group to the exclusion of other groups. Because targeted interventions use more resources per person reached than population-wide interventions, theoretically a reduction in health gap could occur even though a smaller number of people, including a smaller number of disadvantaged people, achieved a health gain.
If the goal is to reduce the social gradient for tobacco use, then the best strategy will be to focus efforts on the most disadvantaged 40 to 50% of the population, even if this means somewhat less change among the most highly disadvantaged 10 to 20% than could be achieved if the goal was to narrow the gap between the highest and lowest groups.

9.0.2.3 Absolute and relative changes in inequality

To assess progress in reducing tobacco-related health disparities it is necessary to monitor trends in tobacco use across social groups defined in a consistent way across time.

Trends in inequality can be expressed in absolute terms (for instance, the size of the decrease from one time to another in the proportion of people who smoke in one group compared with another), or in relative terms (for instance, the extent to which the proportional difference in smoking rates between high and low groups increases or declines over time).

9.0.2.4 Apparent change versus statistically significant change

Sample sizes of surveys used to quantify smoking-related beliefs and behaviour in Australia are generally not very large, particularly compared with similar studies undertaken in the US. Differences between groups and year-on-year changes are often quite small and wide confidence intervals surround estimates relevant to particular social groups in particular years. To assess whether absolute and relative differences and changes among various groups are significant or whether they could be due merely to chance, researchers often need to aggregate data over several years or aggregate subjects into a smaller number of groups (for instance high, medium and low income groups rather than income quintiles) to ensure reasonable sample sizes and to apply appropriate statistical tests.

9.0.3 Data available on tobacco-related disparities in Australia

Data about smoking and socio-economic status in Australia can be drawn from several different ongoing surveys. The Australian Government Department of Health and Ageing has collected data periodically since 1985 to assess the impact of the National Campaign Against Drug Abuse, later renamed the National Drug Strategy.

Since 1998, the Australian Institute of Health and Welfare (AIHW) National Drug Strategy Household Survey has collected data every three years from almost 30000 people aged 14 years and older who provided information on their drug use patterns, attitudes and behaviours. The sample is based on households, so homeless and institutionalised people are not included. Respondents are asked a number of questions that enable researchers to classify their smoking status. They are also asked about recency of last cigarette and numbers of cigarettes smoked each day or weekly. Similar information was collected in national surveys conducted for the Anti-Cancer Council of Victoria for adults 16 years and over in 1974 and 1977 and then every three years until 1998.

Chapter 1 presents data from both these surveys re-analysed to cover consistent age groups (18 years and over), with adjustments for slightly different classifications of socio-economic status.

i Since 2004, young people aged 12 and 13 years have been included in the National Drug Strategy Household Surveys. However analysis of the data is mostly based on those aged 14 years and older to allow for comparisons with earlier survey findings.

ii In Australia these would represent a very small percentage, probably less than half of one per cent, of the total population (see Section 9.6 for estimates of numbers of homeless, prisoners and institutionalised persons).

iii Now known as ‘Cancer Council Victoria’.

iv The surveys conducted for Cancer Council Victoria and for the Australian Bureau of Statistics were face-to-face interviews. The National Drug Strategy Household Survey uses a combination of face-to-face surveys, drop and collect surveys and telephone surveys.
The Australian Bureau of Statistics' National Health Survey collected data in 1989–90, 1995, 2001, 2004–05 and 2007–08 from Australians 18 years and over. It provides data on smoking status as well as other risk factors, disability, recent health episodes and chronic health conditions, and data are available about smoking rates in various educational, occupational and socio-economic status (SES) categories.

In addition, more detailed data about smoking attitudes and behaviour among various SES groups are available in a number of states from surveys conducted for health departments, and from surveys conducted at research centres based at the Victorian and South Australian cancer councils. The cancer council data and data collected by the Department of Health and Ageing to assess the impact of the National Tobacco Campaign provide information about smoking status and estimated number of cigarettes smoked per day. These and the Australian arm of the International Tobacco Control Policy Evaluation Study also provide a wealth of information about smokers, including factors such as: psychological profiles and social environment, awareness and understanding of health effects, awareness of campaigns, the impact of policy interventions, past quit attempts and future intentions to quit.

The Household Income and Labour Dynamics in Australia survey conducted by the Melbourne Institute of Applied Economics and Social Research collects data on smoking status and financial stress among a panel of individuals over a period of time during which they may face changes in household employment status, housing, occupation and income.

In contrast to these surveys asking directly about smoking, the Australian Bureau of Statistics Household Expenditure Survey provides interesting data about spending on tobacco products among various household types.

In Australia, surveys of smoking behaviour by secondary school students co-ordinated by Cancer Council Victoria and conducted every three years since 1984 do not ask about the socio-economic status of students' families. However, analysis of the level of disadvantage of the area in which the student resides provides some indication of trends in uptake by socio-economic status.

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1 Data on smoking are also available from another Australian Bureau of Statistics survey undertaken in 1977.
9.1 Socio-economic position and disparities in tobacco exposure and use

Socio-economic disparities are evident in exposure to tobacco and in tobacco use, from before birth, during childhood, during adolescence and early adulthood and right through adult life.

9.1.1 Disparities in smoking during pregnancy

Data from the 2010 National Drug Strategy Household Survey indicate that female smokers in the most disadvantaged socio-economic group consumed almost twice the number of cigarettes per week as women who were least disadvantaged (an average 113.5 compared with 66.1 cigarettes per week).\(^1\)

Data from state perinatal statistics units indicated that women from Aboriginal or Torres Strait Islander backgrounds were more than three times more likely to smoke during pregnancy than non-Indigenous women (49.6% compared with 13.1%).\(^1\) Likelihood of smoking during pregnancy decreased with maternal age. Thirty-seven per cent of teenagers who become pregnant report that they continued to smoke.\(^2\)

Other research has shown that disadvantage across a woman’s life course increases the risk of being a smoker at pregnancy.\(^3\) Women without a partner, the less educated,\(^4,5\) those of lower socio-economic status,\(^4,6\) those living in a deprived neighbourhood\(^7\) and women with a psychiatric disorder\(^8\) are more likely to smoke during pregnancy.

9.1.2 Disparities in exposure of children to secondhand smoke

Children from disadvantaged families are far more likely to be exposed to secondhand smoke at home. Lower household income, lower parental (or head of house) education level and living with multiple adult smokers are predictive of children’s exposure to smoking in the home.\(^9,10\)

Data analysed from the 2010 National Drug Strategy Household Survey indicate that while the majority of households with dependent children where at least one person smokes only allow smoking outdoors, this is significantly less likely to be the case for children in the most disadvantaged areas (77% of smoking households with bans on smoking indoors in the most disadvantaged compared with 90% in the least disadvantaged areas). Given the higher rates of smoking among those in the disadvantaged groups, this means that children from the most disadvantaged areas of Australia are more than six times more likely to be exposed to smoking in their own homes as

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<th>% of those who smoke indoors</th>
<th>% of children exposed to some indoor smoking</th>
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<td>77.40</td>
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<tr>
<td>Fourth</td>
<td>30.7</td>
<td>91</td>
<td>9.00</td>
<td>2.8</td>
</tr>
<tr>
<td>Highest</td>
<td>19.5</td>
<td>90.40</td>
<td>9.60</td>
<td>1.9</td>
</tr>
<tr>
<td>Likelihood of lowest compared with highest</td>
<td>2.62</td>
<td>0.86</td>
<td>2.35</td>
<td>6.17</td>
</tr>
</tbody>
</table>

* Based on socio-economic indexes for areas, Australian Bureau of Statistics

Source: Gartner and Hall 2012\(^11\)

\(^1\) Different states have used different criteria for assessing smoking status, and routinely collect data at different times in the pregnancy (prior to first antenatal visit, at first antenatal visit, at birth). Provisional data were supplied for Victoria for this report and limited to Perinatal National Minimum Data Set data items. The numbers of mothers and babies in Victoria in Australia may change when the final data are used.
children from the most advantaged areas. More than 1 in every 10 of these highly disadvantaged children live in a household where at least one adult at least occasionally smokes indoors.

Although children of many low socio-economic status (SES) smokers are exposed daily to tobacco smoke in the home, legislative developments, such as bans in Australian states and territories on smoking in cars carrying children (see Chapter 15, Section 15.7.2.3), help reduce the number of areas where children may be exposed to secondhand smoke. Widespread smokefree legislation means that children of non-smoking parents might not be exposed to environmental tobacco smoke at all, for months at a time.

Research from overseas reports the same associations between deprivation and the likelihood of secondhand smoke exposure in children, with maternal and paternal smoking habits, household poverty and lower parental educational levels being common predictors of exposure.9, 10, 12, 13

### 9.1.3

#### Disparities in smoking behaviours among young people

In 2008 in Australia, younger students living in disadvantaged areas were more likely to experiment with smoking than students living in more advantaged areas.

Figure 9.1.1 shows that in 2008, younger students living in the most advantaged areas of Australia were about 15% less likely to report having smoked at some time in the last month than students residing in the least advantaged areas.14

Among older students in 2008, smoking was more common among students from more advantaged areas, with students from most advantaged SES areas about 25% more likely to smoke than those from the most disadvantaged areas. Among younger students (aged 12–15 years) in 2008, while there was little difference in the prevalence of current smoking across the different SES groups, smoking was slightly more common among the least advantaged groups (Figure 9.1.2).

**Figure 9.1.1**

Proportion of monthly smokers among secondary-school students aged 12–15 years by relative socio-economic disadvantage, Australia, 2008

Source: Data file provided to Merryn Pearce of the Tobacco Control Unit, Cancer Council, April 2012, by V White, Centre for Behavioural Research in Cancer, Cancer Council Victoria

**Figure 9.1.2**

Proportion of weekly smokers among secondary school students aged 12–15 and 16–17 years by relative socio-economic disadvantage, Australia, 2008

Source: Data file provided to Merryn Pearce of the Tobacco Control Unit, Cancer Council, April 2012, by V White, Centre for Behavioural Research in Cancer, Cancer Council Victoria
9.1.4

Disparities in smoking prevalence among adults

Consistent with findings from the US,15–17 UK,18,19 Canada,20,21 New Zealand,22,23 and other developed countries,26–31 data on current smoking from recent Australian Bureau of Statistics National Health Surveys,32–35 recent National Drug Strategy Household Surveys,1,36,37 and surveys assessing the impact of the National Tobacco Campaign38 and state Quit campaigns,39 all show a clear social gradient in smoking behaviour among adults, with rates of current smoking significantly higher and the proportion of people who have never smoked significantly lower in lower socio-economic groups.

Table 9.1.2 sets out Australian data from the 2007–08 National Health Survey published by the Australian Bureau of Statistics.

The 2010 National Drug Strategy Household Survey tells a similar story. Table 9.1.3 sets out data on smoking status among those of varying employment status, those with and without post-school qualifications, and those living in areas marked by varying levels of income, educational attainment and unemployment. (Note that the figures in Table 9.1.3 cover the population from 14 years of age and so they vary somewhat from those in Chapter One, Section 1.7, which computed adult smoking prevalence just for those respondents aged 18 years and over.)

Figure 9.1.3 plots data on smoking status by the level of social disadvantage of the area that people live in.

The proportion of people who classify themselves as ex-smokers is almost identical among people living in areas of varying degrees of social disadvantage.

Table 9.1.2
Prevalence of daily smoking, Australians 15 years and over by socio-economic and labour force status, 2007–08

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>2007–08 Persons (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population, 15 years+</td>
<td>18.3</td>
</tr>
<tr>
<td>Labour force status</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>19.3</td>
</tr>
<tr>
<td>Unemployed</td>
<td>32.0</td>
</tr>
<tr>
<td>Index of disadvantage</td>
<td></td>
</tr>
<tr>
<td>5th quintile (most advantaged)</td>
<td>11.0</td>
</tr>
<tr>
<td>1st quintile (most disadvantaged)</td>
<td>27.6</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics 200935 (p32)

Table 9.1.3
Socio-economic characteristics by smoking status, persons 14 years and older, Australia, 2010

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Never smoked* (%)</th>
<th>Ex-smokers† (%)</th>
<th>Smokers‡ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All persons (aged 14+)</td>
<td>57.8</td>
<td>24.1</td>
<td>18.1</td>
</tr>
<tr>
<td>Labour force status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently employed</td>
<td>54.9</td>
<td>25.5</td>
<td>19.6</td>
</tr>
<tr>
<td>Student</td>
<td>85.0</td>
<td>4.8</td>
<td>10.3</td>
</tr>
<tr>
<td>Unemployed</td>
<td>55.7</td>
<td>16.7</td>
<td>27.6</td>
</tr>
<tr>
<td>Engaged in home duties</td>
<td>54.2</td>
<td>25.7</td>
<td>20.1</td>
</tr>
<tr>
<td>Retired or on a pension</td>
<td>53.7</td>
<td>35.0</td>
<td>11.3</td>
</tr>
<tr>
<td>Volunteer/charity work</td>
<td>60.1</td>
<td>20.4</td>
<td>19.5</td>
</tr>
<tr>
<td>Unable to work</td>
<td>42.4</td>
<td>22.2</td>
<td>35.4</td>
</tr>
<tr>
<td>Other</td>
<td>53.4</td>
<td>22.8</td>
<td>23.8</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without post-school qualifications</td>
<td>59.8</td>
<td>20.7</td>
<td>19.5</td>
</tr>
<tr>
<td>With post-school qualifications</td>
<td>56.2</td>
<td>26.8</td>
<td>17.0</td>
</tr>
<tr>
<td>Main language spoken at home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>55.5</td>
<td>26.1</td>
<td>18.4</td>
</tr>
<tr>
<td>Other</td>
<td>80.4</td>
<td>8.0</td>
<td>11.6</td>
</tr>
</tbody>
</table>

Source: Australian Institute of Health and Welfare 20111 Table 3.4 (p27)

* Never smoked more than 100 cigarettes or the equivalent tobacco in their life
† Smoked at least 100 cigarettes or the equivalent tobacco in their life, and no longer smoke
‡ Smoked daily, weekly or less than weekly

Figure 9.1.3
Smoking status by relative social disadvantage, persons 14 years and older, Australia, 2010: never smokers, ex-smokers and current smokers

Source: Australian Institute of Health and Welfare 20111 Table 3.4 (p28)
### Section 9.1.5

**Disparities in reported cigarette consumption**

In addition to being more likely to have ever smoked and to be current smokers, those in disadvantaged groups also generally report smoking a greater number of cigarettes each day.\(^{32,40}\)

### Section 9.1.6

**Disparities in duration of smoking**

Among people who have quit smoking, those with lower levels of occupation, income and education are likely to have smoked for longer periods of time prior to quitting. Table 9.1.5 sets out the mean number of years prior to quitting for people who reported being ex-smokers in the 2001 National Drug Strategy Household Survey.\(^{31,42}\)

Results of multivariate analysis showed that smoking duration from onset to cessation was 14% longer for persons with blue collar rather than professional occupations. Respondents who earned $299 or less per week smoked 38% longer than did those earning $800 or more. Individuals with nine or fewer years of education smoked 13% longer than those with 12 or more.

### Table 9.1.4

**Mean number of cigarettes smoked per day, (self-reported) current smokers aged 14 years and older, by social characteristics, by sex, Australia, 2010**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Males</th>
<th>Females</th>
<th>Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without post-school qualifications</td>
<td>17.2</td>
<td>14.9</td>
<td>16.0</td>
</tr>
<tr>
<td>With post-school qualifications</td>
<td>14.2</td>
<td>12.6</td>
<td>13.6</td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently employed</td>
<td>14.6</td>
<td>12.6</td>
<td>13.8</td>
</tr>
<tr>
<td>Student</td>
<td>7.2</td>
<td>8.0</td>
<td>7.6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>20.0</td>
<td>14.9</td>
<td>17.9</td>
</tr>
<tr>
<td>Engaged in home duties</td>
<td>18.7</td>
<td>14.3</td>
<td>14.5</td>
</tr>
<tr>
<td>Retired or on a pension</td>
<td>17.3</td>
<td>17.4</td>
<td>17.3</td>
</tr>
<tr>
<td>Volunteer/charity work</td>
<td>26.2</td>
<td>18.1</td>
<td>22.6</td>
</tr>
<tr>
<td>Unable to work</td>
<td>24.0</td>
<td>17.9</td>
<td>20.8</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Socio-economic status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st quintile (most disadvantaged)</td>
<td>18.9</td>
<td>16.2</td>
<td>17.6</td>
</tr>
<tr>
<td>2nd quintile</td>
<td>16.1</td>
<td>15.3</td>
<td>15.8</td>
</tr>
<tr>
<td>3rd quintile</td>
<td>15.6</td>
<td>12.6</td>
<td>14.2</td>
</tr>
<tr>
<td>4th quintile</td>
<td>13.0</td>
<td>13.1</td>
<td>13.1</td>
</tr>
<tr>
<td>5th quintile (most advantaged)</td>
<td>10.6</td>
<td>9.4</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Main language spoken at home</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>16.1</td>
<td>13.8</td>
<td>15.0</td>
</tr>
<tr>
<td>Other</td>
<td>9.3</td>
<td>8.9</td>
<td>9.2</td>
</tr>
<tr>
<td><strong>Indigenous status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aboriginal and/or Torres Strait Islander</td>
<td>25.0</td>
<td>17.6</td>
<td>21.0</td>
</tr>
<tr>
<td>Other Australian</td>
<td>15.1</td>
<td>13.5</td>
<td>14.4</td>
</tr>
</tbody>
</table>

Note, however that trends in smoking cessation are not uniformly more favourable in higher SES groups for all age and gender groups. A cross-sectional study of young, middle-aged and older women in Australia for instance found that for women aged 70–75 years, those with the highest educational attainment were more likely to have ever smoked than those with the lowest level of attainment. This was in contrast to findings for the other two cohorts, where this association was reversed, with a stronger association between lower levels of education and ever smoking among those aged 18–23 years (younger) than those aged 45–50 years (mid-age). Similarly, for older women, those in the most skilled occupational classes were more likely to have ever smoked, with opposite findings for mid-age women.\(^{31}\) The differences in patterns of uptake between cohorts may be explained by trends towards greater social freedom for women since the late 1960s.

In the US, marked differences in the duration of smoking were found between racial groups as well as socio-economic groups. Most minority racial groups were

### Table 9.1.5

**Mean duration of smoking prior to quitting, Australia, 2001**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Median duration of smoking (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue collar</td>
<td>30</td>
</tr>
<tr>
<td>White collar</td>
<td>22</td>
</tr>
<tr>
<td>Professional</td>
<td>19</td>
</tr>
<tr>
<td>Family income ($ pw)</td>
<td></td>
</tr>
<tr>
<td>Less than 300</td>
<td>35</td>
</tr>
<tr>
<td>300–799</td>
<td>24</td>
</tr>
<tr>
<td>800 and more</td>
<td>16</td>
</tr>
<tr>
<td>Education (years)</td>
<td></td>
</tr>
<tr>
<td>9 or less</td>
<td>33</td>
</tr>
<tr>
<td>10–11</td>
<td>25</td>
</tr>
<tr>
<td>12 or more</td>
<td>18</td>
</tr>
</tbody>
</table>

Source: Siahpush et al 2005\(^{42}\)
likely to smoke for longer periods and individuals living in poverty smoked on a daily basis for 18 years longer than those with a family income about three times above the poverty line.\textsuperscript{44}

Cohort patterns in smoking uptake and quitting are discussed further in Section 9.7.

9.1.7

Disparities in exposure to secondhand smoke

Because more of them smoke, people in more disadvantaged groups are also more likely to be exposed to secondhand smoke both where they work and where they live.

9.1.7.1

Disparities in workplace exposure

Since the mid-1980s in Australia, when smoking was banned in the federal public service offices and then, increasingly in big and then smaller companies (see Chapter 15, Section 15.4), people in higher status occupations have been more likely to work in places with total bans on smoking. While most workplaces since the late 1980s have restricted smoking to at least some degree, as shown in Figure 9.1.4, as recently as the late 1990s, blue collar workers were three times more likely to work in environments with no restrictions on smoking.

With legislation mandating smokefree policies in hospitality venues and in enclosed workplaces in all Australian jurisdictions (with some exemptions, such as high-roller rooms), disparities in workplace exposure to environmental tobacco smoke are no doubt much less pronounced in more recent times. Data collected from annual population surveys in Victoria showed for instance, that the proportion of indoor workers reporting total smoking restrictions at their usual area of work increased significantly between 1998 and 2007 (from 91% to 95%). The data indicated there was a relatively uniform increase in workplace smoking bans across all socio-economic groups for this period. However some disparity between smokefree workplaces does still exist, with 91% of warehouse, workshop and factory workers reporting a smokefree workplace compared with the average of 95% of all indoor workplaces.\textsuperscript{46}

9.1.7.2

Disparities in domestic exposure

In the 1998 National Drug Strategy Household Survey, almost 50% of respondents with a university degree stated that they did not allow smoking inside their home. For those with no tertiary qualifications the figure was only 34%.\textsuperscript{47}

Among Australian smokers in 2010–11, those on lower incomes were much more likely to allow smoking anywhere in their house (Figure 9.1.5).

In 2008–09, 82% of university-educated smokers reported never smoking when non-smokers were present in their cars—only slightly more than smokers who had not completed high-school education (Figure 9.1.6).
9.1.7.3

Exposure in institutional settings

People spending time in institutions such as correctional facilities, psychiatric hospitals and drug treatment centres are among the most disadvantaged groups in Australia. Given the much-higher-than-average rates of smoking among residents and clients of such facilities and services, high levels of smoking among staff, and fears about the impact on attendance, treatment and behaviour, it is only in very recent times that such institutions have begun to introduce smokefree policies. Even after the introduction of such policies, many clients could still be subject to secondhand smoke exposure due to large numbers of people smoking in the immediate vicinity of buildings.


Date of last update: 20 November 2012
9.2

Socio-economic disparities in tobacco exposure and use: are the gaps widening?

While it is clear that smoking rates are higher among disadvantaged than among advantaged groups in Australia, much less clear is whether disparities have been widening over time. The answer depends most crucially on the period of time over which one analyses the data. In addition, the extent of differential changes in rates in different socio-economic (SES) groups also seems to vary depending on the indicator of SES status, the data set and the jurisdiction being examined.

An assessment of the impact of the Californian Tobacco Control Program in reducing prevalence in higher-educated and less-educated population groups provides insight into the complexity in measuring the effect of strategies to reduce relative disparity between groups. Zhu and colleagues explain that population-wide tobacco-control strategies that are known to be effective in reducing smoking prevalence may not necessarily work to reduce disparity between population sub-groups. They note the challenge in tobacco control lies in eliciting an increase in the rate of change in less-advantaged groups, so as to reduce disparity between less-advantaged and more-advantaged groups.1

The factors that serve to negate the effects of population-wide strategies among the most disadvantaged are addressed in Sections 9.4 and 9.5 and considerations around the impact of population-wide strategies on the disadvantaged appear in Section 9.8.

Insufficient data are available to examine trends over time in smoking during pregnancy, however the following sections present data on trends since 1980 in disparities in smoking by adults, together with limited data about emerging disparities among children.

9.2.1

Changes in the prevalence of smoking among adults in various socio-economic groups

Trends over time in smoking prevalence among different social groups can be difficult to interpret because of changing social and economic conditions. With increasing school retention in Australia and introduction of financial assistance for tertiary students in the mid-1970s, a much more diverse group of people in the 1990s are achieving higher levels of formal educational qualification compared with that group of people who undertook tertiary education in the late 1960s and early 1970s.

In a period of low unemployment and a buoyant job market, the unemployed in the mid-2000s on the other hand may be less socially diverse than groups who were unemployed during times of low job vacancies in the 1980s and 1990s. Towards the end of the decade, the unemployment rate had steadily declined to 4.2% (in 2008); however as a result of the global financial crisis in the latter part of 2008, unemployment in Australia rose to 5.6% in 2009.3

Rates of school retention have increased since 1998 among young people.4 Also, increasingly over time people born prior to World War II (who are much less likely to have completed school)5 are being lost from the total population. Thus, part of the explanation for any flattening of smoking rates in people who have not completed Year 12 could be that this is becoming a group characterised by more social and economic disadvantage than was the case in previous cohorts. In 2009, the proportion of Australians aged 25-64 years with a vocational or higher education qualification was 63% (compared with 46% in 1997). The increase is mostly attributable to more Australians achieving a higher education qualification, such as a bachelor degree or more. The achievement of higher education relates to the increase in participation in schooling over time. The proportion of young people continuing education through to Year 12 has increased from 45% in 1984 to 76% in 2009.2

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1 Participation rates in Year 12, for instance, increased from 45% in 1984 to 76% in 2009.2
Inconsistencies in methods of collecting data and in SES categories over time make long-term analysis difficult. To get a reliable picture of trends in SES-related disparities in smoking, it is therefore useful to look at relative changes across several socio-economic indicators and using several different data sets.

9.2.1.1
Changes in prevalence among those with varying levels of formal education

Table 9.2.1 sets out the prevalence of current smoking among people with various levels of education between 1980 and 2010. Adjusting for age and gender, analysis of these data shows that the prevalence of smoking found in every educational level in 2010 was significantly lower than that found in 1980.

As is evident from Table 9.2.1, the decline in prevalence of smoking for the total 30-year period covered by these surveys was most substantial among those who had graduated from university, but was also substantial among those who had finished secondary school and those who left school before Year 10.

Figure 9.2.1 plots this data, omitting figures for those who left school before Year 10. (Given the historically lower minimum leaving age for school, and the historically lower rates of participation by women in tertiary education, this group would comprise mainly older people with varying levels of income and living in varying circumstances. Older populations also exclude people who have died prematurely due to smoking.)

Figure 9.2.1 would seem to indicate that smoking fell roughly equally among people of various educational levels between 1980 and 1992. Declines have flattened since the mid-1980s in less educationally qualified groups, but note the apparent fall in all groups between 1998 and 2001. Since 2004, declines have continued across all groups, with greater reductions in prevalence in the less-qualified and less-educated groups compared with university qualified. The pattern of these changes is discussed in more detail in Section 9.8.

Table 9.2.1
Prevalence of regular smokers in Australia aged 18+, 1980–2010, by educational attainment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 9 or less</td>
<td>35.5</td>
<td>35.8</td>
<td>31.9</td>
<td>30.4</td>
<td>29.8</td>
<td>30</td>
<td>27.9</td>
<td>23.9</td>
<td>22.8</td>
<td>24.3</td>
<td>24.1</td>
<td>12.7</td>
<td>36</td>
</tr>
<tr>
<td>Year 10 &amp; 11</td>
<td>37.9</td>
<td>37.6</td>
<td>34.9</td>
<td>31.9</td>
<td>29.5</td>
<td>30.5</td>
<td>32.7</td>
<td>29.9</td>
<td>30.0</td>
<td>28.5</td>
<td>26.7</td>
<td>7.9</td>
<td>21</td>
</tr>
<tr>
<td>Year 12/post-secondary</td>
<td>37.6</td>
<td>34.1</td>
<td>32.9</td>
<td>28.4</td>
<td>29.1</td>
<td>21.5</td>
<td>28.2</td>
<td>22.0</td>
<td>22.0</td>
<td>20.6</td>
<td>19.1</td>
<td>15.6</td>
<td>41</td>
</tr>
<tr>
<td>Trade</td>
<td>34.9</td>
<td>34.4</td>
<td>29.6</td>
<td>29.4</td>
<td>29.2</td>
<td>25.6</td>
<td>28.2</td>
<td>27.2</td>
<td>28.3</td>
<td>26.1</td>
<td>25.6</td>
<td>6.6</td>
<td>19</td>
</tr>
<tr>
<td>University</td>
<td>28.8</td>
<td>28.6</td>
<td>22.9</td>
<td>21.3</td>
<td>19.6</td>
<td>20</td>
<td>20.1</td>
<td>14.8</td>
<td>13.3</td>
<td>12</td>
<td>11.6</td>
<td>15.5</td>
<td>54</td>
</tr>
</tbody>
</table>


Notes: Based on analysis of data from surveys conducted by the Centre for Behavioural Research in Cancer, Anti-Cancer Council of Victoria, from 1980–98, 6–12 and from the National Drug Strategy Household Survey 2001–10. 1 See footnote vi in Chapter 1. Section 1.2 for explanatory notes regarding methodology used in attaining this data set. Prior to 2001, figures represent those describing themselves as ‘current smokers’ (no frequency specified). Since 2001, the figures include those reporting that they smoke ‘daily’ or ‘at least weekly’.

All data weighted to 2001 census population data and may vary slightly from data presented in the previous edition.

* Includes persons smoking any combination of cigarettes, pipes or cigars.

---

Figure 9.2.1
Prevalence of regular smokers in Australia aged 18+, 1980–2010, by educational attainment


Notes: Based on analysis of data from surveys conducted by the Centre for Behavioural Research in Cancer, Anti-Cancer Council of Victoria, from 1980–98, 6–12 and from the National Drug Strategy Household Survey 2001–10. 1 See footnote vi in Chapter 1. Section 1.2 for explanatory notes regarding methodology used in attaining this data set. Prior to 2001, figures represent those describing themselves as ‘current smokers’ (no frequency specified). Since 2001, the figures include those reporting that they smoke ‘daily’ or ‘at least weekly’.

All data weighted to 2001 census population data and may vary slightly from data presented in the previous edition.

* Includes persons smoking any combination of cigarettes, pipes or cigars.
9.2.1.2
Changes in prevalence in blue versus white collar groups

A quick reading of all the studies published on smoking prevalence in Australia over the past 30 years would seem to indicate that the gap in smoking prevalence between blue and white collar groups has widened considerably. However as discussed in Chapter One, Section 1.7, surveys have varied greatly in the age ranges reported and the ways that occupational status has been defined.

Table 9.2.2 sets out smoking prevalence between 1980 and 2010 for all occupational groups using data collected in surveys conducted by the Anti-Cancer Council of Victoria (now Cancer Council Victoria) until 1998, and then the National Drug Strategy Household Survey, both re-analysed to include just people 18 years and over.

The decline in prevalence of smoking has been substantial across groups. The declines were proportionately greater among white collar workers than blue collar workers; overall, prevalence of smoking among upper white collar workers more than halved over this study period (57%) while among lower blue collar workers, prevalence dropped by just over 30%. But is that the full story? Combining upper and lower blue collar groups and upper and lower white collar groups obscures some interesting differences between the four groups at various points of time.

Figure 9.2.2 sets out the data from Table 9.2.2, omitting the figures for those not in paid work.'

Table 9.2.2
Prevalence of regular smokers in Australia aged 18+, 1980–2010: by occupational status

<table>
<thead>
<tr>
<th>Year</th>
<th>Upper white collar</th>
<th>Lower white collar</th>
<th>Upper blue collar</th>
<th>Lower blue collar</th>
<th>Not in paid work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>32.5</td>
<td>37.2</td>
<td>47.9</td>
<td>51.5</td>
<td>27.0</td>
</tr>
<tr>
<td>1983</td>
<td>28.1</td>
<td>37.8</td>
<td>41.3</td>
<td>46.3</td>
<td>30.5</td>
</tr>
<tr>
<td>1986</td>
<td>24.0</td>
<td>30.6</td>
<td>36.8</td>
<td>44.2</td>
<td>27.3</td>
</tr>
<tr>
<td>1989</td>
<td>19.7</td>
<td>28.1</td>
<td>34.0</td>
<td>40.4</td>
<td>25.0</td>
</tr>
<tr>
<td>1992</td>
<td>16.0</td>
<td>25.8</td>
<td>32.7</td>
<td>36.7</td>
<td>24.6</td>
</tr>
<tr>
<td>1995</td>
<td>14.0</td>
<td>23.4</td>
<td>30.5</td>
<td>36.7</td>
<td>24.1</td>
</tr>
<tr>
<td>2001</td>
<td>12.9</td>
<td>19.9</td>
<td>28.3</td>
<td>34.8</td>
<td>20.8</td>
</tr>
<tr>
<td>2004</td>
<td>13.4</td>
<td>22.6</td>
<td>28.3</td>
<td>31.9</td>
<td>20.6</td>
</tr>
<tr>
<td>2007</td>
<td>14.4</td>
<td>19.6</td>
<td>24.8</td>
<td>31.3</td>
<td>18.9</td>
</tr>
<tr>
<td>2010</td>
<td>18.5</td>
<td>19.6</td>
<td>23.4</td>
<td>16.7</td>
<td>6.20</td>
</tr>
</tbody>
</table>


Notes: Based on analysis of data from surveys conducted by the Centre for Behavioural Research in Cancer, Anti-Cancer Council of Victoria, from 1980–98 and from the National Drug Strategy Household Survey 1998–2010. See footnote i in Chapter 1, Section 1.2 for explanatory notes regarding methodology used in attaining this data set. Prior to 2001, figures represent those describing themselves as ‘current smokers’ (no frequency specified). Since 2001, the figures include only reporting that they smoke daily or at least weekly.

Classifications changed in 2010 such that some occupations that would have been classed as upper blue in 2007 may be classified as lower blue in 2010. Tradespersons are classified as upper blue in 2010 but would have been classified as lower white in previous years.

All data weighted to 2001 census population data and may vary slightly from data presented in previous edition

* Includes persons smoking any combination of cigarettes, pipes or cigars

Figure 9.2.2
Prevalence of regular smokers in Australia aged 18+, 1980–2010, by occupational status


Notes: Based on analysis of data from surveys conducted by the Centre for Behavioural Research in Cancer, Anti-Cancer Council of Victoria, from 1980–98 and from the National Drug Strategy Household Survey 1998–2010. See footnote i in Chapter 1, Section 1.2 for explanatory notes regarding methodology used in attaining this data set. Prior to 2001, figures represent those describing themselves as ‘current smokers’ (no frequency specified). Since 2001, the figures include only reporting that they smoke daily or at least weekly.

Classifications changed in 2010 such that some occupations that would have been classed as upper blue in 2007 may be classified as lower blue in 2010. Tradespersons are classified as upper blue in 2010 but would have been classified as lower white in previous years.

All data weighted to 2001 census population data and may vary slightly from data presented in previous edition

While the ‘not in paid work’ category is likely to include a proportion of socio-economically disadvantaged people, who as a demographic group demonstrate a higher prevalence of smoking, this category also includes retired people (older people being less likely to smoke than younger people—Table 1.4), those engaged in domestic duties (more likely to be female than male, and hence to have a lower smoking prevalence—Table 1.2), and students in post-secondary education (who are less likely to be smokers than those with a lower level of education level—Table 1.6).
Examining Figure 9.2.2, it is clear that smoking rates over the 1980s and early 1990s declined roughly equally in absolute terms among various occupational groups. Disparities appear to have widened briefly in the mid-1990s before the downward trend in smoking resumed in all four occupational groups.

It is also evident that one could get a very different picture of the relative declines among occupational groups in recent years depending on the period examined. Comparing 2010 with 1992 (showed by the dotted line in Figure 9.2.2), one would conclude that white collar groups did much better than blue. However comparing 2010 with 1995 (showed by the solid line), the decline would appear to be roughly equal, with a slight flattening in declines among upper white collar groups between 2007 and 2010. The implications of this pattern of decline are also discussed further in Section 9.8.

Figures 9.2.1 and 9.2.2 demonstrate the importance of avoiding simplistic point-in-time comparisons. Detailed statistical analysis is required to determine relative patterns of change over particular time periods.

Table 9.2.3

<table>
<thead>
<tr>
<th>Socio-economic index for area (SEIFA)</th>
<th>2001</th>
<th>2004</th>
<th>2007</th>
<th>2010</th>
<th>Absolute change</th>
<th>Relative change</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEIFA 1 (most disadvantaged)</td>
<td>25.5</td>
<td>30.5</td>
<td>29.2</td>
<td>27.2</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>SEIFA 2</td>
<td>27.9</td>
<td>25.9</td>
<td>23.5</td>
<td>22.2</td>
<td>-6</td>
<td>-20</td>
</tr>
<tr>
<td>SEIFA 3</td>
<td>26.4</td>
<td>23.5</td>
<td>21.7</td>
<td>18.7</td>
<td>-8</td>
<td>-29</td>
</tr>
<tr>
<td>SEIFA 4</td>
<td>24.3</td>
<td>19.3</td>
<td>18.4</td>
<td>16.9</td>
<td>-8</td>
<td>-31</td>
</tr>
<tr>
<td>SEIFA 5 (most advantaged)</td>
<td>19.4</td>
<td>16.6</td>
<td>15.4</td>
<td>13.4</td>
<td>-6</td>
<td>-31</td>
</tr>
</tbody>
</table>

The data are grouped in quintiles calculated using one of the socio-economic indexes for areas (SEIFA) developed by the Australian Bureau of Statistics. The ABS’s Index of Advantage/Disadvantage is based on a continuum of advantage to disadvantage.

9.2.1.3 Changes in smoking prevalence by area-level measures of SES

Similar to the picture with occupational status, it is easy to see a significantly greater decrease in smoking prevalence among groups living in more advantaged compared with those living in less advantaged areas. This section provides analyses of smoking prevalence in males and females aged 18 years and older, by socio-economic index for areas (SEIFA).

Between 2004 and 2010 smoking prevalence among adults declined significantly across all SEIFAs. The greatest declines between 2007 and 2010 were seen in SEIFAs 3 and 5.
Among males, significant declines in smoking prevalence were seen across all SEIFA groups with the exception of SEIFA 1, the most disadvantaged, where there was a significant increase in smoking prevalence (see Table 9.2.4 and Figure 9.2.4).

### Table 9.2.4
Percentage smokers in Australia and measures of absolute change and relative change, males aged 18 years and over, 2001–10, by socio-economic index for area

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SEIFA 1 (most disadvantaged)</td>
<td>27.3</td>
<td>31.4</td>
<td>30.7</td>
<td>29.0</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>SEIFA 2</td>
<td>29.9</td>
<td>27.5</td>
<td>26.1</td>
<td>23.7</td>
<td>–6</td>
<td>–21</td>
</tr>
<tr>
<td>SEIFA 3</td>
<td>28.3</td>
<td>26.5</td>
<td>22.2</td>
<td>20.1</td>
<td>–8</td>
<td>–29</td>
</tr>
<tr>
<td>SEIFA 4</td>
<td>27.2</td>
<td>21.3</td>
<td>21.3</td>
<td>19.8</td>
<td>–7</td>
<td>–27</td>
</tr>
<tr>
<td>SEIFA 5 (most advantaged)</td>
<td>22.7</td>
<td>18.6</td>
<td>16.7</td>
<td>14.3</td>
<td>–8</td>
<td>–37</td>
</tr>
<tr>
<td>Absolute difference between Q1 and Q5</td>
<td>5</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative difference between Q1 and Q5</td>
<td>17</td>
<td>41</td>
<td>46</td>
<td>51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source and notes: see Figure 9.2.4

### Table 9.2.5
Percentage smokers in Australia and measures of absolute change and relative change, females aged 18 years and over, 2001–10, by socio-economic index for area

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SEIFA 1 (most disadvantaged)</td>
<td>24.0</td>
<td>29.6</td>
<td>27.7</td>
<td>25.4</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>SEIFA 2</td>
<td>25.8</td>
<td>24.5</td>
<td>21.1</td>
<td>20.8</td>
<td>–5</td>
<td>–19</td>
</tr>
<tr>
<td>SEIFA 3</td>
<td>24.5</td>
<td>20.4</td>
<td>21.2</td>
<td>17.3</td>
<td>–7</td>
<td>–29</td>
</tr>
<tr>
<td>SEIFA 4</td>
<td>22.0</td>
<td>17.3</td>
<td>15.5</td>
<td>14.0</td>
<td>–8</td>
<td>–36</td>
</tr>
<tr>
<td>SEIFA 5 (most advantaged)</td>
<td>16.1</td>
<td>14.5</td>
<td>14.1</td>
<td>12.4</td>
<td>–4</td>
<td>–23</td>
</tr>
<tr>
<td>Absolute difference between Q1 and Q5</td>
<td>8</td>
<td>15</td>
<td>14</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative difference between Q1 and Q5</td>
<td>33</td>
<td>51</td>
<td>49</td>
<td>51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source and notes: see Figure 9.2.5
Among females, smoking prevalence declined significantly in all SEIFAs through the nine-year period 2001–10 (see Table 9.2.5 and Figure 9.2.5).

The data are grouped in quintiles calculated using one of the socio-economic indexes for areas (SEIFA) developed by the Australian Bureau of Statistics. The ABS’s Index of Advantage/Disadvantage is based on a continuum of advantage to disadvantage.

However, once again, such simplistic point-in-time comparisons obscure important differences between males and females in various categories of disadvantage. They also say little about the reliability of prevalence estimates given the quite small sample sizes that result from dividing the population into five groups.

But has the differential between SES groups increased over time?

Interestingly, the gradient of decline in female smoking prevalence is less pronounced across SEIFA groups. Smoking prevalence in the most advantaged group (SEIFA 5) declined less so than in SEIFA 3 and 4. In 2010, there was double the proportion of female smokers in SEIFA 1 than in SEIFA 5. However it reflects a fairly stable differential in smoking prevalence between SEIFAs 1 and 5 since 2004.

Similarly in males, the proportion of smokers in the least advantaged (SEIFA 1) was double that of those in the most advantaged group (SEIFA 5). The data show a slight pattern of widening disparity in prevalence between these groups over 2004–10.

### 9.2.2 Differential uptake or differential cessation?

In the population overall, smoking has reduced due to a combination of fewer people taking up smoking, more people quitting, and more smokers than non-smokers dying prematurely.

Table 9.2.6 and Figure 9.2.6 show the proportion of person who identified as never smokers, across SEIFA quintiles using data from the ABS National Drug Strategy Household Surveys between 2001 and 2010.

The proportion of never smokers in the most disadvantaged group was 45% in 2001 and almost 50% in 2010. In comparison, almost 53% of those in the most advantaged group were never smokers in 2001 and this increased to

**Table 9.2.6**  
Percentage never smokers in Australia, persons 18 years and over, 2001–10, by socio-economic index for area

<table>
<thead>
<tr>
<th>Socio-economic index for area (SEIFA)</th>
<th>2001</th>
<th>2004</th>
<th>2007</th>
<th>2010</th>
<th>Absolute change</th>
<th>Relative change</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEIFA 1 (most disadvantaged)</td>
<td>45.4</td>
<td>43.4</td>
<td>45.7</td>
<td>49.6</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>SEIFA 2</td>
<td>43.9</td>
<td>46.4</td>
<td>50.1</td>
<td>53.1</td>
<td>9</td>
<td>21</td>
</tr>
<tr>
<td>SEIFA 3</td>
<td>46.5</td>
<td>48.8</td>
<td>54.0</td>
<td>54.5</td>
<td>8</td>
<td>17</td>
</tr>
<tr>
<td>SEIFA 4</td>
<td>47.5</td>
<td>53.6</td>
<td>54.4</td>
<td>57.2</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>SEIFA 5 (most advantaged)</td>
<td>52.6</td>
<td>54.3</td>
<td>56.9</td>
<td>60.5</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>Absolute difference between Q1 and Q5</td>
<td>−7</td>
<td>−11</td>
<td>−11</td>
<td>−11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative difference between Q1 and Q5</td>
<td>−16</td>
<td>−25</td>
<td>−25</td>
<td>−22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source and notes: see Figure 9.2.6

**Figure 9.2.6**  
Percentage never smokers in Australia, persons 18 years and over, 2001–10, by socio-economic index for area


Note: The data are grouped in quintiles calculated using one of the socio-economic indexes for areas (SEIFA) developed by the Australian Bureau of Statistics. The ABS’s Index of Advantage/Disadvantage is based on a continuum of advantage to disadvantage.
60.5% by 2010. The increase in never smokers in the most disadvantaged group was more modest compared to those of SEIFA 5 (most advantaged), as well as SEIFAs 2, 3 and 4. Although the proportion of the population who are never smokers has increased across all SEIFA groups, the gap between highest and lowest SEIFA appeared to widen between 2001 and 2007, with little evidence of any substantial narrowing between 2007 and 2010.

Table 9.2.7 and Figure 9.2.7 show the proportion of males who identified as never smokers, across SEIFA quintiles using data from the Australian Institute of Health and Welfare (AIHW) National Drug Strategy Household Surveys between 2001 and 2010.

Table 9.2.7
Percentage never smokers in Australia, males 18 years and over, 2001–10, by socio-economic index for area

<table>
<thead>
<tr>
<th>Socio-economic index for area (SEIFA)</th>
<th>2001</th>
<th>2004</th>
<th>2007</th>
<th>2010</th>
<th>Absolute change</th>
<th>Relative change</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEIFA 1 (most disadvantaged)</td>
<td>39.2</td>
<td>37.1</td>
<td>39.9</td>
<td>44.5</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>SEIFA 2</td>
<td>37.4</td>
<td>41.7</td>
<td>44.0</td>
<td>48.5</td>
<td>11</td>
<td>30</td>
</tr>
<tr>
<td>SEIFA 3</td>
<td>40.2</td>
<td>43.7</td>
<td>50.4</td>
<td>49.4</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>SEIFA 4</td>
<td>40.4</td>
<td>48.4</td>
<td>52.5</td>
<td>52.5</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td>SEIFA 5 (most advantaged)</td>
<td>46.0</td>
<td>50.3</td>
<td>54.4</td>
<td>58.0</td>
<td>12</td>
<td>26</td>
</tr>
</tbody>
</table>

Absolute difference between Q1 and Q5: –7, –13, –15, –14
Relative difference between Q1 and Q5: –17, –36, –36, –30

The data indicate that the proportion of males identifying as never smokers has increased between 2001 and 2010, across all SEIFA groups. The proportion of never smokers in SEIFA 5 in 2001 was 46%. This increased by 12% (in absolute terms) to 58% in 2010. In comparison, 39% of males in SEIFA 1 reported being never smokers in 2001; this increased by 5% (in absolute terms) to 44.5% in 2010.

However the proportions of never smokers are still substantially higher in the most advantaged group compared to the most disadvantaged group. The disparity between never smokers in the lowest and highest socio-economic group appears to have widened between 2001 and 2007, beyond this time it seems the disparity between the groups has narrowed little.

Table 9.2.8 and Figure 9.2.8 show the proportion of females who identified as never smokers, across SEIFA quintiles using data from the ABS National Drug Strategy Household Surveys between 2001 and 2010.

Table 9.2.8
Percentage never smokers in Australia, females 18 years and over, 2001–10, by socio-economic index for area

Proportions of never smoking in females have increased since 2001 across all SEIFA groups, with the most marked increase for women in SEIFA 4. The proportions of never smokers are still substantially higher in the most advantaged group compared to the least advantaged group. The disparity between the groups—although not having widened greatly since 2001—has, nevertheless, failed to narrow substantially during this period.

Table 9.2.9 and Figure 9.2.9 detail quitting patterns among adults across SEIFA quintiles. Again data from the AIHW’s National Drug Strategy Household Surveys 2001–10 have been used in this analysis.

The proportion of adults quitting smoking since 2001 has increased, most notably among SEIFAs 3, 4 and 5. The relative change in quitting has been modest among adults in SEIFA 2. In the most disadvantaged group, quitting...
Chapter 9: Smoking and social disadvantage

Table 9.2.8
Percentage never smokers in Australia, females 18 years and over, 2001–10, by socio-economic index for area

<table>
<thead>
<tr>
<th>Socio-economic index for area (SEIFA)</th>
<th>2001</th>
<th>2004</th>
<th>2007</th>
<th>2010</th>
<th>Absolute change</th>
<th>Relative change</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEIFA 1</td>
<td>51.3</td>
<td>48.9</td>
<td>51.2</td>
<td>54.4</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>SEIFA 2</td>
<td>50.2</td>
<td>51.0</td>
<td>55.5</td>
<td>57.3</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>SEIFA 3</td>
<td>52.5</td>
<td>53.7</td>
<td>57.7</td>
<td>59.0</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>SEIFA 4</td>
<td>53.9</td>
<td>58.5</td>
<td>61.3</td>
<td>61.9</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>SEIFA 5</td>
<td>58.7</td>
<td>58.0</td>
<td>59.3</td>
<td>62.8</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Absolute difference between Q1 and Q5</td>
<td>–7</td>
<td>–9</td>
<td>–8</td>
<td>–8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative difference between Q1 and Q5</td>
<td>–14</td>
<td>–19</td>
<td>–16</td>
<td>–15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source and notes: see Figure 9.2.8

Table 9.2.9
Percentage of ever smokers who have quit in Australia and measures of absolute change and relative change, persons 18 years and over, 2001–10, by socio-economic index for area

<table>
<thead>
<tr>
<th>Socio-economic index for area (SEIFA)</th>
<th>2001</th>
<th>2004</th>
<th>2007</th>
<th>2010</th>
<th>Absolute change</th>
<th>Relative change</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEIFA 1 (most disadvantaged)</td>
<td>53</td>
<td>46</td>
<td>46</td>
<td>46</td>
<td>–7</td>
<td>–13</td>
</tr>
<tr>
<td>SEIFA 2</td>
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<td>53</td>
<td>3</td>
<td>5</td>
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<tr>
<td>SEIFA 3</td>
<td>51</td>
<td>54</td>
<td>53</td>
<td>59</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>SEIFA 4</td>
<td>53</td>
<td>58</td>
<td>60</td>
<td>61</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>SEIFA 5 (most advantaged)</td>
<td>59</td>
<td>64</td>
<td>64</td>
<td>66</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Absolute difference between Q1 and Q5</td>
<td>–6</td>
<td>–18</td>
<td>–18</td>
<td>–20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative difference between Q1 and Q5</td>
<td>–11</td>
<td>–38</td>
<td>–39</td>
<td>–44</td>
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<td></td>
</tr>
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</table>

Source and notes: see Figure 9.2.9

behaviour decreased between 2001 and 2004 and then remained stable, neither increasing nor decreasing over this time. Note the relative difference in quitting proportions between SEIFA 1 and SEIFA 5, with an indication of a widening disparity over the survey years.
Table 9.2.10
Percentage of ever smokers who have quit in Australia and measures of absolute change and relative change, males 18 years and over, 2001–10, by socio-economic index for area

<table>
<thead>
<tr>
<th>Socio-economic index for area (SEIFA)</th>
<th>2001</th>
<th>2004</th>
<th>2007</th>
<th>2010</th>
<th>Absolute change</th>
<th>Relative change</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEIFA 1 (most disadvantaged)</td>
<td>55.2</td>
<td>50.0</td>
<td>48.8</td>
<td>47.7</td>
<td>-7</td>
<td>-13</td>
</tr>
<tr>
<td>SEIFA 2</td>
<td>52.2</td>
<td>52.9</td>
<td>53.4</td>
<td>54.0</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>SEIFA 3</td>
<td>52.7</td>
<td>52.9</td>
<td>55.2</td>
<td>60.3</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>SEIFA 4</td>
<td>54.4</td>
<td>58.7</td>
<td>59.5</td>
<td>58.3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>SEIFA 5 (most advantaged)</td>
<td>58.0</td>
<td>62.5</td>
<td>63.4</td>
<td>66.0</td>
<td>8</td>
<td>14</td>
</tr>
</tbody>
</table>

Source and notes: see Figure 9.2.10

Table 9.2.10 and Figure 9.2.10 show quitting patterns among males and females by socio-economic index for area. Among Australian males, quitting behaviour shows no clear gradient across socio-economic groups between 2001 and 2010. An increase in the proportion of quitters is evident across all SEIFAs, with the exception of the most disadvantaged, SEIFA 1. The data on quitting habits in males indicate a growing differential between the most advantaged and least advantaged socio-economic groups.

Table 9.2.11 and Figure 9.2.11 show quitting patterns among females by socio-economic index for area. In females, the proportion quitting among the most advantaged group is less than among their male counterparts. Again, there is not a strong gradient in quitting behaviour across all SEIFAs, although every SEIFA except SEIFA 1 had an increase in quitting behaviour between 2001 and 2010. The social gradient in quitting proportions between the most advantaged and least advantaged females is less pronounced than in males; however the gap between these groups has not lessened over this period.

Interestingly, in data collected on Victorian adult smoking prevalence over a 25-year period, researchers reported that population-wide strategies such as tax increases, mass media campaigns and smokefree policies may have been just as influential on those in low socio-economic groups as among those in high socio-economic groups. They found that in the period 1984–2008, adults in the lowest socio-economic groups experienced greater relative increases in quitting proportions (75%) than those in high socio-economic groups (50%) and mid-socio-economic groups (37%). Those in the lower-to-mid socio-economic groups also had the greatest rates of decline in ever smoking over the 25-year period in comparison to the most advantaged groups.

In 2010, 81% of regular smokers in Victoria reported making at least one quit attempt during their lifetime. This represented a relative increase of 7% from 1998, where the proportion of regular smokers who had made at least one quit attempt was 76%. Significant linear increases in the proportions of regular smokers who had made one quit attempt were seen in the low and mid socio-economic groups, but significant increases were not seen in the most advantaged socio-economic group. There was also a significant increase in the proportion of regular smokers making multiple quit attempts (defined as three or more attempts), from 37% in 1998 to 49% in 2010. This appears related to downward trends in the proportion of regular smokers who had made one or two attempts, and those who had never attempted to quit smoking. Between the years 2004 and 2010, a significant increase in the...
proportion of successful quit attempts (in the five years preceding the 2010 survey) was reported for Victorians in the most disadvantaged socio-economic group.\textsuperscript{20}

Vangeli and colleagues conducted a systematic review of literature to distinguish predictors of quit attempts and quitting success among adult general population samples. The studies examined were methodologically diverse, but suggested past quit attempts and motivational factors were highly predictive of quit attempts, and cigarette dependency was consistently predictive of a successful quit attempt. Socio-economic status appeared to be predictive of success (note, however, it was examined in only two of the studies). Other demographic factors—gender, age, marital status and educational level—were not consistently connected with quit attempts or quitting success across the countries examined.\textsuperscript{21}

### 9.2.3 Changes in consumption of cigarettes

Table 9.2.12 illustrates consumption levels among smokers of varying occupational classes. Declines in consumption were considerable in upper white collar, lower

---

### Table 9.2.11

Percentage of ever smokers who have quit in Australia and measures of absolute change and relative change, females 18 years and over, 2001–10, by socio-economic index for area

<table>
<thead>
<tr>
<th>Socio-economic index for area (SEIFA)</th>
<th>2001</th>
<th>2004</th>
<th>2007</th>
<th>2010</th>
<th>Absolute change</th>
<th>Relative change</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEIFA 1 (most disadvantaged)</td>
<td>50.6</td>
<td>42.0</td>
<td>43.2</td>
<td>44.3</td>
<td>–6</td>
<td>–12</td>
</tr>
<tr>
<td>SEIFA 2</td>
<td>48.2</td>
<td>49.9</td>
<td>52.6</td>
<td>51.4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>SEIFA 3</td>
<td>48.4</td>
<td>55.9</td>
<td>49.9</td>
<td>57.9</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>SEIFA 4</td>
<td>52.3</td>
<td>58.2</td>
<td>59.9</td>
<td>63.3</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td>SEIFA 5 (most advantaged)</td>
<td>60.9</td>
<td>65.6</td>
<td>65.4</td>
<td>66.7</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Absolute difference between Q1 and Q5</td>
<td>–10</td>
<td>–24</td>
<td>–22</td>
<td>–22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative difference between Q1 and Q5</td>
<td>–20</td>
<td>–56</td>
<td>–51</td>
<td>–50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source and notes: see Figure 9.2.11

---

### Table 9.2.12

Self-reported cigarettes smoked (number per week) by Australian adult smokers (factory-made cigarettes only), 1980–2010, by occupational class

<table>
<thead>
<tr>
<th>Year</th>
<th>Lower blue collar</th>
<th>Upper blue collar</th>
<th>Lower white collar</th>
<th>Upper white collar</th>
<th>Not in labour force</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>144.9</td>
<td>141.4</td>
<td>129.5</td>
<td>131.6</td>
<td>131.6</td>
</tr>
<tr>
<td>1983</td>
<td>168.7</td>
<td>147.7</td>
<td>140.0</td>
<td>163.8</td>
<td>149.1</td>
</tr>
<tr>
<td>1986</td>
<td>161.0</td>
<td>149.8</td>
<td>138.6</td>
<td>157.5</td>
<td>147.0</td>
</tr>
<tr>
<td>1989</td>
<td>167.3</td>
<td>163.8</td>
<td>151.2</td>
<td>165.9</td>
<td>162.4</td>
</tr>
<tr>
<td>1992</td>
<td>148.4</td>
<td>156.1</td>
<td>122.5</td>
<td>140.0</td>
<td>151.2</td>
</tr>
<tr>
<td>1995</td>
<td>137.2</td>
<td>140.7</td>
<td>118.3</td>
<td>133.0</td>
<td>137.2</td>
</tr>
<tr>
<td>1998</td>
<td>134.4</td>
<td>144.2</td>
<td>114.1</td>
<td>138.6</td>
<td>136.5</td>
</tr>
<tr>
<td>2001*</td>
<td>140.6</td>
<td>123.7</td>
<td>109.1</td>
<td>105.7</td>
<td>134.4</td>
</tr>
<tr>
<td>2004</td>
<td>134.9</td>
<td>119.7</td>
<td>103.8</td>
<td>104.8</td>
<td>133.1</td>
</tr>
<tr>
<td>2007</td>
<td>132.8</td>
<td>121.4</td>
<td>105.4</td>
<td>101.1</td>
<td>133.5</td>
</tr>
<tr>
<td>2010</td>
<td>148.0</td>
<td>115.2</td>
<td>104.8</td>
<td>97.6</td>
<td>135.5</td>
</tr>
</tbody>
</table>

| % change 1980–2010 | +2 | 19 | 19 | 26 | +3
| % change 2001–10   | +5 | 7  | 4  | 8  | +1

Source: Australian Institute of Health and Welfare 2001,\textsuperscript{13} 2004,\textsuperscript{14} 2007,\textsuperscript{15} 2010\textsuperscript{16}

* Consumption assessed using a different method in 2001 to that used in later years.
white collar and upper blue collar groups, yet consumption among the lower blue collar group actually increased across this period.

9.2.4

Changes in the prevalence of smoking among students in schools in areas of varying levels of disadvantage

Higher levels of uptake among disadvantaged groups appear to have been even more significant than lower levels of cessation as a driver of socio-economic disparities in smoking in Australia. To assess the likelihood of increasing disparity in the future, researchers could more carefully analyse rates of never smoking and cessation among different SES groups in cohorts of adults born since 1970.

Data on smoking rates among secondary school students of different socio-economic backgrounds provide some indication of what future smoking disparities by SES may be.

Information on socio-economic backgrounds of students is not collected in surveys of youth smoking in Australia. Figures 9.2.12 and 9.2.13 show smoking rates among young people aged 16 and 17 years and 12–15 years between 1987 and 2008 according to the level of disadvantage of the neighbourhood in which they lived.

Declines in student smoking rates have been substantial across all quartiles since the late nineties and early 2000s, with the exception of students living in the lowest socio-economic area, where declines there have been more modest.

Interestingly, a sharp decline in smoking was evident across the period 1987–2005 among students living in the most advantaged areas; however declines in this group have appeared to flatten in the three years to 2008. By 2008, smoking rates in students living in the third, second and lowest areas of advantage were lower than the smoking rates of students in the most advantaged areas.

Following a sharp reversal of the socio-economic gradient among young people aged 12–15 years between 1990 and 1996, between 1996 and 2008 smoking declined roughly equally among students at all levels of disadvantage, however again a flattening in smoking prevalence is apparent between 2005 and 2008 for those living in the highest quartile, so that there is only small variation in smoking rates between the groups at 2008.

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i An analysis of generational trends in the UK similarly found that while rates of uptake were higher among manual workers than non-manual workers, manual workers born before 1950 were equally as likely to give up smoking as non-manual workers born before 1950.22
### 9.2.5 Changes in childhood exposure to smoking in the household

In 2010, 77% of the most disadvantage households with dependent children where at least one person was a smoker smoked only outdoors. The proportion of outdoor-only smoking in this group rose by 50% from 2001. In 2010, 90.4% of the most advantaged households containing dependent children smoked only outdoors (see Table 9.2.13).

Gartner and Hall examined trends in the social gradient of children's exposure to secondhand smoke in Australian households between 2001 and 2010. They found that exposure of children to tobacco smoke in the home decreased substantially over the decade, except in the case of the most disadvantaged households, where about half of households with a child still contained at least one smoker. On this measure, their research showed the disparity between household secondhand smoke exposure in children had increased between the least advantaged and most advantaged households.

Sims and colleagues collected data on secondhand smoke exposure in children (measured by mean cotinine levels) in England between 1996 and 2006. Children from more deprived households were most exposed, however across the 11-year research period secondhand smoke exposure in children declined substantially, with a 59% decline in geometric mean cotinine levels over this time. The most marked declines were observed immediately before the introduction of smokefree legislation in England and among children who were most exposed at the outset.

### Table 9.2.13

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Year</th>
<th>2001</th>
<th>(95% CI)</th>
<th>2004</th>
<th>(95% CI)</th>
<th>2007</th>
<th>(95% CI)</th>
<th>2010</th>
<th>(95% CI)</th>
<th>% change between 2001 and 2010</th>
<th>% 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest</td>
<td>2001</td>
<td>51.5</td>
<td>(46.1–56.9)</td>
<td>56.6</td>
<td>(52.2–61.0)</td>
<td>72.3</td>
<td>(67.1–77.4)</td>
<td>77.4</td>
<td>(72.9–81.8)</td>
<td>50.2</td>
<td>(32.3–68.1)</td>
</tr>
<tr>
<td>Second</td>
<td>2001</td>
<td>50</td>
<td>(45.7–54.3)</td>
<td>66.8</td>
<td>(62.7–70.9)</td>
<td>78.3</td>
<td>(73.1–83.5)</td>
<td>87.1</td>
<td>(83.2–90.9)</td>
<td>74.1</td>
<td>(57.2–91.1)</td>
</tr>
<tr>
<td>Third</td>
<td>2001</td>
<td>57.6</td>
<td>(52.1–63.0)</td>
<td>76.2</td>
<td>(72.5–80.0)</td>
<td>80.9</td>
<td>(76.0–85.9)</td>
<td>84.9</td>
<td>(80.6–89.1)</td>
<td>47.4</td>
<td>(31.6–63.1)</td>
</tr>
<tr>
<td>Fourth</td>
<td>2001</td>
<td>58.8</td>
<td>(52.5–65.0)</td>
<td>72.3</td>
<td>(68.1–76.4)</td>
<td>82.3</td>
<td>(77.3–87.2)</td>
<td>91</td>
<td>(87.6–94.4)</td>
<td>54.9</td>
<td>(37.5–72.3)</td>
</tr>
<tr>
<td>Highest</td>
<td>2001</td>
<td>67.2</td>
<td>(61.3–73.2)</td>
<td>80.8</td>
<td>(76.0–85.5)</td>
<td>81.3</td>
<td>(74.7–87.9)</td>
<td>90.4</td>
<td>(85.8–95.0)</td>
<td>34.4</td>
<td>(20.7–48.2)</td>
</tr>
<tr>
<td>Gap lowest to highest</td>
<td>2001</td>
<td>15.7*</td>
<td>(7.7–23.7)</td>
<td>24.2</td>
<td>(17.7–30.6)</td>
<td>9.1*</td>
<td>(0.7–17.4)</td>
<td>13.0*</td>
<td>(6.6–19.5)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Gartner and Hall 2012

* Result should be interpreted with caution because Relative Standard Error lies between 25% and 50%.

### 9.2.6 International comparisons

Observations of smoking and its connection with socio-economic disadvantage and widening disparities between the most and least advantaged social classes are not confined to the Australian population. Survey data in the UK show more rapid declines in smoking among non-manual workers compared with manual workers since the 1970s, contributing to a widening of proportions of smokers between these groups. It reported smoking as nearly twice as common in routine and manual households as in managerial and professional households (28% compared to 15%). The authors noted the ‘striking’ differences between various social classes. Smoking prevalence was particularly high among economically inactive people aged 16–59 years, whose last job was a routine or manual one; 50% of these people were smokers.

Observations on adult smoking and emerging disparities between social classes have been made in research out of New Zealand, Italy, the US and Canada and France.
References


9.3

Contribution of smoking to health inequality

As is the case elsewhere in the world, ill-health and rates of premature death in Australia show a clear gradient across socio-economic status (SES) groups.\textsuperscript{1–3

People who are poorer or disadvantaged in other ways generally suffer more illness and reduced quality of life and die earlier than people who are better off. The social gradient holds regardless of how socio-economic disadvantage is measured.\textsuperscript{1

People who are disadvantaged are more likely to live with multiple risks to their health. Lower socio-economic status is associated with higher rates of obesity, lack of adequate physical activity and diabetes—especially so among Indigenous communities.\textsuperscript{1,2,4

However, with or without such additional risk factors, current smokers are much less likely than non-smokers to be in good health and the incidence of numerous diseases is significantly higher among smokers and recent ex-smokers than among long-time ex-smokers and never smokers.\textsuperscript{5,6

Social differentials in smoking during pregnancy, smoking prevalence, cigarette consumption, duration of smoking and exposure to environmental tobacco smoke must contribute substantially to socio-economic differentials in health status and mortality.

This section outlines data on relative rates of poor health, disease, mortality and life expectancy across SES groups, and also presents estimates of the contribution of smoking to these health disparities.

9.3.1

Socio-economic position, reported health status and smoking

People who live in disadvantaged areas are much less likely to assess their own health as excellent or good.\textsuperscript{1,2

Data from Australian national surveys commonly report higher rates of arthritis, chronic respiratory disease, cardiovascular disease and depression in least advantaged groups in comparison to more advantaged groups in the population.\textsuperscript{2,3–9

The rates of profound disability and type 2 diabetes in low socio-economic areas are double that of those in the highest socio-economic areas.\textsuperscript{2

In 2010, only 41% of smokers participating in the National Drug Strategy Household Survey reported their overall health as ‘very good’ or ‘excellent’, compared to 50% of ex-smokers and almost 60% of non-smokers. Ex-smokers were more likely to report diagnoses or treatment for heart disease and cancer than smokers and non-smokers. Smokers were more likely to report asthma, and twice as likely as non-smokers to have been diagnosed with, or treated for, mental illness.\textsuperscript{10

9.3.2

Socio-economic position and illnesses known to be caused by smoking

Hospitalisations for cardiovascular disease show a clear socio-economic gradient. In 2003–04 rates of hospitalisations for males in the most disadvantaged socio-economic group were 1.3 times those of males of least socio-economic disadvantage. The hospitalisation rate for the most disadvantaged females was higher again, with rates 1.4 times that of females in the least disadvantaged socio-economic group. A socio-economic gradient is evident for other chronic diseases for which smoking is a risk factor, with hospitalisations for coronary heart disease and stroke among males and females increasing as socio-economic status decreases.\textsuperscript{11

Section: 9.3.2

Date of last update: 20 November 2012
The Australian Institute of Health and Welfare has estimated that lung cancer was the fourth leading cause of disease among males and the seventh leading cause of disease among females in 2011. Lung cancer incidence is disproportionately high in those of lower socio-economic status in Australia, with increasing incidence of lung cancer associated with decreasing socio-economic status, across the five years 2003–2007. In the year 2008–09, the rate of hospitalisations for lung cancer was higher for those living in the lowest socio-economic areas of Australia. Those living in the lowest socio-economic areas were hospitalised for lung cancer at 1.5 times the rate of those living in areas of highest socio-economic advantage.\(^\text{i}\)

Chronic kidney disease has increasingly been shown to be connected with smoking and cardiovascular disease.\(^\text{12, 13, 14}\) It is more common in low socio-economic groups and particularly so among Indigenous Australians.\(^\text{2, 14}\)

Between 2000–01 and 2007–08, hospitalisations for chronic kidney disease were highest for Australians living in the most disadvantaged areas. Hospitalisations for kidney dialysis among the lowest socio-economic group were 1.6 times the rate of those in the most advantaged group. After removing the rates for regular dialysis from all chronic kidney disease-related hospitalisations, the rates of hospitalisations among the lowest socio-economic group remained almost twice that of the most advantaged group.\(^\text{15}\)

The worsening of asthma symptoms is known to be associated with active smoking and/or exposure to secondhand smoke. Smoking and asthma are both more common in those living in low socio-economic areas. The Australian Centre for Asthma Monitoring (a collaborating unit of the Australian Institute of Health and Welfare) reported that in 2007–08, not only was asthma much more common among those living in the most deprived socio-economic areas in Australia, but that rates of smoking among asthmatics in low socio-economic areas were far higher than for asthmatic smokers living in areas of higher socio-economic status (37.8% and 12.9% respectively). The disparity between the lowest and highest socio-economic group in asthma prevalence was found to have widened between survey years 2004–05 and 2007–08.\(^\text{16}\)

9.3.3

Socio-economic disparities in death rates from diseases known to be caused by smoking

Australians from lower socio-economic groups have a greater proportion of chronic disease mortality burden than those living in more advantaged areas.\(^\text{17}\) This sub-section presents information on socio-economic disparities in mortality rates from diseases associated with smoking, however it is important to note the influence and interplay of other health risk factors and social and economic deprivation across a life-course, in the contribution to disease and premature mortality among the disadvantaged. Section 9.3.5 provides a detailed discussion on quantifying the contribution of smoking to socio-economic differentials in health status; associations between childhood circumstances and health outcomes, smoking and intergenerational poverty are discussed further in Section 9.5.

The potential years of life lost (PYLL)\(^\text{ii}\) due to cancer deaths in 2007 was greater among Australians living in the most disadvantaged areas (55%) compared with those living in the least disadvantaged areas (42%). A gradient across socio-economic groups was evident for cardiovascular disease, chronic respiratory disease, digestive diseases and diabetes, whereby the proportion of PYLL due to premature mortality from these diseases were represented more highly in those living in lower socio-economic areas.\(^\text{17}\)

According to data compiled by the Public Health Information Development Unit in South Australia, a strong economic gradient was evident for premature mortality associated with lung cancer, with more avoidable lung cancer deaths in the most disadvantaged areas (25.9 per 100 000) compared with those in the least disadvantaged areas (15.2 per 100 000) between 2003 and 2007.\(^\text{18}\)

Similar trends of a disproportionate level of mortality burden being borne among those of less socio-economic advantage have been observed in international studies.

\(^\text{i}\) Estimate projected from a 2003 baseline, derived from AIHW Burden of Disease database, see table 7.1. (p.71)\(^\text{12}\)

\(^\text{ii}\) Potential years of life lost (PYLL): ‘an indicator of premature death. PYLL are determined by age at death and takes in to account only deaths that occur before a particular age’\(^\text{17}\)
A 24-year study of British men and women examined the relationship between socio-economic status and mortality, and the influence smoking, alcohol consumption, diet and physical activity have on mortality. In terms of all-cause mortality, those of lowest socio-economic position had 1.6 times the risk of death in comparison with those of higher socio-economic position. There was also a graded association for cardiovascular disease mortality and socio-economic position. Health risk behaviours, including smoking, were connected with mortality.

Studies of cancer mortality in the US show disparities related to socio-economic position and also to ethnicity.

### 9.3.4 Socio-economic disparities in health-adjusted life expectancy

As part of research on preventable causes of disease conducted for the Australian Government, researchers at the University of Queensland examined differentials in the burden of disease across socio-economic groups.

At birth, those in the lowest socio-economic quintile could expect to die at least three years earlier than those in the highest economic quintile (79.6 compared with 82.7 years). Adjusting for ill-health, those in the lowest quintile could expect to live four years less than those in the highest quintile. By the age of 60, those in the lowest quintile could expect 15% fewer years of health-adjusted life than those in the highest quintile (Table 9.3.1).

Researchers estimated that, for the year 2003, a total of 2,632,800 disability-adjusted life years (DALYS) were lost in Australia. DALYs were calculated for each of the five socio-economic quintiles (Table 9.3.2).

After adjusting for age, loss rates were 31.7% higher in the lowest SES quintile than in the highest. Rates of burden were higher for most causes, but particularly for mental disorders and cardiovascular disease. Per head of population, rates of burden were 26.5% higher in remote areas than in major cities.

Life expectancy among Indigenous Australians is discussed in Chapter 8.

In the US, researchers examined the effects of a number of health risk factors, including smoking, on life expectancy and disparities in life expectancy in eight sub-groups of the population. Individually, smoking and high blood pressure had the most profound effect on life expectancy disparities. They found that variation of life expectancies in the eight sub-groups would decline by 18% in men and 21% in women if the health risks (smoking, blood pressure, elevated blood glucose, and adiposity or obesity) had been reduced to optimal levels.

The Whitehall study followed more than 18,000 English males over a period of 38 years to examine life expectancy in relation to cardiovascular risk factors, which were recorded at middle age. The study reported that the presence of all three risk factors (smoking, high blood pressure and high cholesterol) at baseline (middle-age) predicted a three-fold rate of vascular mortality and about a 10-year reduced life expectancy from age 50 years, when compared with men who had none of the risk factors present at the commencement of the study.

### Table 9.3.1
Life expectancy, Australia, 2003, by socio-economic quintile

<table>
<thead>
<tr>
<th>Socioeconomic quintile</th>
<th>Life expectancy at birth (years)</th>
<th>Health-adjusted life expectancy at birth (years)</th>
<th>Health-adjusted life expectancy at age 60 (years)</th>
<th>Life expectancy at birth lost due to disability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>79.6 (79.4–79.7)</td>
<td>71.2</td>
<td>17.9</td>
<td>10.6</td>
</tr>
<tr>
<td>Moderately low</td>
<td>80.0 (79.9–80.2)</td>
<td>72.0</td>
<td>18.2</td>
<td>10.1</td>
</tr>
<tr>
<td>Average</td>
<td>80.2 (80.0–80.3)</td>
<td>72.2</td>
<td>18.4</td>
<td>9.9</td>
</tr>
<tr>
<td>Moderately high</td>
<td>81.2 (81.1–81.4)</td>
<td>73.6</td>
<td>19.3</td>
<td>9.4</td>
</tr>
<tr>
<td>High</td>
<td>82.7 (82.5–82.8)</td>
<td>75.5</td>
<td>20.6</td>
<td>8.7</td>
</tr>
<tr>
<td>Difference between lowest and highest (%)</td>
<td>-3.9</td>
<td>-6.0</td>
<td>-15.1</td>
<td>17.9</td>
</tr>
</tbody>
</table>

Source: Begg et al. 2007

### Table 9.3.2
Disability-adjusted life years lost, Australia, 2003, by socio-economic quintile, Australia, 2003

<table>
<thead>
<tr>
<th>Socioeconomic quintile</th>
<th>DALYs ('000)</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>562.5</td>
<td>21.4</td>
</tr>
<tr>
<td>Moderately low</td>
<td>564.2</td>
<td>21.4</td>
</tr>
<tr>
<td>Average</td>
<td>523.6</td>
<td>19.9</td>
</tr>
<tr>
<td>Moderately high</td>
<td>507.7</td>
<td>19.3</td>
</tr>
<tr>
<td>High</td>
<td>474.8</td>
<td>18.0</td>
</tr>
<tr>
<td>Total</td>
<td>2,632.8</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Begg et al. 2007

DALY = disability-adjusted life year
Quantifying the contribution of smoking to socio-economic differentials in health status

Estimates of the contribution of smoking to social inequality vary, likely due to differences in study methodology and datasets. Estimates may also be affected by declines in smoking prevalence in developed countries, changing social demographics, latency of disease and death associated with smoking, and the emergence of other risk factors and their contribution to disease and mortality. This section presents research across time and using differing methods to quantify the contribution of smoking to health inequalities. Section 9.3.6 explores whether the inequalities in health outcomes and life expectancy are widening.

In the UK, Jarvis and Wardle used an ‘indirect method’ to estimate that tobacco caused about two-thirds of the difference in risk of death across social class in men age 35–69 years. Prabhat Jha and colleagues reported in a four-country study (England, Wales, Poland and North America) that most social inequalities in adult male mortality during the 1990s were due to smoking.

Bobak and colleagues reported similar results for Canada, Poland and the US, and contended that eliminating smoking would halve the social gradient in mortality among men. Professor Sir Michael Marmot, a public health epidemiologist and expert in health inequality, has been critical of these sorts of estimates, because some estimates have been derived by using lung cancer mortality as a proxy measure for smoking exposure, rather than using crude estimates to determine the contribution of smoking to socio-economic differences in mortality; hence they are likely to overestimate the importance of smoking. Authors of these studies have generally acknowledged the limits of indirect estimation.

Blakely and Wilson and colleagues used direct methods to estimate the contribution of smoking to socio-economic and ethnic inequalities in mortality in New Zealand. Between 1996 and 1999, smoking contributed 21% to the gap between men aged 45–74 years with post-school qualifications and those with none. The corresponding figure for women was 11%. But other work suggested that only 5–10% of the larger inequality in mortality between Māori and non-Māori individuals was due to smoking, despite large differences in smoking prevalence. This estimate contrasted with a much greater estimated contribution by the Ministry of Health using Jha and colleagues’ indirect method.

A study by Siahpush, English and Powles estimated that in Australia, smoking could account for just over one-third of the excess deaths in the 1990s that would otherwise be attributed to lower levels of education. Data on deaths among men aged 40–69 years taking part in a prospective cohort study in Melbourne between 1990 and 1994 showed that the association between education and mortality was greatly weakened after adjustment for smoking and the aetiologic fraction for low level of education was reduced from 16.5% to 10.6%.

Vallejo and colleagues used data from the National Health Survey for England to estimate the contribution of lifestyle factors—obesity and smoking—to health inequalities across social classes (classified by level of income). Their findings, released in 2010, show income as a significant contributor to health inequalities, and that obesity and smoking contribute significantly, but less profoundly, to income-related inequalities in health. Obesity and smoking were estimated to contribute 1.2% and 3.2% to inequality respectively. Despite the prevalence of smoking declining over time, its effects on inequalities have slightly increased because of its over-representation among the lowest socio-economic groups and its effects on health.

It is likely that indirect estimates of the contribution of tobacco smoking overestimate the importance of smoking by failing to take account of higher-than-average prevalence of behavioural and other risk factors in low-SES populations. Direct methods, however, may underestimate the importance of smoking because they do not take into account the long-term impact of smoking during pregnancy and the impact of smoking and exposure to tobacco smoke on diseases other than the ones for which epidemiological data are readily available. They also may not take account of the effects of spending on tobacco products on financial security and intergenerational poverty, which may help to perpetuate continuing high smoking rates in the children of smokers. These issues are explored further in Sections 9.4 to 9.8.
Thun also discusses the difficulties in directly quantifying the contribution of smoking to disparities across social classes in a review of a study by Menvielle and colleagues,33 whose work estimated the degree to which smoking contributes to social class differences (classified by education level) in lung cancer incidences across a cohort of individuals from 10 European countries. Menvielle and colleagues concluded that smoking could account for about 50% of the inequalities in lung cancer risk due social group disparities in education. They noted these findings were unusual, and suggest residual confounding by smoking. They noted that in future studies, other risk factors in relation to smoking should be considered. Thun expressed the complexity in quantifying a direct relationship in this study because of changing demographics in Europe—the relationship between social class, smoking and lung cancer incidences have evolved and changed over time—noting, ‘it is extremely difficult for Menvielle et al. to disentangle the historical and birth cohort effects of lifetime smoking on lung cancer risk from any other factors that may have contributed to risk’.

9.3.6 Are tobacco-related differentials in health status widening?

In the US the socio-economic gap in life expectancy appears to be worsening. In people who had more than 12 years of education, life expectancy in the 1990s was about a year and a half greater than it was in the 1980s. In less educated people, life expectancy increased by only half a year. Much of the growing mortality gap can be attributed to the higher levels of decline in smoking-related diseases such as lung cancer and chronic obstructive pulmonary disease in more advantaged groups.35 Study authors attribute this to the larger declines in smoking prevalence in more advantaged compared with less advantaged groups that have been evident for some time in the US. Irvin and colleagues reported in 2009 that great disparities among socio-economic groups as well as racial groups exist for tobacco-related cancer incidences and mortality in the US. Disparities also ‘exist in access to, and quality of, cancer treatment’.

The situation for Australia is much less clear-cut.

A study published by the Australian Institute of Health and Welfare in 2006 indicated that death rates for cardiovascular disease reduced in all socio-economic groups between 1999 and 2003. There was a decrease in the size of the gap between the rates of death between upper and lower socio-economic groups for coronary heart disease and cardiovascular disease as a whole but an increase in the relative effect of disadvantage (the proportion by which the lowest socio-economic group was higher than the highest socio-economic group) for coronary heart disease, stroke and cardiovascular disease as a whole.11

In 2011, the Australian Institute of Health and Welfare reported death rates from cardiovascular disease have continued falling (based on AIHW mortality data from 2007). However, those of lower socio-economic status, the Indigenous and those living in remote areas of Australia still had the highest rates of hospitalisations and death from cardiovascular disease.37

Between 1982 and 2007, the age standardised mortality rates for lung cancer among Australian males decreased significantly, whereas mortality rates among females increased across this period. This trend is indicative of past smoking patterns. Lung cancer mortality rates for males peaked in the early 1980s, and since this time, have declined substantially; a reflection of declining smoking rates in males in the second half of the 20th century. In the case of women, females took up smoking later in the 20th century (increasing since the mid-1940s and reaching prevalence of about 33% in the mid–1970s), yet they smoked less than males. This pattern is reflected in female lung cancer mortality rates. These have been increasing over time, but more recently in the 1990s and 2000s, the increase has slowed compared with decades prior. Mortality rates from lung cancer show a clear social gradient. For the period 2003–2007, the highest mortality rates for all persons were among those living in the most disadvantaged areas in Australia. The mortality rate for males living in the least advantaged areas was 1.5 times the rate of mortality for males living in the most advantaged areas. Among females, the gap was slightly less, with 1.3 times the mortality rate in females living in the least advantaged areas compared with females living in the most advantaged areas.13 No data could be located on whether or not disparities in lung cancer mortality have widened.

Between 1979 and 2006, mortality rates between low-SES groups and high-SES groups have narrowed in absolute terms among females for ischaemic heart disease (27 to 23 per 100 000). However, absolute differences for
ischaemic heart disease widened in males across this period (52 to 63 per 100,000). Absolute differences for stroke between low and high-SES groups declined in males and females (16 to 13 per 100,000 among males and 13 to 7 per 100,000 among females).

However, relative declines were greater in high socio-economic groups compared with low socio-economic groups for both ischaemic heart disease (28% average five yearly decline in high socio-economic status males compared with 21% in low-SES males, and 30% and 21% for females respectively). For stroke, there was a 25% average five yearly decline in high-SES males compared with 21% in low-SES status males; 26% and 23% for females respectively.28
References


The relationship between tobacco smoking and financial stress

Tobacco use is both a contributor to and an outcome of financial stress.1

9.4.1
Spending on tobacco as a cause of financial stress

The Australian Bureau of Statistics (ABS) regular survey of household expenditure1 provides interesting data about the relationship between smoking and financial stress.

According to the ABS 2009–10 Household Expenditure Survey, households with lower-than-average income appear to spend (on average) slightly less on tobacco products per week than do higher-income households. However, average spending on tobacco products as a percentage of total weekly expenditure is higher among low-income households. In the lowest-income households expenditure on tobacco products as a proportion of total household weekly expenditure was over double that of the highest income households.3

In households where the main source of income is government pensions and allowances, the reported weekly expenditure for those on disability or carer payments was $20.98; among those on study or unemployment benefits, $24.77; and $18.92 for households receiving family support payments. This represents 2.9%, 3.5% and 2.3% of total weekly household expenditure among these groups respectively.3

Expenditure on tobacco products in single parent households was on average $16.83 per week, and those in state/territory housing reported average expenditure of $17.67 per week.3

In coupled households, those with children under five years of age spent an average $7.80 per week on tobacco products and those with children aged 5–14 years spent an average $10.95. In comparison, couples (aged under 35 years) with no children spent an average $9.83 per week on tobacco in 2009–10.3

Research conducted on tobacco expenditure and its association with financial strain indicates that smokers are more likely to experience financial distress than non-smokers.1 Among smokers, factors like lower income, high nicotine addiction, a social circle of smokers and being of younger age are associated with a likelihood of experiencing an instance of ‘smoking-induced deprivation’—whereby the smoker has reported spending money on tobacco rather than on household essentials.4 Being unable to afford enough food to maintain an active and healthy lifestyle (termed ‘food insecurity’) and its connection with low-income groups and high smoking prevalence has been shown in studies in the US population.5,6

Borland and colleagues (2012) examined whether smokers who spend more money on cigarettes are more likely to experience financial burden. Collecting data on daily cigarette expenditure and using the outcomes ‘smoking-induced deprivation’ (SID) and ‘financial stress’ (FS), they found that those who spent more on cigarettes were more likely to

Table 9.4.1
Average weekly expenditure on tobacco products among households in each income quintile, Australia, 2009–10, and as percentage of total household spending

<table>
<thead>
<tr>
<th>Economic quintile</th>
<th>Average weekly amount spent ($*)</th>
<th>Spending as a % of total household expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest†</td>
<td>8.03</td>
<td>1.4</td>
</tr>
<tr>
<td>Second</td>
<td>12.18</td>
<td>1.5</td>
</tr>
<tr>
<td>Third</td>
<td>15.22</td>
<td>1.3</td>
</tr>
<tr>
<td>Fourth</td>
<td>15.58</td>
<td>1.1</td>
</tr>
<tr>
<td>Highest</td>
<td>11.83</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: Australian Bureau of Statistics 20113

* Current dollars; the price in the applicable year; no adjustment has been made for inflation
† Includes a high proportion of households comprising older single people on pensions, with a higher proportion of females than males

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1 Smoking-induced deprivation (SID) defined as a time in the last six months when the money the respondent spent on cigarettes resulted in not having enough money for household essentials, such as food
2 Financial stress (FS) defined as in the last month unable to pay any important bills on time (e.g. electricity) because of a shortage of money
experience SID. They did not find evidence of an association between daily cigarette expenditure and financial stress; however smoking-induced deprivation was predictive of financial stress.  

9.4.2  

Financial stress and its influence on smoking abstinence  

Research suggests that low-income smokers, or smokers experiencing financial stress, are less likely to quit and remain quit. Siahpush, Yong and colleagues (2009) used data from wave 4 of the International Tobacco Control Four-Country Survey to examine the association between financial stress and smokers’ interest in quitting, their attempts to quit and remaining quit. Smokers experiencing financial stress were more likely than others to want to quit smoking, but at follow-up, they were less likely to have made an attempt to quit smoking. Among the smokers who had made a quit attempt, financial stress was associated with less chance of smoking abstinence at follow-up. In a study of adults in Denmark, smokers of low socio-economic status described differing motives for quitting and reasons for relapse than smokers of high socio-economic status. Partos, Borland and Siahpush (2012) used the Australian cohort of the International Tobacco Control Four-Country Survey to examine the contribution of area-level socio-economic disadvantage in predicting a quit attempt, and achieving one-month and six-month abstinence from smoking. Interestingly, they found that smokers living in low socio-economic areas were no less likely to make quit attempts than those in high socio-economic areas. Almost 40% made quit attempts and this was unrelated to area-level disadvantage. The study found an independent association between area-level disadvantage and one month abstinence from smoking, but in a non-linear fashion. They also found evidence of an association with individual experience of smoking-induced deprivation and less probability of making quit attempts. The authors report that area-level disadvantage is not ‘consistently related to making quit attempts nor to medium-term abstinence success; so area-level disadvantage presents ‘few barriers to smoking cessation’.  

9.4.3  

Smoking cessation and the reduction of financial stress  

Data from the HILDA study also reveal that if smokers do manage to quit, their odds of experiencing financial stress reduce substantially when compared with those of continuing smokers. Data from the first, second and third waves of the study indicated that, on average, a smoker who quits could be expected to have a 42% reduction in the odds of experiencing financial stress. Another study, which used data from four waves of HILDA, showed that the odds of experiencing financial stress were 25% smaller for quitters than continuing smokers, and there was strong evidence of enhanced material wellbeing.
References

10. Dobson R. Poor more likely to smoke and less likely to quit. British Medical Journal. 2004;328(7445):914. Available from: http://www.bmj.com/cgi/content/full/328/7445/914
9.5

Smoking and Intergenerational Poverty

Families where one or more parent uses tobacco not only suffer more immediate financial stress but also less financial security and a greater likelihood of poverty.

Spending on tobacco products, loss of school time and income due to smoking-related disease and premature death of breadwinners over a lifetime must all substantially reduce the capacity of a household to accumulate assets such as a family home, to insure against losses, to save for financial requirements in retirement and to pass on assets to the next generation (Figure 9.5.1).

Figure 9.5.1
Socio-economic influences on cardiovascular disease from a life-course perspective
Source: National Public Health Partnership 2001
Note: Adapted by M Scollo from Figure 6 in Preventing chronic disease: a strategic framework background paper

9.5.1

Spending on Tobacco Products and its Impact on Financial Security and Wealth Accumulation

Higher rates of smoking and longer average times until cessation mean that lower socio-economic status (SES) smokers are more likely to suffer both frequent financial stress and longer periods of compromised living standards than their counterparts in the higher strata.

Households where one or more adults smoke are less likely to have funds for discretionary spending on items such as house and contents insurance, motor vehicle insurance and health insurance. Medical problems, accidents
and thefts of cars and other goods are therefore more likely affect these households significantly. Expenditure on health-risk behaviours are also more likely in smoking households—Siahpush and colleagues found odds of reporting expenditure on alcohol, drinking at licensed premises, and gambling were 100%, 50%, and 40% greater for smoking than for non-smoking households.4

Low-income families where one or more adults smoke may also be less likely to invest in superannuation, life insurance and insurance against loss of income.1 All of this translates to less security of income in older age, and less wealth to help adult children or to pass on to children after death. Smokers are also more likely to report a higher level of perceived income inequality, lower perception of relative material wellbeing and living in a community with a lower degree of trust and safety.5

Low-income families where at least one person smokes are less likely to be able to save a deposit to buy a dwelling, so that even controlling for different levels of age and income, they are much less likely to be purchasing and owning their own home.3 Australians’ average income doubled between 1984 and 2004; however house prices increased by 400%—making Australia one of the least affordable housing markets in the world. Nearly one-third of sole parents and single people were suffering from housing stress during this time. A study by the National Centre for Social and Economic Modelling published in 2008 found that those buying their first home were particularly vulnerable to housing stress; they had had the lowest incomes, but paid the highest prices for houses, which put 62% of first-home buyers into housing stress.1

Janssen and colleagues examined data from the Household Income and Labour Dynamics in Australia survey and found evidence of an association between being a smoking household (defined as having one smoker in the household) and having inadequate housing (though when adjusted for SES and age, this association was somewhat weakened).8

9.5.2 The long-term effects of smoking during pregnancy

The higher rates of smoking during pregnancy among disadvantaged groups may well have far-reaching effects on the health and even the temperament of offspring well into adolescence and adulthood.

While the effects of smoking on infant health are well known,9-11 a growing body of evidence suggests that foetal exposure to tobacco smoke also increases the risk of physical and behavioural problems in children and even in adult offspring.12,13 These outcomes themselves contribute to social disadvantage. The effects of smoking during pregnancy are discussed in more detail in Chapter 3, Section 3.8.

9.5.3 Exposure to environmental tobacco smoke and school absence

Children who suffer asthma and frequent respiratory disease are likely to miss more time at school than healthier children. Even controlling for SES and parental smoking status, exposure to secondhand smoke has been demonstrated to reduce school attendance14 and the productivity of parents who need to stay home to care for children.15 Poor school attendance is a very strong predictor of academic failure.16

Exposure to secondhand smoke may still reduce academic performance even where children don’t miss more school. A longitudinal analysis of educational achievement in children participating in the British National Child Development Study found that young people exposed to secondhand smoke at home were more likely to fail standardised UK O (Ordinary) level and A (Advanced) level achievement tests.17 This finding held regardless of prenatal exposure, school attendance and after controlling for SES.

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1 The 19th AMP$\text{NatSEM}$ report defines housing stress as households spending more than 30 per cent of their disposable (after tax) income on housing.
9.5.4

Parental example and smoking uptake: the cycle continues

Children who grow up in households where adults smoke are themselves more likely to take up smoking. As discussed in detail in Chapter 6, smoking by one or more parents is a very strong predictor of uptake among children and smoking cessation reduces the chances of children taking up smoking. Consistent with trends in other countries, Australian teenagers are much more likely to experiment and to smoke regularly if one or more of their parents smoke than if neither of their parents smoke. Figures 9.5.2 and 9.5.3 plot the percentage of never smokers, experimenters and current smokers among secondary school smokers in Victoria according to parental smoking status.

Among students aged 12–15 years, those who reported that both parents smoked were more than twice as likely to have experimented with smoking than students who reported that neither parent smoked. They were about three times more likely to be regular smokers than students who reported that neither parent smoked. Students of parents who did not smoke were much more likely to be a never smokers compared with students who reported that both parents smoked (86% compared with 58%).

Among students aged 16 and 17, those who reported that both parents smoked were more than twice as likely to be regular smokers as students who reported that neither parent smoked. Students who reported either one or two parents were smokers had about the same likelihood of having experimented with smoking. As seen in students aged 12–15 years, students aged 16 and 17 who reported neither parent smoking were much more likely to report never smoking.

The impact of parental smoking appears to be a long-term one. Among Australian secondary school students interviewed in 1985, compared with their peers who reported neither parent smoking, younger teenage boys who reported that both parents smoked were 50% more likely and younger teenage girls were 100% more likely to still be smokers 20 years later (males RR 1.53; 95% CI, 1.19–1.96 and females RR 1.99; 95% CI, 1.52–2.61).

Keyes and colleagues reported that both genetic and environmental influences can increase the risk of cigarette use in the adolescent children, either biological or adoptive, of parents who smoke. They add that the effect of parental smoking on adolescents in biologically related families seems to be associated not only with cigarette use, but also with socially unacceptable behaviour (such as disruptive behaviour disorders, delinquency and preference for risk taking). Harvey reviews the work of Keyes and colleagues and notes that it is important to consider the influence of home environment/family dynamics (e.g. lack of parental supervision) and psychiatric diagnoses on the reported outcome of adolescents’ behaviour disorders and socially unacceptable behaviour. In addition, he notes that a higher socio-economic household is not necessarily protective against adverse home conditions.
Macleod and colleagues reported parental social disadvantage was predictive of children’s tobacco and alcohol use. However some of this association appeared to be mediated by the greater experience of childhood behavioural and cognitive problems among the disadvantaged children.\(^5\)

Absence of smoking restrictions at home is also associated with increased risk of smoking uptake by children. US studies\(^{26,27}\) have found that even after controlling for demographic factors and parents’ smoking status, children who lived in homes where smoking was banned were more than 20% less likely to take up smoking than children who lived in homes where smoking was allowed (see Section 5.14 for further information on the effects of smoking restrictions among young people, and see Section 9.1.7.2 for details on relative prevalence of smokefree homes by SES).
References


Date of last update: 20 November 2012
9.6

Smoking, ill-health, financial stress and smoking-related poverty among highly disadvantaged groups

This section draws heavily on sources identified and material that appears in Chapter 1, Sections 1.8 to 1.10.

In addition to the differentials in smoking among broad categories of socio-economic status, it is clear that smoking rates are even higher among many groups of highly disadvantaged people. The financial stress resulting from expenditure on tobacco products and the immediate and longer-term effects of smoking exacerbate the problems of many people grappling with intensely difficult personal challenges and social alienation due to a variety of life circumstances, events and choices.

9.6.1

People living in regional and remote areas of Australia

About 31.2% of Australians live outside major cities; 68.8% live in major cities, 29% in regional areas and 2.2% in remote or very remote areas.  

People living in rural or remote Australia tend to work in more risky occupations and must travel long distances over country roads. They also are much more likely to smoke, be overweight or obese, to drink alcohol in hazardous quantities and to be physically inactive.

Life expectancy decreases with increasing remoteness. People living in regional or remote areas of Australia are less likely to report being in ‘very good’ or ‘excellent’ health. The life expectancy of those living in regional areas is one to two years lower, and in remote areas, life expectancy is up to seven years lower compared with those living in major cities.

Those living in regional and remote areas may face stressors in the form of drought, flooding, heatwaves, bushfires and outbreaks of plant disease, posing a health and economic burden on these populations. Psychological distress, such as depression, has been known to particularly affect these populations. Those living outside major cities are 1.1 times more likely to report suffering a mental disorder than those living in major cities.

The 2007–08 ABS National Health Survey data show that those living outside major cities report higher rates of arthritis, asthma, diabetes, and heart, stroke and vascular disease. In 2010, smoking rates were 28.9% in remote/very remote areas of Australia, 20.7% in outer regional areas, and 19.9% in inner regional areas. For those living in major cities, the prevalence rate was 16.8%.

According to Australia’s Health 2010, participation rates in screening services, such as bowel, breast and cervical screening, did not necessarily show a gradient across geographical areas. Participation rates in the BreastScreen Australia program were significantly higher in those living in regional areas, outer regional and remote locations compared with those in major cities (the exception was very remote areas, where participation rates were significantly lower). Although participation rates in the National Cervical Cancer Screening Program were similar (about 61%) across major cities, inner regional and outer regional locations, it was significantly lower in remote and very remote locations (54.6% and 59.0% respectively). Participation in the National Bowel Cancer Screening Program also showed varying uptake by geographical areas. Inner regional and outer regional locations showed significantly higher levels of participation than major cities (1.1 and 1.03 times that of major cities respectively), while participation was significantly lower in very remote locations (0.7 times that of major cities).

Living some distance from major population centres, rural populations often lack access to specialist medical and other health services. Because health professionals are in such short supply in rural and remote areas, it is often difficult to find time for preventive health activities. The National Strategic Framework for Rural and Remote Health sets out goals:

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1 As classified by the Australian Standard Geographical Classification (ASGC)
to improve access to healthcare
- to ensure effective and appropriate and sustainable healthcare delivery
- for an appropriate, skilled and well-supported health workforce
- for collaborative health service planning and policy development and strong leadership, governance, transparency and accountability.\(^7\)

As part of health reforms from 2010, the Australian Government subsidised the cost of nicotine replacement therapy patches. From February 2011, all Australians can access subsidised stop-smoking therapy patches. In addition, the reinvigorated National Tobacco Strategy aims to extend the reach of anti-smoking messages in social marketing campaigns through specific media activity aimed at Australians of low socio-economic status and those living in rural areas.\(^8\)

### 9.6.2 People born overseas

At 30 June 2010, data on the estimated resident population of Australia (22.3 million people) report that 27% of the population were born overseas (6.0 million people).\(^9\) Although migrants to Australia come from more than 200 different countries, the majority of overseas-born residents hail from the UK.\(^3\)

Moving countries profoundly changes peoples’ lives. For many it provides escape from poverty and violence; it almost always gives people the chance, if not to improve their immediate economic situation, to at least provide a much better future for their children. With this may come great optimism and sense of purpose, and strong bonds with and support from others living nearby from the same cultural background. Immigrant populations generally enjoy better reported health and lower rates of disability and hospitalisation than those reported by people born in Australia.\(^10\) Rates of mortality for some diseases are higher in some immigrant groups compared with Australian-born residents, for example, lung cancer in people born in the UK, the Netherlands and Ireland; coronary heart diseases in people born in Poland; and diabetes in those born in Germany, Greece, India, Italy, Lebanon and Poland.\(^3,11\)

But immigration can also result in quite extreme social and cultural isolation and many people who move to Australia from non-English speaking countries are further disadvantaged by lack of access to information, and limited employment opportunities due to less facility with English and lack of recognition of educational and professional qualifications gained overseas. Even with these countervailing forces, the prevalence of mental health problems is not higher in people born in non-English speaking and other countries outside Australia. The National Survey of Mental Health and Wellbeing showed that persons born overseas were considerably less likely to report ever having a mental disorder (defined as lifetime mental disorder) (28.9 per 100 000) than persons born in Australia (48.7 per 100 000) and other predominantly English-speaking countries (50.2 per 100 000). Among those diagnosed at some point with a mental disorder and suffering symptoms recently (12 months prior to the survey), persons born overseas had much lower prevalence compared with those born in Australia and predominantly English-speaking countries.\(^3,12\)

However, there is evidence to suggest that those who speak a language other than English at home are less likely to participate in health services than persons where English is the predominant language spoken at home. Between 2005 and 2006, 45% of females aged 50–69 years of age who spoke a language other than English participated in breast cancer screening. In comparison, participation rates of females of the same age bracket whose main language spoken at home was English were 59%. In addition, persons who spoke a language other than English at

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\(^{ii}\) 50–59 years of age is the target age bracket for breast cancer screening.
home were less likely to use a health service for a lifetime mental disorder (26 per 100,000 compared with 48 per 100,000 in predominantly English speakers). So does the migrant experience translate into greater risk of smoking?

For daughters of parents coming to Australia from Asian, African and Middle Eastern countries where female smoking rates are generally very low, contact with other Australian girls may result in a greater risk of smoking uptake. Further, among migrants who are already smokers, the stresses associated with establishing a new life in Australia may work against success in quitting.

However, equally it is also possible that moving to Australia increases the likelihood of quitting in those groups who come from countries with less developed tobacco-control policies. As a demonstration of this effect, a study of Asian immigrants to California in the US (a jurisdiction with a strong history in tobacco control), found that Chinese and Korean immigrants to California had much higher quit ratios than among the populations in their respective homelands. The Chinese immigrants in California quit at roughly seven times the rate of Chinese in China, and Koreans in California three times that of Koreans in Korea. The difference in cessation rates was accounted for by the much higher number of quit attempts made by those living in California as opposed to their counterparts in their homeland, suggesting that time spent in an environment with significantly different social norms towards smoking was a driver for quit attempts.

Overall it would seem that being an immigrant or speaking a language other than English is not a risk factor for smoking. People from non-English speaking backgrounds are less likely to smoke than those where the major language spoken at home is English. Data from the National Drug Strategy Household Survey indicate current smoking prevalence for persons who speak a language other than English at home is 11.6%, compared with 18.4% of those whose main language spoken at home is English. There were a high proportion of non-smokers in homes where English was not the main language spoken (80.4%), compared with predominantly English-speaking households (55.5%).

The National Health Survey reports similar findings, where prevalence of smoking was 12.2% among those who predominantly speak a language other than English. People migrating to Australia after 1996 are only slightly less likely to be smokers than those arriving prior to 1996, and are also less likely to smoke than the Australian population as a whole.

However, it also has to be recognised that people in some cultural and linguistic communities smoke at very high rates indeed. Studies from the 1990s indicated that among the Arab-speaking population in Sydney, more than 50% of both males and females reportedly smoked; among the Sydney-based Lebanese community, about 49% of males and 29% of females were smokers. Male members of the Vietnamese community in Sydney had smoking rates of 53%. The ‘45 and Up Study’ in Australia demonstrates how smoking prevalence can vary across cultural sub-groups. It examined smoking characteristics of Australian migrants compared with those of Australian-born residents aged 45 years and older and found that compared with Australian-born men, a higher proportion of men born in Europe, North Africa and the Middle East were current smokers. Compared with Australian-born women, a lower proportion of women from East and Southeast Asia were current smokers and a higher proportion of women from New Zealand and the UK/Ireland were current smokers. Among women born in Asia, the risk of smoking increased significantly the younger they migrated to Australia. The duration smoked and amount smoked per day was primarily lower among migrants than Australian-born persons.

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iii Persons aged 14 years plus

iv Persons aged 15 years plus

Section: 9.6.2

Date of last update: 20 November 2012
A study of Arabic-speaking patients seen in the general practice setting in New South Wales found that of more than 1000 patients seen by the general practitioner, 29.7% were smokers. Smokers were also more likely to report poorer overall health and high nicotine dependence. Nicotine dependence was highest in Arabic-speaking males. Further studies from New South Wales show that while school children within families from high-smoking communities have a lower prevalence of smoking than their counterparts from English-speaking homes, older teenagers are more likely to take up smoking once parental controls reduce.

While being born overseas in itself is not a risk factor for smoking, being a member of a community where smoking is common may increase health and financial problems of families affected. In Canada, a study of overseas-born children found that the likelihood of smoking increased with the years spent living in Canada, suggesting that the unhealthy behaviours arose after time in their new homeland. A similar finding was made in the US, where a survey of Hmong American youths and adults found that among youth, 15% reported daily smoking use and 32% reported ever smoking. The odds of ever use of tobacco increased as the percentage of life lived in the US increased. As with other disadvantaged smokers, smoking must also contribute to financial stress. With prices of tobacco products much higher in Australia than in their countries of birth, spending on tobacco products among recent immigrants who smoke significantly reduce funds available for family goals such as saving for a home, education in a private school and assisting other family members both in Australia and overseas. A US study examined the influence of financial strain on quitting success among a group of smokers from Latino, African American and Caucasian background. They found that greater financial strain at the outset was significantly associated with reduced odds of abstinence at 26 weeks post-quit. They concluded that greater financial strain predicted lower cessation rates among racially/ethnically diverse smokers.

People from cultural backgrounds where smoking is prevalent may face cultural resistance to quitting due to traditional beliefs and attitudes to smoking. Continued smoking by family and friends may make it harder to contemplate quitting and increase chances of relapse in those who give it a go. People from culturally and linguistically diverse (CALD) backgrounds also lack access to information due to language barriers. Providing education and support to Australians with different cultural backgrounds provides particular challenges for public health policy, as has been recognised by the National Tobacco Campaign.

9.6.3 Lone parents, especially lone mothers

In 2009–10, one in five children aged younger than 17 years (20%) had a natural parent living elsewhere (about one million children). For the majority of these children (81%), this person was their father. Almost three-quarters of children with a parent living elsewhere were in one-parent families.

Lone mothers and their children are one of the most disadvantaged groups in many countries and suffer higher risks of poverty and ill-health than other family types.

Lone parents tend to have higher levels of unemployment, in part due to caring responsibilities, and are more likely to experience economic hardship. Rahkonen and colleagues reported the more the economic hardship the more smoking was prevalent among subjects of their study in Finland. The association between economic hardship and lone parenthood was significant independent of other factors such as education, occupational social class, household disposable income, housing tenure or social relations for both men and women.

In Australia in 2009–10, three in five (59%) of lone parent households with dependent children were classified as having 'low economic resources.' One-parent households accounted for 6% of all households, but made up 18% of low economic resource households. In the same year, expenditure on tobacco products in single parent households with dependent children was on average $16.83 per week. In comparison, coupled households with dependent children spent $11.86 per week.

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Australian research conducted in the early part of the 2000s found that the overall prevalence of smoking among lone mothers was about 46%, with those younger in age (18–29 years) reporting the highest prevalence (59%). Lone mothers who were younger, less educated, received government pension/benefits, occupied rental housing, or who lived in more disadvantaged areas were more likely to smoke than others. A strong ‘lone mother effect’ remained after controlling for socio-economic variables. The odds of smoking for lone mothers were 2.4 times greater than for married mothers (95% CI: 2.0–2.9) and twice as large as those for women living alone (95% CI: 1.6–2.4).

As highlighted by Hilary Graham in her extensive research and writing about smoking in lone mothers in the UK, smoking status among this group is associated not just with the difficult circumstance they face in the present, but also by ‘longer term biographies of disadvantage.’

Lone mothers are much less likely than mothers with partners to quit or suspend smoking during pregnancy. And mothers who continue to smoke during pregnancy are much more likely to report having a difficult, fussy baby, further adding to the stress of looking after children without a partner present.

In 2010, the National Drug Strategy Household Survey reported current smoking prevalence in single-parent households with dependent children was 36.9%. This was over double the current smoking in coupled households with dependent children, where prevalence was 17.9%. Single-person households without children had a current smoking prevalence of 23.8%. Lone households with dependent children also smoked more cigarettes than other households with dependent children, with an average of 110 cigarettes smoked per week, compared with an average of 95.4 cigarettes smoked per week in households headed by a couple.

Gartner and Hall reported that in Australia between 2001 and 2010 the proportion of households containing a smoker and a child under the age of 15 declined both in lone parent households and households headed by a couple. However the decline was more profound in two-parent households, with about half of lone-parent households with dependent children still smoking in 2010. Lone-parent households with dependent children had a greater percentage increase between 2001 and 2010 in only smoking outdoors while at home, compared with two-parent smoking households. However, lone-parent households were still half as likely to smoke only outdoors as two-parent households.

Table 9.6.1
Prevalence of smoking in households containing a child under the age of 15 overall and according to household structure, 2001–10

<table>
<thead>
<tr>
<th></th>
<th>2001 (%)</th>
<th>95% CI</th>
<th>2004 (%)</th>
<th>95% CI</th>
<th>2007 (%)</th>
<th>95% CI</th>
<th>2010 (%)</th>
<th>95% CI</th>
<th>% change between 2001 and 2010 (%)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoker(s) in household</td>
<td>44.3</td>
<td>(42.7–45.9)</td>
<td>40.8</td>
<td>(39.5–42.1)</td>
<td>37.3</td>
<td>(35.6–39.0)</td>
<td>34.6</td>
<td>(33.1–36.1)</td>
<td>−21.9</td>
<td>(−26.3–−17.5)</td>
</tr>
<tr>
<td>Couple</td>
<td>40.3</td>
<td>(38.6–42.1)</td>
<td>36.8</td>
<td>(35.4–38.3)</td>
<td>33.5</td>
<td>(31.7–35.3)</td>
<td>30.5</td>
<td>(28.8–32.2)</td>
<td>−24.3</td>
<td>(−29.6–−19.0)</td>
</tr>
<tr>
<td>Single</td>
<td>59.0</td>
<td>(54.8–63.1)</td>
<td>58.0</td>
<td>(54.5–61.5)</td>
<td>56.8</td>
<td>(51.8–61.8)</td>
<td>51.8</td>
<td>(46.7–66.9)</td>
<td>−12.2*</td>
<td>(−22.8–−1.5)</td>
</tr>
<tr>
<td>Smoker(s) in smoking</td>
<td>55.6</td>
<td>(53.2–58.0)</td>
<td>69.5</td>
<td>(67.6–71.4)</td>
<td>78.5</td>
<td>(76.1–80.9)</td>
<td>85.4</td>
<td>(83.5–87.3)</td>
<td>53.6</td>
<td>(46.1–61.1)</td>
</tr>
<tr>
<td>households only smoke</td>
<td>60.0</td>
<td>(57.3–62.8)</td>
<td>73.7</td>
<td>(71.6–75.9)</td>
<td>81.7</td>
<td>(79.1–84.3)</td>
<td>89.7</td>
<td>(87.7–91.7)</td>
<td>49.4</td>
<td>(41.7–57.0)</td>
</tr>
<tr>
<td>outdoors</td>
<td>42.4</td>
<td>(37.0–47.9)</td>
<td>55.0</td>
<td>(50.3–59.6)</td>
<td>66.2</td>
<td>(59.8–72.5)</td>
<td>72.6</td>
<td>(66.3–79.0)</td>
<td>71.3</td>
<td>(44.7–97.9)</td>
</tr>
</tbody>
</table>

Source: Gartner and Hall (2012)

* Result should be interpreted with caution as Relative Standard Error lies between 25% and 50%.

Children who live in households with a smoker suffer from more respiratory diseases and respiratory illnesses occur more frequently and more severely in those exposed to environmental tobacco smoke. Children of lone parents who smoke are also much more likely than children in two-parent families (and than children of lone parents who do not smoke) to begin smoking as teenagers, thus the effects of smoking are perpetuated across the generations.
Chapter 9: Smoking and social disadvantage

9.6.4 People with mental illnesses

Mental health problems are common within the Australian population. Mental disorders are the third leading 'broad cause' of Australia's disease burden, behind cancer and cardiovascular disease. The National Survey of Mental Health and Wellbeing indicates one in five Australians between 16 and 85 years have suffered from one or more of the common mental disorders in the 12 months before the survey (categorised by mood disorders, such as depression, anxiety disorders and substance use disorders). Among young people aged 16–24 years, as many as one in four persons reported a mental disorder at some time in the preceding 12 months.

The National Drug Strategy Household Survey reports that smokers were twice as likely as non-smokers to report being diagnosed with, or treated for, a mental illness. Smokers were also more likely to report high or very high levels of psychological stress in the four-week period before the survey.

9.6.4.1 Mental illness and disadvantage

People with serious mental illnesses are very seriously disadvantaged in employment, housing, and just about every sphere of life. They report higher rates of unemployment, are at a greater risk of homelessness, and are more likely to have lower levels of educational attainment than the general population.

Current tobacco use is strongly associated with a range of other substance use and mental health problems. In the US and Australia, adults reporting with mental disorders in the 12 months before the survey smoked at almost double the rate of adults without mental disorders. Mental health problems are higher in the other highly disadvantaged groups discussed in this section.

9.6.4.2 Smoking among those with long-term mental health or behavioural problems

Refer to Chapter 7, Section 7.12 for a full discussion on smoking prevalence among those who report mental health problems.

9.6.4.3 Smoking among those with serious psychiatric illnesses

The 2010 National Survey of Psychotic Illness indicates 64,000 Australians aged 18–64 years have a psychotic illness (4.5 cases per 1000 in the 12-month period to March 2010). Psychotic illnesses can include schizophrenia, schizoaffective disorders, bipolar disorder and depression. The most common reported disorder was schizophrenia, accounting for 47% of all psychotic disorders. Schizophrenia accounted for more than half of psychotic disorders among males (56.3%) and one-third of psychotic disorders among females (33.2%).

The survey indicates smoking rates among Australians with a psychotic illness were 67.2% in 2010, declining only a little since 1997–98, when current smoking prevalence among this population was 68.9%. Sixty-six per cent of people with psychosis reported smoking an average of 21 cigarettes per day.

A review of 42 international studies in 20 nations found an average smoking prevalence among people with schizophrenia of 62%. Diaz and colleagues reported from their study of smoking prevalence among patients with bipolar disorder, schizophrenia and major depression that daily smoking rates among those with major depression...
were 57%, and 66% among those with bipolar disorder. Among patients with schizophrenia, daily smoking prevalence was as high as 74%.56

The interaction between tobacco use and mental illness is complex and likely to reflect a number of factors; the complexity of these interactions and associations has been well examined among adults as well as among adolescents and children.52,57-59

Swendson and colleagues set out to examine mental disorders and risk factors for later onset of nicotine, alcohol and drug use, abuse and dependence. Behavioural disorders and pre-existing substance abuse were predictive of later transition to substance abuse. They concluded there was significant prospective risk associated with baseline mental disorders for the onset of nicotine, alcohol and illicit drug dependence with abuse over the study follow-up period (10 years after baseline). However they noted the complexity in these associations, in that the magnitude of associations varied across categories of mental disorders and there were differences observed across mental disorder and the onset of use, abuse and dependence with abuse. For example, their analysis suggested that certain conditions, such as anxiety or additional substance use disorders, play a fairly stronger role in the initial onset of daily smoking or drug use than in the onset of dependence. In comparison, many forms of disorder were more strongly associated with transitions to dependence on alcohol than with the onset of use or abuse of alcohol.60

Smith and colleagues reported patients with a first episode of psychosis actually initiated smoking before the first signs of illness (psychosis), suggesting smoking may not have been a response to the early signs of the illness. They reported subjects were vulnerable to the same predictors of smoking uptake as the general population, particularly prenatal tobacco exposure, which is also known to be connected with other medical, cognitive and behavioural problems.61

People with mental health illnesses who live in institutions have higher rates of smoking than those living in the community.62 For inpatients in an institution, environment may reinforce smoking behaviour.63 Many patients report smoking more due to boredom.64 Smoking may also be seen as a means of reclaiming a degree of self-determination and autonomy in the face of disempowerment.65 Although most patients with a psychiatric condition report that they smoke for the same reasons as other smokers (including ‘addiction’, for ‘relaxation’ and to ‘calm down’),66-68 there is evidence that nicotine may serve for some as a form of self-medication to ameliorate symptoms of certain mental illnesses, or to alleviate side effects of prescribed medication.62,66,67

Financial stress among those with mental illness who smoke

The interaction between poor mental health and poverty and/or financial stress is well known; understanding its mechanism was a subject of study for Jenkins and colleagues. They found that the most disadvantaged, by low income, were more likely to have a mental disorder. Twenty-three per cent of subjects with a mental disorder were in debt, compared to 8% of those without a mental disorder; the more debt the subjects had, the more likely they were to have some form of mental disorder. They concluded that low income and debt were associated with mental illness but the effect of income was mediated largely by debt.69

In Australia in 2000, it was estimated that people with a psychotic illness who smoked and were in receipt of a disability support pension spent more than one-third of their pension on tobacco products, and contributed a total of about $111 million each year in tobacco taxes to the Australian Government. According to this study, smoking contributes to the vicious cycle of poverty and disadvantage in which many mentally ill people are trapped.70

In 2010, the Australian national survey of people living with psychotic illness reported 85% of persons with a psychotic illness obtained their main source of income from government payments. One-third of those with a psychotic illness had been in paid employment in the past year (32.7%) and one in five was employed at the time of the survey interview (21.5%). In comparison, about 72% of the general working age population (age 15–64 years) were employed in July 2010.

One in twenty with a psychotic illness were homeless at the time of interview, one in ten (11.0%) were in supported accommodation, and only 15% had some form of private health insurance.
Smoking status and gambling have also been associated with psychiatric symptoms. Smoking prevalence has been reported to be very high among people who call helplines for problem gamblers (over 43% in one US study).

9.6.4.5
Preventable diseases among those with mental illness who smoke

The higher rates of smoking among people with mental health problems and mental illnesses means that they are more likely to suffer all the various health problems associated with tobacco use. Those with psychotic illnesses report higher rates of asthma, heart and/or circulatory conditions, arthritis, diabetes, kidney disease and stroke.

People with mental illness may not be as frequently or intensively counselled about preventive health issues by health practitioners very much focused on managing immediate symptoms of mental illness. Studies report, however, that risks of cardiovascular disease can be reduced by interventions to stop smoking among patients with mental illness.

US research has indicated a 20% reduction in life expectancy among people suffering from schizophrenia, with heart disease being the most common cause of death.

9.6.4.6
Barriers to cessation among those with mental illness

Refer to Chapter 7, Section 7.12.4 for a full discussion on smoking prevalence among those who report mental health problems.

9.6.5
People with alcohol and drug problems


People with mental health problems are much more likely to suffer from alcohol and other drug problems, and tobacco use commonly co-exists with other drug use (see Chapter 1, Section 1.10.6). The National Drug Strategy Household Survey reported the diagnoses or treatment for a mental illness was much more common in those who had used illicit drugs in the last 12 months (18.7%), and in the last month (20.4%) compared with those who had not used illicit drugs in the past 12 months (10.8%). Illicit drug users also had higher levels of psychological distress than non-users.

A US study examined psychiatric co-morbidity associated with nicotine addiction among alcohol-dependent respondents in the general population. Forty-eight per cent of the alcohol-dependent respondents reported nicotine dependence. In addition they reported ‘higher lifetime rates of panic disorder, specific and social phobia, generalised anxiety disorder, major depressive episode, manic disorder, suicide attempt, antisocial personality disorder and all addictive disorders than those without nicotine dependence.

Most individuals presenting for treatment for substance use disorders smoke tobacco as well. Australian research shows that in this population, smoking rates range from 68% to 90%. Among mentally ill inpatients with co-existing alcohol and other drug problems, smoking rates as high as 90% have been observed.

The relationship between tobacco and other drug use is complex, and may be subject to genetic and neurobiological determinants, as well as psychological and social influences.

As pointed out by Baker and colleagues, those with substance abuse problems who also smoke tobacco

...are at particularly high risk of experiencing harm as a consequence of a typically heavier pattern of tobacco use...and due to the synergistic effects of these substances. It has been estimated that the combined health risks of smoking and alcohol use are 50% higher than the sum of their individual risks. For example in the
case of oesophageal cancer, the excellent solvent properties of alcohol may take the carcinogen in tobacco smoke to basal layers. In addition, people with severe alcohol and drug dependence problems are more likely to die from tobacco-related causes such as coronary heart disease, cancer, stroke and chronic lung disease, than from causes related to the use of any other drugs. Baker et al 2006 (p87)

Cessation interventions tailored to the needs of poly-drug users are discussed in Chapter 7, Section 7.12.5.

9.6.6 The homeless

Homelessness is defined as lacking adequate access to safe and secure housing. In 2010, 1.1 million Australian adults (7% of the 16.8 million adult population living in private dwellings) had experienced homelessness at some time in the previous 10 years. They were mostly younger adults (18–34 years) who had lower levels of education, were more likely to have been unemployed in this period, derived their main income from government pensions or allowance and had experienced financial stress compared with those who had not been homeless. They were also more likely to report disability or a long-term health condition. Reports of psychological disability or restriction in the homeless were four-fold compared with those who had never been homeless (22% compared with 5%).

Individuals experiencing homelessness have a poorer health status than the general population, with the ‘street homeless’ (those usually dwelling on streets or in parks, in derelict buildings or other temporary shelters) being the worst affected. Melbourne-based research has shown a greatly elevated prevalence of smoking among the homeless (77%), with street homeless reporting higher rates of 93%.

People who live ‘rough’ are unlikely to see media advertising about the dangers of smoking. Unrestricted smoking outdoors is likely to result in the development of high levels of dependence on tobacco-delivered nicotine. Research conducted by Apollonio and colleagues suggest that the mentally ill and homeless have been the subject of cigarette promotion and marketing in the past.

9.6.7 Prison populations

At 30 June 2011, there were 29 106 prisoners (sentenced and unsentenced) in Australian prisons. Of the total prisoner population, 7% (2028) were female and approximately 8 in 10 (79% or 23 082) were born in Australia.

The prevalence of smoking in the prison population is far higher than among the general population, and tobacco use is commonly accepted as part of prison life. Prison entrants in Australia are more than three times as likely as those in the general population to be daily tobacco smokers (74% compared with 20%). It is not unusual for tobacco to be used as currency in gambling or other trade.

Papododima and colleagues found about 80% of prisoners in their study identified as current smokers, with 43% reporting deterioration of smoking habits when incarcerated. Heavy smoking was linked to past adverse childhood events and personality traits, such as impulsivity, among prisoners.

Research undertaken in 2001 examining smoking among New South Wales prisoners found that 78% of male and 83% of female inmates were smokers. Most (95%) inmates smoked roll-your-own cigarettes, a far higher proportion than that seen in the rest of the population. Forty-one per cent of prisoners who smoked reported that they smoked more heavily in prison than when in the community. Illicit drug use was closely connected to tobacco use, with about 90% of individuals who had ever injected drugs, or used cannabis, being smokers as well. Eighty-six per cent of inmates aged under 25 were smokers, compared with 64% of prisoners aged over 40. Prisoners who smoked were less likely to have completed their schooling. A small number of smokers had started smoking in prison (7%).

A 2008 study of prisoners in three metropolitan intake prisons in Adelaide found many prisoners used multiple substances, with the six most common substances used at high and moderate risk levels being tobacco, cannabis,
amphetamines, opiates, alcohol and sedatives. Of these, tobacco was the mostly commonly used substance among male and female prisoners.\(^5\)

The elevated smoking rates in the prison population reflect, to a large extent, increased likelihood of disadvantaged socio-economic backgrounds in inmates.\(^5\) Indigenous people make just over a quarter (26% or 7656) of the total prisoner population.\(^4\) Drug users and the less educated are over-represented in the prison system, as are those suffering mental disorder.\(^5\)

Younger prison entrants (age 25–34 years) in Australia were more likely than their counterparts in the general population to have asthma (15% compared with 10%) and diabetes (2% compared with 1%). The high rates of diabetes are likely linked to the large proportion of Indigenous Australian prisoners, where prevalence of diabetes in this group is higher than non-Indigenous Australians. Prisoners aged 35–44 years were also twice as likely to have cardiovascular disease compared with those aged 35–44 years in the general population.\(^5,10\)

The 2007 National Survey of Mental Health and Wellbeing reported incidence of mental disorders among individuals who had at some time been imprisoned was greater than among those who had not (41% compared with 19%).\(^1\) Findings from the National Prisoner Health Census showed a similar pattern of mental health problems among prison entrants. A history of mental health problems was more common among female prison entrants and close to a third of prison entrants were referred to prison mental health services as a result of their initial health assessment. More than one-third of the 549 prisoner entrants reported ever being told by a doctor, psychiatrist, psychologist or nurse that they had a mental disorder.\(^3,9\)

Exposure to secondhand smoke in prisons must be very high, even though smoking has been increasingly restricted in indoor areas.\(^5\) Ill-health due to tobacco and spending on tobacco products must create significant challenges for prisoners trying to secure a job and a safe and secure place to live once they are released from prison. Both these factors reduce the chances of reoffending and are crucial for the successful transition to life outside prison. Thibodeau and colleagues reported smoking intention prior to release from prison was predictive of smoking behaviour post-release. Belief in improved health after release was associated with non-smoking at release from prison.\(^9\)

Prisoners are part of the key target group in the Australian Government’s National Tobacco Campaign, where a $27.8 million anti-smoking social marketing campaign is being implemented to target tobacco use in high-risk and high-need groups.\(^8,9\)

### 9.6.8 Veterans

Tobacco use has historically been a part of defence force culture, with tobacco being provided and promoted to troops in the past.\(^9\)–\(^10\) Stress and trauma associated with war deployment has been associated with the uptake of smoking, resumption of smoking and overall high rates of smoking compared with the general population.\(^3,11\)

More recently, research has been conducted to determine how to effectively denormalise smoking in the military and reduce barriers to smoking cessation.\(^10\)

In 2006, the ‘Your Lives, Your Needs’ survey was conducted to assess the health and wellbeing of Australia’s Department of Veterans’ Affairs veteran community. It surveyed two groups: Veterans’ Entitlements Act 1986 clients (80% were aged 65 years plus) and Safety, Rehabilitation and Compensation Act 1988 clients (almost 60% were aged under 45). The older clients (65 years plus) were less likely to rate their health as very good or excellent compared with general community aged 65 years of age plus (21% compared with 36%). Among the younger clients, the difference was much more marked, with only 10% of veterans reporting their health as very good or excellent, compared with over 60% in general population aged 45 years and under. In 2009, 50 000 Department of Veterans’ Affairs clients had accepted one or more mental health disability claims associated with their participation in war or defence service. The most common reported conditions were post-traumatic stress disorder, anxiety, substance abuse and depression.\(^3\)

While military personnel have one of the highest rates of smoking among adults in the US,\(^104–106\) a more recent qualitative study of US defence personnel found that the primary strength of its tobacco-control program was
the provision of stop-smoking services among its military installations, which include counselling and access
to pharmacotherapy. Opinions were mixed on tobacco-control strategies for the military, with some response
favouring a tobacco-free environment, while others were concerned about the unintended consequences of a
complete ban on tobacco in the service.\textsuperscript{107} Studies of US war veterans conclude that additional effort is required to
support smoking cessation in this community of particularly high smoking prevalence.\textsuperscript{105,106,108}

A study of returned servicemen from the Iraq war and the Afghanistan war indicated an association between
heavy daily smoking and emotional numbing, suggesting that veterans suffering post-traumatic stress, smoke to
overcome trauma.\textsuperscript{107}

Less information is available about current smoking rates among either active service personnel or veterans in
Australia. Based on the relative incidence of smoking-related cancers, smoking rates among veterans of the Korean
war are believed to be higher than those of the general population.\textsuperscript{110} Smoking may interact with exposure to other
carcinogenic agents during war service, resulting in higher cancer rates in this group. A study of Australian Army
Vietnam veterans aimed to assess the relationship between military and war service with mortality and length of
life, 36 years after repatriation from the Vietnam War. Their findings indicated that mortality risks among these
veterans are linked to regular enlistment, an increased chance of not being in an intimate relationship later in
life and increased risk-taking behaviour either during service or higher rates of health-risk behaviours, such as
smoking, post-service. They concluded that increased risk of mortality among these veterans is likely to arise from
health-risk behaviour such as smoking, inactivity and poor diet, rather than from war service \textit{per se} or psychiatric
disorder.\textsuperscript{111}

9.6.9
Indigenous communities

Refer to Chapter 8 for a full discussion on smoking in Australia's Indigenous communities.

9.6.10
Vulnerable youth

While generally they enjoy very good health, there are rising rates of obesity and sexually transmissible infections
as well as higher levels of physical inactivity in young Australians aged 15–24 years. Many are using an illicit drug,
consuming alcohol at harmful levels and are burdened by mental disorders.\textsuperscript{1 Prevalence of tobacco smoking in
Australians aged 15–24 years was estimated to be 17% in 2007.\textsuperscript{1} Prevalence of asthma among Australian males and females aged 15–24 years was about 11% in 2007–08. It was
just under 12% in males aged 10–14 years and about 7% in females of the same age.\textsuperscript{1} Asthma attacks are more
common and more severe in young people exposed to secondhand smoke.\textsuperscript{1} Disadvantaged parents are much
more likely to smoke indoors than more advantaged parents.\textsuperscript{4} Asthma symptoms are more poorly managed
and more frequent in children who live in families in more disadvantaged neighbourhoods.\textsuperscript{4} Indigenous children and children of non-Indigenous lone mothers, people suffering mental disorders, people with
substance abuse problems and prisoners must all be at particular risk of harm caused by tobacco use in addition
to exposure to secondhand smoke. Spending on tobacco products in low-income families can mean reduced
expenditure on recreational activities, education and even food for children in very disadvantaged families.\textsuperscript{118} Such children are much more likely to lose a parent (and breadwinner) due to illness and premature death caused
by smoking. Absence of smoking restrictions at home is associated with increased risk of smoking uptake by
children.\textsuperscript{118,120} Smoking by parents is highly associated with the uptake of smoking and other high-risk behaviours
in children.\textsuperscript{121}

Young people from disadvantaged families who are already facing difficult personal circumstances are at
particularly high risk of taking up smoking. Concurrent use of alcohol and tobacco use during early adolescence
has been found to be associated with risk factors that are predictive of alcohol use and dependence later in life.\textsuperscript{122}
Furthermore, disadvantaged youth exposed to more substance users in their social groups report greater alcohol,
cigarette and marijuana consumption regardless of whether members of the social group provided tangible or emotional support.\textsuperscript{22}

Mental health problems in young people are strongly associated with engagement in risky behaviours.\textsuperscript{124} Smoking rates are high among young people in institutional care\textsuperscript{125} and screening and treatment for smoking is often not addressed in institutional care.\textsuperscript{126} Depression vulnerability was found to be predictive of smoking among young female college students in the US.\textsuperscript{127} Among boys admitted to psychiatric inpatient care in Finland, cannabis and hard drug use was associated with past placement in child welfare.\textsuperscript{83}

One international study suggests that smoking by adolescents may limit their subsequent life chances independent of the effects of socio-economic status.\textsuperscript{128} Anecdotal evidence suggests that smoking status in Australia may be starting to affect employability and to limit choices in housing and in dating\textsuperscript{129} and, therefore, perhaps also in the establishment of long-term relationships.
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64. Ker S, and Owens D. Admission to a psychiatric unit and changes in tobacco smoking. Clinical Practice and Epidemiology in Mental Health 2008;4(12) Available from: http://www.cpmhealth.com/content/4/1/12


Chapter 9: Smoking and social disadvantage

9.7 Explanations of socio-economic disparities in smoking

'The relation between SES and smoking patterns is complex involving cumulative and multiple effects across the human life course, possibly extending from one generation to the next.' Gilman et al 2003

Higher smoking rates among disadvantaged groups are associated with a web of interacting physiological, psychological, social, commercial, economic and cultural factors, including:

- nicotine exposure during and before childhood
- anxiety and depression
- differences in time preferences
- parental and peer example
- social modelling
- targeted and more intensive marketing
- a lower likelihood of working indoors
- representations of smoking in popular culture.

No doubt different factors are more or less important in explaining socio-economic disparities at different developmental stages and at different stages in the tobacco addiction cycle. As with other aspects of social disadvantage, many factors driving tobacco-related disparities originate in childhood and accumulate throughout the individual’s life-course. While a wealth of information is available and increasingly being collected on associations between various forms of social disadvantage and various aspects of tobacco use, understanding the causal mechanisms underlying these associations remains elusive.

One major strand of social epidemiology has used statistical analysis to try to tease out which factors most accurately predict relative rates and relative changes between groups.

An analysis of data from the 1995 Australian National Health Survey, for instance, used multiple logistic regression to examine the association of smoking status with various individual and geographic measures of disadvantage. Analyses showed that gender, age, marital status, country of birth and socio-economic position were all significantly related to smoking status. The odds of being a smoker were largest for respondents who were aged 20–34 years, were not married, had a low socio-economic standing, and were born in the Middle East, southern and western Europe for men, and the UK/Ireland and western Europe for women. The area measure of socio-economic status had a stronger association with smoking likelihood than the individual level indicators (education and income), suggesting a crucial role for the smoker’s social environment.

The Christchurch Health and Development Study, a longitudinal study of the health, development and adjustment of a cohort of New Zealand children born in mid-1977, has concluded that higher rates of cigarette smoking among young adults from socio-economically disadvantaged backgrounds arose from an accumulation of conditions that were more common in children from disadvantaged compared with those from advantaged backgrounds. The researchers concluded that mediating factors that increased the likelihood of uptake of smoking included: lower (conventionally) measured intelligence and poorer school achievement (which they estimated in combination accounted for 56% of the relationship between childhood social disadvantage and later smoking); higher rates of adolescent conduct problems (11%); and greater exposure to parental and peer smoking (26%). These conclusions did not depend on the choice of socio-economic indicators or the age at which smoking was assessed.

Some researchers assert that it is important to tease out precise differences among different social and cultural groups at various stages in the addiction and lifecycle trajectories. Other commentators question the social value...
of more replication or demonstration of inequalities, and call for a much greater focus in research on the 'black box' of how to go about reducing them.40,52-54

Beyond social epidemiology, researchers from many other academic and professional disciplines have also explored physiological, psychological and sociological factors related to social disparities in tobacco use. Figures 9.7.1 and 9.7.2 attempt to sketch out how a variety of physiological, psychological and sociological factors may be working to maintain socio-economic disparities in smoking uptake and smoking cessation.

Figure 9.7.1
Factors driving socio-economic disparities in smoking uptake

Figure 9.7.2
Factors driving socio-economic disparities in smoking cessation

Source: Thank you to Dr Ron Borland for helping to simplify a previous version of these two diagrams.
References


Tobacco in Australia: Facts and Issues


Chapter 9: Smoking and social disadvantage

Section 9.8

Are current strategies to discourage smoking in Australia inequitable?

As described in Section 9.1, smoking rates among those living in the most disadvantaged areas of Australia are double those living in the most advantaged areas. Smoking has declined in all social groups, however the plummeting in smoking prevalence in the highest socio-economic group has not to date been observed in the remaining 80% of the population (refer Section 9.2). It must be remembered that smoking rates have been higher among disadvantaged groups since long before the introduction of tobacco-control policies, and that in the absence of tobacco-control policies, they may well have greatly increased.

Whether current tobacco-control strategies are effective in reaching low socio-economic groups has been discussed by several commentators.1-4 Graham comments that the reductions seen in smoking prevalence in developed countries have come about from tobacco-control policy and subsequent cultural 'shift', where the desirability and acceptability of smoking has been eroded and smoking is increasingly viewed as socially unacceptable. Much of the gain in driving declines in smoking prevalence is attributable to tobacco-control policies, through such strategies as population-wide messages that depict the harms of smoking, and environmental regulations that limit smoking in public areas. Graham comments that these policies serve to protect public health (for both smokers and for those unwillingly exposed to smoke) and at the same time generate a shift in social norms, whereby smoking and by extension, the smoker, become increasingly stigmatised. Graham notes that although tobacco-control policy has involved a degree of stigma to effect change, smoking is now disproportionally represented in the most disadvantaged parts of populations, where there are marked inequalities in life expectancy, living standards and health outcomes. Graham recommends that tobacco-control policy and research should be conducted with an appreciation of social class and drivers of social inequality and an understanding of how social class operates to ‘produce smoking and smokers as stigmatised’.5

Overseas and local evidence strongly suggest that population strategies such as graphic television advertising of the health effects of smoking and increases in taxes on cigarettes in fact have reduced smoking across all socio-economic groups. International research on the impact of price increases has generally found higher responsiveness to price among lower socio-economic groups6-9 and emerging local evidence echoes these findings.10 Siahpush and colleagues found a strong association between real price increase on cigarettes and declines in smoking prevalence in Australia, particularly so in lower-income groups. One Australian dollar increase in cigarette price was associated with declines of 2.6%, 0.3% and 0.2% in the prevalence of smoking in low, medium and high-income groups, respectively.11 Section 9.10 contains further discussion on tobacco-control strategies and the effect on the disadvantaged.

This section examines evidence about the relative impact of population-level tobacco-control strategies on various socio-economic status (SES) groups and provides links to further discussions on social marketing in Chapter 14 and tax in Chapter 13; both of these are key mechanisms in population-wide tobacco-control strategies.

9.8.1 Impact of mass media

A meta-analysis of the most rigorous studies since 1980 on the impact of mass media advertising has shown that such campaigns are effective across education levels and different racial groups.3 In the US, low-education women seem to have been particularly responsive to media-based tobacco-control efforts.5

A detailed discussion on the impact of mass media can be found in Chapter 14, Section 14.4.
9.8.1.1

Impact of mass media in reducing disparities in smoking-related knowledge

In Australia, television advertising has been extremely effective in raising awareness of the health effects of smoking among blue collar and less educated groups.

In the mid-1980s in Australia, people with limited formal education and blue collar workers were much more likely than people with post-school qualifications and white collar workers to believe that no illnesses were caused by smoking, and that some illnesses were helped by smoking. However, studies monitoring the impact of the Quit Campaign introduced in Victoria in 1985 and the National Tobacco Campaign introduced across Australia in 1997 indicate a steady increase in knowledge among people with all levels of education about the health effects of smoking—such as emphysema, heart disease, stroke and macular disease—which were the subject of television commercials used in the campaigns (see Chapter 14, Sections 14.3.1.2 and 14.4.4 for a detailed discussion on the impact of the National Tobacco Campaign in Australia).

Data from wave 5 (2006) of the International Tobacco Control Four Country Survey indicated that more than 90% of people reported having noticed publicity on television on smoking in the last six months, with no differences in level of awareness between groups with various levels of educational attainment.

Disparities in knowledge about the health effect of smoking still exist, but these are much less pronounced in Australia than they are in the UK, where TV advertising on the health risks of smoking has been less prominent. Disparities are also much more pronounced in the case of health conditions that have not been the subject of television commercials. Data from wave 5 of the International Tobacco Control Policy Four Country Survey evaluation study indicated, for instance, that Australians with a university education were only 4% more likely than people who had not finished high school to agree with the proposition that smoking causes stroke. However, they were 15% more likely to agree that smoking causes impotence, a topic which, while it had been quite frequently reported in newspapers, has never been the subject of a television commercial or package health warning in Australia (Figure 9.8.1).

Data from Wave 8 (2010–11) of the International Tobacco Control Four-Country Survey provides a comparison to the earlier findings of Wave 5 (2006). Although health knowledge appears to have decreased somewhat—particularly so in relation to respondents agreeing that smoking causes impotence—trends by education have remained relatively consistent between survey waves—see Figure 9.8.2.
While stroke was a subject of anti-smoking television campaigns in NSW and Victoria in the year 2007, smoking-related impotence has of 2011, not been the subject of a television campaign or featured on cigarette pack warnings. For a timeline of Australian social marketing campaigns see Chapter 14, Section 14.3.

9.8.1.2

**Impact of mass media led campaigns across socio-economic groups in Australia**

See Chapter 14, sections 14.3 and 14.4 for a discussion on the impact of mass media led campaigns across socio-economic groups in Australia.

9.8.2

**Differential impact of price increases on low-income groups in Australia**

Cigarettes in Australia are among the most expensive in the world. Frequent increases in fees and excise and customs duty on tobacco products up until 2001 appear to have had a significant impact on smoking among all socio-economic groups over that time, with a significantly greater effect among those on low incomes. Among people who were still smoking at the end of the first phase of the National Tobacco Campaign in Australia (May 1997 to November 1999), the prevalence of smoking decreased more among blue than white collar groups during the second phase of the campaign (November 1999 to November 2002) when prices of tobacco products increased significantly.\(^2\) Smoking declined by 6.1% in blue collar groups and increased by 0.9% in white collar groups.

A very detailed analysis of changes in monthly smoking prevalence in response to changes in cigarette prices in each Australian state and territory between February 1991 and December 2006 showed that compared with people on moderate and high incomes, a higher percentage of people on low incomes stopped smoking in response to increases in the price of cigarettes.\(^1\)

A detailed discussion on the impact of tobacco price increases on low-income groups can be found in Chapter 13, Section 13.11.

9.8.3

**Differential impact of campaigns and price increases on disadvantaged children in Australia**

Socio-economic trends in smoking prevalence among Australian children also appear to reflect overall levels of tobacco-control funding and taxation policy.

A study of smoking among children in schools located in suburbs with varying degrees of socio-economic disadvantage in all Australian states and territories between 1987 and 2005 indicated that smoking prevalence decreased in all SES groups.\(^2\) However, the level of tobacco-control activity affected the consistency of change across different SES groups, particularly in teenagers aged 12–15 years, the period of peak smoking uptake. As indicated in Table 9.8.1, in the period of low tobacco-control funding and activity in Australia (1992–1996), smoking prevalence increased among students aged 12–15 years, with the greatest increase among low-SES students. In a period of high tobacco-control activity (1997–2005), by contrast, smoking decreased quite sharply and reductions were consistent across SES groups.

As indicated in the middle columns of Table 9.8.1, the prevalence of smoking increased very sharply in low-SES teenagers during the period of low tobacco-control activity, whereas there was little change among the higher-SES teenagers.
Published research on the effect of cigarette price on young people in Australia is somewhat limited; however a study of Scottish teens and the relationship between smoking and the young people’s personal income and parental social class provides further information in this area. West and colleagues’ analysis showed the effect of income on smoking was strongest among higher social class youths. Despite the fact that the proportion of weekly income apparently spent on tobacco was greater among lower social class youths, the association of income on smoking was weak or non-existent among lower social class youths.

9.8.4
Differential impact of smokefree policies

Evidence about the relative impact of smokefree policies on disadvantaged compared with advantaged groups is mixed. Thomas and colleagues reported that such policies generally appeared to result in greater benefits for higher income and educational groups. It is likely, however, that this finding reflects the fact that such policies have been adopted earlier in white collar environments. A study by Dinno and Glantz published in 2009 indicated that comprehensive smokefree policies covering workplaces and venues such as bars and clubs, as well as cigarette price increases, are as likely to discourage smoking among low-SES as among high-SES groups (see Chapter 15, Section 15.9.5 for further details). Very few studies in Australia have examined the relative impact of restrictions on smoking in workplaces and indoor and outdoor public places. A study in Victoria did find that significantly more persons in the lower socio-economic group (measured by educational attainment) reported smoking less after the introduction of smokefree hospitality venues in Victoria compared with those of higher socio-economic status (40% compared with 24%).

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Source: White, Hayman and HV 2008

Table 9.8.1
Chapter 9: Smoking and social disadvantage

References

1. Baum F. Cracking the nut of health equity: top down and bottom up pressure for action on the social determinants. Global health promotion. 2007;14(2):90–119. Available from: http://ped.sagepub.com/cgi/content/abstract/14/2/90


9.9

Are there inequalities in access to and use of treatment for dependence on tobacco-delivered nicotine?

Lower socio-economic status (SES) smokers tend to have higher levels of dependency on tobacco-delivered nicotine as measured by time to first cigarette in the morning, and heaviness of smoking.1 For this reason they may be more likely to benefit from services and treatment that support people to overcome cravings and to deal with slip-ups. This and their lower incomes place a special responsibility on government to ensure that such treatments and services are affordable, accessible and attractive to disadvantaged smokers.

9.9.1

Quitlines

In the US, a national telephone helpline promoted through television advertising was used more by disadvantaged groups than by other population segments.23 Data on individual-level measures of SES are not collected on callers to the Australian national Quitline, but analysis of caller postcodes provides some indication of trends within different socio-economic groups, as do population surveys that ask smokers about their use of services.

A study of calls to the Quitline in Victoria over the period January 2001 and March 2004 showed that in periods without television advertising, people living in the most affluent suburbs were 60% more likely to call the Quitline than people in less affluent suburbs.4 This finding is consistent with the greater health and consumer literacy of people with higher levels of education. Although the rate of calls was significantly higher among people from the most compared with the least affluent suburbs, there was almost no difference in call rates between the middle three socio-economic quintiles.

The study by Siahpush and colleagues also showed that increasing the level of TV advertising was at least as effective in prompting additional calls to the Quitline in lower, compared with higher, SES groups. A high level of target audience rating points (TARPs) resulted in a 273% increase in calls in the lowest quintile and a 250% increase in the highest SES quintile when compared with periods without any TV advertising.4

Data combined from waves six, seven and eight of the International Tobacco Control (ITC) Four-country Survey (years 2008 to 2010, during which time spending on media campaigns was substantially higher than the previous six years) suggests that among Australians still smoking at the time they were last surveyed, those in the lowest income group were no less likely and may have been slightly more likely than other smokers to have ever called the Quitline (Figure 9.9.2).

Figure 9.9.1
Average number of calls per month to the Quitline per 100 000 smokers, Victoria, Australia, 2001–04, by quintile of disadvantage
Source: Siahpush, Wakefield, Spittal and Durkin 2007

Figure 9.9.2
Proportion of smokers who received advice or material from the Quitline in the past year, Australia, combined waves six, seven, eight from ITC 4-country survey, 2007–10, by annual household income
Source: Data file of responses (combined) to sixth, seventh and eighth wave of the International Tobacco Control Four-country Survey, provided to Merryn Pearce of the Tobacco Control Unit, Cancer Council Victoria, by T Partos and R Borland, Cancer Council Victoria, 2012
9.9.2.1 Disparities in use of treatments

Evidence from the US suggests there may be socio-economic differences in the products and services used to quit smoking by people of different socio-economic groups, with lower-SES groups less likely to use pharmcotherapies. In addition, disparities have been observed among particular groups in receipt of prescriptions for cessation medications, and the likelihood of filling them. A study from New Zealand also reported differences in uptake of treatments by ethnicity, with persons of Pacific and Māori origin being less likely to claim nicotine replacement therapy (NRT) than persons of European origin, despite high smoking rates in the former group, and NRT being available at a subsidised rate in New Zealand.

Australian smokers may in the past also have tended to underrate the potential usefulness of services to support quitting and medicines to treat tobacco dependence and this is particularly true for smokers in low-income groups. In a review of experimental and focus group research published in 2002, smokers on low incomes were less likely to report having used NRT, with some evidence that cost is a barrier to use of this treatment. A trial intervention conducted in Australia, which offered subsidised NRT in addition to a Quitline service, found that the offer of subsidised NRT recruited double the number of low-income smokers, compared to the offer of the Quitline service alone. Sixty-three per cent of those who called were first time callers to the Quitline. Those recruited to the intervention group (Quitline service plus subsidised NRT) had higher levels of nicotine dependency than the comparison group (Quitline service only). About 73% of smokers in the intervention group attempted to quit, compared with 61% of smokers in the control group. Quitting outcomes at follow-up among the low-income smokers were comparable to quitting outcomes in other studies of mainstream smokers.

Figure 9.9.3 presents data from wave eight (2010) of the International Tobacco Control Four-country Survey. It shows prescription medication use on the most recent quit attempt among those who made a quit attempt (since last being surveyed).

The data, although a moderate sample size, shows a gradient across household income groups, with those in the lowest income households more likely than households of higher income to report using prescription stop-smoking medication in their last quit attempt. This data provides some promising evidence to suggest that smokers of lower household income in 2010 were no less likely to use stop-smoking medication to aid a quit attempt.

Figure 9.9.4 also presents wave eight data (2010) of the International Tobacco Control Four-country Survey on all smokers, not just those that made a quit attempt since last being surveyed. It shows that low income smokers were no less likely to make a quit attempt than the highest income smokers. Like Figure 9.9.3, smokers in the lower income brackets were actually more likely than those of the highest income bracket to use a prescription stop-smoking medication aid in their most recent attempt. There was quite a difference in particular between the high income groups using a prescription stop-smoking medication in their quit attempt (11.6%), compared with those in the lowest income group (18.4%). It is worth noting that these figures represent use of prescriptions medications only in the last quit attempt—so those who did not answer ‘yes’ to using a prescription medication in their most recent quit attempt...
may still have used prescription medication in previous quit attempts during the survey period (July 2010 to December 2010), or the smoker may have been prescribed stop-smoking medication but had not used it, or made a quit attempt. Therefore it is possible these figures may very slightly underestimate prescription medication use.

Bupropion (known as ‘Zyban’) has been listed on Australia’s Pharmaceutical Benefits Scheme (PBS) since February 2001 and varenicline (under the trade name ‘Champix’) since January 2008. Before 2011 in Australia, NRT was not subject to subsidies under the PBS), with the exception of NRT patches, which have been available to Aboriginal peoples and Torres Strait Islanders at a subsidised rate since March 2008. (Patches have also been available to veterans under the Repatriation Benefits Scheme since 1994—see Section 7.16.1.)

However from 1 February 2011, the listing for subsidised NRT patches on Australia’s PBS was extended to include all Australians (both general and those eligible for concessions). Figure 9.9.5 shows the substantial increase in uptake of anti-smoking medications among concession patients since the listing of subsidised NRT patches in 2011.

The number of prescriptions for anti-smoking medications processed under the Pharmaceutical Benefits Scheme increased from an average of approximately 42,000 prescriptions per month in 2009 and 2010 to more than 54,000 prescriptions per month throughout 2011. The increase in prescriptions was largely among patients eligible for concessions: the average monthly prescriptions for concession patients increased by 65% while the increase among non-concession patients was only 1.2%. While 45% of patients prescribed bupropion and 39% of patients prescribed varenicline in 2011 were healthcare card holders or other concession patients, almost 76% of those prescribed NRT were concession patients.

9.9.2.2

Disparities in compliance with treatment

A study of smokers using NRT in the general US community (i.e. NRT purchased over the counter rather than prescribed by their doctor) has indicated that those with very low incomes and those of minority status were much more likely to discontinue NRT use if they had slipped up, if they suffered side effects, or if they felt that it wasn’t helping with quitting.12

Similarly a study of smokers using cessation services in the UK (which included group program and one-to-one behavioural support, as well as the offer of pharmacotherapy) reported that at 52-week follow up, 14% of smokers of higher-SES had remained quit, compared with about 5% of smokers in the lowest socio-economic group. The researchers concluded treatment compliance was one of the factors relating to disparity in quitting success.13

Figure 9.9.4

Proportion of Australian smokers using prescription stop-smoking medications on their last quit attempt and smokers who did not make a quit attempt, 2010, by annual household income

Source: Data file of responses to eighth wave of the International Tobacco Control Four-country Survey, provided to Merryn Pearce of the Tobacco Control Unit, Cancer Council Victoria, by T Partos and R Borland, Cancer Council Victoria, 2012

Figure 9.9.5

Number of prescriptions filled for anti-smoking medications under the Pharmaceutical Benefits Scheme, Australia, January 2008 to December 2011: concession prescriptions versus ordinary prescriptions

Source: Medicare Australia 2011

Note: Includes prescriptions for bupropion (Zyban) and varenicline (Champix) from January 2008 and nicotine replacement therapy from January 2011
Disparities in provision of quit smoking advice and referral by general practitioners

Data from the seventh wave of the International Tobacco Control Four-country Survey (between October 2008 and March 2009) showed that smokers of lower educational attainment were more likely than any other group to report being advised to quit smoking by their doctor. There was a slight increase from 2006 among smokers who had completed schooling, obtained a trade qualification or completed some university reporting being advised to quit (up from 51%, 52% and 48% respectively).

There is little evidence of inequities in access to pharmacotherapies and services for treatment of tobacco dependence in Australia. However, given the higher level of dependency and less than optimal use of available services and treatments, there is still scope for improving general practitioner identification of smokers, advice to quit, and use of NRT and the Quitline by lower-SES smokers.

Figure 9.9.6
Proportion of smokers who could recall having been advised to quit by their doctor, Australia, 2008–09, by level of educational attainment

Source: Data file of responses to seventh wave of the International Tobacco Control Four-country Survey, provided to Merryn Pearce of the Tobacco Control Unit, Cancer Council Victoria, by T Partos and R Borland, Cancer Council Victoria, 2012
References


9.10

Further initiatives to reduce tobacco-related disparities in Australia

In Australia, tobacco control policy units, health promotion foundations and Quit campaigns are all greatly concerned about socio-economic disparities in smoking.

Addressing social disadvantage associated with smoking is an objective of Australia’s National Tobacco Campaign that operates under the auspices of the Australian National Preventive Health Agency (ANPHA). The National Tobacco Campaign aims to reach high-need and highly-disadvantaged groups through a multi-tiered targeted social marketing campaign. Reducing disparities and disadvantage is also subject of state-based tobacco control initiatives, including the Tackling Tobacco Program operating in NSW, and the Tobacco and Mental Health project in South Australia. The Victorian Health Promotion Foundation (VicHealth) has established a program to reduce health inequalities among Victorians though a focus within its program areas on determinants such as social connection or race-based discrimination, or risk factors including smoking and alcohol consumption. Reducing smoking among disadvantaged groups is also a key priority for Quit Victoria.

The following presents what is known about the effects of population-wide strategies and targeted interventions on disadvantaged groups and on tobacco-related disparities.

9.10.1

Effectiveness of population strategies with disadvantaged groups

A systematic review of research on the impact of population-wide tobacco control policies published in 2008 found no evidence of a greater impact on higher socio-economic groups for smoking restrictions in schools or workplaces, restrictions on sales to minors, bans of advertising of tobacco products, health warnings or multi-faced interventions. The review also found significant evidence of greater effectiveness of price increases among those with lower incomes and manual occupations. Main and colleagues’ review of 19 systematic reviews of population-level tobacco control interventions that reported on at least one socio-demographic characteristic found that few studies attempted to analyse effects by SES—something which they felt should be explicitly addressed in future reviews and in research of intervention efficacy. Overall there was little to suggest lower levels of effectiveness among disadvantaged groups. They concluded that there was preliminary evidence to suggest that increasing the unit price of tobacco may reduce smoking related health inequalities.

An analysis of nation-wide tobacco control strategies in 18 European countries found that countries with the most comprehensive policies had the highest proportion of ex-smokers. National scores on a scale measuring the comprehensiveness of national tobacco control policies were positively associated with quit ratios in all age–sex groups. High and low educated smokers benefited roughly equally from nation-wide tobacco control strategies. In addition to these three systematic reviews of the effectiveness of population-level tobacco control policies across socio-economic groups above, two papers have assessed available research and specified which strategies are most likely to reduce disparities between advantaged and disadvantaged groups. One of these identified advertising bans, smoking bans in workplaces, removing barriers to smoking cessation therapies, and increasing the cost of cigarettes as having the potential to reduce socio-economic inequalities in smoking in western European countries. The other review concluded that there was good evidence that tobacco taxation, thematically appropriate mass media campaigns and appropriate smoking cessation support services could reduce tobacco-related disparities in New Zealand.

The potential for further progress with each of these strategies in Australia is discussed below.
9.10.1.1

Taxation to reduce the affordability of tobacco products

Before April 2010, excise and customs duty on tobacco products had not increased in real terms in Australia since November 1999. On 30 April 2010, the Australian Government raised the excise on tobacco products by 25%, making Australian cigarettes among the least affordable in the world. Smoking prevalence in the least advantaged households declined significantly in Australia between 2007 and 2010, as reported in the National Drug Strategy Household Surveys. The most commonly reported reasons for changes in smoking behaviour among smokers in 2010 were because smoking was affecting their health, and because it was costing too much.

Price affects tobacco use more substantially than any other strategy, and it seems that this is particularly so among lower socio-economic groups. Australian research reports that tax increases in the past have had a substantial impact on smoking in low socio-economic groups. Several substantial reviews have examined studies assessing the effect of price increases on smoking and tobacco consumption among disadvantaged groups. Analysis of data from the International Tobacco Control Policy Evaluation (ITC) Four-country survey suggests that while behaviours to avoid high prices and tax on tobacco products are common across all socio-economic groups, low-SES smokers in the UK, Canada, Australia and the US are on average 25% more likely to engage in one or more behaviours to avoid or minimise paying tax on tobacco products compared with those of higher socio-economic status. For example, those in the low-SES group were 85% more likely than high-SES respondents to use discount brands or roll-your-own (RYO) cigarettes. Higher socio-economic groups in comparison were more likely to report traveling to an area of low-tax, purchasing tobacco duty-free or purchasing in cartons rather than individual packs. Given the findings of the analysis, the researchers concluded that reducing price differentials between discount and premium brands may have a greater impact on low-SES smokers.

For a further detailed discussion on tobacco price and impacts on low socio-economic groups, see Chapter 13, Section 13.11.

9.10.1.2

Smokefree policies

Policy interventions such as workplace smoking bans affect not only individuals but also people in the family and friendship groups of those affected.

Smokefree workplace policies reduce the amount of tobacco smoked, reduce exposure to secondhand smoke and reduce the chances of a quitter relapsing. There is also evidence that they increase quitting.

Drawing on social diffusion theory and a wealth of data collected since 1970 from the landmark Framingham study, a major US paper published in the New England Journal of Medicine in 2007 described how social behaviours such as weight loss and quitting can be spread person to person like a viral infection. A further study published in 2008 showed that ever smokers were about 70% more likely to have quit over the previous 30 years if their spouse had quit, about 25% more likely if a sibling had quit, 36% more likely if a friend had quit and 34% more likely if a co-worker had quit. A study by the John F Kennedy School of Government at Harvard University went on to use network analysis to demonstrate how workplace smoking bans could contribute to declining prevalence of smoking.

All Australian states and territories have now implemented bans on smoking in enclosed workplaces, including in hospitality venues—see Chapter 15 for further detail on smokefree policies in Australia. The extension of smokefree policies from restaurants to pubs in Victoria was reported to have a more profound impact on Victorian smokers in the lower socio-economic group (measured by educational attainment), with 40% reporting smoking less after the introduction of the ban, compared with 24% in the higher socio-economic group.

Many Australian states and territories have in more recent times, extended smokefree policies to cars carrying children, and to outdoor areas, such as playgrounds and outdoor dining areas. The implementation of smokefree
cars carrying children has the potential to reduce disparities in health outcomes, by reducing secondhand smoke exposure in children of parents that smoke.

Diffusion theory would predict that the social multiplier effects of smokefree policies will be much greater when they apply to large geographic areas and to many different sorts of venues. The effects of such policies on people in disadvantaged groups should be greater where such policies extend to more blue collar work environments and to a greater range of sporting, hospitality and retail venues.26

Extending smokefree policies to private residences has been generally thought to be beyond the bounds of regulation. Winickoff examines this notion, and points to the potential of smoking bans in high density public housing to reduce secondhand smoke exposure among the disadvantaged.27

9.10.1.3

Pictorial health warnings

Pictorial health warnings introduced in Australia in 2006 may have been more effective in gaining attention among less educated smokers than among smokers with a university education.

Figure 9.10.1 shows the frequency with which smokers of various levels of educational attainment noticed the pictorial health warnings in the first few months after introduction of the warnings in 2006.

The proportion of smokers who looked at the new warnings often or very often was 10% higher among those who had not finished high school than among those smokers with a university education. While low-SES smokers were no more likely than high-SES smokers to report thinking about the harms of smoking as a result of looking at the warnings, they were more likely to report forgoing cigarettes. While generally people with higher levels of education take a more planned approach to quitting, it could be that these graphic warnings are somewhat more effective among lower than higher SES groups in prompting action.

Data from Wave 8 (July 2010–May 2011) of the International Tobacco Control (ITC) Four-country Survey allows comparison with ITC data from 2006—see Figure 9.10.2

The 2010 data shows moderate differences between education attainment level and reading or looking at warning labels on cigarette packets. Those who had some university education were still slightly less likely than those of lower educational attainment or qualification to report reading or looking at warning labels often or very often.

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Total rarely or never</th>
<th>Total often or very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not finished high school</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Finished school</td>
<td>46</td>
<td>41</td>
</tr>
<tr>
<td>Trade qualification</td>
<td>42</td>
<td>39</td>
</tr>
<tr>
<td>University</td>
<td>38</td>
<td>38</td>
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Figure 9.10.1

Percentage of smokers rarely and frequently reading new pictorial health warnings on cigarette packets, smokers 18 years and over, Australia 2006, by level of educational attainment

Source: Data file of responses to the fifth wave of the International Tobacco Control Four-country Survey, by educational attainment and income adjusted for household size, provided to Michelle Scollo of the Tobacco Control Unit, Cancer Council Victoria, by J Cooper and R Borland Cancer Council Victoria, 2008.

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Rarely or never</th>
<th>Often or very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not finished high school</td>
<td>21.9</td>
<td>56.9</td>
</tr>
<tr>
<td>Finished school</td>
<td>22.3</td>
<td>59.5</td>
</tr>
<tr>
<td>Trade qualification</td>
<td>22.3</td>
<td>63.7</td>
</tr>
<tr>
<td>University</td>
<td>18.4</td>
<td>70.0</td>
</tr>
</tbody>
</table>

Figure 9.10.2

Percentage of smokers reporting reading or looking closely at the health warnings on cigarette packets in the past month, smokers 18 years and over, Australia, July 2010–May 2011, by educational attainment

Source: Data file of responses eight wave of the International Tobacco Control Four-country Survey, provided to Merryn Pearse of the Tobacco Control Unit, Cancer Council Victoria, by T Partos and R Borland, Cancer Council Victoria, 2012.
Research conducted in the United States reports a particular impact of pictorial health warnings among smokers of lower socio-economic status. The research found that when comparing text-only warnings with pictorial warnings, participants rated pictorial warnings as more ‘personally relevant’ and ‘effective’. Smokers of low health literacy more notably rated pictorial health warnings as ‘credible’ compared to text based warnings, yet there was no difference between ratings of credibility of pictorial and text health warnings among smokers of high health literacy.

In addition, graphic pictorial health warnings (e.g. image of fatal lung disease) were rated significantly more ‘credible’, ‘effective’ and ‘personally relevant’ among participants compared with pictorial warnings displaying symbolic imagery (e.g. tombstones representing death) and human suffering (e.g. image of adult female crying). Interactions between the type of pictorial warning and both race and health literacy were also significant, in that, pictorial warning labels with graphic images produced minimal differences in ratings across racial groups and levels of health literacy, whereas other imagery (i.e. symbolic imagery) produced greater differences. This suggests that graphic pictorial warning labels are most likely to have the broadest effect, eliciting the greatest and most consistent impact across all sub-populations of smokers regardless of race, or level of health literacy.

A new Standard consisting of two sets of seven pictorial health warnings apiece will commence rotation on tobacco products in Australia leading up to 1 December 2012, to correspond with the introduction of plain packaging. The new Standard for pictorial health warnings features some new, as well as existing images. The size of the pictorial warning has also been increased to cover at least 75% of the front surface of most tobacco product packaging. The Standard maintains the size of 90% of the back surface for cigarette packaging, but requires an increase to 75% of the back surface of most other tobacco products—see Chapter 12, Attachment 1, Section A1.1 for further details.

The data presented above suggest that new warnings required under the 2011 Standard are likely to be at least as effective with low as with high-SES groups.

9.10.1.4

Under-the-counter sales of cigarettes

With a greater density of retail outlets selling tobacco in disadvantaged areas, moves to limit the number tobacco retailers in disadvantaged neighbourhoods and/or prohibit display of cigarettes in retail areas may well have a greater impact in lower SES children and quitters at risk of relapse. All Australian states and territories have now banned displays at point-of-sale, Chapter 15 provides more detail on point-of-sale display bans.

9.10.1.5

More effective use of mass media

Researchers and managers working on the development of Quit Campaigns in Australia have gone to considerable lengths to target media placement (both in terms of timing and program and program type) and to pre-test advertisements among low-SES groups to ensure that they are attended to by people of lower socio-economic status.

Increasing interest among researchers about the differential effects of advertising style and content and the differential effects of mass media advertising among different socio-economic groups can also provide crucial guidance on advertising content. Research in Wisconsin, for instance, shows that advertisements promoting the benefits of quitting and the availability of smoking cessation services are more effective in stimulating action.
in higher SES groups. Promotion of cessation services through television might seem like an attractive idea for increasing use of services by low income groups, but may in fact result in further disparities in smoking as those in more advantaged areas would be more likely to respond.

Investigators believe that emotional narrative communication may be a better method for low-SES groups because it does not rely on explicit arguments or information (which require assessment of the merits of the message, and acceptance of the argument/message).\textsuperscript{44-46} Durkin and colleagues reported that greater exposure to advertisements containing highly emotional elements or personal stories hold promise for quitting activity in low and mid socio-economic groups.\textsuperscript{47}

Theorists\textsuperscript{48} have proposed that narrative messages (messages embedded in the lessons of personal stories) may enhance impact and persuasion through minimising smokers’ ability and motivation to counter-argue against a specific argument or message. Emotionally arousing stories are also more likely to be discussed with others,\textsuperscript{49-50} and once shared, are more likely to survive and be reproduced.\textsuperscript{51} Therefore, messages that are personally relevant and emotionally engaging are more likely to increase perceptions of susceptibility to health risks and be passed on to others through interpersonal communication. Narratives are more likely to trigger self-relevant emotional responses, because the viewer is ‘transported’ or absorbed into the emotional experience of characters with whom they identify.\textsuperscript{52,53} The use of stories in public health communication has previously been found to be very effective through education‒entertainment\textsuperscript{54} as well as in anti-smoking advertising.\textsuperscript{40} Victorian research has shown greater increases in calls to the Quitline from low-SES groups were associated with higher emotion narrative advertisements on air compared with other types of anti-smoking advertisements on air.\textsuperscript{55}

9.10.1.7

Harm reduction: a strategy of benefit for disadvantaged groups?

Disadvantaged groups tend to smoke more cigarettes each day and be more dependent on tobacco-delivered nicotine. High rates of mental health problems may also reduce the capacity of many disadvantaged smokers to quit smoking completely. For this reason several commentators have called for consideration of strategies to reduce harm among smokers who are unable to quit and who remain dependent on nicotine. This might include encouraging individual smokers who have repeatedly failed to quit to switch to Swedish-style oral tobacco (snus) which poses less risk to the individual user and creates none of the problems of secondhand smoke—see Chapter 12, Attachment 3.\textsuperscript{56} More controversially, other commentators have called for the introduction of a regulatory framework that could help shift the market away from smoked tobacco towards potentially less harmful products including snus and pharmaceutical-grade nicotine.\textsuperscript{10,57-60}

9.10.2

Encouraging greater utilisation by disadvantaged groups of cessation treatment and services demonstrated to be effective

Apart from the application of the population-level strategies listed above, encouraging better use of existing services and treatments by low-SES groups also holds promise for reducing inequalities.

Meta-analyses included in US guidelines for clinical practice show that Quitlines can improve a person’s odds of quitting by about 60% (increasing abstinence rates from 8.5% to 12.7%). Compared with placebo medication, using nicotine replacement therapy, bupropion or varenicline can almost double a person’s chances of success (increasing abstinence rates from about 14% to about 25%). If a person both uses medication and gets coaching from the Quitline they increase their odds still further. Adding the Quitline to medication increases the odds of quitting by 30% (increasing abstinence from 23% to 28%). Adding medication to the Quitline increases chances by about 70% (increasing abstinence rates from 14.6% to 22%).\textsuperscript{61,64} While many studies of cessation interventions report results stratified by socio-economic group, unfortunately reviews and meta-analyses of such studies (such as those published as part of the Cochrane Collaboration)\textsuperscript{63} rarely report on efficacy or effectiveness by socio-economic status.\textsuperscript{64} A systematic review of studies that addressed smoking cessation and improving access to smoking
cessation services among disadvantaged groups reported that although many studies collected socio-economic information, only few analysed its association with the results. However, the review did find some evidence from the studies of effectiveness of particular interventions in increasing quitting behaviour in disadvantaged groups. This is discussed further in the next section 9.10.2.1 (refer Murray and colleagues)

For a discussion on financial incentives and cessation, see Chapter 7, Section 7.17

9.10.2.1

Face-to-face counselling services?

The UK is the only developed country with a national program for the treatment of tobacco dependence, with face-to-face stop-smoking services established first in the most deprived areas of the National Health Service. These are known as Health Action Zones, and have been rolled out to all primary trusts in the country. While services attempt to target disadvantaged groups within each trust by encouraging action by health professionals in more deprived areas, the cost-effectiveness of this labour-intensive approach to smoking cessation has been hotly contested.

Supporters of these services point to data that a greater percentage of people from the most, compared with the least disadvantaged areas, are accessing the services. They argue that although a smaller percentage of people enrolling in clinics in disadvantage areas compared with more affluent areas set quit dates, the total percentage of people attempting to quit has been almost five times higher per capita in the most disadvantaged compared with the most affluent areas.

Critics point out that the percentage of the smokers accessing the service is extremely small. Because the number of smokers in more advantaged areas is smaller and the percentage who succeed in quitting is higher, overall the impact on low income smokers is probably much more modest in reducing inequalities than might be suggested by the absolute rates of quitting per capita. If more high- than low-SES smokers in each area are accessing the services and succeeding in quitting, then these services could even be increasing inequalities.

In 2010 the UK Government outlined improvements for the NHS services. A systematic review conducted to examine the effectiveness NHS stop-smoking services found some preliminary evidence that NHS services were making a modest contribution to reducing inequalities in health through their support of larger proportions of disadvantaged smokers compared with their more advantaged counterparts. The authors noted, however, that additional research was needed to determine the most effective model of treatment, given that the review suggested group treatment may be more effective than one-on-one treatment. They also recommend further specific analysis of demographic characteristics and the differential impacts/efficacy of interventions among sub-groups, to provide a better picture of the most effective treatment model.

Murray and colleagues echoed the findings of the research above by Bauld and colleagues pointing to evidence that NHS stop-smoking services are making gains in reaching smokers living in deprived neighbourhoods. Primary care does provide the opportunity to target smokers for cessation interventions, but further research is needed to determine efficacy of this approach among disadvantaged smokers and for quit rates overall. Bauld et al note that although support provided by community contacts such as pharmacists may not be as effective as intensive interventions in primary settings, these community-based providers may be in a better position to reach disadvantaged smokers not interested in attending group intervention sessions.

With much lower density of housing than is common in the UK, face-to-face services are unlikely to be feasible in Australia.
9.10.3

Developing targeted services and approaches for smokers where these are needed

A number of groups in Australia have needs that are unlikely to be adequately met by mainstream initiatives to encourage and support smokers to quit. As indicated through this chapter, initiatives targeting highly disadvantaged groups are in place in various jurisdictions and sectors in Australia, but these are not uniform across the country. Extending all services nation-wide could further assist in the reduction of smoking in highly disadvantaged groups.

The ‘Tackling Tobacco’ initiative undertaken by the Cancer Council NSW aims to encourage and support non-government social and community services to address smoking among their clients. An evaluation of program results ‘challenged assumptions and attitudes that disadvantaged people are uninterested or unable to quit’. It reported clients of these non-government social and community organisations were receptive to receiving quitting support from the trained staff in these services, and the staff providing this care report knowledge and confidence in addressing tobacco among their clients. The program results also indicate improvement in quality of life among clients who do quit smoking.\(^1\)

9.10.4

Promoting educational achievement, mental health and social connectedness

To eliminate SES disparities in tobacco use will require more than increasing quit attempts in disadvantaged groups.

Given the difficulties facing those who have established dependence on tobacco-delivered nicotine, and given that most of the current disparities in tobacco use can be attributed to differential uptake rather than differential rates of cessation, we need to do more to prevent uptake among children, particularly in disadvantaged families.

Price increases and social marketing have considerable impact on children from disadvantaged backgrounds. Youth and young adults are also sensitive to price increases in tobacco.\(^1\) It may also be worth trying to influence disadvantaged children through appeals to their parents, siblings and influential peers.\(^2\)

Appreciation of population social conditions when developing health policy\(^7\) and improvements in the social conditions which encourage uptake and continuation of smoking can help advance reductions in uptake of smoking among disadvantaged groups.

While dozens of social problems can be associated with high rates of smoking, it is evident that many of these problems stem from and could be mitigated by the prevention of educational failure in children. Young people who do well at school are more likely to understand information about health risks and are more likely to feel connected to school and to feel hopeful about their future. If they succeed in further education and get a good job, they are much less likely to end up in stressful personal circumstances, or to be part of social groups where lots of people smoke.

As Hilary Graham and her colleagues have demonstrated

\textit{education trajectories (as measured by age of leaving education and educational qualifications) are associated with smoking, with uptake in adolescence as well as current smoking, heavy smoking and quitting in adulthood. Education eliminates the effect of childhood circumstances on these dimensions of smoking status, suggesting that childhood conditions exert their influence through education. Education in turn determines adult socioeconomic position, with poor adult circumstances adding further to the risk of smoking in adulthood and reducing the odds of quitting.}\(^7\)\(^8\)

\(^8\) The ‘Tackling Tobacco’ program has also been undertaken by Quit SA (South Australia)
Preventing educational failure is partly about the science of literacy and numeracy, but it’s also about helping schools to work more effectively. Readiness for school, children’s mental health and connectedness with school and community are also important and could help to prevent development of mental health problems and a range of other social problems, all of which are highly correlated with smoking uptake.\textsuperscript{80,81}

Findings of American research on the association between social cohesion and lower smoking rates,\textsuperscript{82} and the relationship between social cohesion and self-reported health status\textsuperscript{83,84} suggests that improvements in social capital could also help to reduce smoking uptake. European research suggests that policies to reduce the ugliness and disorder of the most disadvantaged neighbourhoods and provide opportunities for young people to participate in activities that build a sense of community may reduce risk-taking behavior including smoking.\textsuperscript{85,86}

Given the crucial contribution of smoking to the perpetuation of social disadvantage, investment in measures to accelerate the decline of smoking among the less advantaged sections of the population is a public policy likely to yield substantial social as well as financial returns.

**Acknowledgements**

Thank you to Dr Ron Borland and his colleagues Jae Cooper and Timea Partos for provision of extensive data from the International Tobacco Control Policy Evaluation study, and for many discussions over the years about this topic the authors.

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Thank you to Professor Wayne Hall and Dr Coral Gartner from the University of Queensland for their extremely helpful advice and encouragement, and for provision of unpublished analyses from the National Drug Strategy Household Survey.
### Proposed interventions

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<th>Social policies</th>
<th>Expected effects</th>
<th>Expected effects on drivers of disadvantage</th>
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<tbody>
<tr>
<td>Family support, early childhood, education system and school interventions to prevent educational failure</td>
<td>Greater engagement with school and community</td>
<td>Reduced alienation</td>
</tr>
<tr>
<td></td>
<td>Increased capacity to understand probability and causation</td>
<td>Increased salience</td>
</tr>
<tr>
<td></td>
<td>Improved health and consumer literacy</td>
<td>Increased quit attempts</td>
</tr>
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### Population-wide tobacco control strategies

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<th>Expected effects on drivers of disadvantage</th>
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<td>Increase tax on cigarettes with measures to prevent excise evasion</td>
<td>Higher average cigarettes prices</td>
<td>Reduced affordability</td>
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<tr>
<td>Media releases to promote research on new health effects</td>
<td>Greater coverage of less well known health effects in popular media</td>
<td>Increased salience</td>
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<tr>
<td>Increase spending and narrative strength of anti-smoking education</td>
<td>Increase reach and effectiveness of Quit campaigns</td>
<td>Increased salience</td>
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<td>Extend smokefree policies to cars, crowded outdoor venues, outside doorways</td>
<td>Less smoking by parents, in public, in cars and at home</td>
<td>Reduced opportunities</td>
</tr>
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<td></td>
<td></td>
<td>Reduced modelling</td>
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<tr>
<td>Increase size and frequency of change of pictorial health warnings</td>
<td>More attention to pack warnings</td>
<td>Increased salience</td>
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<td>Under the counter sale of cigarettes</td>
<td>Fewer visual cues in retail environment</td>
<td>Fewer prompts</td>
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<tr>
<td>Classification of movies to take into account smoking</td>
<td>Reduction of smoking by exciting characters in movies</td>
<td>Less glamour</td>
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### Strategies to increase use of effective services and treatments

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<td>Extra promotion in disadvantaged areas through outdoor advertising, direct marketing through health professionals and incentives</td>
<td>Increased use of Quitline and courses and tobacco treatments in low-SES areas</td>
<td>Increased quit attempts</td>
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<td>Subsidy of NRT</td>
<td>Extra use of NRT and Quitline by disadvantaged</td>
<td>Greater quitting success</td>
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<td>Education and support to increase quality of use</td>
<td>Improved compliance</td>
<td>Greater quitting success</td>
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<td>Development of improved medicines</td>
<td>Greater use, compliance and word of mouth promotion</td>
<td>Increased quit attempts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Greater quitting success</td>
</tr>
</tbody>
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**Figure 9.10.3**

Interventions that could balance the factors promoting SES differentials in tobacco use
References


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Section: 9.10.4


