Goreen Narrkwarren Ngrn-toura

Healthy Family Air

A Literature Review to Inform the VACCHO Smoking amongst Pregnant Aboriginal Women Research Project

VACCHO

Prepared by the Centre for Excellence
in Indigenous Tobacco Control (CEITC)
The University of Melbourne

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Note on terminology: VACCHO acknowledges that although the terms 'Aboriginal' and 'Indigenous' have been used throughout this document, we are referring to both Aboriginal and Torres Strait Islander people in Victoria.

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Foreword

Smoking tobacco in pregnancy causes some potentially preventable complications, low birth weight and preterm birth. Rates of smoking in pregnancy remain significantly higher amongst Aboriginal pregnant women compared with non-Aboriginal women (DHS 2008). Smoking as a new mother can also impact on the health and growth of a child, as can smoking by family and community members. Smoking and the health of Aboriginal children is everyone's business.

The Victorian Aboriginal Community Controlled Health Organisation (VACCHO) seeks to address this disparity through a three-year research project titled *Goreen Narrkwarren Ngrn-toura* – Healthy Family Air (Reducing Smoking amongst Pregnant Aboriginal Women in Victoria: An Holistic Approach) funded by the former Victorian Department of Human Services (now Department of Health). VACCHO represents the collective of 24 Aboriginal Community Controlled Health Organisations around Victoria and is well placed to facilitate such a project within the sector working with the Koori Maternity Services.

The *Goreen Narrkwarren Ngrn-toura* – Healthy Family Air project seeks to increase the understanding and knowledge of smoking cessation, to create supportive environments with Aboriginal health organisations, to support Aboriginal women to quit smoking in pregnancy and to support young mothers not to take up smoking. Engagement will be a key component of this project and will involve individuals, key stakeholders, multiple organisational partners such as Quit, and the Women's Alcohol and Drug Service. The project will also seek strong working relationships with other projects that have the objective of reducing smoking in pregnancy.

This literature review, completed as part of the *Goreen Narrkwarren Ngrn-toura* – Healthy Family Air project, provides valuable information not just to provide direction for this project, but for all people working towards smoking cessation in Aboriginal communities. The project works from the premise that pregnant Aboriginal women and new Aboriginal mothers do not live in isolation. They are part of the Aboriginal community, as are their children. This project holds as the central focus that the health of Aboriginal children is everyone's business. In focusing our efforts on the health of babies and children, we are improving the health outcomes of future generations of Aboriginal people in Victoria.

Jill Gallagher
Chief Executive Officer
Victorian Aboriginal Community Controlled Health Organisation

About the Cover Artwork

Goreen Narrkwarren Ngrn-toura – Healthy Family Air
Artist: Anjee-Lee Solomon

Our women are strong. Our children are healthy. This woman represents our women who battle with the journey to quit smoking. The water represents quitting attempts that they go through to finally achieve their goal. The trees represent new life. The mother sits with spirits in the background, this being community and family support and the circles represent the journey to having a healthy life for her and her family.

Glossary

ACCHO	Aboriginal Community Controlled Health Organisation
AHPACC	Aboriginal Health Promotion and Community Care Program
AHW	Aboriginal Health Worker
CEITC	Centre for Excellence in Indigenous Tobacco Control
CI	confidence interval
DH	Department of Health
DHS	Department of Human Services
NACCHO	National Aboriginal Community Controlled Organisation
NAPS	Newborn Asthma and Parental Smoking Project
NRT	nicotine replacement therapy
RCT	randomised control trial
SIDS	Sudden Infant Death Syndrome
VACCHO	Victorian Aboriginal Community Controlled Health Organisation

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Acknowledgments

We would like to acknowledge the contributions made to the *Goreen Narrkwarren Ngrn-toura* – Healthy Family Air (Reducing Smoking amongst Pregnant Aboriginal Women in Victoria: An Holistic Approach) project.

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The project team acknowledges Anjee-Lee Solomon for her artwork, which reflects the aims and objectives of the project.

This literature review and the project were made possible through a three-year research project titled *Goreen Narrkwarren Ngrn-toura* – Healthy Family Air (Reducing Smoking amongst Pregnant Aboriginal Women in Victoria: An Holistic Approach) funded by the former Victorian Department of Human Services (now Department of Health).

Thank you to all those people who commented on the draft of the review.

Summary

Smoking during pregnancy can have serious health effects for babies, including low birth weight, Sudden Infant Death Syndrome (SIDS), preterm births (born too early), and other pregnancy complications. Smoking rates are high in the Victorian Aboriginal community compared to non-Aboriginal people, and pregnant Aboriginal women in Victoria are around five times more likely to smoke during pregnancy than non-Aboriginal women. Smoking rates are also high amongst Aboriginal young people and Aboriginal Health Workers.

The Victorian Aboriginal Community Controlled Health Organisation (VACCHO), concerned about these high rates of smoking, has developed a project that will strengthen the capacity of Aboriginal Community Controlled Health Organisations (ACCHOs) and workers in these organisations to deliver support and smoking reduction programs to pregnant Aboriginal women in Victoria. The project, *Goreen Narrkwarren Ngrn-toura* – Healthy Family Air (Reducing Smoking amongst Pregnant Aboriginal Women in Victoria: An Holistic Approach), has been funded by the former Victorian Department of Human Services (now Department of Health). It involves activities to train Aboriginal Health Workers (AHWs), Koori Maternity Strategy Workers and In-Home Support Workers to help organisations to better support pregnant women and young mothers to quit or reduce smoking; and to deliver a Group Support Program to build capacity, self-esteem, skills and knowledge amongst pregnant Aboriginal women and young mothers.

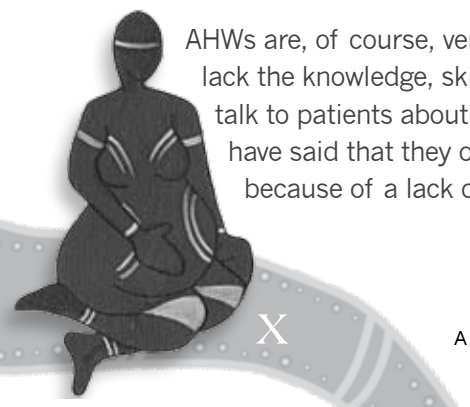
This report has been written to gather information about the types of activities and programs that might work to reduce smoking amongst pregnant Indigenous women. It also includes information on what we know about why Indigenous women smoke before, during and after pregnancy, and why they might quit. Understanding this can help with developing appropriate programs for pregnant Indigenous women. Some of the information in this report comes from studies and projects that directly involve pregnant Indigenous women. However, most of our knowledge about what might work to reduce smoking amongst Indigenous pregnant women comes from studies and projects that have targeted Indigenous people generally, and non-Indigenous people.

Issues that affect smoking amongst Indigenous people

Tobacco use amongst Indigenous people is linked to the dispossession and family removal that happened as part of colonisation. Large differences in socio-economic status and stressors, such as loss of identity and racism, are associated with high levels of smoking. Smoking is linked to social and economic measures that impact more on Indigenous people, like lower education and income, and unemployment. In addition, smoking is much more socially acceptable in many Indigenous communities, as it is central to social relationships. Many Indigenous people find it difficult to quit smoking because so many people around them are smoking.

Although many Indigenous people know that smoking is bad for their health, it is often a lower health priority in communities. Studies show that women who smoke might be more likely to quit when they become pregnant, but we're not sure if this is true for Indigenous women. Quitting may be a lower priority for pregnant Indigenous women because of the many other health and social issues that affect them. Smoking is also a way for them to cope with the many stresses that they have in their lives.

AHWs are, of course, very important in addressing smoking in their communities. However, some lack the knowledge, skills and confidence to help people to quit. They may feel embarrassed to talk to patients about quitting, especially if they smoke themselves. Aboriginal Health Workers have said that they often feel frustrated when they try to implement tobacco programs because of a lack of funding, or support from other workers, the health organisation, or the



community. In addition, there are not enough Health Workers trained in tobacco control, although the Commonwealth and State governments are currently funding more positions and training of Aboriginal Health Workers in tobacco control.

What might work to help people quit and to reduce smoking in Indigenous communities

Programs and activities that help people to quit smoking or try to prevent people from starting to smoke can either focus on individuals and their families, or can be aimed at entire communities and try to reach large numbers of people at the same time.

Individual-level activities

Individual-level activities are likely to be based in the clinic and to be delivered face-to-face by the AHWs, doctors, or nurses. In Victoria, Aboriginal Community-controlled Health Organisations provide health care to individuals and their families, and most of the opportunities to help people to quit are through general medical consultations or regular health checks. Helping people to quit smoking is part of the work that Aboriginal Health Workers, doctors and nurses do as part of their jobs already, and it is also linked in with existing programs, like the Koori Maternity Strategy and the Aboriginal Health Promotion and Community Care Program (AHPACC).

Brief interventions, where AHWs, doctors or nurses talk to patients about quitting, and help them to find the best way to quit (if they want to), can be very effective if the health workers are trained properly. There are a number of Indigenous-specific training programs available, including Educator Training developed and delivered by Quit Victoria. Nicotine replacement therapy (NRT), where nicotine in a patch, tablet or gum helps to stop cravings in smokers, can be very effective in helping smokers to quit. Other medications can also be very effective. However, it is not clear whether it is safe for pregnant women to use NRT or these other medications. Quit smoking support groups can be effective for some people, and other methods (like hypnosis or acupuncture) are not proven to work (although they may help some individuals).

A number of Indigenous projects have combined several of these activities to try to help people to quit smoking. It is not certain whether this makes a difference to the success of quitting. One tobacco control project recommended that programs for Indigenous pregnant women should not just focus on smoking in pregnancy, but include the whole range of interacting issues that affect pregnant women.

Community- and population-level activities

The individual-level activities described above should be supported by programs that target whole communities and the Indigenous population more generally. These types of activities include: media campaigns; pamphlets and other materials; telephone quitlines; school and youth prevention programs; policies that limit access to cigarettes, or exposure to second-hand smoke; incentive-based programs; and programs that combine several activities.

There have only been a few media campaigns that have targeted Indigenous people, and none that have specifically targeted pregnant Indigenous women. Little is known about the impact of these and the general national campaigns on Indigenous people's smoking. Culturally appropriate resources, like posters, booklets and pamphlets have been developed as part of a number of projects around the country. There is no information about whether or not Quitlines are acceptable to Indigenous Australians. However, two studies with Indigenous people in other countries found that they could be acceptable and effective. There have been a number of school-based programs in Indigenous communities that try to prevent young people from starting smoking, but there is no information about whether they actually stopped young people from starting to smoke.

Policies that make certain places smoke-free (like workplaces, pubs and restaurants, and cars with children in them), have been effective in the general Australian population, but the impact on Indigenous people is not known. Several Indigenous health services around the country have developed programs that have included implementing smoke-free workplace policies along with activities to support AHWs to quit smoking. These seem to be very successful at reducing smoking amongst AHWs.

Payments to quit smoking (incentives) have been successful in some programs at increasing the numbers of people who try to quit, although it is not as clear whether they stay quit after the payments stop. Programs with non-Indigenous pregnant women in other countries have successfully used payments to help women to quit during their pregnancies.

There have been a number of programs in Indigenous communities around the country that have included many different (multi-component) approaches to tobacco control in their programs. It is likely that tobacco control programs can have the greatest impact by combining several different individual and community level activities. This can also help to address smoking in a more holistic way.

Recommendations

Tobacco control activities with pregnant Indigenous women should include:

Training

- Provide training to AHWs to develop skills to deliver individual clinic-based interventions and community-based tobacco control activities

Developing programs and policies in organisations

- Develop programs in the clinic that work in with existing services to advise and support pregnant women to quit. This may include: brief interventions, behavioural counselling or motivational interviewing; providing NRT (like patches); and delivering quit courses.
- Develop policies and protocols in Aboriginal organisations (such as smoke-free workplaces and cars) to provide supportive environments in which to deliver smoking cessation programs.
- Put in place programs and policies to support AHWs who smoke to quit.

Community development activities

- Develop programs that increase the unacceptability of smoking in Indigenous communities, and provide skills and supportive environments for pregnant women to quit.
- Develop programs that bring together several different tobacco control activities, are holistic, and are focused on families and communities, not necessarily just pregnant women.
- Implement programs more broadly that address social disadvantage.

Introduction

The Victorian Aboriginal Community Controlled Health Organisation (VACCHO) has been funded by the former Victorian Department of Human Services (now Department of Health) to conduct a research project, *Goreen Narrkwarren Ngrn-toura* – Healthy Family Air (Reducing Smoking amongst Pregnant Aboriginal Women in Victoria: An Holistic Approach). This project aims to strengthen the capacity of Aboriginal Community Controlled Health Organisations (ACCHOs) and the capacity of Aboriginal Health Workers (AHWs) and Koori Maternity Strategy Workers within these organisations to deliver support and smoking reduction programs to pregnant Aboriginal women in Victoria. The project involves the following activities:

- training to build the capacity of AHWs, Koori Maternity Strategy Workers and In-Home Support Workers to deliver smoking reduction and cessation interventions to pregnant Aboriginal women and young women;
- working with management and staff in a number of chosen sites to create a supportive environment within organisations for more integrated support for smoking reduction and cessation amongst pregnant women and young mothers: and
- developing and delivering a multifaceted holistic Group Support Program to build capacity, self-esteem, skills and knowledge amongst pregnant Aboriginal women and young mothers so that they can be better informed about the harmful effects of smoking on the foetus and about opportunities to reduce smoking, and be better supported in any attempts to engage with smoking reduction and cessation activities.

This literature review provides an overview of the current evidence around tobacco control prevention and cessation initiatives with pregnant women who smoke, within both mainstream and Indigenous contexts. It also reviews what is known about the determinants of tobacco use amongst Indigenous people, as well as the barriers and motivations to quitting. Only a small number of interventions with Indigenous pregnant women have been identified, and this review, therefore, includes, where relevant, studies in both mainstream and Indigenous contexts, and those involving sub-populations other than pregnant women. To date, the only published studies of smoking in Indigenous pregnant women have been descriptive studies. A number of intervention research projects are currently underway, including a randomised control trial (RCT) investigating the effectiveness of an intervention with pregnant Indigenous women at three Aboriginal health services. While the findings of this RCT are not yet publicly available, a pilot study associated with the RCT has been written up as a doctoral thesis (Gilligan 2008). Gilligan (2008), in an assessment of publication volume on Indigenous antenatal smoking, found that all 61 articles published between 1980 and 2006 were descriptive studies.

This review has been written to specifically inform the development of the VACCHO project but is being published to make the information more widely available. Much of this paper has been based on the work undertaken for an existing review on Indigenous tobacco control activities in Australia (CEITC 2008) by the Centre for Excellence in Indigenous Tobacco Control (CEITC) for the Department of Health and Ageing. It is supplemented by a more detailed examination of studies identified through the CEITC review that are more specifically relevant to programs with pregnant Indigenous women. Published literature was identified through database searches of Informit and Expanded Academic combining a range of appropriate search terms (Indigen*, Aborigin*, smok*, tobacco, pregnan*). Unpublished literature was identified through a number of websites (such as Indigenous Health*InfoNet*, non-government organisations and research institutions) and by using a snowballing technique (where other researchers, reference lists of articles or websites referred to the existence of unpublished reports/evaluations). Furthermore, all of the state/territory National Aboriginal Community Controlled Health Organisation (NACCHO) affiliates were contacted to obtain information about tobacco control programs in their jurisdictions.

Prevalence of tobacco use in Indigenous communities

The prevalence of tobacco use amongst pregnant Indigenous women must, of course, be placed in the context of tobacco use in Indigenous communities more generally. In a recent re-analysis of data from three national surveys in 1994, 2002 and 2004, Thomas (2009) found that smoking prevalence in the Indigenous population aged 18 and over fell in this ten-year period (although not significantly), and that, in this analysis, 52.1% of Indigenous people aged 18 and over were 'current smokers' in 2004. Indigenous Australians are more than twice as likely to smoke than non-Indigenous Australians (ABS 2006).

Gender- and age-adjusted data from the 2002 National Aboriginal and Torres Strait Islander Social Survey indicates that 53.5% of Indigenous Victorians aged over 15 are current smokers (Thomas DP et al. 2008). In contrast, 19.2% of Victorian adults were regular smokers in 2002 (Germain, Wakefield & Durkin 2008). While Indigenous women are more likely than Indigenous men to be non-smokers and to have never smoked (Thomas DP et al. 2008), Indigenous women are 2.5 times more likely to smoke than non-Indigenous women (AIHW 2008). In Victoria, Thomas (2009) has reported that smoking prevalence amongst Indigenous women aged 18 and over has fallen from 65.4% (95% confidence interval [CI], 53.1–77.7) in 1994 to 59.5% (95% CI, 53.4–65.6) in 2002 and to 46.9% (95% CI, 35.4–58.4) in 2004.

The National Aboriginal and Torres Strait Islander Social Survey reports that 44.5% of Indigenous young people aged 15–24 years were current daily smokers in 2002 (ABS 2004). Between 1996 and 2005 rates of smoking were significantly higher for Indigenous students than non-Indigenous students, although the proportion smoking declined significantly between these years for both Indigenous and non-Indigenous students (Mason & White 2007). Amongst a random sample of 174 young Aboriginal people in Melbourne in 1998, 29% of those aged 12–15 years and 63% of those aged 16–25 years reported being current smokers. Thirty-one percent of the sample of 12–25 year olds had never smoked (VAHS 1999). According to 2004–05 data, Indigenous smokers are more likely than non-Indigenous smokers to have begun smoking before age 13 (10% compared to 5%) and to be regular smokers by age 18 (68% compared to 54%) (ABS 2007).

Smoking rates amongst AHWs are similar to those in the Indigenous population generally (Mark et al. 2005; Kerdel & Brice 2000; West, Young & Lloyd 1998; Andrews, Oates & Naden 1996). Although AHWs are in ideal positions to provide smoking cessation advice to their clients, their smoking status may have an impact on their confidence and capacity to offer smoking cessation advice. In several studies of AHWs who smoke, the majority indicated that they wanted to quit smoking and had made attempts to quit (West, Young & Lloyd 1998; Andrews, Oates & Naden 1996). AHWs may, therefore, be a sub-population receptive to smoking cessation initiatives that specifically target them.

Smoking amongst pregnant Indigenous women

Studies amongst pregnant Indigenous women in Australia have reported a range of smoking rates from 46.5% in the Western Australian Aboriginal Child Health Survey (Zubrick et al. 2004) to as high as 67% in a hospital-recruited sample in Perth (Gilchrist et al. 2003). Three studies with community-based samples found prevalences of 64.3% in a Perth sample (Eades et al. 2008), 66.6% in a North Queensland sample (Panaretto, Anderson, Gilligan et al. 2009) and 41% in a Far North Queensland study (Gilligan et al. 2009).These rates compare to around 16% for non-Indigenous mothers reported in two large hospital-based databases (Mohsin & Bauman 2005; Laws, Grayson & Sullivan 2006). In a Western Australian study of teenage mothers, Indigenous teenagers (42%) were more likely to smoke during pregnancy than non-Indigenous teenagers (28%) (Lewis LN et al. 2009). Indigenous mothers in other countries are also more likely to smoke than non-Indigenous mothers (Assembly of First Nations & First Nations Information

Governance Committee 2007; Heaman & Chalmers 2005; New Zealand Ministry of Health 2006). In Victoria in 2007-08, data from the Victorian Admitted Episodes Dataset shows that 40% of Aboriginal women admitted to hospital from one month prior to delivery were current smokers, compared to 8% of non-Aboriginal women (DPCD 2009).

Exposure to environmental tobacco smoke

Nationally, in 2007, 66% of Indigenous children aged 0–14 years lived in households with at least one regular smoker, compared to 35% of non-Indigenous children. Twenty-eight percent lived in households in which at least one resident regularly smoked indoors, compared to 9% for non-Indigenous children (AIHW 2008). A community survey in South Hedland, Western Australia, in 2006 found that 30% of people lived in homes where someone smoked inside at least once a week (CUCRH 2008).

Impact of tobacco use in Indigenous communities

It is well documented that smoking increases the risks of coronary heart disease, stroke, peripheral vascular disease and numerous cancers. These diseases all occur at higher rates amongst Indigenous Australians than amongst non-Indigenous Australians (ABS & AIHW 2008). An analysis of 2003 national data shows that tobacco use was responsible for 12.1% of the burden of disease and 20% of deaths amongst Indigenous Australians. It is the largest contributing factor to the burden of disease for Indigenous males and the second largest for females (Vos et al. 2007). In addition to the health effects of cigarette smoking, Indigenous families and communities are also impacted by the social effects and financial strain resulting from tobacco use (Briggs, Lindorff & Ivers 2003). A 1992 study in a remote Northern Territory Aboriginal community reported that more than one-fifth of income expenditure was on cigarettes (Hoy et al. 1997). This can significantly reduce expenditure on necessities such as food, clothing and housing, impacting on the health and welfare of children and families.

It is also accepted that smoking is specifically a risk factor in pregnancy complications, peri-natal mortality, low birth weight, preterm birth and Sudden Infant Death Syndrome (Laws, Grayson & Sullivan 2006). A study in Townsville examined risk factors for pregnancy outcomes for Indigenous women between 2000–03 and found that smoking was significantly associated with small-for-gestational-age births (Panaretto et al. 2006). Eades et al. (2008) found an association between smoking and poor pregnancy outcomes (low birth weight and/or preterm births) for Indigenous women in Perth in the mid- to late-1990s. There are long-term health effects for children later in life, such as an increased risk of coronary heart disease, type 2 diabetes, and obesity (Gluckman 2008). Exposure by children to environmental tobacco smoke is also a significant cause of morbidity, particularly asthma and other respiratory diseases (Wipfli et al. 2008). The prevalences of these conditions are all higher amongst Indigenous people compared to non-Indigenous people. For example, in Victoria in 2007, 12.5% of Aboriginal babies were born with low birth weights (<2500 grams), compared to 6.5% of non-Aboriginal babies. The peri-natal mortality rate of Aboriginal babies was also higher: in 2007, 20.4 per 1000 births compared to 9.8 per 1000 for non-Aboriginal babies (DPCD 2009).

Determinants of Tobacco Use amongst Pregnant Indigenous Women

This section briefly reviews current knowledge of the determinants of tobacco use amongst pregnant Indigenous women, and the barriers to quitting. An understanding of these determinants and what drives women to smoke or to quit before, during and after pregnancy is crucial to the development of appropriate tobacco control programs. Four published papers have been identified that report on the determinants of tobacco use *specifically* amongst pregnant Indigenous women: Heath et al. 2006, Wood et al. 2008, Gilligan et al. 2009 and Passey et al. 2009. Most of this review, therefore, focuses on studies published about tobacco use amongst Indigenous people more generally. This section first discusses the broad environmental determinants of tobacco use amongst Indigenous Australians, and, second, reviews other social and behavioural determinants. It takes a 'strengths-based', rather than deficit, approach, reviewing the literature from the viewpoint of how to improve smoking cessation by addressing these determinants.

Broad determinants of tobacco use

Published literature identifies a number of broad environmental determinants that contribute to the high levels of uptake and maintenance of tobacco use and relatively low levels of quitting amongst Indigenous people. The impacts of the colonising process on Indigenous people, the greater likelihood of socio-economic disadvantage, and strong social norms supporting smoking are all associated with maintaining higher rates of smoking in Indigenous communities.

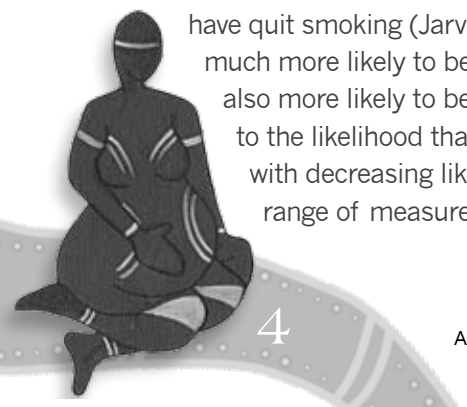
Colonisation

There is evidence that, prior to European settlement, Aboriginal and Torres Strait Islander people in some areas of Australia used native tobacco and *pituri*. However, with colonisation tobacco was used as payment for labour, and exchanged for cultural and intellectual property (such as sacred objects and ceremonial knowledge), and was provided as part of official government rations (Brady 2002). Post-invasion, the social controls limiting the use of native tobacco were lost. This, and the widespread availability and the addictive nature of nicotine, meant that tobacco use became widespread amongst Indigenous people (Brady 2002).

In addition, the dispossession, family dislocation and acculturation resulting from the colonisation process led to large differences in socio-economic status and an increase in stressors, such as loss of identity and racism, associated with high levels of tobacco use (Baker et al. 2006; Briggs, Lindorff & Ivers 2003). Paradies (2006), in a review of the association between self-reported racism and health, found four studies of the association between racism and cigarette smoking that all reported a significantly positive association. Indigenous people who had not been removed from their families have been found to be twice as likely to be non-smokers (Thomas DP et al. 2008). Pregnant Indigenous women in Perth have reported that stress related to racial discrimination was a factor contributing to their tobacco use (Wood et al. 2008).

Socio-economic status

Socio-economic status and increased exposure to health risk factors, such as smoking, are strongly linked. The most affluent people in developed countries are less likely to smoke and more likely to have quit smoking (Jarvis & Wardle 1999; Turrell & Mathers 2000). Indigenous people, who are much more likely to be socio-economically disadvantaged than other Australians, are, therefore, also more likely to be smokers. Thomas, D. P. et al. (2008) found a clear income gradient related to the likelihood that Indigenous people smoke; increasing household income is associated with decreasing likelihood of being a smoker. Non-smoking is significantly associated with a range of measures for socio-economic advantage. However, even amongst Indigenous adults



of higher socio-economic status, smoking rates are still around twice the rate of non-Indigenous adults. While socio-economic status is a strong contributing factor to Indigenous smoking prevalence, other factors also contribute to high smoking prevalences in Indigenous communities.

Social norms around smoking in Indigenous communities

Several studies and projects in Indigenous communities have identified that the main reason why Indigenous smokers find it difficult to quit is because of the high numbers of smokers all around them, and the strong social norms supporting smoking in Indigenous communities (Roche & Ober 1997; Stewart & Wall 2000; Brady 2002; Lindorff 2002; Briggs, Lindorff & Ivers 2003; Johnston & Thomas 2008). In community consultations conducted in 2000–01 for the National Aboriginal and Torres Strait Islander Tobacco Control Project, smoking was seen as a mechanism to maintain kinship bonds, a sense of belonging and social cohesiveness. Exchange relationships were seen to be maintained and enhanced through the sharing of cigarettes and information in a social forum. Indigenous people felt there was a constant temptation through exposure to the large number of family and friends around them who were smoking (Lindorff 2002). Similarly, Johnston & Thomas (2008) describe smoking as a communal and collective activity, and tobacco as a commodity for reciprocal social exchange that strengthens social relationships. AHWs in Victoria have indicated that because socialising over cigarettes is so common, this is an easy way to develop rapport with, and to communicate with, clients, and this reinforced smoking and made it more difficult to quit (Murphy & Mee 2000).

Wood et al. (2008) have found that social norms around smoking in Indigenous communities strongly motivate pregnant women to continue smoking. One woman in the study commented that 'it's like when someone offers you a cup of tea when you go to their house, they offer you a smoke and you feel obliged to have one' (*Health Report* 2008). The women in this study reported difficulties in quitting smoking because their families, particularly their partners, were not supportive, and everyone around them was smoking (Wood et al. 2008). Gilligan et al. (2009) found that having a partner who smokes was significantly associated with Indigenous women smoking during pregnancy.

Addressing determinants to improve smoking cessation

Knowledge and attitudes about health effects of smoking

Several studies of Indigenous pregnant women have shown that while they are aware that smoking is bad for their health, they do not know the specific health effects, and in particular have limited knowledge about the specific risks of smoking for the foetus (Passey et al. 2009; Gilligan et al. 2009; Wood et al. 2008).

Several studies report concerns for personal health as a major motivator to quit, particularly after suffering an illness or being diagnosed with a serious illness (as opposed to simply the threat of future illness) (Wood et al. 2008; Lindorff 2002; VAHS 1999). Studies have also reported that the known health effects of tobacco use were not likely to deter smokers, but that smokers were more likely to give up because of the impact of smoking on the health of others, particularly children (Stewart & Wall 2000; Alford 2004; Johnston & Thomas 2008). Johnston & Thomas (2008) have reported on the importance of families in motivating people to quit (as well as playing a role in initiating and maintaining smoking behaviour). Similarly, Indigenous Health Workers, including those working with pregnant women, have also indicated that people are more likely to respond to smoking cessation messages that appeal to their desires to protect their children and others around them; they also feel more comfortable delivering these types of messages than confronting people directly (Wood et al. 2008; Mark et al. 2005). Several tobacco control projects have taken the approach that smoking cessation messages are probably more likely to be successful when framed around the impact of environmental tobacco smoke (CUCRH 2008).

Increasing the relative importance of smoking as an issue

While knowledge of the health effects of smoking appears to be good in Indigenous communities, tobacco use is still not a high priority for Indigenous people. There is such a large range of complex health and social problems affecting Indigenous people that smoking often takes a low priority (Stewart & Wall 2000; Murphy & Mee 2000). The relatively long time-lag between exposure and illness, and the less acute social and welfare impact of smoking on people lives (particularly when compared to alcohol, petrol and other drugs), means that smoking is less likely to be the focus of service delivery (Briggs, Lindorff & Ivers 2003; Murphy & Mee 2000). Health workers may be reluctant to provide smoking cessation advice when so many other health and social issues are affecting their clients (Wood et al. 2008; Harvey et al. 2002). A stronger incorporation of tobacco cessation activities into the broader activities of health workers, and organisational mechanisms to support this, will most likely raise the priority of tobacco control within communities.

Utilising social networks to support smokers to quit

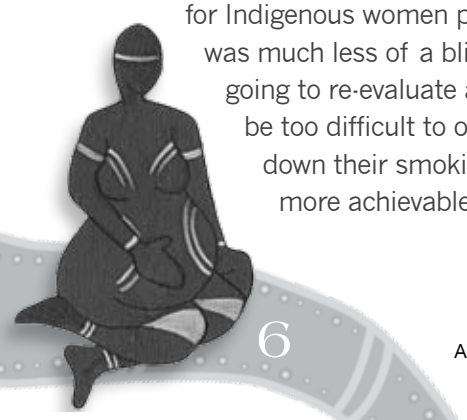
While social networks can reinforce smoking behaviour, they could also potentially be used to promote quitting behaviour. A recent United States study (Christakis & Fowler 2008) suggests that smoking cessation decisions are not made by isolated persons, but reflect choices made by groups of connected people. They hypothesise that changing social norms are transmitted through relationships in the network, and a smoker is more likely to quit as those around him or her quit; there are no more social contacts with whom he or she can smoke. These findings suggest that the involvement of influential individual smokers in Indigenous communities, who have the potential to influence others in their families and communities to quit when they do, could have a powerful impact on smoking cessation amongst Indigenous people (although probably only when part of a range of activities).

Pregnancy as a motivator for quitting

Pregnancy (particularly a woman's first pregnancy) has been noted to be an important contributing factor in non-Indigenous women (and some men) quitting (Penn & Owen 2002). However, it may not be a major motivator for Indigenous women and men. Research suggests that women of lower socio-economic status are more likely to smoke in pregnancy and are the least likely to respond to cessation interventions (Floyd et al. 1993; McDermott & Graham 2006). Pregnant Indigenous women may share the barriers to quitting faced by other women who experience multiple social disadvantages.

Furthermore, a study examining psychosocial problems amongst pregnant smokers in the United Kingdom found that psychosocial problems increased across a pregnancy smoking continuum (non-smoker, quitter, light smoker, heavy smoker); heavy smokers have the most psychosocial problems. They conclude that this group is unlikely to benefit from usual antenatal smoking cessation interventions and requires more intensive and targeted support (Pickett, Wilkinson & Wakschlag 2009). Pregnant Indigenous women who are heavy smokers may also have increased psychosocial problems and so may require more intensive and targeted support.

Pregnancy is often seen as a teachable moment because motivations may be stronger, and there are increased numbers of contacts with health professionals at this time (Hellerstedt et al. 1998). Lisa Wood, a researcher involved in a study of pregnant Indigenous women in Perth, has noted that for Indigenous women pregnancy is not necessarily a 'teachable moment' as 'pregnancy in itself was much less of a blip on the radar of these women's lives…it wasn't this big life change, I'm going to re-evaluate all my lifestyle behaviour' (*Health Report* 2008). The barriers to quitting can be too difficult to overcome, although several women in Wood et al.'s study reported cutting down their smoking in response to their pregnancies (Wood et al. 2008). This may be a more achievable goal for pregnant Indigenous women to strive for.



In contrast, however, Heath et al. (2006) report that the pregnant women in their Townsville-based study may have been more prepared and motivated to quit due to their pregnancies. They investigated the 'stages of change' profile of this study group; that is, whether they had given up (action), were thinking about giving up (contemplation) or were not even thinking about giving up (pre-contemplation). They found that nearly double the expected proportion of women were in the contemplation stage; 58% compared to the 30% reported in mainstream studies. Similarly, only 32% of women were in the pre-contemplation stage, compared to 60% reported in mainstream studies.

Addressing younger age at uptake

Indigenous people are more likely to start smoking at younger ages than non-Indigenous people (ABS 2007), and the earlier young people start smoking, the more likely they are to become addicted, to continue smoking as adults and to smoke heavily (US Department of Health and Human Services 1988; Royal College of Physicians 1992). High rates of smoking in Indigenous communities mean that adults are modelling smoking behaviour to young people, who are consequently more likely to take up smoking themselves (Zastowny et al. 1993; den Exter Blokland et al. 2004). Other factors influencing Indigenous youth to take up smoking include boredom, unemployment, stress, alcohol use, peer pressure and image (Alford 2004; VAHS 1999). The habit is then reinforced by the addictive nature of nicotine. Studies of Indigenous youth in other countries have also found stressful life events, financial insecurity and household structure (for example, single-parent households) to be influential risk factors (Le Master et al. 2002). A study of Indigenous youth in Melbourne identified a number of protective factors for a whole range of health and wellbeing indicators, including smoking. These factors included appreciation of Aboriginal community values, creative activities, sense of responsibility, sense of belonging and community connection, pride in Aboriginal identity and sporting activities (VAHS 2000). The findings of these studies suggest a number of factors that could be targeted in preventive tobacco control programs with young people. If smoking uptake can be delayed amongst Aboriginal youth, then they are less likely to start smoking or to become addicted.

Coping with stressors

Reducing stressors in the lives of Aboriginal women who smoke and/or supporting them to better manage these stressors is important in improving smoking cessation in this group. Stress is a major barrier to quitting, as well as contributing to relapse (Stewart & Wall 2000; Lindorff 2002; Wood et al. 2008; DiGiacomo et al. 2007). Stresses come from racism, family and work expectations, social and health problems, and life-altering events, such as the death of a family member (Mark et al. 2005; DiGiacomo et al. 2007). Such stressors are magnified for Indigenous smokers, often occurring together and repeatedly over time. Smoking is used as a coping mechanism to deal with a stressful situation or as a 'time out' or a way to relax to prevent future stressful events (Lindorff 2002). AHWs in a South Australian study reported that stress associated with their jobs was a barrier to quitting smoking (Kerdel & Brice 2000). It is an enjoyable activity that people have control over when everything else in their lives is difficult and chaotic.

In studies with pregnant Indigenous women, stress has been strongly associated with smoking. Passey et al. (2009) reported that smoking was seen as being one way to cope with the stresses of everyday life. Likewise, Heath et al. (2006) found that 57% of the participants reported that they felt they needed to smoke to relieve stress. Gilligan et al. (2009) found that the level of daily stress was significantly higher amongst pregnant Aboriginal smokers than non-smokers. In another study with pregnant women, Wood et al. (2008:2381) describe stress as 'a strong reinforcer of smoking dependency and…a trigger to relapse'; stress, therefore, presents a significant barrier for pregnant women to quit. Furthermore, AHWs working with these pregnant women reported that smoking became a low priority in the context of dealing with a whole range of other health and social issues

during pregnancy, such as poverty, housing, sexual abuse and domestic violence. AHWs reported not discussing smoking cessation out of concern that they would simply increase the stresses for their clients (Wood et al. 2008).

Increasing the number of quit attempts per person

Studies indicate that the majority of Indigenous smokers, of all ages, want to quit, but find it difficult to do so (CUCRH 2008; Lindorff 2002; VAHS 1999). It takes, on average, between five and seven attempts before a person will succeed in quitting smoking (Durcan et al. 2002). Research has found that most Indigenous people have made fewer quit attempts than non-Indigenous smokers. In one study, 85% of Indigenous smokers had made, on average, two or fewer previous quit attempts. If the opportunities for quit attempts could be increased, then there may be greater success with Indigenous people quitting (Mark et al. 2004).

Reducing rates of cannabis and alcohol use

There is a higher rate of use of cannabis in Indigenous communities than in non-Indigenous communities (DoHA 1996) and this has a relationship to nicotine addiction. A study in Arnhem Land communities found that tobacco users were around three times more likely than non-users to also use cannabis. For participants in the study, cannabis use reinforced continued tobacco use (Clough 2005). Smoking is also associated with higher rates of alcohol use (Clough et al. 2004).

Increasing workforce knowledge, skills and confidence

AHWs are crucial in smoking cessation strategies, as they are central to the delivery of primary health care in Aboriginal communities. Studies suggest that while AHWs have basic knowledge of the link between smoking and cancer and heart/lung diseases, their knowledge of the associations between smoking and diabetes, stroke and low birth weight was incomplete (Kerdel & Brice 2000). Furthermore, they often lack the knowledge and skills to promote quitting (West, Young & Lloyd 1998; Lindorff 2002; Stewart & Wall 2000). One study found that while smoking is part of the competencies in AHW certificates, training is mostly limited to general information about tobacco use; few courses provided skills-based training in facilitating quit groups or in using nicotine replacement therapy (NRT). Additional resources were needed both for AHWs and the trainers (Adams & Walker 2006).

Several studies involving AHWs have reported that they are sometimes reluctant to provide cessation advice to patients beyond speaking to them generally or talking about reducing passive smoking around children. These were perceived to be less confrontational ways of talking to people about smoking. Wood et al. (2008) report that AHWs in their study were concerned about being perceived by their pregnant clients as telling them what to do. They were reluctant to provide specific smoking cessation advice, although most did routinely ask clients if they smoked. AHWs also did not want to add to the other health and social problems facing their clients and make them feel badly about themselves by raising smoking cessation. They did not want to disrupt the therapeutic relationship by raising the issue of smoking and risking women not returning for antenatal care. Indigenous Health Workers have also reported discomfort at providing advice to particular individuals within the community, for example, to Elders (Zandes, Holloway & Mason 2008; Harvey et al. 2002).

In addition, several studies have identified that AHWs may also feel uncomfortable providing smoking cessation advice when they themselves are smokers (Murphy & Mee 2000; Mark et al. 2005; Adams & Walker 2006). The high level of smoking amongst health workers could have an impact in the following ways: it reduces the importance of smoking as a problem to be dealt with immediately (in the context of other pressing concerns); they do not see themselves as having the right to encourage others to quit, when they themselves smoke; they believe that smokers will not listen to them; and they believe that their own lack of

success at quitting will reinforce the difficulty of the process to their clients (Murphy & Mee 2000). Support strategies in workplaces and families have been suggested to support smoking cessation amongst AHWs (Kerdel & Brice 2000).

Thompson et al. (2009) found that around three-quarters of AHWs in their study reported that AHW smoking status is a barrier to providing cessation advice to clients. Their main concern was for their credibility; that is, how could they talk to others about cessation, when they were having trouble quitting themselves? Suggestions for assisting AHWs to be more comfortable in delivering smoking cessation advice include adequate and appropriate training and support in the workplace to quit, such as NRT and quit buddies.

There is an insufficient workforce in Indigenous tobacco control (Stewart & Wall 2000). A case can be made for specialist Indigenous Tobacco Control Workers, but more appropriate training and support also needs to be available to Indigenous Health Workers across the board. In addition, further attention is needed to ensure that general practitioners are knowledgeable about and/or confident in raising tobacco cessation with patients and safely prescribing them with NRT and other pharmacotherapies. Even where adequate training has been provided, AHWs have commented on the frustration and difficulties in implementing tobacco control programs in the absence of community support (Harvey et al. 2002).

Expanding the Indigenous tobacco control workforce is part of the new initiatives announced under the Commonwealth Indigenous Chronic Disease Package through the Council of Australian Governments. Tackling the risk factors of chronic diseases, including smoking, is a key focus of the package, and initiatives will include training a new regional tobacco control workforce to support Indigenous people to quit smoking; providing training to existing health staff in providing smoking cessation advice and activities; and developing local Indigenous-specific anti-smoking campaigns (see DoHA 2009).

Training programs such as *SmokeCheck* and the Educator Training delivered by Quit Victoria have been rolled out in several states to address the lack of skills and confidence that AHWs face in delivering smoking cessation advice and tobacco programs. These are discussed further, below. In addition, the Centre for Excellence in Indigenous Tobacco Control (CEITC) has developed a kit that will be of use to trainers and AHWs in addressing the gaps in knowledge about tobacco program development (CEITC 2007). Training in the use of this resource is currently being rolled out around the country.

Increasing and improving infrastructure and relevant programs to help people quit

The high prevalence of tobacco use amongst Indigenous Australians is likely to be affected by the more limited access to, and availability of, appropriate health services and treatments. Access to health services can be limited by factors such as language barriers, racism and reduced cultural safety. Limited access to NRT in remote communities may also reduce treatment options for Indigenous Australians in these communities.

While there are examples of successful tobacco control projects for Indigenous people, many of these have not been sustained. Tobacco control has, as a result, not been a core activity of Indigenous community-controlled health services that have so many other competing health and social priorities. Few programs have lasted long enough for staff to develop expertise in the area, or for successes in smoking cessation to be realised (Ministerial Council on Drug Strategy 2005). Funding to tobacco control programs tends to be one-off and short term (Briggs, Lindorff & Ivers 2003).

There is generally a lack of support available to people who want to quit. Smokers are getting information and knowledge about smoking and the health effects, but then when they are ready to quit, they have nowhere to turn to for help. Wood et al. (2008), for example, report that even when clients indicated to AHWs that they wanted to quit, protocols and programs were not in place to support their attempts.

There has, in addition, been a fragmented approach from Commonwealth and state/territory governments, non-government organisations and community-controlled services to Indigenous tobacco control. This will hopefully be at least partly addressed through the recent development of the *Victorian Tobacco Control Strategy 2008–2013* (DHS 2008), which identifies Aboriginal people as a specific target group. The *Victorian Government Indigenous Affairs Report 2008-09* specifically includes the reduction of smoking in pregnancy as a key indicator (Indicator 1.1) to improving maternal health and early childhood health and development (Strategic Area for Action 1). It sets a target of reducing reported smoking by Indigenous mothers to 25% by 2013 (DPCD 2009). At the national level, the Commonwealth Government has made a commitment to tackling Indigenous tobacco use through the National Indigenous Tobacco Control Initiative. As mentioned above, funding has been committed by the Council of Australian Governments to support Indigenous tobacco control initiatives under the Commonwealth Indigenous Chronic Disease Package.

Prevention and Cessation Initiatives in Indigenous Tobacco Control

Many prevention and cessation programs that have been successful in the mainstream context have not been evaluated in the Indigenous context. This section reviews the current knowledge of best practice in Indigenous tobacco control initiatives, focusing specifically (though not exclusively) on initiatives that have targeted pregnant Indigenous women. Table 1 summarises prevention and cessation interventions around Australia that have specifically focused on tobacco control with pregnant Indigenous women. The review focuses initially on those activities that target individual patients in the primary health care clinic setting, and then reviews interventions that target populations or communities.

Interventions with individual patients and their families in primary health care settings

A Cochrane Review of 72 trials has found that smoking cessation interventions in pregnancy reduce the proportion of women who continue to smoke in late pregnancy, and reduce low birth weight and preterm birth. Interventions used in these trials were generally delivered to individuals and included educational interventions based on cognitive behaviour and motivational interviewing; interventions based on 'stages of change' theory; offering incentives; giving feedback to the mothers on foetal health status or nicotine by-products measurements; pharmacotherapy; or other interventions, such as hypnotherapy. The authors recommend that smoking cessation interventions should be routinely provided in all maternity care settings (Lumley et al. 2009). It can be assumed that smoking cessation interventions delivered to pregnant women in Aboriginal primary health care settings will also reduce smoking in late pregnancy and reduce some poor antenatal and peri-natal outcomes.

While the majority of smokers who quit do so without any individual clinic-based interventions, where individuals seek support and assistance to quit smoking, a number of clinically based interventions are available. No studies have been found that examined the relative efficacies of these interventions with pregnant Indigenous women, and only a few have been conducted with Indigenous people generally. Studies in mainstream contexts can provide valuable lessons as to their likely success in Aboriginal contexts, when appropriately delivered. There are a number of individual-level interventions to examine:

- brief interventions and individual behavioural counselling;
- NRT and other pharmacotherapies;
- quit smoking courses; and
- other individually focused behavioural interventions, such as hypnotherapy, group therapy and self-help materials.

There are no studies with Indigenous Australians that assess the efficacy of these interventions independently. However, a number of multi-component interventions have been evaluated that have incorporated more than one of the interventions listed above. These are reviewed below.

In the context of VACCHO's *Goreen Narrkwarren Ngrn-toura* – Healthy Family Air project, individual-level clinical interventions for Aboriginal people in Victoria are delivered through ACCHOs. These organisations vary in the types of services that they provide. In Victoria most have some level of general medical service provision through general practitioners, practice nurses and/or AHWs, and most smoking intervention opportunities in the health service setting are likely to be through the general medical consultation or periodic health checks delivered by these health professionals.

Many ACCHOs also have health issue- or population-specific workers and programs. These include, for example, workers in the areas of sexual health, drug and alcohol, youth, health promotion,

justice, disability and aged care, and maternal and child health. Eleven organisations throughout Victoria are sites for Koori Maternity Services, which aim to provide culturally accessible antenatal care for Aboriginal women through dedicated AHW positions and, in some sites, with midwives working alongside them. This program has been successful in improving Aboriginal women's access to and satisfaction with antenatal care, and has resulted in improvements in antenatal and peri-natal outcomes (Campbell 2000; Campbell & Brown 2004; DHS 2009). It has been difficult to assess the impact of this program on smoking quit rates amongst pregnant women; improvements in antenatal and peri-natal outcomes are likely due to a combination of factors associated with the program, including earlier and more frequent contact with health professionals, and health advice on nutrition, emotional support and substance abuse.

There are also other programs and strategies delivered through ACCHOs that may provide opportunities for interventions delivered by health workers to Aboriginal patients. These programs take a holistic approach to tackling wellbeing through clinical interventions and social support programs that address multiple risk factors. Such programs include, for instance, Best Start, Healthy for Life, and the Aboriginal Health Promotion and Community Care Program. These strategies do not specifically focus on pregnant women, although some activities within these programs may assist pregnant Aboriginal women. Best Start, for example, aims to improve the health, development, learning and wellbeing of all Victorian children by supporting families and communities to provide the best possible environments for child development from pregnancy to school. Six of the thirty Best Start sites are specifically with Aboriginal communities (DEECD 2009). Healthy for Life's objective is to improve the health of Aboriginal and Torres Strait Islander mothers, babies and children. A long-term outcome of the Healthy for Life program is to address low birth weight amongst Indigenous babies, an outcome related to smoking (DoHA 2006). Amongst the aims of the Aboriginal Health Promotion and Chronic Care Program is improved coordination and continuity of care and support for chronic disease self-management, and improved coordinated approaches to health promotion planning, implementation and evaluation, including for smoking cessation (VACCHO nd).

Table 1: Intervention-based projects addressing smoking during pregnancy amongst Indigenous women

Project title	Location/ organisations involved	Description	Time period	Funded by	Evaluation/results	Publications/ websites
A RCT to Assess the Effectiveness of an Intervention to Reduce Smoking amongst Pregnant Aboriginal and Torres Strait Islander Women	Aboriginal Medical Services in Cairns, Townsville and Perth	Women are randomised into two groups – one with usual antenatal care, and the other with brief intervention supplemented by more intensive follow-up and support from general practitioners and project workers, and NRT after three failed quit attempts.	2005–2010	National Health & Medical Research Council	Evaluation of a pilot study shows no difference between control and intervention groups. But, having an intervention at all made a difference; an overall cessation rate across both groups of 11% was achieved.	Gilligan, C. (2008). *Aboriginal and Torres Strait Islander Women: An Examination of Smoking during Pregnancy*. Thesis submitted for fulfilment of the award of Doctor of Philosophy (Health Behaviour Science), The University of Newcastle. Submitted February 2008.
Support Mums to Quit: smoking intervention research for pregnant rural Aboriginal women	North coast NSW, involves researchers from Northern Rivers University Department of Rural Health, University of Sydney; NSW Aboriginal Maternal and Infant Health Strategy (AMIHS) team at Ballina; and North Coast Area Health Service. Supported by Bundjalung Elders Council and Ngayundi Health Council.	Research aims to develop a better understanding of the factors influencing the high smoking rates amongst pregnant Aboriginal women, and what types of strategies would help women quit. Information will be used to design and evaluate a quitting program. First stage of research involved focus groups and one-on-one interviews with pregnant women on the North Coast about smoking, factors affecting smoking and quitting, and their views on what would help women quit. Study also included use of alcohol and other drugs in pregnancy. The second stage of research will involve a state-wide survey to assess the wider applicability of the stage one findings to other Indigenous women in NSW. Stage three will involve development and evaluation of a quitting program based on the results of the first two studies.	2009–ongoing	Department of Health and Ageing	First stage of findings from focus group discussions and interviews available. If the program that is eventually developed proves to be successful, it will be offered to other AMIHS programs across NSW.	Passey, M., Gale, J., Holt, B., Leatherday, C., Roberts, C., Kay, D., Rogers, L. & Paden, V. (2009). 'Stop smoking in its tracks: understanding smoking by rural Aboriginal women', in Gordon Gregory (ed.), *Proceedings of the 10th National Rural Health Conference* (Cairns, Qld, 17–20 May 2009), Canberra: National Rural Health Alliance.

Project title	Location/ organisations involved	Description	Time period	Funded by	Evaluation/results	Publications/ websites
Qualitative and Quantitative Studies of Otitis Media to Improve Ear Health: qualitative research phase	The Telethon Institute for Child Health Research, University of Western Australia. Research based in the Eastern Goldfields Region.	Qualitative study aims to investigate patterns of smoking and breastfeeding, characteristics of smokers and non-smokers, and long/short-term breast-feeders, Aboriginal perceptions of the social determinants of smoking, early weaning and stress, and Aboriginal women's perceptions of the determinants of maternal smoking, early weaning and stress. The qualitative phase involved semi-structured interviews with 55 senior and younger Aboriginal women about maternal smoking and non-smoking; short/long-term breastfeeding factors that increase or decrease maternal stress; and proposals for interventions to decrease maternal smoking, increase the length of breastfeeding Discussions are ongoing with Aboriginal communities and funding partners to potentially establish 'Young Mothers Centre(s)'. This would include childcare, parenting support, training courses, entertainment, leisure space, material goods, referral and information.	2002–ongoing	Healthway (Health Promotion Foundation of WA); National Health and Medical Research Council.	People smoke because others around them smoke and continue due to stress and worry and find alternative activities helpful in reducing smoking. Stress was the main factor for unhealthy decision-making relating to smoking and breastfeeding. Future strategies to address smoking should include family, financial and competing demands and time out opportunities for entertainment. Interventions resulting from the study include NAIDOC Banner and t-shirts promoting breastfeeding and non-smoking in pregnancy. Otitis Media results/ feedback plain language pamphlet produced promoting breastfeeding, non-smoking and stress reduction findings. Aboriginal mums' resource pamphlet/service directory.	Plain language study results/feedback pamphlet was developed.
Indigenous Women's Project	Asthma Foundation of Western Australia	The project uses the message 'Fresh air grows solid babies' developed through NAPS Project (see below). The project delivers Brief Intervention training in smoking cessation to AHWs, midwives and child health nurses. Through the project, Indigenous pregnancy resources are disseminated throughout WA. Community and training grants are also available through the project.	Currently funded to December 2009	Department of Health, Government of WA		Resources available at www.smokefreebaby.org.au

Project title	Location/ organisations involved	Description	Time period	Funded by	Evaluation/results	Publications/ websites
Reducing the Risk of SIDS in Aboriginal Communities (RROSIAC)	SIDS and Kids Western Australia	Aims to reduce high risk of Aboriginal infants dying of Sudden Infant Death Syndrome (SIDS); aims to raise awareness amongst Aboriginal community members and health professionals for need for smoking cessation and encourage access to support. Activities include conducting focus groups, community education and train-the-trainer education to health professionals; development and implementation of culturally appropriate tobacco cessation within SIDS program.	Recurrent funding	Office for Aboriginal and Torres Strait Islander Health	Twelve-month external evaluation by Curtin University of the RROSIAC program.	Brochures, flip charts and fridge magnets have been developed.
Smoke-free Pregnancy Project – Aboriginal women and their families	Quit South Australia	Aims to reduce the rate of pregnant women who are smoking, increase the number of health care providers who are trained in providing brief smoking cessation intervention, and increase the number of Aboriginal pregnant women and family members referred to Quitline. Activities include provision of training to AHWs; NRT provision to pregnant women and families; promoting Aboriginal-specific resources.	Funded to June 2011	Drug and Alcohol Services South Australia	Evaluation will include process evaluation of education sessions for AHWs; data to be collected on numbers of referrals to Quitline; analysis of data on rates of smoking in pregnancy at state-level.	Aboriginal-specific resources available on Quit SA website (www.quitsa.org.au)
Newborn Asthma & Parental Smoking Project (NAPS)	Asthma Foundation of Western Australia; Kulunga Research Network	Project looked at ways to promote the 'Care for my Air' message to pregnant Aboriginal women. Produced and trialled culturally appropriate resources, and distributed to AHWs and Aboriginal Liaison Officers in Perth and Wheatbelt regions of WA. Message on resources is 'Fresh air grows solid babies' (see: 'Indigenous Women's Project' above).	March 2005– March 2007	Healthway	Not clear if the resources have been evaluated.	

Project title	Location/ organisations involved	Description	Time period	Funded by	Evaluation/results	Publications/ websites
Baia-Lak Birrah Lii Playgroup Program	Wathaurong Aboriginal Co-operative Ltd	Multi-component six-week program offering community-based support to deal with stress and financial counselling, and smoking cessation program in context of playgroup. Different methods of smoking cessation used by each of the women, but was done in a supportive environment.	Eight week program in 2007		Four women quit smoking (two had been smokers for >30 years). Two AHWs completed Quit training.	VACCHO & CRCAH (2007). Communities Working for Health and Wellbeing: Success Stories from the Aboriginal Community Controlled Health Sector in Victoria. Fitzroy & Casuarina, NT: VACCHO & CRCAH.
Rio Tinto Child Health Partnership Project	Rio Tinto Child Health Partnership: Telethon Institute for Child Health Research; Rio Tinto; Alcohol Education and Rehabilitation Foundation; WA, QLD and NT governments.	One of three projects was focused on reducing exposure to smoking and alcohol during pregnancy. Undertook a literature review. Supported development of culturally appropriate activities and messages to address alcohol use and smoking during pregnancy. Projects were undertaken in three sites in Qld, one site in NT, and two sites in WA. Also held a symposium: 'Start out Strong: A healthy beginning in life'.	2003–2007	Rio Tinto; Alcohol Education and Rehabilitation Foundation; WA, Qld and NT governments.	Evaluations show success in building the capacities of Indigenous communities, increasing understanding and awareness, reducing alcohol and/or tobacco use amongst pregnant women, and success in building the partnerships.	Kulunga Research Network (2008). Rio Tinto Child Health Partnership. Delivering Improvements in Aboriginal and Torres Strait Islander Child and Maternal Health. Subiaco: Kulunga Research Network, Telethon Institute for Child Health Research.
Healthy Ways Project	Interdepartmental initiative of SA government; involved ten SA Aboriginal communities.	Reducing the uptake of smoking by women and children in these communities was a key aim of the project (others were around nutrition and health outcomes for mothers and babies). Strategies in the area of tobacco control included training of community and health workers; retail policies; creation of smoke-free areas.	2001–2005	SA Department of Health, Commonwealth Department of Education, Science and Training.	No specific evaluation of impact on smoking cessation; focus of project was on nutrition and community development issues. Recommendation to appoint a Tobacco Program Worker to specifically work with these communities on tobacco control.	South Australia, Department of Health, Aboriginal Health Division (2006). *Healthy Ways Project (2001–2005): Evaluation Report*. Adelaide: SA Department of Health.

Brief interventions and individual behavioural counselling

Several Cochrane Reviews show that brief interventions delivered by health professionals are effective in reducing smoking prevalence in mainstream settings: interventions delivered by doctors in primary care settings, hospital wards, outpatient clinics and industrial clinics (Stead, Bergson & Lancaster 2008); by nursing staff in hospitals, and in health check or preventive health settings (Rice & Stead 2008); and by dental professionals (Carr & Ebbert 2006). A recent review of the literature has found only a small additional benefit of more intensive counselling compared to brief counselling (Stead, Bergson & Lancaster 2008). Brief interventions are not only effective, but are also inexpensive and cost effective.

While there have been no studies specifically evaluating the efficacy of brief interventions delivered to Indigenous people in Australia, there is no reason why, with proper training and support, health professionals (particularly AHWs) could not successfully deliver brief interventions in Indigenous contexts, and with pregnant Indigenous women.

Brief intervention training for health professionals

Studies on brief interventions in the Indigenous Australian context have mostly examined the success of training for AHWs in their delivery (as opposed to their impact on actual smoking cessation). In the mainstream context, a review has found that training health professionals in providing smoking cessation interventions has been shown to have a measureable effect on their ability to identify smokers and to provide them with smoking cessation advice (Lancaster, Silagy & Fowler 2000).

In the Australian Indigenous context, two types of programs have been developed and delivered. *SmokeCheck* was developed through a project at Queensland Health based on the Smokescreen brief intervention training program for general practitioners, and uses the 'stages of change' model developed by Prochaska and DiClemente (1986). The training includes a brief intervention handbook and resource materials designed specifically for Indigenous clients: those who are not ready to give up; are thinking about giving up; have already decided to give up; are trying to stay a non-smoker; and pregnant women. *SmokeCheck* has been adopted in Queensland, New South Wales, South Australia and Western Australia. Quit Victoria has also been involved in developing and delivering Educator Training to Indigenous communities in Victoria and the Northern Territory (Zandes, Holloway & Mason 2008).

Evaluation of *SmokeCheck* training in Queensland and New South Wales has found that it can result in improvements in clinical practice, and may have benefits for practitioners who smoke, but its impact on improving smoking cessation rates for patients is not yet clear (Queensland Health 2007; Goodger, Hearn & Soewido 2009). One study of the South Australian *SmokeCheck* program that has followed up clients at three and six months appears to have encouraged quit attempts, but the numbers are too small to make definitive statements about the success of this program (Hosking, Stewart & Chong 2009).

An evaluation of the New South Wales *SmokeCheck* project has found that it successfully increased the level of confidence, skills and knowledge of AHWs to provide smoking cessation advice to their clients. For example, the evaluation found that the training significantly increased the confidence of AHWs to talk about smoking and its harmful effects for health, advising and offering advice to quit, and assessing the client's stage of change for smoking cessation (Goodger, Hearn & Soewido 2009).

In Queensland, a number of evaluations have been undertaken on the use of *SmokeCheck* (Campbell et al. 2008; Queensland Health 2007; Harvey et al. 2002). Health workers are satisfied with the training but have expressed concern at not being able to integrate tobacco control activities into their routine clinical practice due to the enormity and complexity of the issue. Amongst the problems that health workers report facing are that they feel constrained by the limited amount of

time available to them in the clinical setting to deliver brief intervention as clients were attending with very complex medical conditions. They also comment that they are uncomfortable giving advice to people (telling them what to do), and giving advice to specific groups such as Elders and non-family members (Harvey et al. 2002). *SmokeCheck* addresses these issues by increasing health worker confidence in delivering smoking cessation advice appropriately (Queensland Health 2007). Participants in a pilot of *SmokeCheck* training in three North Queensland health care settings commented that the training increased and consolidated their knowledge about smoking cessation methods and aids (such as NRT), and increased their access to useful resources. Participants found pregnant women to be the most receptive to cessation advice, and workers reported feeling at ease talking to them about smoking and using the *SmokeCheck* resources with them (Harvey et al. 2002). However, while *SmokeCheck* training can result in improvements in clinical practice, and may have benefits for practitioners who smoke, this may not translate into improving smoking cessation rates for patients. In the pilot study, there was no evidence that any patients or practitioners had given up smoking after six months (Harvey et al. 2002).

The evaluation of the pilot study in North Queensland also reported a need to provide refresher courses, and to integrate a train-the-trainer component to ensure future sustainability. These activities have been included in Queensland Health's roll out of training. The *SmokeCheck* Indigenous Tobacco Brief Intervention Project offers health professionals ongoing training, refresher training, *SmokeCheck* newsletters, and one-to-one support. A train-the-trainer program will also be delivered to ensure the ongoing sustainability of the program (Queensland Health 2009).

Nicotine replacement therapy and pharmacotherapies

In mainstream studies that do not involve pregnant women, the use of nicotine replacement therapy (NRT) appears to increase the likelihood of cessation success. A Cochrane Review of 132 trials found that, when measured at six months, NRT increased the rate of quitting by 50%–70%, compared to placebo or non-NRT use. This was regardless of the setting in which it was offered, the duration of the therapy, and the intensity of additional support provided. So, the review found that NRT works with or without additional counselling, and does not need to be prescribed by a doctor to be effective (Stead et al. 2008). In studies that do not involve pregnant women, Bupropion and nortriptyline have been found to be equally effective as NRT and to double the rate of quitting (Hughes, Stead & Lancaster 2008).

However, Lumley et al. (2009) report in their Cochrane Review of interventions for promoting smoking cessation during pregnancy that NRT did not appear to have a significant advantage over other types of interventions. In fact, there is concern about the possible adverse effects of nicotine on the foetus, and thus concern over the safety of using NRT during pregnancy. A recent trial suspended the enrolment of participants due to a significant increase in serious adverse events in the group receiving the NRT intervention (Pollack 2007 in Lumley et al. 2009). Furthermore, Dempsey (2001) recommends that doses of nicotine prescribed during pregnancy through NRT should be similar to a smoking dose, and should be delivered intermittently (through gum, spray, inhaler) as opposed to continuously (as through patches). This presents a potential problem in the prescription of NRT to pregnant Indigenous women, as the only form of NRT currently available through the Pharmaceutical Benefits Scheme is through patches. Lumley et al. (2004) also found that no trials had demonstrated any significant difference in smoking cessation with Bupropion, although studies suggest that it may be safe to use during pregnancy. While the results of mainstream studies suggest that the use of NRT and other pharmacotherapies could be effective with non-pregnant Indigenous people, their use with pregnant Indigenous women should be approached cautiously.

Quit smoking courses

Research conducted with Indigenous Victorians, as part of the evaluation of the 1997–98 National Tobacco Campaign, suggests that quit groups and other types of support groups could be successful with Indigenous people if they are established specifically for Indigenous people, and run by Indigenous ex-smokers (Murphy & Mee 2000). No reports of quit smoking groups involving pregnant Indigenous women were located. However, the No More Dhonga program delivered at the Rumbalara Aboriginal Health Service involved Indigenous smokers and included a short course developed by Quit Victoria and run over three weeks, one short session per week. It involved providing a Quitline support booklet, support from Quitline (if nominated), access to NRT and Zyban®, and ongoing support from the Quit facilitator and from Quitline. All of the participants chose to use Quitline, without any complaints. Nineteen percent (six participants) quit smoking; two of these were AHWs. Part of the success of the program was attributed to support from the Rumbalara management in prioritising the program and enabling employees to attend; the availability of NRT and Zyban®; the development of an individual management plan involving a number of health professionals, including the general practitioner, Quit facilitator and a local pharmacist; and the culturally safe environment in which it was delivered (Adams, Rumbiolo & Charles 2006).

Other individually focused behavioural interventions

There are a number of additional behavioural interventions that have been evaluated in the mainstream but not in the Indigenous context.

- Group behaviour therapy is twice as effective as self-help programs, and twice as effective as offering no interventions. There is not enough evidence, however, to assess whether group therapy is more effective than intensive individual counselling (Stead & Lancaster 2005).
- Exercise may have an effect on smoking cessation, but most of the studies to date have had small sample sizes or have been difficult to compare due to the use of exercise regimes of various intensities, and follow-up times (Ussher 2005).
- Standard self-help materials only have a very small benefit, and seem to have no additional benefit when used with other interventions (such as advice from a health care professional or NRT). There is evidence that materials that are tailored for individual smokers are effective, although the effect is small (Lancaster & Stead 2005). Materials that are made specifically for Indigenous people may, therefore, have a benefit for Indigenous smokers, but this has not been assessed.
- While smokers who are supported by their partners are more likely to quit, a review of programs that incorporated a specific partner-support component did not show an increase in long-term quit rates (Park et al. 2004).
- There is not enough evidence to show that the use of biomedical risk assessment by offering patients feedback on the physical effects of smoking (such as through measurements of exhaled carbon monoxide) has an impact on smoking cessation (Bize et al. 2005).
- There is no consistent evidence that active acupuncture or related techniques increased the number of people who could successfully quit smoking (White, Rampes & Campbell 2006).
- There is also no good evidence that hypnotherapy can or cannot help people trying to quit smoking (Abbot et al. 1998).

Multi-component interventions in primary health care settings

A small number of studies in Indigenous communities throughout Australia have involved delivering multi-component interventions in primary health care settings. These studies have combined NRT and/or Bupropion with brief intervention, and some have included some kind of ongoing counselling or support. The sample sizes of these studies have been small and the findings not significant.

The NRT trial in three Indigenous communities in north Queensland achieved a quit rate of 14% (nine of 64 smokers) at six months with smokers offered smoking brief intervention, ongoing support and counselling and a course of NRT. Only two of the successful quitters completed a full course of NRT therapy (ten weeks of nicotine gum), with the remainder using patches and/or gum for between one day and four weeks (Campbell et al. 2008). The quit rate achieved in this Queensland trial is similar to an earlier study conducted in three Northern Territory Indigenous communities, which found that 15% (six of 40) of smokers using nicotine patches (with brief intervention) had quit at six months. Another group in the study that had received only brief intervention had a 1% quit rate (Ivers et al. 2003). A project run at Rumbalara Aboriginal Health Service in Victoria offered a combination of a quit course, ongoing support and NRT or Zyban® and achieved a 19% (six of 32) quit rate (Adams, Rumbiolo & Charles 2006). A study in New South Wales involved 115 participants in quit smoking groups, with 82% of these (94) also using NRT. This study had a success rate of only 6.1% at three months (Mark et al. 2004). In a study involving 30 male prison inmates in New South Wales, 50% of the participants were Indigenous. Participants were offered a combination of Bupropion, NRT, brief cognitive behavioural therapy and self-help resources. At six months, 26% (seven) were assessed to be no longer smoking, with the remaining participants reporting that, although they had not quit, they smoked significantly less tobacco per week (Richmond et al. 2006).

Only one multi-component intervention with pregnant Indigenous women in a primary health care setting has been identified. The analysis of the results of this RCT is currently being completed, and the results are not yet published. The trial involves pregnant Indigenous women at three Indigenous health services in Queensland and Western Australia. It aims to assess the effectiveness of a high-intensity intervention to reduce smoking amongst pregnant Indigenous women and involves randomising women at each of the services into two groups – one with regular antenatal care, and the other with brief interventions supplemented by more intensive follow-up and support from general practitioners. A pilot study of the broader RCT study has been reported in a doctoral thesis (Gilligan 2008). While the pilot study found no difference in smoking cessation rates between the control and intervention groups, the rate of smoking cessation achieved overall was 11%.

Gilligan (2008) describes key elements in the design of this intervention with pregnant Indigenous women:

- all women should be routinely asked about their smoking status in order to identify them as smokers/non-smokers;
- general practitioners should be responsible for the delivery of the primary intervention messages;
- interventions should be able to be easily integrated into routine care;
- incorporate elements into programs that will increase the likelihood of provider acceptance of and adherence to the intervention (for example, adequate training, interventions that involve minimal time commitments);
- involve a multi-disciplinary team, including AHWs, that has clearly defined roles and that takes part in the planning, implementation and evaluation of the intervention;
- mechanisms that maximise the cultural sensitivity of the intervention, such as involving community-controlled health services, Board, staff and clients;
- an outcome-driven approach, such as motivational interviewing techniques (while increasing knowledge and attitudes is important, it is not sufficient to change behaviours);
- using mechanisms to increase the probability of participant adherence to the protocol, such as formal agreements with clients, or incentives;
- interventions that take the social environment of the pregnant woman into account and enhance social supports for quitting;
- providing ongoing support to enhance motivation and quit attempts; and
- availability of NRT along with adequate and appropriate counselling and assessment.

While the intervention was not significantly effective compared to usual care, a number of secondary outcomes were successfully achieved. The rate of detection of pregnant women who were smokers was high, and the rate at which women entered into agreements to quit smoking was also high, even if they did not remain abstinent. Prompting quit attempts is the first step to eventually quitting successfully (Gilligan 2008). A number of problems in the research process were identified, including adherence to study protocol by service providers, and contamination between control and intervention groups, leading the researcher to conclude that a RCT study design is not appropriate in an Indigenous community context. Furthermore, Gilligan (2008) concludes that interventions with pregnant women should perhaps focus more widely on multiple and interacting lifestyle factors that impact on health and pregnancy outcomes, rather than focusing specifically on smoking.

Another intervention-based research project underway on the New South Wales north coast is currently in a data collection phase, with the intention of using this information to design and evaluate a quitting program for pregnant Indigenous women. The first stage of research has involved conducting interviews and focus group discussions with pregnant women to assess factors affecting smoking and quitting, and interventions that would support quit attempts. The second stage will assess the wider applicability of these findings to women elsewhere in New South Wales through a state-wide survey. These findings will inform the development of a smoking cessation program (Passey et al. 2009; see also CEITC nd).

Interventions with communities or whole populations

Interventions that focus on communities or whole populations are likely to be successful in the Indigenous context. While individually targeted programs, as reviewed above, are necessary, the evidence suggests that they need to be supported by population-based approaches.

These population approaches can reach and potentially affect a large number of people for a relatively low cost. Many of the initiatives described below impact on pregnant smokers by working with families and communities to provide supportive social environments in which to quit.

Population-based approaches include:

- media campaigns;
- pamphlets and other materials;
- telephone quitlines;
- school and youth programs;
- policy measures, such as legislation limiting tobacco/cigarette selling and advertising, taxation to increase the price of tobacco/cigarettes, and smoke-free areas legislation;
- incentive-based programs; and
- whole of community multi-component interventions.

Media campaigns

Media campaigns are cost effective and have a wide reach. When well funded and sustained over time, they have been associated with reduced prevalence of smoking in the general Australian population (Wakefield, Germain & Henriksen 2008). However, only two evaluations of the impact of the National Tobacco Campaign on Indigenous people have been identified. Both have found that while recall of the advertisements was high, smoking cessation was low (Murphy & Mee 2000; Ivers et al. 2005).

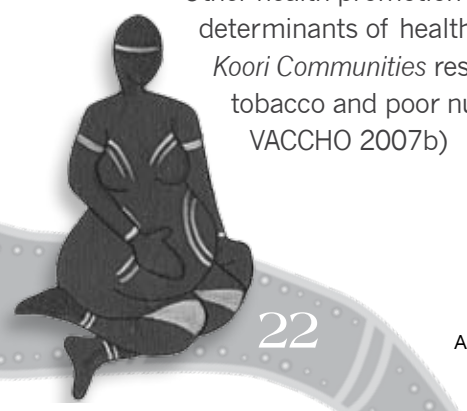
No Indigenous-specific media campaigns targeting pregnant women were identified in this review. However, there have been a number of more generally targeted Indigenous media campaigns. Most of these seem to be aimed at reducing environmental tobacco smoke and exposure amongst children (CEITC 2008).

Ivers et al. (2005) suggest that media campaigns may be useful for targeting the broader Indigenous community, getting quit smoking messages not only to those ready to quit, but also to those who are not ready to quit. In particular, healthy young people who do not attend health services, and so are not exposed to brief intervention advice from health professionals, would benefit from media campaigns. Media campaigns may also raise awareness of smoking as a health issue in Indigenous communities in general, and may be associated with increased community willingness to develop and be involved in tobacco control interventions. Media campaigns most likely act to complement other tobacco control programs (Ivers et al. 2005).

Pamphlets and other materials

Many pamphlets and other types of information materials have been developed or adapted for the Indigenous context; most notably, a series of pamphlets has been developed and adapted in several contexts for use with the *SmokeCheck* brief intervention program. One pamphlet specifically targets pregnant women (AHCSA & Quit SA nd). Culturally appropriate resources have been developed and distributed for use with pregnant Indigenous women as part of a Newborn Asthma and Parenting Smoking Project; the message on the resources is 'Fresh air grows solid babies'.

Other health promotion materials used during antenatal care tend to address multiple determinants of healthy pregnancies. For example, the *Healthy Pregnancies, Healthy Babies for Koori Communities* resource kit includes information about the impact of drugs and alcohol, tobacco and poor nutrition on the developing foetus (Pyett et al. 2007; VACCHO 2007a; VACCHO 2007b)



Telephone quitlines

Quitlines act as a centralised triage service assisting smokers to identify the appropriate cessation service, and providing advice and support, particularly in a crisis (Borland & Segan 2006). One study has found that simply having a quitline available, even if call-in rates are low, increases cessation in the community. It appears that knowing that help is available if necessary, or that quitting is important enough to warrant such a service, has an impact on cessation (Ossip-Klein et al. 1991).

While there has not been a widespread survey analysing the acceptability of quitlines to Indigenous Australians, projects have found that when encouraged to call quitlines, they are well liked and potentially useful to Indigenous people (Adams, Rumbiolo & Charles 2006). Their impact on actual quit rates amongst Indigenous Australians has not been assessed. However, evidence from two overseas studies shows that quitlines are acceptable to and successful for North American Indigenous people; the same numbers of Indigenous as non-Indigenous people called, and the quit rates were comparable (Maher et al. 2007; Hayward, Campbell & Sutherland-Brown 2007). From this evidence, it is likely that quitlines can be both acceptable and effective with Indigenous communities in Australia, and could be helpful in supporting pregnant Indigenous women in quitting. Raising the profile of quitlines to Indigenous communities could be a cost-effective way of improving quit rates.

School and youth programs

The majority of programs run for youth are aimed at preventing the uptake of smoking; the evidence is clear that if young people do not take up smoking by age 20, then they are less likely to become smokers at all. Naturally, the majority of these programs are school based. In a review of school-based interventions that included information giving, social influence approaches, social skills training and community interventions, there was little evidence that information alone is effective. The majority of studies used social influences interventions and found short-term effects on smoking behaviour, but probably no long-term effects (Thomas & Perera 2006). Comprehensive programs that combine school-based programs with community-based and policy initiatives have been found to be effective (Backinger et al. 2003). Family-based programs to reduce smoking of family members in order to strengthen non-smoking attitudes and so promote non-smoking behaviour in children may help to prevent adolescents from taking up smoking (Thomas, Baker & Lorenzetti 2007). While several school-based prevention programs have been run recently in Indigenous communities or in schools where there are many Indigenous students, these have largely been process evaluations; none has assessed the impact of prevention programs on young people taking up smoking (Vale, Sullivan & Cass 2002; Day 2007; Ivers 2005; Campbell et al. 2008; The Second Story Youth Health Service, Kumangka Aboriginal Youth Service & Aboriginal Health Council of SA 2003; Alford 2004; Sarin 2008). Some of these projects are part of broader multi-component community programs.

Policy measures

Legislation limiting tobacco/cigarette selling and advertising

Advertising and selling practices impact significantly on tobacco use. Cigarette displays in retail outlets send the message that smoking is normal and that cigarettes are a normal consumer item. Young people and people who are trying to quit are particularly vulnerable to being affected by these displays (Wakefield et al. 2006). Similarly, exposure to tobacco advertising affects the uptake of smoking, particularly amongst young people. Clearly, it is difficult in the urban/rural context of Victoria to have an impact on policies that impact on the selling and display of cigarettes. However, advocating for improved monitoring compliance with legislation in these locations will have an impact on smoking amongst all Indigenous people, and particularly youth.

Taxation to increase the price of tobacco/cigarettes

International evidence suggests that increasing the cost of cigarettes reduces the prevalence of smoking (Wakefield, Germain & Henriksen 2008). One economic study found that a 10% increase in cigarette prices leads to a 4% decline in smoking prevalence (Gallet & List 2003). Two recent studies found that increasing the price of tobacco results in a reduction in the social disparities of smoking; that is, an increase in the price of cigarettes results in a significantly greater decline in the prevalence of smoking in low-income groups as compared to medium- and high-income groups (Siahpush et al. 2009; Thomas, S. et al. 2008). Furthermore, Thomas, S. et al. (2008) found that price increases were even more effective in reducing these social disparities than more visible interventions such as health warnings and advertising restrictions. The impact of tobacco price increases has not been evaluated in Indigenous communities in Australia. While they have the potential, as in other populations, to reduce tobacco consumption, such price increases may result in financial hardship, particularly for heavily addicted smokers (Ivers 2008).

Smoke-free areas

Making public and private areas, such as workplaces, homes and cars, smoke-free decreases the numbers of cigarettes that people smoke, increases the quit attempts, reduces relapse and increases the numbers of people who quit (Farkas et al. 1999). It also decreases the exposure of others to second-hand smoke. Chapman et al. (1999) reviewed 19 studies of the impact of smoke-free workplaces on smoking and found that, in Australia, 22.3% of the reduction in cigarette consumption between 1988 and 1994 could be attributed to smoke-free workplaces. Smoke-free homes further reduce consumption, and reduce the likelihood that children will take up smoking (Pierce & Leon 2008). Evidence from Canada, for instance, shows that smokers (aged 12 and over) living in households where smoking was completely banned smoked a average of nine cigarettes per day, six fewer than those living in homes where they could smoke. Those facing restrictions both at home and work smoked nine cigarettes per day, compared to those who could smoke at home and at work, who smoked 16 cigarette per day (Statistics Canada 2005).

Smoke-free public and private spaces are cost-effective measures that could have an impact on smoking rates in Indigenous communities, or at least the amount that people smoke. Smoke-free spaces can be difficult to negotiate, particularly in communities where smoking is widespread and acceptable. However, several Indigenous communities have successfully implemented smoke-free spaces. For example, in Western Australia, the Kimberley Aboriginal Medical Services Council (KAMSC) has implemented various smoke-free policies – smoke-free grounds, no smoking in uniform – and is now assisting other Kimberley organisations to make their organisations smoke-free too. These workplace policies, coupled with programs to specifically support staff to quit smoking, have resulted in a halving of the rates of smoking amongst KAMSC staff (Lewis P et al. 2009).

Similarly, workplace policies, intensively supporting quit attempts by staff (and within their social networks) and providing quit training have shown good preliminary results in a project involving five health services in Queensland (Panaretto, Anderson, Deemal et al. 2009). A comprehensive tobacco control program undertaken by the Tasmanian Aboriginal Corporation has been associated with successfully reducing smoking rates, and includes strong smoke-free workplace policies as a component of the program (Davey & Goodwin 2009). Several projects around the country are also working on promoting smoke-free homes and cars; for example, Reducing Aboriginal Children's Tobacco Smoke Exposure in the Pilbara (CUCRH 2008). The North Queensland Indigenous Tobacco Project has produced a resource, 'How to make your workplace smoke-free', to assist organisations to address smoking in and around their workplaces, including providing smoke-free areas, limiting smoke breaks and providing support for staff who want to quit smoking (Campbell et al. 2008).

Incentive-based programs

The impact of the use of incentives on smoking rates varies. A review of several studies on the impact of incentive payments on smoking cessation rates has found that while incentives may have an initial impact, they do not make a sustained impact on smoking rates (Cahill & Perera 2008; Cahill & Perera 2005; Backinger et al. 2008). Incentive programs may improve recruitment rates, and may result in early cessation success. However, once the rewards are no longer available, smokers receiving incentives are just as likely to stop smoking as those not receiving incentives (Cahill & Perera 2008).

In the Cochrane Review on interventions for promoting smoking cessation in pregnancy, the only intervention strategy that resulted in a significantly greater smoking cessation rate, compared with other strategies, was an intervention based on providing incentives to pregnant women (Lumley et al. 2009). A review on improving health using financial incentives has found that incentive-based interventions are most effective for behaviour change that is simple, time limited and tied to the attainment of one-off goals; they are less effective for complex behaviour change and maintenance of behaviour. Using incentives to encourage smoking cessation during pregnancy may be more effective because the primary objective is behaviour change for a limited period of time (that is, during the pregnancy and post-partum period). Incentives also appear to be most useful when part of a multi-faceted program (Jochelson 2007). This review found that the factors that contribute to the success of incentive-based programs include the large value of the incentive; the timing of the reward, which is immediate to the positive behaviour and periodic, as opposed to one-off rewards; schemes that reward support from the individual's social network; and having incentives as part of a program that also builds skills and confidence (Jochelson 2007).

Two significant smoking cessation programs with low-income pregnant women have included incentives and have had an impact of smoking cessation. One program included incentive payments to the pregnant woman and her partner for each month of abstinence. At eight months, 32% of the pregnant women had quit (compared to 9% of women not receiving the incentive), and at two months post-partum 21% of women remained abstinent (compared to 6%) (Donatelle et al. 2000). A pilot program that included incentives in combination with structured social support targeted pregnant smokers in disadvantaged areas of Dundee; at three months post-delivery, the program had achieved a 49% cessation rate (27 of 55 women recruited) (Radley nd).

Whole-of-community multi-component interventions

Community-based tobacco control projects that work with families and entire communities using a number of different coordinated approaches may be more likely to be successful at reducing smoking than single-purpose projects. Whole-of-community interventions require multiple components across multiple sectors with community participation integral to program development, implementation and maintenance. The two large mainstream RCTs using this approach that have been evaluated found little effect, but authors of both evaluations commented that the projects may have been affected by the constraints on the types of activities that could be included in the trials. In particular, activities that could impact on policy and environmental changes, and that could potentially enhance the impact of other activities, were not included in the programs (COMMIT Research Group 1995a, 1995b; Hancock et al. 2001). While evidence for the success of such multi-component community-based programs is not convincing, such an approach is still viewed as best practice in health promotion, and there is considered to be room for further innovations (Hancock et al. 2001). In addition, impacts are more likely to be measurable in the long term, as smoking reduction relies on significant behaviour change, particularly in communities where smoking rates are so high, and smoking is considered acceptable.

In the Indigenous Australian context, multi-component community-based programs have been successful in improving knowledge and willingness to quit (Ivers et al. 2006), and in reducing tobacco sales in Northern Territory communities (Thomas et al. 2009). A non-randomised control trial

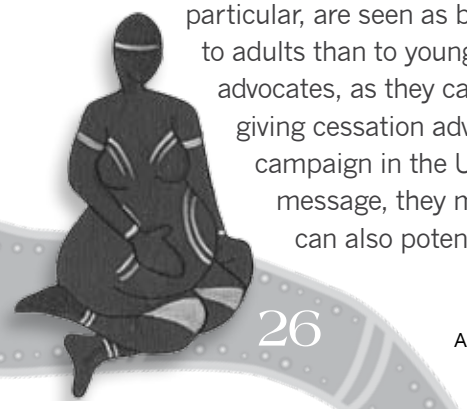
involving six remote Northern Territory communities (three intervention matched with three control) conducted in 1999–2000 involved delivering community-developed interventions alongside a range of evidence-based interventions delivered at a number of access points (for example, training health professionals in health services, point-of-sale interventions at community stores and education programs at schools). Measurements of tobacco orders at community stores appeared to show a reduction in tobacco consumption at one intervention community, and a non-significant reduction in consumption overall. A community survey found no significant changes in the prevalence of tobacco use, although more smokers indicated that they were thinking about quitting, and knowledge about tobacco and its effects increased (Ivers 2005; Ivers et al. 2006).

A multi-component RCT in north Queensland (The North Queensland Indigenous Tobacco Project) had a modest overall impact, but (other than the 'Butt Out' component) did not measure smoking cessation as an outcome. Importantly, the program's evaluation showed that local services and communities felt that they had minimal ownership of the project, and this probably affected the impact of the program overall (Campbell et al. 2008). It is, therefore, crucial that such programs are not only community based, but community driven and owned.

Multi-component programs are currently being developed and implemented elsewhere in Indigenous Australian communities, although these have not yet been completed and evaluated. These programs include the Top End Tobacco Project ('Top End Tobacco Project' 2008); the Clean Air Dreaming Project (Sarin 2008); the Reducing Aboriginal Children's Tobacco Smoke Exposure in the Pilbara Project (CUCRH 2008); and the Beyond the Big Smoke Project (Lewis P et al. 2009).

Two multi-component projects that worked specifically with pregnant Indigenous women and young mothers have been identified. The Baia-Lak Birrah Lii Playgroup Program was a multi-component six-week program at the Wathaurong Aboriginal Co-operative. The program offered community-based support to deal with stress and financial counselling, and a smoking cessation program in the context of a playgroup. The women involved in the program used different methods of smoking cessation, and the program provided a supportive environment in which to quit. Although the numbers of women involved were small, an evaluation showed that four women quit smoking, including two who had been smokers for more than 30 years (VACCHO & CRCAH 2007). In another program, the Healthy Ways Project, a key aim was to reduce the uptake of smoking by women and children in ten South Australian Aboriginal communities. Strategies in the area of tobacco control included training of community and health workers; retail policies; and the creation of smoke-free areas. As the focus of the project was on nutrition and community development, no specific evaluation of the impact of the program on smoking cessation was measured (Department of Health, Aboriginal Health Division 2006).

Multi-component community-based interventions are not likely to produce measureable effects over the short term; individual smoking behaviour change is only likely to occur through the long-term exposure of individual smokers and communities to cessation messages and changes in tobacco culture (Ivers et al. 2006). Such projects, therefore, need to be funded over the longer term. Projects are also more likely to be successful if they include social marketing campaigns and policy measures as part of the suite of components; for example, activities such as price interventions, smoke-free spaces and legislation. In addition, changing social norms around smoking should be central to the approach of these multi-component interventions; thus, the involvement of key local people, 'channels of influence', who could potentially influence community networks, would enhance the success of such a program. Elders, in particular, are seen as being potential 'channels of influence', although this may be more important to adults than to young people (Murphy & Mee 2000). Smokers should not be excluded as potential advocates, as they can sometimes be the best advocates, even though they may feel awkward about giving cessation advice. Smokers have been successfully used in other contexts, such as the 'Truth' campaign in the United States (see www.TheTruth.com). By constantly repeating a cessation message, they may eventually give up themselves. As noted earlier, influential smokers who quit can also potentially influence whole networks of smokers.



Conclusion

The literature reviewed for this paper supports the initiatives proposed by the VACCHO project, *Goreen Narrkwarren Ngrn-toura* – Healthy Family Air (Reducing Smoking amongst Pregnant Aboriginal Women in Victoria: An Holistic Approach). Key tobacco control activities with pregnant Indigenous women should include the following:

Training

- Training provided to AHWs to improve their confidence and capacity to deliver individual clinic-based interventions and community-based tobacco control activities (as described in the recommendations below).

Organisational Development

- Interventions provided in the primary health care setting to advise and support the women to quit. Such interventions should be integrated into existing clinical care practices, and may include brief interventions, behavioural counselling or motivational interviewing; NRT provision, where deemed safe; and delivering quit courses.
- The development of policies and protocols in Aboriginal organisations (such as smoke-free workplaces and cars) to provide supportive environments in which to deliver smoking cessation programs.
- Strategies for AHWs to support and encourage them to quit smoking themselves, including the development of supportive work environments.

Community Development

- Strategies that de-normalise smoking in Aboriginal communities, and provide skills and supportive environments for pregnant women to quit.
- Multi-component family- and community-focused programs that take a multi-pronged and holistic approach to tobacco control, and incorporate components that target families and communities, not just pregnant women.
- Implement programs more broadly that address social disadvantage.

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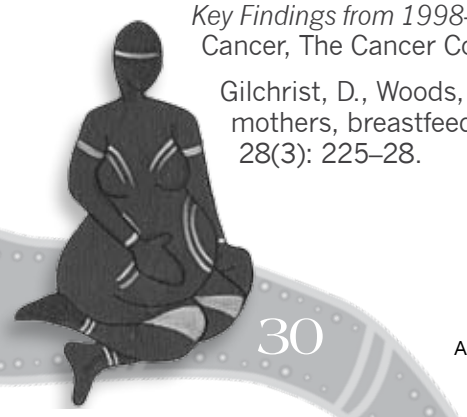

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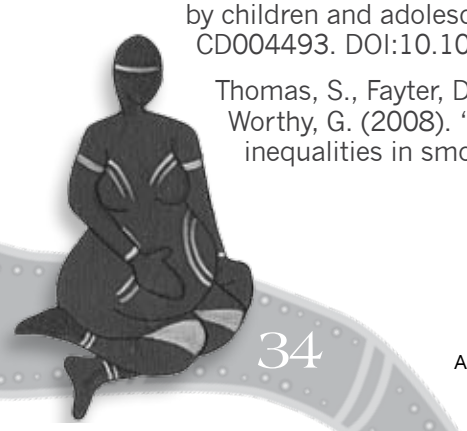

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