Evidence review: Addressing the social determinants of inequities in tobacco use

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Part One: Background

1.1 Introduction

VicHealth released *Fair foundations: The VicHealth framework for health equity* (hereafter called the Framework) in October 2013 as a planning tool to inform equity-focused health promotion policy and practice in Victoria, Australia. Eight evidence reviews have been commissioned to support the use of the Framework in relation to healthy eating, tobacco, alcohol, physical activity and mental wellbeing. The focus of this report is on tobacco use.

The Framework developed by VicHealth is consistent with the approach developed by the World Health Organization (WHO) Commission on Social Determinants of Health [1]. The social determinants of health are the social conditions in which people are born, grow, live, work, play and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels. The social determinants of health are generally responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries [1]. The social determinants of health inequities refer to the conditions and the social processes that distribute them unequally in society.

Tobacco smoking is the leading preventable cause of death and disease in Victoria, costing 4000 lives and $5 billion every year [2]. Considerable progress has been made in reducing smoking rates in the community over the past four decades. The prevalence of regular smoking (daily or weekly) among adults in Victoria has fallen from 21.2% in 1998 to 14.4% in 2011 [3]. However, there has been less success in reducing socioeconomic inequities in smoking.

As with most other high-risk behaviours, the prevalence of smoking and associated disease is significantly higher among disadvantaged groups, including low socioeconomic groups [3, 4], Aboriginal people [5, 6], people with mental illness [7], prisoners [8] and homeless people [9].

Another marker of inequity is a clear social gradient for smoking and tobacco-related disease where smoking rates are lower in the most advantaged quartile than in the second quartile, and increase with each quartile of disadvantage [10]. There is clear evidence that there is a social gradient for tobacco use and related illness in Victoria [3].
While there is strong evidence about what works in reducing tobacco use, there is less evidence about the most effective approaches to reduce inequities in tobacco. However, the evidence base has increased over the past decade.

The Framework has been developed as a tool to inform and guide efforts to improve health equity in Victoria. The Framework identifies three layers of influence and entry points for action in relation to the social determinants of health inequities. These three layers of influence are socioeconomic, political and cultural context; daily living conditions; and individual health-related knowledge, attitudes and behaviours [11].

Figure 1: Fair Foundations: The VicHealth framework for health equity

DIFFERENCES IN HEALTH AND WELLBEING OUTCOMES
• Life expectancy • Mortality rates • Morbidity rates • Self-rated health status

Differential health and wellbeing outcomes are seen in life expectancy, mortality rates, morbidity rates and self-rated health.
These differences are socially produced, systematic in their distribution across the population, avoidable and unfair.

SOCIAL POSITION

INDIVIDUAL HEALTH-RELATED FACTORS
• Knowledge • Attitudes • Behaviours

SOCIAL POSITION

DAILY LIVING CONDITIONS
• Early child development • Education • Work and employment
• Physical environment • Social participation • Health care services

SOCIAL POSITION
• Education • Occupation • Income • Race/ethnicity •
Gender • Aboriginality • Disability • Sexuality

The socioeconomic, political and cultural context creates a process of
social stratification, or ranking, which assigns individuals to different
social positions. The process of stratification results in the unequal
distribution of power, economic resources and prestige.

SOCIOECONOMIC, POLITICAL AND CULTURAL CONTEXT
• Governance • Policy • Dominant cultural and societal norms and values

Fair Foundations: The VicHealth framework for health equity
The social determinants of health inequities: The layers of influence and entry points for action

1.2 Purpose of this report

This report provides an overview of the current evidence base about the social determinants of inequities in tobacco smoking and tobacco-related health outcomes, and highlights promising approaches for promoting equitable reductions in tobacco smoking and tobacco-related health outcomes in relation to each of levels of the Framework. It is intended to provide practical, evidence-informed recommendations for promoting equity in relation to tobacco use in Victoria and across Australia.

Specifically it aims to:

1. Synthesise current Australian and international evidence describing the social determinants of inequities in relation to tobacco use;
2. Summarise the scope, nature and quality of the evidence base for promoting equity within tobacco control efforts;

3. Identify promising strategies which could feasibly be implemented in Victoria, and across Australia, at each level of the Framework and identify key policy and implementation considerations; and
4. Identify key gaps in the evidence base and make recommendations for future research priorities in relation to tobacco use and inequity.

1.3 Methodology

A rapid review of the Australian and international literature was conducted in March 2014. The search of the peer-reviewed literature was conducted using the following databases and search engines: PubMed, ISI Web of Science and Scopus (note these all include Medline), Cochrane Library and Google Scholar. A snowballing strategy was used to identify further relevant sources.

The search terms included:

- Social determinants, tobacco use, smoking;
- Social determinants, tobacco use, smoking, Australia;
- Social determinants, tobacco use, smoking, high-income countries;
- Health promotion, policy, social determinants of health;
- Health promotion, policy, legislation, social determinants of health;
- Health promotion, policy, social determinants of health, high-income countries;
- Knowledge, attitude, awareness, behaviour, smoking, tobacco, quitting, smoking cessation;
- Income, housing, poverty, neighbourhood, work, employment, tobacco;
- Equity, inequity, inequality, equality, tobacco;
- Harm reduction tobacco;
- Targeted, approach, intervention tobacco;
- Population approach, intervention tobacco;
- Mental health, homeless, Aboriginal and Torres Strait Islander, Indigenous, disadvantaged, prisoners, tobacco;
- Smoking initiation disadvantaged populations; and
- Quit smoking disadvantaged populations.

The broad scope and rapid nature of the review precluded a comprehensive systematic literature search. Rather, the focus was on providing a broad overview of the evidence base and evidence-informed recommendations on promising interventions for each level of the Framework.

A search of the grey literature was also conducted to identify relevant evidence, particularly in relation to effective or promising policy and regulatory interventions to reduce inequities associated with tobacco use.

Part Two: Prevalence and social distribution of tobacco use

2.1 Overview

Smoking greatly increases the risk of many diseases, including cancer, cardiovascular disease, respiratory diseases, peripheral vascular disease and many other serious medical conditions [12]. Exposure to second-hand smoke also causes disease and premature death in adults and children who do not smoke [13]. Half of all long-term smokers will die prematurely because they smoked [14].

Tobacco is responsible for the greatest disease burden in Australia (7.8% of the total burden in 2003) [15]. Populations in lower socioeconomic areas experience proportionally greater disease burden than populations in higher socioeconomic areas. Smoking is also one of the causes of poorer health and lower life expectancy among disadvantaged groups and Aboriginal people [15, 16]. Smoking is the leading risk factor for chronic disease in Aboriginal people, accounting for 12% of the total burden of disease and one-fifth of deaths [16].

The prevalence of regular smoking (daily or weekly) in the adult Victorian population has declined markedly over time from 21.2% in 1998 to 14.4% in 2011. In 2011, more than half of the Victorian adult population (54.8%) had never smoked [3].

However, smoking prevalence is much higher among people who are Indigenous Australians, live in disadvantaged areas, have mental illness, are unemployed or are prisoners. For example, daily smoking prevalence is 47% among Aboriginal people [6], 66% among people with psychosis [7] and 84% among prisoners [8]. Refer to Table 1.

Table 1: Estimates of smoking rates in different population groups in Australia

Group	% who smoke	Source
Australian general population	15.1 Males 16.4 Females 13.9	4
People in low socioeconomic (SES) groups	24.6	4
Unemployed people	27.6	4
People with a mental illness	32.4	17
Sole parents	36.9	4
Aboriginal and Torres Strait Islanders	47.7	6
People living with psychosis	66	7
Prisoners	84	8
People experiencing homelessness	77	9
Young people in custody	79	18
People with other substance use disorders	85	19

It is also important to acknowledge the limitations of current data collections, as many disadvantaged population groups are not adequately captured by existing survey methods and trend data on smoking prevalence are not routinely collected for these groups [20].

Tobacco-related inequities are not just related to higher smoking prevalence – disparities exist in relation to higher foetal exposure to tobacco smoke during pregnancy [20, 21, 22, 23], greater childhood exposure to second-hand smoke [23] and early smoking uptake [24].

2.2 Prevalence of smoking by socioeconomic status and education

There is clear evidence of a social gradient in tobacco use in Victoria, across a range of markers of social position. Regular smoking rates for Victorians living in low SES areas in 2011 were 17.5%, 15.6% in mid SES areas, and 11.1% in the highest SES areas [3].

Regular smoking prevalence is higher among those with lower levels of education – 18.1% among those who completed year 12 or less, compared to 12.7% among those with tertiary education [3].

The proportion of Victorian adults who have never smoked has increased over time from 50% in 1998 to 54.8% in 2011 [3]. Adults living in high SES areas (quintile 5) were significantly more likely to be "never smokers" compared to adults living in mid (quintiles 3 and 4) or low (quintiles 1 and 2) SES areas [3].

2.3 Aboriginal people

In 2008, almost half (47%) of Aboriginal people aged 15 years and over were current (daily) smokers [6].

Smoking prevalence declined between 2002 and 2008, falling from 51% to 47%. In 2008, one in five (20%) Aboriginal adults were ex-smokers, an increase from 15% in 2002.

The age-adjusted rate of current daily smoking for Indigenous Australians is more than double the rate for non-Indigenous Australians [6].

2.4 Children

Smoking prevalence among children has declined markedly over the past 25 years. In 2011, the overall rate of current smoking among Australian students aged 12 to 17 years was 6.7%. Among 12- to 15-year-olds, 4.1% were current smokers, increasing to 12.9% among 16- to 17-year-olds [25].

Victorian data shows a continued trend of declining smoking rates among adolescents. In 2011 the prevalence of current (smoked in the past seven days) and committed (smoked on

at least three of the past seven days) smoking among Victorian adolescents aged 12 to 17 years was the lowest it has been since 1984. In 2011, only 4% of Victorian students aged 12 to 15 years and 14% of students aged 16 to 17 years were current smokers [26]. Smoking behaviour becomes more common as students become older. Smoking rates among 12-year-olds was extremely low, at 2% of males and 1% of females being current smokers, increasing to 14% of male and 18% of female students at age 17 years.

2.5 Prisoners

Smoking prevalence among prisoners is very high and has not fallen over time, unlike the prevalence for the general population [8]. In 2012, 84% of prison entrants were current smokers, and around 80% of prisoners report being current smokers when they leave prison [8].

The prison population generally has strong representation of people from groups in the population with high smoking prevalence. These groups include people from low socioeconomic groups, young males, Aboriginal people, unemployed people and people with low levels of education [8]. For example, 67% of prison entrants who smoked were unemployed or unable to work at the time of entering prison and 36% had not completed year 10 or above at school [8].

2.6 People with mental illness

Smoking prevalence among those with a mental illness is high [7, 17]. In 2008, it was estimated that almost a third (32%) of the 3.6 million people who identified as current smokers had a twelve-month mental disorder [17]. Current smokers had twice the prevalence of twelve-month mental disorders compared with people who had never smoked [17].

Morgan and colleagues found that two-thirds (66.1%) of people living with psychotic disorders reported smoking, and there was little change in the three years between the surveys. Smoking was more common among males (71.1%) compared to females (58.8%) [7].

Smoking rates also appear to be higher than those of the general population for people with panic disorder, post-traumatic stress disorder (PTSD), agoraphobia and severe depression [10, 27].

2.7 Culturally and linguistically diverse communities

The National Drug Strategy Household Survey (NDSHS) reports that the current smoking prevalence for persons who speak a language other than English at home is lower than those people who mainly speak English at home (11.6% compared with 18.4%) [4].

However, this finding is not consistent across various cultural and linguistic communities, with some groups having high smoking prevalence and significant differences associated with gender. For example, Rissel and colleagues report smoking prevalence of 49% in males and 29% in females among the Lebanese community in Sydney [28]. A Victorian survey of Spanish-speaking community members found that just under one-quarter (23.8%) of those surveyed reported they smoked tobacco products regularly (daily or at least weekly). Over one-third (38%) of males reported smoking regularly compared with just 14.7% of females [29]. Other forms of tobacco use may also be common in some communities, such as waterpipe use in Arabic and African communities [30].

Migration can influence smoking uptake and quitting in various ways. For example, among immigrants from regions with low female smoking rates such as Africa and Asia, the risk of uptake of smoking among young women may increase following migration to Australia [10]. In addition, the stress associated with migration to another country may hinder quitting attempts [10]. Alternatively, Australia's comprehensive tobacco control policies and mass media campaigns may also increase quit attempts among some groups [10]. Further research on these issues would be useful.

2.8 Disparities in exposure to second-hand smoke

Exposure to second-hand smoke (SHS) causes a range of serious adverse health effects in both adults and children [13]. Children are particularly at risk because of their immature respiratory, immune and nervous systems and their lack of control over their exposure in various settings such as the home and in the car [23].

The implementation of comprehensive smoke-free laws in Australia has reduced disparities in workplace exposure to SHS across all socioeconomic groups [10]. There are, however, clear disparities in exposure to SHS in homes. Exposure to tobacco smoke in the home was highest among households with children in remote and very remote areas (10%) compared with households in major cities (5%) [23]. Children living in households in low socioeconomic areas are more likely to live in households with a smoker and were four times more likely than those in the highest socioeconomic areas to be exposed to tobacco smoke in the home (12% compared with 3%) [23].

Gartner and Hall examined the socioeconomic gap in childhood exposure to SHS between 2001 and 2010 [31] across Australia, and found that the proportion of households with children who live with a smoker declined by 17% to 35% in all socioeconomic groups, except those living in the most disadvantaged areas [31]. Half of these disadvantaged households still contained a smoker in 2010, and as a result, children in these households had high exposure to SHS [31]. However, there is some progress, with more smokers reporting they are smoking outdoors away from children. Among smoking households with children, the proportion who report that they always smoke outdoors increased from 56% to 85% between 2001 and 2010, and changes occurred across all socioeconomic groups [31].

Victorian data shows that in 2008, almost three-quarters (73%) of those surveyed reported that the regular smoker always or usually smokes outside the home, 12% reported that the regular smoker sometimes smokes outside and around one in ten (11%) stated that the regular smoker always or usually smokes inside the home. However, there were differences across the social gradient, with people who live in low SES areas less likely to report always or usually smoking outside compared with those in mid or high SES areas [32].

Data from the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) and the National Health Survey (NHS) 2007–2008 shows that 22% of Indigenous children were likely to be exposed to tobacco smoke in the home compared to 7% of non-Indigenous children [23].

Children can also be exposed to high levels of SHS in cars. In 2010, it became illegal in Victoria to smoke in a car when a child is present. Media reports suggest that police identified more than 1000 Victorians smoking in cars when children were present between 2010 and 2013. During the first twelve months, police reported 318 offences were recorded, rising to 350 in 2012–2013. However, it is difficult to know if the increasing number of offences related to a rise in incidence or reflected more effective enforcement of the law [33].

Exposure to SHS is also very high in other settings such as correctional facilities and sometimes in psychiatric hospitals and drug treatment centres.

2.9 Smoking in pregnancy

Smoking in pregnancy is a risk factor for many serious medical conditions for both the mother and child, including low birth weight, pre-term birth, placental complications and perinatal mortality [23].

In 2009, one in seven (14%) Australian women smoked during pregnancy. However, among disadvantaged groups, smoking prevalence is much higher. For example, half of Indigenous mothers (48%) reported smoking in pregnancy in 2009 (more than three times the rate of non-Indigenous mothers), and mothers in low SES areas were more than four times as likely to have smoked in pregnancy than those in high SES areas (23% and 5%, respectively). Smoking during pregnancy was also more common among mothers in very remote areas and teenage mothers [23].

In Australia, more men than women die of tobacco-related diseases [34]. However, there are also broader gender issues in relation to tobacco control. Women who smoke have an increased risk of cardiovascular disease, including coronary heart disease (CHD), stroke and subarachnoid haemorrhage [35]. Women who use oral contraceptives and also smoke have a significantly increased risk of CHD. Women who smoke also have a higher risk of a range of reproductive health problems, including painful menstruation, heavy periods, reduced fertility, pre-term birth and earlier menopause [36].

2.10 The changing equity gap for tobacco-related inequities in Victoria

Data from the Victorian smoking surveys clearly shows that over time, smoking in Victoria has declined across socioeconomic status groups in the population. What is most encouraging is that there is now evidence that the equity gap in relation to smoking is beginning to narrow [3].

In 2012, Germain and colleagues reported that regular smoking in Victoria declined by 53% – between 1984 and 2008 – falling from 33.2% to 15.5% [37]. This change was the result of both reduced uptake of smoking and increased quitting behavior.

There were also significant declines in those aged 18–29 years who report "ever smoking" (falling from 59% to 35%, a relative decline of 41%) [37]. The proportion of "never smokers" has increased over time and teenage smoking prevalence is very low, suggesting this trend of reduced uptake of smoking is likely to continue [37].

Between 1984 and 2008, quitting among those aged 30 years and over also increased, especially among low SES groups [37].

In 2011, 12.8% of adults reported smoking on a daily basis, down from 19.6% in 1998; a relative decline of 34.7%. This represents a significant decline in daily smoking amongst Victorian adults [3].

In 2012, Alexander and colleagues [3] examined smoking prevalence in Victoria between 1998 and 2011. Between 1998 and 2011, smoking prevalence declined across all socioeconomic groups. However, in the later time period of **2005–2011 the prevalence of regular smoking declined most rapidly among adults living in the most disadvantaged areas of Victoria** – reversing previous trends where smoking declines were greatest among more advantaged groups.

Alexander and colleagues report that between 2005 and 2011, the odds of being a regular smoker among adults in the high SES group declined by 2.8% on average per year for adults. However, among those in the lowest SES group, the odds of being a regular smoker declined by 5.3% on average per year between 2005 and 2011 for adults [3]. This data suggests that the equity gap for tobacco use in Victoria is beginning to narrow.

Alexander and colleagues note that this trend coincided with a period of strong tobacco control activity in Australia, suggesting that well-funded and sustained population-wide tobacco control interventions can reduce inequities in tobacco use. During this period, tobacco taxation was increased significantly for the first time in a decade, and there is strong evidence that lower SES groups are more sensitive to the increase in cigarette prices and that increasing tobacco taxation has the potential to reduce inequities in tobacco [38, 39, 40, 41, 42]. Increased funding for national and state mass media campaigns also allowed greater reach, intensity and duration of campaigns and campaign messages focused on highly emotional messages that are more effective in communicating with low SES smokers [43]. Victorian smoke-free laws were extended to enclosed workplaces, indoor licensed

premises and gaming venues [3]. The display of tobacco products at retail outlets was prohibited in Victoria and large colour graphic health warnings on cigarette packaging were introduced nationally.

Smoking rates among secondary school students have also fallen across all socioeconomic groups over the past two decades. There is evidence that the level of tobacco control funding and activity levels is an important influence on declines in smoking prevalence and specifically impacts on declines among low SES students. In a period of low tobacco control funding (1992–1996) and activity, smoking prevalence increased among 12- to 15-year-olds, with the increase being greatest among low SES students[A]. In a period of high tobacco control activity (1997–2005), smoking decreased and was generally consistent across SES groups [44]. Between 2005 and 2011 (also a period of high tobacco controls activity) decreases in smoking prevalence were similar among all socioeconomic groups [45].

Results from the 2011 Victorian smoking survey and the analysis of data from 1998–2011 provided by Alexander and colleagues suggest that these tobacco control strategies contributed to the declines in smoking prevalence among adults in Victoria, and in the more recent period between 2005 and 2011 these strategies were particularly effective in reducing smoking prevalence among people in disadvantaged areas [3].

There is also evidence that these tobacco control interventions can reduce smoking prevalence across all socioeconomic groups in adolescents [44]. Inconsistent funding to tobacco control programs that result in reductions in mass media anti-smoking advertising and other tobacco control activity increase disparities in smoking prevalence [44].

Future surveys will be able to identify if these trends continue and will also be able to provide an assessment of the impact of plain packaging and larger graphic health warnings on smoking prevalence on the general population and among disadvantaged groups.

Despite these gains, there is a need to accelerate efforts to reduce tobacco-related inequities as one in six Victorian adults from the most disadvantaged areas of Victoria smoke regularly, compared to one in nine Victorians from the most advantaged areas of the state [3]. This disparity highlights the need for a combination of proven population level tobacco control strategies complemented by enhanced targeted approaches to reduce smoking among disadvantaged groups and broad-based macroeconomic and social policies focused on reducing social disadvantage and health inequities. Together, these approaches are most likely to be effective in addressing the social determinants of inequities in tobacco use [3, 10, 46].

[A] In this study, students' residential postcode was collected and the Index of Relative Socio-Economic Disadvantage (IRSD) associated with each postcode determined SES quartiles [44].

Part Three: The social determinants of inequities in tobacco use

3.1 Social disadvantage and smoking

Tobacco use and social disadvantage are closely linked [20, 47]. Half of all long-term smokers will die due to smoking [14], and on average, smokers lose 13–14 years of their lives [48, 49]. Experiencing social disadvantage increases the risk of being a regular smoker and tobacco use compounds existing social inequalities and poverty [47]. Smoking-related disease impacts on the quality of life and family relationships of the smoker in various ways – for example, cutting short employment through chronic illness and increasing financial stress [47, 50, 51, 52]. As smoking becomes less acceptable in the general community, smokers may increasingly feel marginalised [20].

Exposure to SHS is also harmful and children are particularly at risk [23]. Children from disadvantaged groups have higher exposure to SHS in their homes and cars than children in the general population [23, 31]. Smoking by pregnant women is higher among disadvantaged groups and has long-term effects on the health of children throughout life [10, 23].

Tobacco use exacerbates the impact of poverty by reducing funds available to cover the essentials of life, including food, accommodation and clothing [20, 47, 51]. The poorest smoking households in NSW spend nearly 20% of their income on tobacco, while smoking households with the highest income spend around 3% of their income on tobacco [53]. There is also evidence that smokers are twice as likely to report severe financial stress such as going without meals or being unable to heat their home [51]. Food insecurity (the inability to access enough food every day of the year) was more common and more severe for children living in smoking households than children in non-smoking households [54].

Long-term tobacco use can also contribute to intergenerational poverty by limiting savings or accumulation of assets [10] and it may also reduce funds available for educational opportunities for children.

High prevalence of smoking among families, peers and disadvantaged communities acts to reinforce smoking as a "normal" behaviour, and the high levels of stress associated with poverty, social disadvantage and associated life challenges make it more difficult to successfully quit smoking [10, 20, 47, 51]. Children exposed to SHS are also more likely to experience illness, which can influence their learning opportunities at school and in the long term may affect their employment opportunities [13]. They are also more likely to become smokers later in life.

3.2 Socioeconomic, political and cultural factors influencing inequities in smoking

In the Framework, the first layer of influence for the social determinants of health inequities is the socioeconomic, political and cultural context, which encompasses governance, policy, and dominant cultural and societal norms and values.

Governance refers to the system of values, policies and institutions by which society manages economic, political and social affairs through interaction within and among the state, civil society and private sector. It includes the definition of needs, civil participation, accountability and transparency in public administration, and the laws, rules and practices that set limits and provide incentives for individuals and organisations [11].

Policy refers to macroeconomic and social policies, including fiscal policy, trade, labour market structures, social welfare, land and housing, education, health, medical care, transport, and water and sanitation [11]. It also includes tobacco-specific policies.

Dominant **cultural and societal norms and values** constitute an important part of the context in which policies are developed and implemented [11].

Governance

The National Preventive Health Taskforce noted that issues of governance include national economic priorities, trade arrangements, market deregulation and foreign investment, fiscal policies and the extent to which policies, systems and processes are inclusive [55]. The WHO Commission on Social Determinants recommends countries take action to address the unequal distribution of power, money and resources [1]. Addressing these structural determinants of health inequity has benefits for governments and public sector institutions as well as individuals and communities [55]. For example, strong governance and policy and regulatory frameworks underpin government policies to limit the harm associated with tobacco use and control tobacco company activities. Globally, good governance and effective policy and regulatory frameworks underpin the efforts to implement international treaties such as the WHO Framework Convention on Tobacco Control (FCTC).

Australia's governance system determines the framework for policies, legislation, services and interventions in relation to tobacco use. The prevailing Australian government ideology in relation to tobacco control, particularly over the past three decades, favours intervention in the market to reduce the catastrophic harms associated with tobacco use. As the review of Australia's Future Tax System stated, "*The strongly addictive qualities of tobacco, its serious health impacts and its uptake by minors, justify government intervention in the tobacco market. The costs that smoking imposes on non-smokers also support the case for government intervention*" [56].

Over the past forty years, Australian governments at all levels have introduced a suite of policy and regulatory interventions to control various activities of tobacco companies and to reduce the harm associated with tobacco use. These policy and regulatory measures have been essential elements of Australia's comprehensive approach to tobacco control and have

been complemented by sustained mass media campaigns, advocacy and a range of cessation support services. Australia has been recognised as a world leader in tobacco control and has among the lowest smoking prevalence in the world. Despite these approaches, inequities in tobacco use persist, although recent evidence suggests that this gap is at last beginning to narrow.

Governance systems also influence the extent to which various groups in society are able to participate in decision-making processes and the extent to which they can influence the conditions that affect their health and daily lives.

Macroeconomic and social policies

The influence of macroeconomic and social policies on tobacco and alcohol use, nutrition and physical activity is not well understood. However, these broader policies, and the systems of governance that influence them, have a fundamental influence on society and on people's daily lives, and ultimately have an influence on their tobacco use [57].

Coherent action across government portfolios such as finance, education, housing, employment, transport and health is necessary to influence poverty, insecure or poor-standard housing, education, child health, unemployment, low social capital and low-control work environments. Influencing these factors can deliver benefits both in terms of health equity and reducing levels of chronic disease and death in Australia for low SES groups and Aboriginal people and other disadvantaged groups [57, 58].

A whole of government approach has been successfully developed over many decades to reduce tobacco use across Australia. This response involves a wide range of portfolios at the state and federal level, including health, social services, treasury, finance, attorneys general, trade, consumer protection, industrial relations and education. These policies include regulation prohibiting the advertising, promotion and marketing of tobacco, comprehensive smoke-free legislation, increasing the price of tobacco, mandatory health warnings on cigarette packaging and the world's first legislation to require plain packaging of cigarettes. Complementing these policy efforts has been sustained mass media campaigns and provision of a range of cessation support services and research and evaluation.

However, there has been much less integration and policy coherence between policy efforts to influence the broader social determinants of health and policy efforts to influence chronic disease risk factors such as tobacco use.

Sociocultural norms

Whether smoking is seen as socially acceptable, desirable or appropriate within various social and cultural groups is shaped by a wide range of influences. Sociocultural norms and values influence smoking uptake, continued smoking and quitting. Over the past four decades the dominant cultural and social norms concerning smoking and tobacco control initiatives in Australia have undergone a significant change. Forty years ago, social norms strongly favoured smoking and prevalence was high (45% men and 30% of women were

current smokers) [59]. There was widespread advertising, promotion and sponsorship of tobacco, knowledge of health effects among smokers was limited, the price of tobacco was low, health warnings on tobacco packets were weak and ineffective, and anti-tobacco mass media campaigns were in their infancy. Smoking was permitted indoors in most workplaces and public places, including restaurants, shopping centres, and pubs and clubs. Smoking was also permitted on planes, trains and buses.

Over time, however, the social norms that reinforced and favoured smoking have changed [60]. Smoking prevalence has declined dramatically among adults, and young people's attitudes towards smoking and the tobacco industry have changed markedly [60]. Tobacco advertising and marketing is now almost eradicated in Australia. Restrictions on smoking in public places are widespread, and apply even in many outdoor settings. Smoking and the tobacco industry are commonly portrayed in the media in negative ways and community attitudes to the tobacco industry have also become more negative [60].

Reductions in smoking prevalence have been the result of Australia's comprehensive tobacco control programs. However, Chapman and Freeman argue it is also likely that there has been a synergistic effect on smoking prevalence from a variety of cultural influences about the depiction of smoking and the way it is talked about in news and entertainment media, in everyday conversation and on the internet [60]. Together, these factors have made a contribution to reducing motivation to smoke and creating an environment that supports non-smoking [60].

3.3 Daily living conditions

The socioeconomic, political and cultural context creates a process of social stratification that results in the unequal distribution of power, economic resources and prestige [11, 61]. Key markers of social position include educational attainment, occupational status, income level, gender, race or ethnicity, Aboriginality and disability [11, 61].

This social stratification means that different social groups have differential exposure and vulnerabilities to a range of daily living conditions that can be protective or damaging to health, including early child development, education, work and employment, the physical environment, social participation and health-care services [11, 61].

These conditions, in turn, have an influence on smoking behavior and the social distribution of smoking in Australia. People with low incomes, less education, insecure or no employment and who live in disadvantaged areas are more likely to be smokers or be exposed to SHS [4, 10, 20].

A study from the UK found that multiple disadvantage is associated with high smoking prevalence. Every additional indicator of disadvantage (for example, being unemployed, a sole parent, living in poor housing) increased smoking by 5% per indicator up to four indicators. For people with a very high level of disadvantage, smoking prevalence increased

at a higher rate (smoking prevalence increased by 10% between four and five indicators and by an additional 15% between five and six indicators) [20, 62].

Australian data from the NDSHS shows that smokers with low incomes, blue-collar occupations and lower levels of education are more likely to have smoked for longer periods of time prior to quitting [4, 10]. For example, smokers in blue-collar occupations smoked 14% longer than smokers with professional occupations, and people earning $299 or less per week smoked 38% longer than smokers who earned $800 or more per week [4, 10].

Early childhood and education

Early childhood is a critical time in human development [1, 55, 57, 63]. Early childhood provides the foundation for a child's future life, influencing the mastering of skills and future educational and employment opportunities [1, 63]. Child development and education also affect the risks of obesity, malnutrition, tobacco use, mental health problems, heart disease and criminality later in life [1, 57].

The WHO Commission on Social Determinants of Health has emphasised the importance of early childhood development – including physical, cognitive and linguistic development as well as social and emotional development. There is evidence that early childhood is the optimum and most cost-efficient time to ensure that children develop their full potential [1, 57, 63].

Educational attainment is also a well-established social determinant of health. Low levels of education are linked with poorer health, whereas higher education levels are associated with better health [64]. Education affects health through many mechanisms, influencing neural development, health literacy and health behaviours, an individual's sense of control and empowerment as well as influencing future life chances, for example income and occupation [64]. Levels of education also influence employment opportunities and income, which in turn influence housing, transport, community participation and many other determinants of health.

Employment and working conditions

Employment conditions have a direct impact on the financial security of the worker and their families. However, poor working conditions such as inflexibility, lack of job security, low pay and shift work can result in increased stress, fatigue, conflict, poor job satisfaction and higher intensity of smoking [65]. Kuovonen and colleagues [65] found that higher intensity of smoking was associated with higher job strain and low job control and low rewards.

High smoking is also associated with unemployment [66]. Unemployment is associated with psychological distress and high levels of stress, and smoking is often identified by smokers as a coping mechanism [66]. Long-term unemployment can result in social exclusion, low

self-esteem and mental health problems also associated with high prevalence of smoking [66].

There is increasing recognition of the potential of workplace prevention programs targeting healthy eating, physical activity, alcohol use and smoking. These measures can complement and reinforce community-based programs and health system initiatives [55]. The workplace is a setting where many adults spend a large proportion of their time, and therefore has the potential to reach a large number of people and provide opportunities for support and positive peer pressure to improve health [55, 67].

Physical environment

The physical environment has an influence on smoking behaviours. For example, physical environments that are poorly planned, unsafe, have limited opportunities for recreation and provide few resources to support communities may encourage and reinforce high smoking prevalence and undermine quit attempts [68]. In disadvantaged communities, smoking rates are also likely to be high and this creates social norms that reinforce smoking [20]. Smoking is also frequently viewed as a coping mechanism to help deal with life stressors such as financial pressures, boredom, living in unsafe environments and other stressful situations [20].

Other elements of the design of urban environments such as the distribution and density of retail outlets selling tobacco may also influence smoking behaviour. There is recent evidence showing that there is a higher concentration of tobacco outlets in disadvantaged areas, which may contribute to disparities in smoking prevalence and may undermine quit attempts or make it harder not to relapse [69, 70, 71, 72].

Health care

There is evidence smokers from disadvantaged groups want to quit smoking; however, they are less likely to successfully quit without assistance [20]. A range of cessation services are available to assist smokers to quit, including Quitline, online services, brief interventions from health professionals and specialised services. These interventions complement other tobacco control policies such as price increases, mass media campaigns and smoke-free legislation [73].

A review of the equity impact of tobacco control population-health programs found that mainstream smoking cessation services are likely to increase inequities because they achieve higher quit rates among high SES smokers [38, 39]. Many of the studies examined in these reviews were from the UK, which has established networks of face-to-face smoking cessation services with a particular focus on providing these services in the most disadvantaged areas.

The UK Stop Smoking Services are locally based, and although they must comply with national guidelines there is flexibility in service design to meet local needs. Services offer

behavioural support and pharmacotherapies to smokers in their local area to help them quit and there is a strong focus on assisting smokers from disadvantaged groups to quit [74].

Based on twenty studies of cessation support delivered through the UK National Health Service, Bauld and colleagues reported that quit rates were consistently lower among smokers from disadvantaged areas. To address this inequity, some services concentrated their efforts in these disadvantaged areas, and while they did achieve an increase in uptake of services, actual quit rates remained lower than in advantaged areas [75]. Some tobacco control experts have raised concerns about the effectiveness and cost-effectiveness of this labour-intensive and costly approach in comparison with population-based tobacco control programs that have been widely implemented in Australia. It has also been argued that a more effective population-level approach may be to promote self-efficacy in quitting, given that the vast majority of smokers attempt to quit unaided [76].

Smokers from low socioeconomic groups tend to have higher levels of dependency on nicotine [77] and smoke for longer before trying to quit [4, 10]. However, evidence suggests that smokers from low socioeconomic groups are less likely to use pharmacotherapies and cessation services to quit. A study from New Zealand reported low levels of nicotine replacement therapy (NRT) uptake among young people, men and Pacific and Maori people despite high smoking prevalence and the availability of subsidised NRT [78]. Strategies to increase uptake of pharmacotherapies and cessation support services could include mass media advertising by pharmaceutical companies, including encouraging smokers to use pharmacotherapies when providing brief interventions and increasing referrals to Quitline and other cessation services.

Historically, smoking has often been ignored or even promoted in some health-care service areas such as mental health facilities and drug and alcohol services [20]. While this is changing, development of smoke-free policies and integration of cessation support into routine care has been slow to develop in these areas compared to other health-care areas. This has been influenced by a range of factors, including high smoking rates among clients as well as staff and concerns that tackling smoking may have a negative impact on attendance, treatment or behaviour [10, 20]. Erroneous beliefs that people from disadvantaged groups are not interested in quitting or cannot quit have also been widespread and have often been promoted within these settings until quite recently. As a result, people with mental illness or substance use problems are less likely to be asked whether they smoke and offered brief interventions and quitting support as part of routine care [20].

Quitline services provide evidence-based advice and support to help smokers quit. Services range from simply providing a Quit booklet, through to one-off information or counselling sessions or more intensive support via a system of call backs from trained counsellors.

There is evidence that Quitlines can double a smoker's chance of quitting [79] and that more intensive support is more effective than a single call. Quitline counsellors record information

about a caller's smoking behaviour and previous experiences in quitting and encourage smokers to set a date for quitting. They also provide advice on issues such as dealing with cravings, medications that are available and strategies to help prevent relapse, and offer ongoing support via a series of call backs [10]. The Victorian Quitline also has four trained Aboriginal Quitline advisers to provide culturally appropriate support to Aboriginal smokers.

Social participation

Social participation is defined for the purposes of the VicHealth Framework as supportive relationships, involvement in community activities, civic engagement, and participation in decision-making and implementation processes.

As the National Preventive Health Taskforce [55] noted,

"*choosing to eat healthy food, being physically active, limiting alcohol consumption and not smoking requires people to be empowered to make these choices. It means that the healthy choice must be physically, financially and socially the easier and more desirable choice than the less healthy option. This is not always the case, particularly with decreasing social position*".

Empowerment, inclusion and control are important factors influencing social development and wellbeing [57]. Social exclusion can be seen among many groups in Australia (for example, among Aboriginal people or those with mental illness) and may exist as a result of class, education, gender, age, ethnicity, disability and geography [57]. Exclusion reflects inequities in wealth, power and prestige of different people and communities [57]. Policies to create an inclusive society where all groups in the community feel valued and can participate in social and economic life are vitally important to reducing health inequalities.

3.4 Individual health-related factors

The final layer of influence in the Framework is the individual level, and includes health-related knowledge, attitudes and behaviours, which result from, and are responses to, socioeconomic, political and cultural context, social position and daily living conditions. These layers of influence, inequitably distributed according to social position, create differences in health outcomes. Differential health and wellbeing outcomes are seen in life expectancy, mortality rates, morbidity rates and self-rated health [61].

People receive information and advice about smoking from multiple sources, including government, the media, family, health professionals and friends. Access to sustained, credible and informed tobacco and health messages and understanding of these messages is critical to reducing smoking prevalence.

Accordingly, mass media campaigns are a central element of a comprehensive approach to tobacco control [80, 81, 82]. Mass media refers to a range of media channels able to reach large numbers of people within a population, such as television, radio, newspapers, magazines, outdoor advertising, point-of-sale advertising and digital media [80, 83].

Mass media campaigns can have both direct and indirect effects. While campaign messages can have a direct influence on young people and adults [80, 82], they also have broader indirect effects and can contribute to efforts to denormalise smoking by influencing family and peer discussions about smoking, influencing social norms and attitudes towards smoking and supporting the implementation of other tobacco control policies [43]. Mass media campaigns are very cost-effective because of the large numbers of individuals who can be reached by campaign messages, and numerous studies have demonstrated that returns on investment exceed the costs of the campaigns [80, 81, 83].

The evidence that public education campaigns are effective at reducing tobacco use is extensive:

- The 2012 US Surgeon General's report, *Preventing Tobacco Use Among Youth and Young Adults*, concluded that mass media campaigns can be one of the most effective strategies in changing social norms and preventing youth smoking. Influential and successful campaigns require adequate funding, appropriate campaign messages, adequate intensity, and repetition. The campaign message format and emotional tone also influence effectiveness. There also is strong evidence that media campaigns designed for adults can decrease the prevalence of smoking among young people [24].

- A comprehensive report released in June 2008 by the National Cancer Institute (NCI), *The Role of the Media in Promoting and Reducing Tobacco Use*, concluded that anti-tobacco media campaigns are effective in reducing smoking among young people and adults. Campaigns with a strong emotional appeal are likely to have the greatest impact on smokers, and young people can be positively influenced by anti-tobacco advertisements aimed at adults [82].

- The 2014 report of the US Surgeon General, *The Health Consequences of Smoking – 50 Years of Progress*, also found that mass media campaigns and comprehensive tobacco control programs can prevent the uptake of smoking among young people and reduce the prevalence of tobacco use among youth and adults. The report recommended that high-impact national media campaigns be conducted in the US with high frequency and exposure throughout the year and should be sustained for the next decade to reduce the prevalence of smoking [84].

In summary, mass media campaigns reduce the number of young people who start smoking [24, 82, 84, 85], increase the number of smokers who quit [43, 80, 81, 82, 84], and reduce smoking prevalence in youth and adults [43, 80, 84, 86, 87], saving lives and health-care resources.

For example, the Australian National Tobacco Campaign (1997–2000) was a collaborative federal and state government initiative, featuring television advertisements aimed at 18- to 40-year-olds with the message "every cigarette is doing you damage", together with an advertisement encouraging smokers to call the Quitline service [81]. Evaluation of the campaign showed a reduction in the adult prevalence of smoking in Australia of 1.8% [88].

There were also increases in intention to quit and quit attempts, and an increase in one-year quit rates [81]. These effects applied to males and females, older and younger age groups, and smokers and recent quitters at all levels of educational attainment and occupational status [81].

In 2012, the US Center for Disease Control and Prevention (CDC) developed a national anti-smoking campaign, called Tips From Former Smokers (Tips), featuring hard-hitting, emotionally evocative television advertising messages about smoking-related disease in real people [89]. Recall of the campaign was high among smokers and non-smokers. Quit attempts among smokers rose from 31·1% at baseline to 34·8% at follow-up, a 12% relative increase [89]. At follow-up, the abstinence rate was 13.4% among smokers who had made a quit attempt [89], which translates to an estimated 1·64 million additional smokers making a quit attempt, and 220,000 who remained quit at follow-up. Non-smokers encouraged family and friends to quit smoking as a result of the campaign and community discussion about the dangers of smoking increased. McAfee and colleagues estimated that the increase in quitting among smoking and those who achieved sustained quitting could have added from a third to almost half a million quality-adjusted life-years to the US population [89].

Wakefield and colleagues examined the impact of tobacco control policies on Australian adult monthly smoking prevalence between 1995 and 2006 and found that increasing the price of tobacco and mass media campaigns had the greatest impact on reducing smoking prevalence of all policies studied [90]. Wakefield and colleagues reported that a 0.3-percentage-point reduction in smoking prevalence could be achieved by either exposing the population to televised anti-smoking advertisements an average of almost four times per month or by increasing the costliness of a pack of cigarettes by 0.03% of gross average weekly earnings [90]. In 2008, a 0.3% reduction in prevalence translated to around 60,000–95,000 fewer smokers, up to half of whom would die prematurely if they continued smoking [91].

The effects of mass media campaigns on smoking prevalence occur relatively quickly; however, in the absence of continued high-intensity advertising, the effects dissipate rapidly [90]. Although people may recall advertising for a long period after a media campaign ends, recent media exposure is required to achieve behaviour change. To achieve maximum effectiveness in reducing smoking prevalence, the population must be exposed to the campaign messages at appropriate intensity and at frequent intervals [90].

Family and peer influences

The smoking status of parents is an important influence on the smoking behaviour of their children. Children are much more likely to take up smoking if their parents or peers are smokers [86]. For example, Victorian students aged 12–15 years, who reported that both parents smoked, were more than twice as likely to have experimented with smoking and about three times more likely to be regular smokers than students with non-smoking

parents [59]. Students with parents who were non-smokers were more likely to be never smokers [59].

Adolescence is a critical period, when children are more vulnerable to influences that may encourage them to smoke or experiment with tobacco [24]. The behaviour of their peer group is particularly influential, as young people are more likely to use tobacco if their peers also smoke [24].

Family and peer groups also have an important influence on supporting quit attempts by smokers – for example, adults are more likely to quit if family and friends have also quit [59].

Therefore, recent declines in youth smoking and adult smoking, particularly among low socioeconomic smokers, are likely to have benefits in changing smoking norms, reducing uptake by young people and encouraging quit attempts.

Part Four: What can be done to address the social determinants of inequities in tobacco use?

Evidence regarding effective strategies to reduce inequities in tobacco use has been growing in recent years. While there is strong evidence in relation to some issues – notably pricing policies and mass media campaigns, evidence on other strategies is somewhat limited.

4.1 Influencing the socioeconomic, political and cultural context – what works?

4.1.1 Comprehensive approach to tobacco control policy

Reducing the prevalence of smoking among disadvantaged groups requires a long-term comprehensive approach to achieve change [41, 85, 92].

Encouragingly, there is increasing recognition among policymakers and the public health field about the importance of reducing health and social inequities associated with smoking in Victoria and across Australia. For example, The National Tobacco Strategy 2012–2018 [73] places a strong emphasis on reducing the health inequities arising from smoking among populations in Australian society with a high prevalence of smoking. The VicHealth Action Agenda for Health Promotion also recognises the importance of reducing harm in groups where smoking remains common.

Increasing the price of tobacco and mass media campaigns are proven tobacco control strategies that have been effective in reducing smoking prevalence across all socioeconomic groups [20, 37, 90]. Smoke-free laws are also effective in reducing consumption of tobacco and prompting quit attempts among all socioeconomic groups [20]. There is also an emerging body of evidence supporting the integration of tobacco control strategies into social and community service organisations that already have close links with their clients from disadvantaged groups with very high smoking rates [20, 47].

The level of tobacco control funding also has an influence on declines in smoking prevalence across socioeconomic groups in young people [44]. An Australian study examined smoking prevalence among children in schools from varying SES backgrounds between 1987 and 2005 [44]. The study found that when funding was low (1992–1996), smoking prevalence among 12- to 15-year-olds increased, particularly among low SES students, and that when funding and tobacco control activity was high (1997–2005), smoking declined and reductions were broadly consistent across all socioeconomic groups [44].

4.1.2 Tobacco-specific polices

Pricing policies

There is strong evidence that increasing the price of tobacco is one of the most effective measures to reduce tobacco consumption [38, 39, 40, 41, 90, 93]. Price increases are an effective tobacco control policy that increases quit attempts and reduces consumption of

tobacco, and is particularly effective at reducing tobacco use among smokers with low incomes and young people [40, 41, 90].

A number of reviews of the equity impact of population tobacco control interventions have concluded that there is strong evidence that increases in tobacco price have a beneficial effect on socioeconomic disparities in smoking [20, 38, 39, 40]. Wakefield and colleagues found a strong association tobacco price increases and reductions in smoking prevalence in Australia, particularly among smokers on low incomes [90]. 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 [90].

The Australian government has committed to regular increases to the price of tobacco to reducing smoking prevalence. This measure is likely to have a significant impact in reducing smoking prevalence among people experiencing disadvantage. A tobacco tax increase of 25% in April 2010 substantially increased the price of tobacco – the first real-terms tobacco tax increase in Australia in a decade. Four tobacco excise increases (of 12.5% each year) will be implemented over four years commencing 1st December 2013. This staged approach is likely to maximise quitting attempts by price-sensitive smokers over time, while providing time for smokers to adjust their consumption and their household expenditure on tobacco and non-tobacco items [55].

It is true that for individual smokers who do not quit or cut down as a result of price rises, the economic burden of smoking increases [94]. However, the evidence clearly shows that decreasing the affordability of tobacco is an effective intervention to reduce inequities in tobacco use. Because low-income smokers are more responsive to price increases than more advantaged smokers, their consumption of cigarettes will generally fall more sharply, and their relative financial burdens from smoking are more likely to be reduced [40]. Even smokers who have great difficulty quitting or choose not to quit can reduce the economic burden to some extent by reducing the number of cigarettes smoked [95].

As the World Bank identified, increasing the price of tobacco reduces smoking prevalence and intensity, especially among young people and disadvantaged groups, which in turn results in a reduction in tobacco-related illness and deaths and an increase in life expectancy [40]. The health consequences of tobacco consumption are devastating, especially for people facing multiple disadvantages who may also have reduced access to health care and poor health literacy [40]. As a result, mortality and disability rates among the poor are much higher when they develop chronic illnesses [40].

Additional strategies may be beneficial to provide further encouragement and assistance to low-income and vulnerable populations to access extra support to quit smoking [55, 93]. These may include greater promotion of and access to subsidised NRT, additional quitting support (e.g. through Quitline, health services or through social and community service organisations) and strategies to improve self-efficacy in quitting. There is a need to carefully monitor the impact of increases in tobacco prices on disadvantaged groups on both smoking

behaviour and levels of financial stress in order to identify and minimise any unintended consequences associated with this policy.

Smoke-free laws

There is strong evidence that smoke-free legislation prompts quit attempts and reductions in consumption in the general population [96].

Thomas and colleagues [39] reported that there was weak evidence that restrictions on smoking in workplaces may be more effective for staff in higher occupational groups. However, Scollo [10] argues that this finding may reflect the delayed introduction of these policies in blue-collar workplaces compared with white-collar workplaces.

A review by Hill and colleagues [38] found that there is mixed evidence on the impact of smoke-free legislation on socioeconomic inequities in tobacco exposure in public places or workplaces. They reported that several cross-sectional studies demonstrate higher workplace exposure to tobacco smoke among disadvantaged social groups. Hill and colleagues also report that the effect of smoke-free legislation on this disparity is unclear [38].

Another evidence review on smoking and disadvantage found that comprehensive smoke-free policies covering workplaces and venues like bars and clubs are effective in reducing smoking across all socioeconomic status groups [20].

In 2007, 95% of indoor workers in Victoria reported smoking bans in their usual area of work compared with 91% in 1998. Total smoking bans were more common in indoor workplaces (95%) compared with outdoor workplaces (50%) and workplaces in which work is undertaken primarily in vehicles (81%) [97]. However, there were increases over time in the proportion of outdoor workers, vehicle workers, warehouse workers and hospitality workers reporting total smoking restrictions at their usual area of work between 1998 and 2007 [97]. Workplace smoking restrictions increased over time for all workers across all socioeconomic groups, although there was a slightly greater rate of change over the past decade among more advantaged groups [97].

It would be useful to examine whether this trend of increasing smoking bans has continued since 2007, particularly in relation to outdoor workers, vehicle workers and lower-paid workers, and to identify any inequities that may persist.

A study by Dinno and Glantz published in 2009 indicated that comprehensive smoke-free policies covering workplaces and venues such as bars and clubs are likely to discourage smoking among all socioeconomic groups [98]. A study in Victoria reported that more lower socioeconomic smokers (measured by educational attainment) reported smoking less after the introduction of smoke-free hospitality venues in Victoria compared with those of higher socioeconomic status (40% compared with 24%) [99].

There is evidence that smoke-free legislation in Scotland was associated with a reduction in childhood asthma admissions across all socioeconomic groups [100]. A recent systematic review of the effect of smoke-free legislation on perinatal and child health outcomes found that smoke-free legislation is associated with substantial reductions in pre-term births and hospital attendance for asthma [101].

The introduction of comprehensive smoke-free policies in prisons will reduce inequities in smoking and exposure to SHS. There is evidence that a prison sentence increases smoking behavior [8]. Around 5% of prisoners who were non-smokers on entry to prison reported that they started smoking while in prison, while around one-third of discharged prisoners were smoking more heavily on exit from prison [8]. However, almost half (46%) of prison entrants who were current smokers expressed a desire to quit smoking [8].

Strategies to reduce smoking prevalence in prison will require a comprehensive approach that considers the unique aspects of the prison environment and culture. As an Australian Institute of Health and Welfare report [8] notes,

"Tobacco smoking is a major and established part of prison culture, serving a variety of purposes for prisoners including as a common ground for socialising or as a means to relieve the boredom of prison life. It may be used as a form of currency; a means of social control; a symbol of the few remaining privileges the group has; and as a form of stress relief ... Smoking can also help prisoners deal with stressful situations such as transfers, court appearances and prison visits".

The prison environment poses a number of challenges to smokers trying to quit. These include high stress levels associated with incarceration, crowded conditions where non-smokers and smokers may share cells, high levels of nicotine dependence among those who smoke, and lack of access to medications (e.g. NRT) and cessation services [8]. Smoking is also seen by many prisoners as a means of relieving boredom and it has been suggested that additional recreational or educational opportunities may be beneficial [8].

On 1 July 2011, New Zealand became the first country in the world to introduce a total ban on smoking in prisons. In the initial period there were issues with contraband and black market trading in cigarettes that were able to be managed by stronger security checks. Underpinning the success of the New Zealand implementation were an intensive twelve-month preparation phase prior to the introduction of smoke-free restrictions, provision of accessible and appropriate cessation support and a comprehensive approach within the prison setting covering both indoor and outdoor areas, simplifying enforcement [8].

In Australia, the Northern Territory and Queensland have also legislated to require smoke-free prisons. In November 2013, the Victorian government announced that all Victorian prisons will be smoke free by July 2015 and that amendments to the Tobacco Act 1987 will ensure the ban will cover both public and private prisons [102]. Prisoners and corrections staff will be able to access NRT and other cessation support services as required as part of the implementation [102].

Plain packaging and labelling

Prior to the introduction of plain packaging, the cigarette pack was an important tobacco marketing tool in countries such as Australia where traditional forms of advertising are banned [103]. From 1 September 2012, all tobacco manufactured for sale in Australia must be contained in plain dark brown packs, with 75% front-of-pack graphic health warnings and the brand name and variant limited to a standardised font size and type. This requirement strengthened the previous legislative arrangements in place from 2006 that mandated graphic health warnings covering 30% of the front of the pack [103].

Australia is the first country in the world to implement plain packaging which is expected to reduce the appeal of tobacco for young people, increase the effectiveness of health warnings about tobacco and challenge erroneous beliefs about the relative harms of different brands [103]. Evaluation of the early impact of plain packaging on smokers as policy implementation commenced found that smokers of these plain packs rated their tobacco as being lower in quality and satisfaction and were more likely to think about quitting [103].

A comprehensive evaluation of the effectiveness of plain packaging is currently being completed. It will be essential that the evaluation include detailed analysis of the impact of this intervention across the social gradient.

Two reviews [38, 39] reported on the equity impact of health warnings and found no consistent evidence of differential effects on smoking behaviour by education or on smoking attitudes or behaviour by gender. The impact of the larger health warnings implemented at the same time as plain packaging will provide additional data and should include analysis across all socioeconomic and educational groups.

Sale of tobacco to children

Thomas and colleagues reported on interventions that included education of retailers and the community, enforcement of legislation or both, and concluded there was insufficient evidence to determine the equity impact of this policy [39]. The evidence is inconsistent in regard to gender, ethnicity and age. There was no evidence about possible differential effects by income, occupation or educational level [39]. Enforcement is the critical factor influencing the effectiveness of the approach in reducing adolescent smoking.

Advertising and promotion restrictions

Hill and colleagues reported there is also insufficient evidence to determine the equity impact of legislation prohibiting the advertising, promotion and marketing of tobacco [38]. The WHO European Regional Office report on Tobacco and Inequities [93] also found no evidence of a social gradient in impact, but noted there was inadequate evidence to assess this policy. The report also noted there was evidence of the tobacco industry targeting marketing at more vulnerable groups and recommended the introduction of comprehensive

bans on tobacco advertising. These comprehensive restrictions are already in place in Australia.

Electronic nicotine delivery systems

Electronic nicotine delivery systems (ENDS), also called e-cigarettes or electronic cigarettes, are battery-operated devices that contain a mechanism that heats a cartridge, producing vapour that the user inhales. Some e-cigarettes contain nicotine while others do not [104]. Disposable and refillable cartridges are available. The sale, supply and purchase of ENDS containing nicotine are illegal in many Australian jurisdictions [104].

Quit smoking products in Australia are regulated by the Therapeutic Goods Administration (TGA), which must authorise the importation, supply and sale of all legal therapeutic goods [104]. Currently, no application has been made to the TGA for ENDS for medically supervised use to quit smoking. Rates of use remain low at this time compared to some other countries such as the UK [105].

Tobacco control experts remain divided about the role and the risks of benefits of e-cigarettes within a comprehensive tobacco control framework. Pepper and Brewer describe the current safety information on e-cigarettes as being at an early stage and inconsistent. They also note that policy and regulatory approaches differ widely between nations and that there is substantial concern that interest and use of the product is increasing in the absence of a research base or consensus about the risks and benefits of the product [106].

Many tobacco control experts are concerned that e cigarettes could contribute to normalising smoking and may prevent smokers from quitting by maintaining their nicotine addiction or deter them from using effective cessation tools [106, 107]. There is also concern about the potential uptake of e-cigarettes among young people and progression to smoking among teenagers who may have otherwise never used any form of nicotine delivery device [107]. Current e-cigarette users who are former smokers frequently state that they use these products because they believe they are healthier than regular cigarettes; however, the long-term impact of the use of these products is unknown [107].

In contrast, other tobacco control experts argue that e-cigarettes are likely to be an effective harm-reduction product providing an alternative to regular cigarettes among adult tobacco smokers and could offer an additional pathway to quitting. A study of smokers not intending to quit found an 8.7% smoking cessation rate at one year with few major side effects. The study concluded that the use of e-cigarettes, with or without nicotine, decreased cigarette consumption and improved tobacco abstinence [108]. Another study from New Zealand, involving smokers wanting to quit, found that e-cigarettes, with or without nicotine, were modestly effective at helping smokers to quit, with similar abstinence rates as nicotine patches, and few major side effects [109].

A UK study found that smokers who had used e-cigarettes to quit were more likely to be abstinent at twelve months than those who used over the counter NRT products or an

unaided quit attempt [110]. In this study, heavier smokers were more likely to use treatment and low SES smokers were less likely to use e-cigarettes.

In June 2013, the UK Medicines and Healthcare Products Regulatory Agency (MHRA) announced that it would regulate e-cigarettes and other nicotine-containing products as medicines. The National Institute for Health and Care Excellence (NICE) guidance on tobacco harm reduction recommends the use of licensed e-cigarettes for use in a harm-reduction approach to smoking, which would allow e-cigarettes to be prescribed on the NHS once a licence was granted [111].

A recent four-country study found higher awareness of e-cigarettes in the US (73%) and UK (54%) compared with Australia (20%) and Canada (40%). Awareness of ENDS was higher among younger, non-minority smokers with higher incomes who were heavier smokers. Younger, occasional or weekly smokers with high incomes and those who perceived ENDS as less harmful than traditional cigarettes were more likely to try ENDS. Current use was higher among both non-daily and heavy smokers. Around 80% reported using ENDS because they were considered less harmful than traditional cigarettes; three-quarters (75%) reported they used ENDS to help reduce their smoking; and 85% reported they used ENDS to help them quit smoking [105].

Internationally, policy responses and advice issued by governments vary considerably. For example, Brazil bans the sale, import and advertising of ENDS, while Finland only prohibits advertising of the product. In the US, e-cigarettes are permitted and the Food and Drug Administration (FDA) regulates those marketed for therapeutic purposes and proposes to extend this control to all e-cigarettes. Wales has recently announced the government is considering banning e-cigarette use in indoor public places.

In 2014, the Western Australian Supreme Court ruled that a WA business, *HeavenlyVapours*, sold a product designed to resemble a cigarette which was in breach of the Tobacco Products Control Act 2006 (WA) [112]. Section 106(a) of the Tobacco Products Control Act 2006 (WA) states that

"A person must not sell any food, toy or other product that is not a tobacco product but is –
(a) designed to resemble a tobacco product".

The court found that e-cigarettes look like a cigarette, are shaped like a cigarette and the steam or vapour looks like smoke, and therefore are in breach of the legislation [112]. This ruling has effectively prohibited the sale of e-cigarettes in WA. The majority of states and territories have similar clauses in their tobacco legislation and it would be desirable to clarify the extent to which these provisions apply to e-cigarettes.

The use of e-cigarettes remains controversial. More research is urgently needed to clearly establish their overall benefits and harms at both individual and population levels [109]. There is insufficient evidence to identify the potential equity impact at this time.

Regulating the content and disclosure of ingredients of cigarettes

Regulating the content and disclosure of ingredients of tobacco is an emerging area of tobacco control. It has been identified as an important issue by the WHO FCTC and several countries have introduced legislation to control cigarette ingredients or mandate reporting arrangements.

Australia currently has regulations prohibiting the sale and marketing of confectionery and fruit-flavoured cigarettes in most states and territories and a mandatory national standard requiring reduced fire-risk cigarettes. Australia does not currently regulate other aspects of the contents of tobacco products.

The disclosure of cigarette ingredients is covered by a Voluntary Agreement between the Australian government and the three main tobacco companies in Australia [113]. Around 200 cigarette ingredients are disclosed by the tobacco industry under the Voluntary Agreement as well as additional ingredients used in papers, filters, adhesives and inks [113]. The majority of ingredients disclosed in Australia are identified as having a flavour function [113].

The preamble to the WHO FCTC [41] states that parties recognise *"that cigarettes and some other products containing tobacco are highly engineered so as to create and maintain dependence"*.

A range of tobacco additives can be used to improve flavour and aroma of cigarettes and decrease the harshness of tobacco to create a milder cigarette that is easier to smoke [114, 115]. Tobacco industry documents demonstrate the importance to the industry of minimising the irritation and harshness of tobacco. These characteristics can act as a barrier to young people and novice smokers experimenting with tobacco [115, 116] and a variety of methods have been used to minimise these unfavourable characteristics, including: adding various ingredients/additives, eliminating substances with irritant properties and balancing irritation with other sensory effects [116].

Many tobacco products contain added sugars and sweeteners such as glucose, molasses, honey and sorbitol [115, 116, 117]. High sugar content improves the palatability of tobacco products to tobacco users [116, 117]. WHO FCTC Guidelines note that masking the harshness of cigarette smoke with flavours and various additives contributes to promoting and sustaining tobacco use [116]. There is also evidence that the engineering of cigarettes, in particular the use of filter ventilation, is an important influence on creating a milder smoking experience more acceptable to children and novice smokers [118].

The WHO FCTC [41] states that

"Regulating ingredients aimed at reducing tobacco product attractiveness can contribute to reducing the prevalence of tobacco use and dependence among new and continuing users".

Several countries, including Canada, the US, Thailand and Brazil, have regulated tobacco additives and disclosure arrangements. Regulatory approaches in Canada and Brazil prohibit

all flavour additives except for a very limited number of additives specified in the legislation [119, 120, 121]. In the US, the Family Smoking Prevention and Tobacco Control Act (Tobacco Control Act) gives the FDA the authority to regulate the manufacture, distribution and marketing of tobacco products to protect public health [122]. Cigarettes cannot contain any herb or spice or characterising flavours (other than tobacco or menthol) [122].

In February 2014, the European Parliament approved a revised European Union Tobacco Products Directive which prohibits cigarettes and roll-your-own tobacco with any characterising flavour other than tobacco [123]. Menthol is considered a characterising flavour and will be phased out over four years. A limited number of additives deemed necessary for the manufacturing of tobacco will be permitted. Mandatory reporting on ingredients will be provided through a standardised electronic format [123].

This is an emerging issue in tobacco control and momentum is building at the international level as more countries regulate the use of tobacco additives in order to reduce their attractiveness, particularly to young people. There is insufficient evidence to determine the equity impact of these approaches at this time.

4.1.3 Macroeconomic and social policies

There are relatively few social policies and legislation that explicitly consider tobacco. However, as discussed earlier in the report, policies that promote early child development, education, planning and working conditions can influence inequities in tobacco use. There is a need for better integration between universal policies and targeted approaches to reduce inequities in tobacco use.

4.1.4 Continuing efforts to denormalise smoking

Recent Australian and international tobacco control policy documents refer to the importance of continued efforts to denormalise smoking in the community. Voight [124] suggests that these denormalisation strategies seek "*to change the broad social norms around using tobacco – to push tobacco use out of the charmed circle of normal, desirable practice to being an abnormal practice*". Denormalisation strategies aim to influence social norms surrounding the relevant behaviour by reducing both the visibility and acceptability of the behaviour because making a behaviour less socially acceptable can motivate people to change and may also influence community support for related issues [124].

Different policies and programs can contribute to denormalisation efforts in different ways. For example, smoking restrictions provide protection from the harms of SHS as well as reducing the acceptability and visibility of smoking [124]. Smoke-free laws help establish non-smoking environments as the "norm".

Mass media campaigns also have a strong influence on denormalising smoking. Durkin and colleagues state that mass media campaigns can successfully influence an individual's knowledge, attitudes and smoking behaviours and prompt quit attempts [43]. However, mass media campaigns also increase discussion about tobacco in social groups (i.e. among

families, peers and communities) and this discussion may prompt quit attempts or influence attitudes and social norms about smoking. Campaigns may also increase support for other tobacco control policies that may in turn prompt quit attempts [43].

Among many disadvantaged groups, the social and cultural norms that favour smoking have been slower to change. Population groups with higher smoking rates are more likely to be in environments where smoking is the norm and to have family and friends who smoke, and are less likely to be supportive of quit attempts [20]. In communities and social groups where smoking prevalence is high, smoking is often an important part of daily life and social relationships [20]. For example, many Aboriginal people report that smoking is strongly linked to social and family relationships and social interaction, with the majority of family and friends smoking [125, 126]. Where smoking is seen as the norm, and family and friends smoke, it is more difficult for smokers to quit and remain abstinent [127].

Ivers suggests that Aboriginal tobacco control programs that include a focus on the social context of smoking may be effective in reducing smoking prevalence [127]. Community involvement at all stages of the program and a holistic approach are also important factors influencing success of tobacco control programs for Aboriginal people [127]. Johnston and colleagues [128] recommend a focus on changing social norms around smoking at both the community level and within young people's social and family groups to prevent uptake of smoking by young Aboriginal people. Johnston and colleagues also suggest that settings for these approaches should include schools and families and that promotion of smoke-free homes should be an important element to challenge smoking as the norm [128].

Adolescence is a key time for experimentation with smoking and new cohorts of young people are progressively become teenagers in social environments where non-smoking is increasingly becoming the norm. Adult smoking is an important influence on the smoking behaviour of young people, in particular parental smoking [59, 62]. Adults are also more likely to quit smoking if their family and peers quit [59, 62]. Therefore, recent reductions in smoking among low SES groups in Victoria can be expected to have benefits for smokers, their social groups and their children.

In settings such as prisons, where smoking prevalence is high, comprehensive smoke-free policies that encourage and support inmates and staff to quit are likely to contribute to changing entrenched smoking cultures and norms. The experience of New Zealand in this regard is likely to be a promising model to inform Australia's approaches [8].

The vast majority of smokers experience regret about having ever started smoking [129]. Apart from the health risks of smoking, smokers also identify the social unacceptability of smoking as an important reason to quit [60]. However it is important to ensure that efforts to denormalise smoking are implemented within a framework that takes account of the social context of smoking and does not stigmatise smokers or increase existing inequities [124]. Population-wide approaches to encourage the denormalisation of smoking and promote quitting should be continued, including price increases, mass media campaigns and

implementation of comprehensive smoke-free laws and policies, especially in environments where smoking is high (e.g. prison environments, Aboriginal communities, mental health facilities). There is a need for more evidence about effective tobacco control programs for Aboriginal people.

4.2 Influencing daily living conditions – what works?

Actions at this level of the Framework seek to improve the conditions in which people are born, live, work and play in order to reduce disparities in tobacco use and promote environments that support smoke-free lifestyles.

An equity-focused social determinants approach to tobacco use should include actions that seek to improve the inequities by improving people's early life experience, their access to and quality of education and employment, and the physical environment where they live. It is also important to consider people's daily social experiences, physical environments, financial resources and other material living conditions when addressing inequities in tobacco use.

Early childhood

There is evidence that effective early childhood interventions can reduce inequities resulting from poverty, poor nutrition, and limited educational and development opportunities [63]. Reducing inequities requires integrated interventions in early childhood that target a range of risks impacting on vulnerable children [46]. For example, parenting support interventions and pre-school programs can improve children's cognitive and social–emotional development and school readiness, improve educational levels and enhance future employment prospects [46]. The most disadvantaged and vulnerable children benefit most from these interventions because there is an opportunity to modify some of the risk factors that can negatively influence their future life chances [63].

Programs to reduce smoking prevalence among women experiencing disadvantage are important, as are programs to reduce smoking in pregnancy. The higher rates of smoking during pregnancy among disadvantaged groups may have long-term effects on the health, and on the emotional and social development of children [35]. There is increasing evidence suggesting that foetal exposure to tobacco smoke is associated with increased risk of a range of physical and behavioural problems in children that may continue into adulthood and that these problems can contribute to social disadvantage [10, 35].

Smoking during pregnancy is more common among women who are from low socioeconomic groups [130, 131, 132, 133], who are without partners, who have lower levels of education, who have a mental illness [134], who have a substance use disorder [135] or who are from Aboriginal and Torres Strait Islander backgrounds [6].

There is strong evidence demonstrating the effectiveness of smoking cessation interventions early in pregnancy [130, 131, 136]. A Cochrane review found that smoking

cessation programs in pregnancy can reduce smoking prevalence and reduce low birth weight and pre-term births [130]. Lumley and colleagues recommend that smoking cessation support and relapse prevention interventions should be a routine component of antenatal care [130]. Smoking cessation interventions are best integrated with existing health services [137].

Smoking cessation programs during pregnancy also offer benefits in terms of improved health and wellbeing of parents and extended families [35]. Pregnancy is a critical opportunity for smoking cessation intervention when mothers and fathers are more receptive to advice and support to change behaviour [35]. As the WHO [35] states,

"pregnancy offers multiple windows of opportunity for smoking cessation intervention. The course of pregnancy and the reality of the postpartum period create a prime target for cessation efforts".

Quitting smoking during early pregnancy results in the greatest benefits to the foetus and the mother; however, quitting at any stage during pregnancy will deliver health benefits. Brief intervention advice can result in quit rates of around 6.6% in pregnant women [79]. Table 2 provides a summary of interventions at various stages of pregnancy.

Table 2: Summary of effective interventions for young women and pregnant smokers

Smoking status	Interventions
Smokers aged 15–45 years	• Population-wide approaches to promote quitting prior to pregnancy.
Early-pregnancy smokers	• Promote quitting during the first trimester. • Use the 5A's approach as part of obstetric care – ask, advise, assess, assist and arrange for follow up.
Early-pregnancy quitters	• Provide ongoing support to prevent relapse during pregnancy and postpartum. • Promote spouse and family quitting and reduced exposure to SHS. • Shift motivation to include the health of the mother, not just the baby.
Late-pregnancy smokers	• Provide intensive interventions to promote quitting. • Support reducing consumption even in late pregnancy.
Pregnancy quitters	• Engage the family and spouse smokers to quit. Offer relapse prevention immediately postpartum.

Smoking status	Interventions
Continuing smokers	- Prevent return to pre-pregnancy levels of smoking. - Provide interventions during follow-up visits. - Promote smoke-free homes and cars.
Postpartum relapsers	Support quit attempts, empower mother and partner to remain abstinent and adopt smoke-free policies for the home.

Source: WHO Gender, *Women and the Tobacco Epidemic*, Chapter 9: Pregnancy and post partum cessation [35].

Postnatal relapse rates are high, around 50–80% during the first year after birth [138]. Factors associated with relapse following birth include having friends and family who are smokers, high nicotine dependence pre-pregnancy, higher depression scores and less concern about weight at the end of pregnancy [139]. Solomon and colleagues report that most women's first cigarettes after delivery were *"unplanned, in the presence of another smoker, and while experiencing negative emotions"* [139].

However, there is little evidence available about effective interventions to reduce relapse rates. Identifying women at high risk of relapse during pregnancy, at birth and following the birth is important [137]. Ashford and colleagues concluded that a comprehensive intervention that includes parental education about SHS and its effects on the family, empowering and supporting the mother and family members to remain abstinent and adopt a smoke-free home-smoking policy, could reduce relapse rates following birth [140].

Intervention efforts for women who continue to smoke during the later stages of pregnancy should promote harm-reduction approaches, including smoking reduction and abstinence immediately prior to giving birth and encourage other healthy behaviours such as physical activity and highlight future opportunities to quit [35].

There is currently a lack of evidence on the safety of NRT in pregnancy. However, the Australian National Clinical Guidelines for the Management of Drug Use in Pregnancy recommend that NRT should be considered when a pregnant woman is otherwise unable to quit, and when the likelihood and benefits of cessation outweigh the risks of NRT and potential continued smoking [137].

There is also a lack of evidence about effective interventions to reduce maternal smoking among Aboriginal women. Eades and colleagues found that an intensive quit-smoking intervention for pregnant Aboriginal and Torres Strait Islander women offered no additional benefits in terms of quit rates compared to usual care [141].

Gilligan and colleagues suggest that interventions with Aboriginal and Torres Strait Islander women should consider the smoking behaviour of pregnant woman as well as partners and

social networks and suggests this type of broader intervention could offer benefits during pregnancy, begin to challenge existing social norms and community attitudes and influence smoking rates in the broader community [142]. Passey and colleagues also recommend interventions should focus on the social environment and consider factors that act as stressors for Aboriginal women could improve cessation [143].

Broader health programs such as promoting breastfeeding and improving nutrition and social policies, such as the provision of maternity leave benefits, are also likely to have indirect effects on tobacco use (for example, by relieving stress, enhancing the emotional wellbeing of parents and children or reducing financial stress).

Education

Education has a significant influence on socioeconomic status and other factors of disadvantage among adults, which in turn influence smoking behaviour among young people and adults [46]. If young people have a positive educational experience they are more likely to feel connected to school and have improved emotional wellbeing [10, 144]. Improved educational attainment influences future employment and financial security and stressful personal circumstances that in turn influence smoking [10].

As Graham and colleagues [46] state, *"educational trajectories (as measured by age of leaving education and educational qualifications) are associated with smoking uptake in adolescence, as well as with current smoking, heavy smoking, and quitting in adulthood"*.

Provision of quality primary and secondary education accessible to all children, identifying and overcoming barriers to enrolment in school [57], small class sizes, well-trained teachers and policies that seek to prevent children leaving school early can improve educational outcomes and offer benefits in terms of future employment and help reduce inequities [64]. School-based tobacco control programs have had limited effectiveness in reducing uptake of smoking [145]. However, a more recent review by Flay [144] found that school-based smoking prevention programs can be effective if they are interactive, utilise a focus on social influences and networks, and are sustained over time (fifteen sessions or more until ninth grade) [144].

There is also evidence that broad programs that focus on improving young people's emotional and behavioural wellbeing and changing the school environment also reduce health risk behaviours such as smoking [146]. One example of such a program is the Gatehouse Project in Victoria that identified three priority areas for action: building security and trust; increasing skills and opportunities for good communication; and building a sense of positive regard through participation in school life [146]. The results showed a 3% to 5% difference in the intervention group of students in relation to alcohol use and regular smoking. The largest effect was seen in relation to regular smoking by students in the intervention group [146]. A limitation of the program is the complexity of designing and delivering a multicomponent intervention and the need for sustained effort from schools and communities [146].

A comprehensive approach that includes ensuring children are ready for school, improving access to quality education, improving young people's emotional wellbeing, reducing smoking and other risk-taking behaviours, building resilience and connectedness between schools, families and communities will enhance educational outcomes and help reduce inequities [10, 64, 144].

Employment

Broader economic and social policies that promote economic growth, create jobs, reduce unemployment and improve working conditions are also likely to have an indirect impact on reducing tobacco inequities.

Employment conditions have a direct impact on the financial security of the worker and their families. Factors such as inflexibility, lack of job security, low pay and shift work, working overtime or multiple jobs can result in job stress and be linked with financial hardship, which can be a factor influencing smoking rates and intensity of smoking, and act as barriers to quitting [65].

There is some evidence that workplace interventions to increase employees' sense of control and participation as well as changes to workplace hours may reduce health inequities [147]. There is mixed evidence about whether workplace smoking bans increased inequities by socioeconomic status or occupational class [20, 38, 39, 64]; however, this may reflect slower uptake among low socioeconomic or blue-collar workplaces [10].

There is also evidence highlighting the importance of workplace health promotion programs. Workplace health promotion programs can reduce health risks, improve uptake of healthy behaviours and deliver economic benefits (such as reduced health costs, absenteeism and injury costs) as well as improving job satisfaction [67]. However, estimates of participation in these programs range from 20–60% and participation is generally higher among those who are younger, female, well educated, non-smokers and those with a professional occupation [67]. Those with the greatest risk (for example, smokers, those who are overweight or have high blood pressure) are less likely to participate, as are those workers with low incomes or in casual employment [67]. Thus, these programs have the potential to increase inequities.

Programs that integrate interventions across several health behaviours and include a focus on working conditions are more effective in protecting and improving employee health and wellbeing than single-issue workplace interventions [55]. Further evaluation of the effectiveness of workplace interventions across the social gradient is required.

Physical environment

There are currently few controls on the number of outlets that can sell tobacco across Australia [70]. There are an estimated 35,000 tobacco retail outlets in Australia and the vast majority of smokers (87.5%) report that they are within walking distance of a retail tobacco outlet during their daily activities [148].

There is also concern that a higher density of tobacco retailers creates an environment favourable to price discounting, which undermines the effectiveness of tobacco taxation policies and may result in increased consumption levels. There is evidence suggesting that price discounting of cigarettes is more common in disadvantaged areas in Victoria [149]. In disadvantaged areas, between 23% and 33% of milk bars sold discounted cigarettes compared with 10–14% in more advantaged areas [149].

A recent analysis of tobacco outlet density in the US found that tobacco outlet density was higher in areas where a higher proportion of Hispanics and African Americans live, and in areas where a higher proportion of families live in poverty [71]. Canadian research has also confirmed that tobacco outlets were more likely to be located in disadvantaged areas [72].

Previous research conducted in the Hunter region of NSW found no relationship between socioeconomic status and tobacco outlet density [148]. However, two more recent Australian studies have found a strong relationship between tobacco outlet density and social disadvantage [69, 70]. In Western Australia, socially disadvantaged areas had more than four times the number of tobacco outlets compared with more advantaged areas. In regional WA, socially disadvantaged areas had more than five times the number of tobacco outlets than more advantaged areas [70].

Smoking is more prevalent and more visible in disadvantaged communities and smoking remains the norm in many of these social environments. The widespread availability of tobacco contributes to the normalisation of tobacco [70]. This is exacerbated when the concentration of tobacco outlets is greater in lower socioeconomic neighbourhoods, where smoking prevalence and acceptability are already higher [70].

Policy approaches to license tobacco retailers, limit the number of tobacco retail licences granted, and to reduce the geographic density of outlets in more disadvantaged suburbs and towns may be a promising intervention to reduce inequities in tobacco use. Further research to determine if different types of retail outlets are more concentrated in disadvantaged areas may be useful.

Health-care services

Research has shown that although disadvantaged smokers want to quit just as much as other smokers, they are less likely to successfully quit without assistance [20]. Cessation support services include Quitline services, online services, specialised services and brief interventions by health professionals.

Pharmacotherapies are effective in increasing quit rates, particularly when combined with support and brief interventions [150]. NRT can at least double the quit rate [151]. Brief interventions from a health professional can also increase successful quitting [150].

Data from the UK on cessation support delivered through the NHS reports lower quit rates among smokers from disadvantaged areas. Some services sought to address this inequity by concentrating cessation programs in more disadvantaged areas. While uptake of cessation services improved, quit rates were still lower in these disadvantaged areas [75]. Hill and colleagues [38] concluded that there is consistent evidence that mainstream smoking cessation services produce higher quit rates among higher socioeconomic smokers and are therefore likely to increase inequities in smoking.

Improving access to evidence-based cessation support such as counselling, pharmacotherapies and behavioural interventions is likely to help reduce smoking prevalence among disadvantaged groups [20].

The strongest evidence relates to cessation approaches for people with mental illness. Banham and Gilbody found that cessation interventions that are effective in the general population are also equally effective for people with severe mental illness. Importantly, smoking cessation interventions in people with stable psychiatric conditions do not negatively impact on their mental illness [152].

There is limited evidence about effective cessation approaches with Aboriginal people [127, 153]. Brief cessation advice combined with pharmacotherapies has been effective in Aboriginal communities [127]. A review by Power and colleagues found evidence that face-to-face counselling or quit support combined with NRT is likely to increase quit rates among Indigenous people. Power et al. also found that training Aboriginal Health Workers to provide brief interventions is also likely to contribute to increased quit rates [153]. Ivers reports that "*culturally appropriate, non-coercive methods of counselling are likely to be appropriate for and acceptable to Aboriginal people*" [127].

There is a lack of evidence about effective approaches for many other groups such as people who are homeless or are prisoners [20]. Table 3 summarises the evidence regarding the effectiveness of cessation interventions for some disadvantaged groups.

Table 3: Summary of the evidence regarding cessation interventions for disadvantaged groups

Population group	Pharmacotherapies	Pharmacotherapies and quit counselling	Motivational interviewing and behavioural interventions	Organisational smoke-free policies
ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE	Shows promise	Shows promise	No evidence published to date	No evidence published to date
PEOPLE WITH MENTAL HEALTH ISSUES	Strong evidence	Strong evidence	Strong evidence	Strong evidence
PRISONERS	Shows promise	Shows promise	No evidence	Shows promise

Population group	Pharmacotherapies	Pharmacotherapies and quit counselling	Motivational interviewing and behavioural interventions	Organisational smoke-free policies
			published to date	
PEOPLE WITH SUBSTANCE USE DISORDERS	Strong evidence	Strong evidence	Strong evidence	Strong evidence
PEOPLE EXPERIENCING HOMELESSNESS	Shows promise	Shows promise	Shows promise	No evidence published to date

Source: Australian National Preventive Health Agency (ANPHA) *Evidence Brief: Smoking and Disadvantage 2013* [20].

Quitlines are an efficient means of delivering acceptable, accessible and evidence-based treatment to large numbers of smokers [154]. Telephone support services such as the Quitline reduce barriers to accessing services such as lack of transportation, poor access to child care, living in a remote area and low incomes [154].

There is evidence that Quitlines can double a smoker's chance of quitting [79] and that more intensive support is more effective than a single call. A Cochrane review demonstrated that call-back cessation services (including those offered by Quit Victoria) are effective for the general population [155].

There is evidence that Quitline services are also appropriate for people with mental illness. Segan and colleagues found a smoking cessation intervention involving doctors and Quitline for people with a depression history is appropriate, acceptable to participants, increases the probability of quit attempts and does not have adverse effects on the participants' mental health [156]. This co-management approach is a key component of the Victorian Quitline's tailored call-back service for smokers with a history of depression.

There is some evidence that smokers with higher education are more likely to quit by using these services [157]. However, disparities in call rates can be reduced by increasing exposure to mass media campaign advertising and by airing negative health effects campaign messages. One study showed that increasing the level of television advertising 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 [157]. Campaigns with higher emotional messages are also likely to generate more calls to the Quitline from lower SES smokers compared with other campaign types and this effect was less pronounced among higher SES groups [158].

Unpublished data provided by Quit Victoria suggests that, currently, just over a quarter of all callers to the Quitline are from smokers in low socioeconomic groups [159]. Over time, the proportion of callers to the Quitline who are from lower socioeconomic groups has

increased (22.9% in 2010–2011 to 25.9% in 2012–2013) [159]. There is also some evidence of increasing engagement from low socioeconomic groups with increasing numbers of smokers from low SES groups accepting call backs from the service (53.2% in 2010–2011 increasing to 64.5% in 2012–2013) and an increase in the average call backs per service. Calls from people with mental health problems comprised 15.6% of all callers to the Quitline in 2012–2013 and between 70% and 82% of mental health callers accepted a call back from the service. Calls from smokers who were pregnant were low at 1.4% in 2012–2013. Calls from Aboriginal smokers were also low at 1.7% in 2012–2013 and the percentage of smokers accepting call backs from the service increased from 61% in 2010–2011 to 83.8% in 2012–2013 [159].

The Quitline is continuing to implement strategies to ensure the service is culturally appropriate, accessible and acceptable to Aboriginal smokers. The Quitline currently has four trained Aboriginal Quitline counsellors and is increasing efforts to promote the service within Aboriginal communities, Aboriginal Community Controlled Health Services and other relevant health services.

The provision of subsidised or free quitting medications is an important strategy to improve access to cessation support by disadvantaged groups [20]. In Australia, NRT has been available at a subsidised price on the Pharmaceutical Benefits Scheme (PBS) since February 2011 [20]. The co-payment for most PBS medicines is $36.90 or $6.00 for concession card holders (as at May 2014) and the Australian government pays the remaining cost. The amount of co-payment is adjusted on 1 January each year in line with the Consumer Price Index (CPI). Supply of the nicotine patches on the PBS requires a prescription from a medical practitioner or authorised nurse practitioner. The nicotine patches are available as a twelve-week supply in each year in either 21 mg or 15 mg. If a patient is unsuccessful in quitting using the nicotine patches, they can access other pharmacotherapies on the PBS (for example, bupropion and varenicline) during that twelve-month period. Listing NRT on the PBS has resulted in a high uptake in low-income groups. In 2011, 76.4% of prescriptions for the nicotine patch were for concessional card holders [160].

There are anecdotal reports that the requirement for a doctor's prescription may be a barrier for some disadvantaged groups – for example, Aboriginal smokers, those in remote areas or those with mental illness. There may also be a need to promote the availability of subsidised NRT more widely to encourage greater uptake and correct use of NRT, streamline access arrangements and overcome barriers to accessing subsidised NRT.

A promising approach to more effectively reach disadvantaged groups and provide cessation support relates to building the capacity of social and community services [20, 47]. The non-government social and community sector already provides services to highly disadvantaged populations who have a high prevalence of smoking and are viewed by clients as a trusted source of advice. There is also evidence that this approach is both effective in decreasing smoking rates and acceptable to clients and the organisations [20, 47].

Finally, tobacco control interventions should be tailored to the local environment and the needs of different vulnerable population groups. Successful programs are likely to utilise a holistic and empowering approach; have well-trained and supported staff motivated to implement tobacco control interventions, and understand and take account of the social context and smoking environment influencing vulnerable populations [20].

Programs for Aboriginal people and communities should also include a broad community and family focus as well as the individual smoker [128, 161, 162]. Protecting the health of children and discouraging children from smoking, staying healthy to care for their family, pregnancy, and the high cost of cigarettes have been nominated by Aboriginal people as important reason to quit [141, 142, 162].

There is a need for more evidence to identify the equity impact of these interventions – in particular, the effectiveness of approaches that integrate tobacco cessation advice into routine care offered by social and community service organisations. Continuing to build the evidence base to identify effective approaches for Aboriginal people, the homeless and prisoners, and other disadvantaged groups is also important. There is a need for better evidence to identify pathways and interventions to identify, encourage and support smokers from disadvantaged groups to quit smoking [94]. Evidence gaps are most apparent in relation to effective approaches to support Aboriginal people, the homeless and prisoners, and people with substance use disorders to quit smoking.

Social participation

Social participation is defined for the purposes of the VicHealth Framework as supportive relationships, involvement in community activities, civic engagement, and participation in decision-making and implementation processes.

Interventions that include a strong focus on enhancing participation and leadership from Aboriginal leaders and communities in tobacco control interventions for Aboriginal communities are more likely to be effective [126]. Evaluation of the National Tackling Tobacco Project will contribute substantially to the evidence base in this area.

A review of actions addressing the social and economic determinants of Indigenous health found effective approaches to promote health and connection to family, community and culture included community ownership and capacity building; well trained and committed staff; effective partnerships; building on existing community strengths and capacities; building on traditional cultural approaches; supporting young people and empowering women to undertake leadership roles [163].

Involving disadvantaged communities in the planning, delivery and evaluation of interventions may enhance participation and ownership of tobacco control approaches [164].

4.3 Influencing Individual health-related factors – what works?

Mass media campaigns

Mass media campaigns are effective because they can disseminate messages to large numbers of people at frequent intervals at a low cost per head [80, 81, 82, 83]. Mass media campaigns can reach and influence large numbers of smokers at all stages of the quitting process – from those who are not considering quitting, to those who are contemplating quitting or engaged in a quit attempt, and recent quitters and ex-smokers who are at high risk of relapse [80].

Some reviews of the effect of population health interventions on inequities have reported that the impact of mass media, health education and smoking cessation campaigns on low SES groups was inconclusive [38, 39]. However, these reviews included a range of interventions from mass media campaigns to interventions with lower reach and effectiveness such as promotion of the UK non-smoking day; online campaigns and Quit and Win promotions. It is likely this has influenced the conclusions reached by the authors.

A review of the literature in 2008 on the use of mass media [165] concluded that "*in comparison with their effects on other populations, campaigns have often been less effective, sometimes equally effective, but rarely more effective in promoting cessation among socioeconomically disadvantaged populations*". However, many of the less effective mass media campaigns had low levels of funding that were unable to achieve high levels of media exposure and as a result were unable to effectively reach and influence low SES smokers [43, 80, 166].

There is now evidence, much of it from Australia, that identifies approaches to increase the effectiveness of mass media campaigns with smokers from lower socioeconomic groups and contribute to reducing inequities in smoking. Achieving adequate campaign intensity is a critical element of successful campaigns, particularly those seeking to influence low socioeconomic smokers who are exposed to stronger pro-smoking influences [43]. When mass media campaigns are not on air there is evidence that the prevalence of smoking in low SES groups increases [80]. This was also seen in Australia during periods of low tobacco control funding when smoking prevalence among 12- to 15-year-olds increased, particularly among teenagers from low SES groups. In contrast, smoking rates declined across all SES groups during 1997–2005 when well-funded mass media campaigns were on air [44].

There is also evidence of a threshold effect for effectiveness – exposure to an average of at least 1200 Target Audience Ratings Points (TARPs)[B] per quarter is necessary to achieve measurable declines in smoking prevalence among adults and young people [90]. Additional exposure to campaign messages in the range of 1800–2100 TARPs per quarter delivers even

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[B] **TARPs** are also referred to as Gross Rating Points (GRPs). TARPS are standard advertising industry measures of campaign reach and frequency. For example, 100 TARPS per quarter equates to, on average, 100% of those within a region exposed to one ad, or 50% exposed to two ads. 1000 TARPs per quarter equates to, on average, 100% of those in a region exposed to ten ads, or 50% exposed to twenty ads and so on [80].

greater behavioural impact. Mass media campaigns that do not achieve this threshold TARP level can increase <u>recall</u> of the message; however, campaign effects on <u>behaviour</u> only occur when <u>higher TARP exposure levels</u> are reached [80].

Message type is also important in influencing low SES smokers. Highly emotive messages such as negative health effects messages using testimonials or graphic representations are more effective than other message types at increasing changes in knowledge, beliefs and quitting behaviour [166, 167]. It has been suggested that that these types of campaign messages are more effective with low SES smokers because they present smoking-related information in a format that is easy to understand, difficult to dismiss, able to challenge myths about tobacco-related disease and successfully provokes a strong emotional response, thus increasing motivation to quit [166, 168, 169]. More recent studies have also suggested that use of this type of campaign messaging (high emotion, negative health effects) can contribute to reductions in socioeconomic disparities in smoking [43, 170].

Television remains the most effective media channel to reach smokers [43]. While social media is increasingly being used as a part of an overall campaign approach there is evidence that suggests it may increase inequities between lower and higher SES population groups, because lower SES groups do not engage with health messages to the same extent as higher SES groups [171].

There is some evidence that mainstream campaigns can achieve recall and recognition of campaign messages with Aboriginal people; however, some qualitative research suggests that Aboriginal people prefer more culturally targeted messages with local community involvement [172, 173]. Evaluation of the impact of the National Tobacco Campaign reported that knowledge of health effects and recall of campaign messages was high, but there was little impact in terms of quit rates among Aboriginal smokers following the campaign [173].

The 2008 Bubblewrap campaign in WA saw the introduction of a specific Aboriginal campaign element (radio ads) designed to complement a mainstream campaign and campaign evaluation research with Aboriginal smokers [174]. The evaluation of the impact of the Bubblewrap campaign found that the overall campaign advertisements were described as believable and relevant by Aboriginal smokers. Over 80% of Aboriginal smokers surveyed had thought about cutting down the amount they smoked and 68% had thought about quitting as a result of seeing these advertisements. About a quarter (26%) of Aboriginal smokers sought further information about quitting and 59% discussed quitting with family or friends [174].

Another study reported that campaign advertisements with strong graphic and emotive messages about the health effects of smoking were rated highest by Aboriginal smokers. Stewart concluded that exposure to mainstream campaign messages that contained strong graphic and emotive images and personal narratives about the health effects of smoking are likely to be effective and motivate quit attempts among Aboriginal smokers [175].

Further research is needed to identify the most effective methods to reach Aboriginal smokers. Specifically, research should continue to explore the best balance between targeted messages and mainstream campaigns in influencing quitting behaviour and attitudes at the level of individual smokers as well as families and communities. In addition, research should examine the best mix of overall interventions to reduce smoking and the balance between community-based approaches and mass media campaigns.

For other disadvantaged groups such as those with a serious mental illness, the homeless and those with substance abuse problems it is likely that a mass media approach is not the most effective intervention, and advice provided by health professionals or social and community service organisations may be more effective [20].

Family and peer influences

The continuation of population-wide interventions to encourage adults to quit is critical to efforts to reduce adult and youth smoking because there is evidence that children are influenced by the smoking behaviour of their parents [86]. Young people who are socially isolated, have low self-confidence and lower levels of education are more likely to become smokers and engage in other health risk behaviours [93, 146]. Young people who report feeling a sense of control over their lives, are socially connected and have higher levels of education are less likely to become smokers [93].

Interventions to improve educational outcomes, programs to enhance resilience and emotional wellbeing of disadvantaged adolescents, and programs that encourage school connectedness are likely to reduce inequities in smoking [93, 146]. The recent trends of low smoking prevalence among young people will be a key factor influencing reduced smoking prevalence among adults in the future, and will further contribute to the denormalisation of smoking. Continued efforts to denormalise smoking in disadvantaged areas and within Aboriginal communities are important. Approaches that include a focus on families and social networks, promotion of smoke-free role models, encouraging implementation of smoke-free homes and building the capacity of Aboriginal leaders and communities in tobacco control are also likely to reduce inequities in tobacco use. Strategies outlined in section 4.1.4 are also highly relevant to this section.

Part Five: Conclusions and recommendations for future action

This review provides an overview of the Australian and international evidence describing the social determinants of inequities in relation to tobacco use and identifies promising strategies for promoting equity within tobacco control efforts in Victoria. It also identifies some gaps in the research.

It is clear that substantial inequities exist in relation to tobacco use in Victoria and Australia. The prevalence of smoking is significantly higher among lower socioeconomic groups, Aboriginal people, prisoners, people with mental illness and homeless people. In many cases, current surveys and monitoring tools are not adequately capturing or monitoring smoking rates in disadvantaged populations in Australia and trend data are not routinely collected for these groups [20].

Over time, smoking in Victoria has declined across all socioeconomic groups in the population but inequities in use persisted because smoking has declined faster among more advantaged groups. There is now evidence that the equity gap for tobacco use in Victoria is beginning to narrow [3] and that for the first time, between 2005 and 2011, the prevalence of regular smoking declined most rapidly among the most disadvantaged groups – reversing a trend in previous years [3].

There is evidence that during this period (2005–2011) tobacco control strategies were intensified. In 2010, tobacco taxation was significantly increased for the first time in more than a decade with the introduction of a 25% increase in tobacco excise, and funding for social marketing campaigns was increased. There is strong evidence that lower SES groups are more sensitive to the increase in cigarette prices; therefore, increasing the taxation of tobacco is an effective tobacco control strategy that has the potential to reduce inequities in tobacco use [38, 39, 40, 41]. Enhanced funding for mass media campaigns allowed a greater reach, intensity and duration of campaigns – factors critical to successful efforts to promote quitting, especially among low SES smokers [43]. In addition, campaigns began to emphasise highly emotional campaign messages that have been shown to have the greatest impact on lower SES smokers [20, 166, 167]. A range of other policy measures were implemented, including extension of state-wide smoking bans to enclosed workplaces, licensed premises and gaming venues, and cars when children are present. Alexander and colleagues conclude that these tobacco control strategies were particularly effective in more recent years in reducing the smoking behaviours of those in disadvantaged areas [3].

This review found evidence for strategies to reduce inequities in tobacco use existed across all layers of the Framework. The strongest evidence for effective strategies to reduce inequities in tobacco use related to increasing the price of tobacco through taxation polices and continuing anti-smoking mass media campaigns. There was also evidence that smoke-free legislation and policies can increase quitting behaviour and decrease tobacco consumption across all socioeconomic groups.

Reducing tobacco-related inequity requires a comprehensive approach across all levels of this Framework, involving many organisations, individuals and communities. It is recognised that organisations and communities will have different expertise, interest and capacities to address tobacco-related inequities. However, there are many things that can be done immediately and in the longer term to make a difference. A useful incremental approach developed by the WHO is shown in Figure 2 [93].

Figure 2: An incremental approach to reducing inequities

Ensure policy choices do not make inequities worse

Focus on addressing the health consequences for the most disadvantaged

Reduce the gap between the most advantaged and the most disadvantaged

Seek to flatten the gradient across the whole population

Source: World Health Organization European Regional Office, *Tobacco and Inequities, Guidance for addressing inequities in tobacco-related harm* [93].

5.1 Influencing the socioeconomic, political and cultural context

There is overwhelming evidence that lower SES groups are more sensitive to the increase in cigarette prices and that increasing price has the strongest potential to reduce inequities in tobacco use. Implementation of tobacco price rises over coming years is expected to have a very significant impact on reducing inequities in tobacco use.

The WHO recommends that tobacco price increases should be accompanied by strategies to ensure NRT and smoking cessation support are affordable and accessible to low-income groups. Measures are already in place in Australia with subsidised NRT available through the PBS but more could be done to promote this measure to disadvantaged groups, streamline processes, and identify and overcome any barriers to accessing subsidised NRT and other medications. There is also a need to monitor the impact of these interventions on the smoking behaviour and financial stress of disadvantaged groups to identify unintended impacts of the policy.

There is evidence that comprehensive smoke-free policies can discourage smoking among low SES groups as well as high SES groups [20]. Implementation of smoke-free laws in

Australia is widespread, covering both indoor workplaces and public spaces and some outdoor public spaces. There is limited scope or rationale for extending these approaches further. However, smoke-free policies have been slow to be implemented in some settings such as prisons, as well as drug and alcohol and mental health facilities. In these settings where smoking prevalence is high, comprehensive smoke-free policies that encourage and support inmates, clients and staff to quit are likely to contribute to changing entrenched smoking cultures and norms and also reduce inequities in tobacco use. The experience of New Zealand in implementing smoke-free prisons is likely to be a promising model to inform Australia's approaches. The full implementation of smoke-free prisons by the Northern Territory and Queensland will also inform Victorian policy approaches as the government has announced this measure will be implemented by July 2015.

There is evidence that significant shifts in cultural norms about smoking have occurred in the community. Tobacco control policies help denormalise smoking in different ways, so too does reporting on tobacco issues by the media, a range of cultural influences and overall declines in smoking prevalence. For example, smoke-free laws decrease the acceptability and visibility of smoking, reduce consumption, increase quit attempts and help establish smoke-free environments as the norm. Mass media campaigns also have a strong influence on social norms by prompting quit attempts by individual smokers as well as increasing discussion about tobacco among families, peer groups and communities [43]. However, these pro-smoking norms have been slower to change in disadvantaged areas, Aboriginal communities and settings such as prisons. Greater efforts both to understand and address the social contexts of smoking and to develop strategies to continue to denormalise smoking in these communities is an important approach.

5.2 Influencing daily living conditions

Policies that seek to influence the conditions in which people live (for example, by improving people's early life experience, their access to and quality of education and employment, reducing stress and the changing physical environment) can reduce overall health inequities and specific tobacco-related inequities. People with less money, less education, insecure working conditions and poor living conditions are much more likely to be smokers or be exposed to SHS [10, 20].

Smoking during pregnancy is much higher among women from disadvantaged groups. Interventions that focus on partners and the extended family as well as the pregnant women are more likely to be effective. In addition, many women quit smoking for the duration of pregnancy but relapse following the birth of their child; therefore, relapse prevention as well as advice and support to quit are crucial. However, there is little evidence available about effective interventions to reduce relapse rates. Interventions that focus on the health effects of SHS on the family, empowering the mother, partner and family members to quit and remain abstinent and promoting smoke-free homes are promising interventions to prevent relapse. There is very little evidence about effective interventions

to reduce Aboriginal maternal smoking and establishing this evidence base should be a priority.

There is evidence to suggest that some cessation services can have a negative impact on equity. There is a need for better evidence to identify pathways and interventions to ensure that disadvantaged groups with high smoking prevalence are identified, encouraged and supported to quit [94]. Evidence gaps are most apparent for the most effective approaches to support Aboriginal people, homeless and prisoners, and people with substance use disorders to quit smoking.

Improving access to effective approaches to help smokers quit (i.e. counselling, pharmacotherapies and behavioural interventions) is a priority approach to reduce smoking rates in disadvantaged groups [20]. The strongest evidence relates to cessation approaches for people with mental illness that do not adversely affect mental illness [152]. Evidence regarding the effectiveness of cessation interventions in other vulnerable populations is lacking, although there is limited evidence about effective cessation approaches with Aboriginal people [127].

A promising approach identified by the review to improve access to cessation support includes developing partnerships between health organisations and the social and community sector to build the capacity of social and community organisations to provide brief advice and cessation support to their clients. The non-government social and community services sector already provides a range of services to highly disadvantaged populations focused on relieving financial stress, food support, housing assistance, child protection, mental health support and skills training. The clients of these services also have a high prevalence of smoking, and there is evidence that brief advice and cessation support from staff in these organisations to their clients can reduce smoking and are acceptable to both clients and organisations.

Evidence about workplace programs suggests they should include a focus on a range of health behaviours rather than exclusively focusing on smoking. Evidence also suggests that participants in these programs are more likely to be younger, professional, well-educated, female, non-smokers and that health promotion initiatives are less likely to reach low earners and those who are intermittently employed. Thus, they have the potential to increase inequities. However, further evaluation of the effectiveness of workplace interventions across the social gradient is required.

There is evidence to suggest that tobacco retail outlets are more concentrated in disadvantaged areas which may contribute to price discounting, help normalise quitting and undermine quitting attempts [69, 70]. Licensing tobacco retailers would be an effective first step. Identifying effective approaches to limit the number of tobacco retail outlets in more disadvantaged suburbs and towns also has the potential to reduce inequities in tobacco use.

5.3 Influencing individual health-related factors

There is comprehensive evidence that mass media campaigns conducted as part of a comprehensive tobacco control program can promote quitting and reduce smoking prevalence among adults and young people. The extent to which mass media campaigns can impact on low socioeconomic smokers and reduce inequities in tobacco use is dependent on whether a number of criteria are met. Achieving sufficient population exposure to campaign messages is critical to influence lower socioeconomic status smokers and other vulnerable population subgroups [43]. There is evidence of a threshold effect for effectiveness – exposure to an average of at least 1200 TARPs per quarter is required to result in measurable declines in smoking prevalence in youth and adults [90]. Exposure to mass media campaigns at a lower TARP level will increase recall of the message but will be unlikely to influence behaviour [80].

Negative health effects messages using testimonials or graphic depictions are the most effective at generating increased knowledge, beliefs and quitting attempts among low SES smokers [43]. More evidence is needed to identify the effectiveness of mass media campaigns for Aboriginal smokers and the most appropriate balance between mainstream and targeted campaigns as well as the mix of mass media and community-based interventions.

A mass-reach approach is not efficient for reaching other smaller vulnerable population groups such as the homeless, those with mental illness or those with substance use problems.

5.4 Interventions across the life course

Interventions to reduce tobacco-related inequities must be implemented across the life span to be effective.

Interventions to support and encourage pregnant women and their partners to quit smoking are a priority. Equally important are interventions to prevent relapse for women who have quit smoking during pregnancy. Given the disparity in exposure to SHS across socioeconomic groups and for Aboriginal children, interventions to increase smoke-free homes and cars among disadvantaged groups are also important.

Youth smoking prevalence in Australia is now at the lowest level since surveys began in 1984.There is evidence that population-wide approaches such as increasing the price of tobacco through tax increases, mass media campaigns and enforcement of smoke-free laws are very effective in reducing adolescent smoking as well as adult smoking across all socioeconomic groups. There is no need to implement specific youth-focused mass media campaigns because adult-focused campaigns are equally effective with young people. One of the most influential factors on youth smoking is whether their parents smoke; therefore, efforts to encourage parents and other adults from disadvantaged groups to quit are also

important in reducing prevalence of young people. Broader interventions to prevent educational failure, promote resilience and enhance emotional wellbeing of adolescents will also help to reduce tobacco-related inequities.

Of particular importance, and the greatest priority, are interventions focused on adult smokers. Population-wide interventions to increase the price of tobacco, implementation of hard-hitting mass media campaigns at effective levels of intensity and enforcement of smoke-free and other tobacco laws have been effective in driving down prevalence rates across all socioeconomic groups. Encouragingly, these strategies are also beginning to have an impact on narrowing the equity gap in smoking rates and, between 2005 and 2011, the prevalence of regular smoking declined most rapidly among the most disadvantaged groups in Victoria, reversing the previous trend. Implementing tobacco control interventions to encourage and support Aboriginal smokers to quit is a priority. These interventions must be developed and implemented and evaluated in partnership with Aboriginal communities to be effective. Additional effort is also required to reduce inequities in smoking among prisoners, in respect of whom the implementation of smoke-free policies and provision of quitting support has been slow to develop.

In light of these gains it is now time to seek to accelerate these declines by continuing to implement these population-wide interventions together with more targeted approaches to assist and support disadvantaged smokers to quit and interventions to denormalise smoking in disadvantaged groups.

Figure 3: Interventions to reduce tobacco-related inequities by life stage

Early years
- Support pregnant women and partners to quit
- Prevent relapse for pregnant women and their partners
- Promote smoke-free homes and cars
- Support healthy child development

Adolescence
- Implement regular tobacco price increases
- Continue mass media campaigns
- Enforce smoke-free and other tobacco laws
- Encourage adults (especially parents) to quit
- Impement programs that promote resilience, school connectedness and emotional wellbeing
- Enhance educational experiences for disadvantaged adolescents

Adults
- Implement regular tobacco price increases
- Enforce smoke-free policies in disadvantaged communities and prisons
- Continue mass media campaigns at effective levels of intensity
- Increase access to quitting support and medication for disadvantaged groups
- Enhance efforts to denormalise smoking in disadvantaged communities

5.5 Prompts for planning

To reduce inequities in tobacco use, the following ***prompts for planning*** are recommended:

Socioeconomic, political and cultural context

- Include explicit tobacco equity objectives as a central goal of all relevant health promotion and tobacco control programs and policies;
- Develop approaches that combine changing smoking habits with reducing inequities in the social context and environments;
- Report on the impact of tobacco control interventions across social groups;
- Encourage better integration and policy coherence between policy efforts to influence the broader social determinants of health and policy efforts to influence chronic disease risk factors such as tobacco use;
- Continue to implement coordinated, comprehensive interventions designed to work synergistically – for example, combining tax increases, mass media and enhanced cessation services;
- Ensure programs are sustained and of sufficient intensity to achieve impact (particularly in Aboriginal tobacco control and health promotion, where there is a history of short-term approaches);
- Fund programs at an appropriate level to have a demonstrated impact (this is particularly important for mass media campaigns where there is evidence of a threshold of effectiveness);
- Continue to implement regular tobacco price rises accompanied by strategies to streamline access, promote availability of subsidised NRT and increase access to cessation support and services for disadvantaged groups;
- Enforce existing smoke-free laws in low-income workplaces and disadvantaged communities;
- Implement comprehensive smoke-free policies in prisons, mental health and drug and alcohol services that also include access to free/subsidised NRT and cessation support both within the setting and when transitioning to the community;
- Contribute to research efforts to establish the potential benefits and harms of e-cigarettes at both individual and population levels and the potential equity impact;
- Advocate for regulation to control the use of tobacco additives in cigarettes in order to reduce their attractiveness, particularly to young people;
- Advocate for mandatory and comprehensive disclosure of cigarette ingredients;
- Strictly enforce sales to minors laws, especially in disadvantaged neighbourhoods; and
- Strengthen efforts to understand and address the social contexts of smoking and develop strategies to continue to denormalise smoking in disadvantaged communities.

Daily living conditions

- Implement programs to support breastfeeding and nutrition, provide comprehensive support to mothers and partners before, during and after pregnancy, and during the early years of life, pre-school programs;
- Support and encourage pregnant women from disadvantaged groups to quit smoking and implement smoke-free homes and cars. Ensure programs include a focus on involving and supporting partners and families;
- Implement school programs to promote resilience and encourage school connectedness and improve the emotional and behavioural wellbeing of young people and reduce the risk of substance use (e.g. Gatehouse program);
- Involve communities at all stages of planning, implementation and evaluation;
- Improve access to tools and services that are known to help people quit (i.e. counselling, quitting medications and behavioural interventions for disadvantaged groups);
- Implement negative health effects campaign messages at sufficient frequency and intensity to influence quitting attempts among low SES smokers;
- Strengthen investment and focus on building the capacity of social and community service sectors and Aboriginal organisations to implement tobacco control programs;
- Implement programs that utilise a non-judgmental, holistic and empowering approach;
- Recognise the role of smoking in people's lives and other stresses they may be facing, and have well trained staff who can access ongoing organisational support;
- In addition, tobacco control programs for Aboriginal people and communities should also include a focus on family and communities as well as supporting individual smokers; and
- Implement approaches to license tobacco retailers, to limit the number of tobacco retail licences granted and to reduce the density of outlets in more disadvantaged areas.

Individual health-related factors

- To maximise effectiveness and to reduce inequities in smoking, mass media campaigns should meet the following conditions:
  - Deliver exposure to at least **1200 Target Audience Ratings Points (TARPs) per quarter** to achieve measurable declines in smoking prevalence in youth and adults and to reach low SES smokers. (Note: exposure to mass media campaigns at a lower TARP level will increase recall of the message but will be unlikely to influence behaviour);
  - Use television as the main media channel;
  - Air highly emotional negative health effects messages to more effectively reach and motivate low SES smokers.
- Build community support and ownership among Aboriginal and disadvantaged communities to encourage smoke-free policies (e.g. at sporting and community events)

and promote importance of smoke-free homes and involve communities in developing and implementing tobacco control strategies;

- Implement interventions to improve educational outcomes, build self-efficacy and confidence skills of disadvantaged adolescents and programs that encourage school connectedness and build resilience in adolescents; and
- Continue efforts to denormalise smoking in disadvantaged communities.

5.6 Addressing evidence gaps

More research is needed on the following approaches:

- Continued research on those who continue to smoke – why they continue to smoke and how best to support them;
- Effective tobacco control approaches for Aboriginal smokers and communities;
- Effective tobacco control approaches for other disadvantaged groups (e.g. homeless, prisoners and those with drug and alcohol abuse problems);
- The most effective interventions to encourage and support Aboriginal women and their partners to quit smoking;
- The most effective interventions to prevent relapse to smoking among women and their partners who quit during pregnancy;
- The risks and benefits ENDS as part of a tobacco control strategy and their potential as a cessation product and harm-reduction measure;
- Monitoring of the implementation of tobacco control policies to identify any negative, unintended impact for disadvantaged groups and identify strategies to minimise these;
- Continued development of the evidence base around mass media campaigns and reaching low SES smokers;
- Assessment of the impact and effectiveness of partnerships between health organisations and the social and community sector to build the capacity of social and community organisations to provide brief advice and cessation support to their clients;
- Evaluation of all future tobacco control policies (such as implementation of plain packaging) should include analysis of the equity impact of these policies;
- Evaluation of the equity impact of workplace health promotion programs that integrate interventions across lifestyle health behaviours (smoking, alcohol use, stress, physical activity and nutrition) and influence working conditions; and
- Analysis of the effectiveness of mass media campaigns for Aboriginal smokers and the most appropriate balance between mainstream and targeted campaigns as well as the mix of mass media and community-based interventions.

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