STEPS TOWARDS REDUCING HIGH RATES OF TOBACCO USE IN REMOTE ABORIGINAL COMMUNITIES

submitted by

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Statement of Contribution by the student

Jan Robertson was the primary person responsible for the following thesis components:

- Coordination of community engagement, recruitment of Indigenous research staff, delivery of intervention components for the TETP
- Contributed to the design of the baseline and follow-up community tobacco use surveys for the TETP
- Lead the design of the semi-structured interviews of key stakeholders and coordinated for Publication #1
- Lead the collaborative development of health promotion resources for community members
- Developed the follow-up survey feedback resources for community and other stakeholders
- Write-up including literature searches for Publication # 1-4 and 6
- Analysis of qualitative data Publications 1,3 and 4
- Assisted with integration of qualitative and quantitative data for Publications 1. 3-5
- Submission of publications and corresponding author responsible for liaison with journals for Publications #1-4 and 6

Statement of the contribution of others

This thesis has been made possible through the support of the following people:

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Principal Supervisor: Professor Kim Usher
School of Health, University of New England
And, Adjunct Professor, School of Nursing, Midwifery & Nutrition, James Cook University

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School of Public Health, Tropical Medicine & Rehabilitation Science, James Cook University

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In this thesis, the term 'Indigenous' should be taken to include both Aboriginal and Torres Strait Islander peoples.

Abstract

Background

Tobacco use has been identified as a risk factor for six of the eight leading causes of death globally. In Australia the prevalence of tobacco smoking has more than halved over the last 30 years to around 15%. However, despite recent decreases, smoking rates of 41% (in 2012-2013) remain much higher among Australia's Indigenous peoples, with a disproportionately higher associated burden of disease. In small studies undertaken in remote communities over the last 25 years in the Top End of the Northern Territory, tobacco use has been consistently even higher with rates of up to 68%-83% among men and 65-73% among women. This includes remote Arnhem Land communities, where historical and cultural associations with tobacco use are diverse and long-standing.

Little is known regarding effective interventions to reduce smoking rates in remote settings such as these. The commonwealth government has made a commitment to close the life expectancy gap between Indigenous and non-Indigenous Australians by 2030, with unprecedented resources allocated to decrease the most common chronic disease risk factors, including tobacco smoking. The current ambitious target of halving the smoking rate among Indigenous Australians nationally by 2018 underlines the need to undertake tobacco research that can inform evidence-based action in a timely fashion through both effectiveness research and research dissemination.

Aim

The integrative research question posed by this thesis is: what strategies can work to reduce tobacco use in remote Aboriginal communities? The overall aim of the research reported in this thesis by publication is to inform policy implementation, clinical practice, community-driven interventions and future research efforts that will contribute to a reduction in the extraordinarily-high smoking rates found in remote Indigenous communities.

Methodology & Results

Data for the thesis are drawn from a five-year study, the Top End Tobacco Project (TETP) undertaken between 2007 and 2012 in three remote Aboriginal communities in the Arnhem Land region of the Northern Territory (NT). The candidate joined this study in the start-up phase and was therefore not involved in the study design. However, the candidate had a key role in project implementation including community engagement, data collection, data analysis and interpretation, and publication development.

The TETP aimed to implement and evaluate a multiple-component community tobacco intervention in selected communities. The six publications included in this thesis are based on data collected from the larger TETP study. Data sources included: qualitative and quantitative data collected concurrently during baseline community tobacco surveys; qualitative data collected through semi-structured interviews undertaken with key stakeholders across the NT; field trip notes taken during site visits to each of the participating communities and selected key policy documents.

The published papers include research reports on four sub-studies of the TETP (Papers #1,3, 4 & 5) and a discussion paper (Paper #2) and a literature review, which is currently under review (Paper #6). Multiple methodologies were used across the sub-studies and included qualitative and mixed-methods approaches.

Paper #1 reports a qualitative study which examined the perceptions of key stakeholders regarding the opportunities and challenges to translation of tobacco policy into practice in the setting of remote Aboriginal communities. Semi-structured interviews were undertaken in 2009-2010 with 82 key stakeholders in the study communities and regional centres across the Northern Territory. Major themes emerged regarding both opportunities and challenges. The highest opportunity area to reduce smoking was perceived to be implementation of 'smoke-free' policies.

Paper #2, also describes qualitative data drawn from both a pilot study previously undertaken in another part of Arnhem Land and that collected in the TETP. This paper considered strategies for remote area nurses to effectively engage with community members in order to reduce tobacco use. Public health and outreach approaches were considered to have the most promise.

Paper #3, reports data from the TETP community baseline tobacco surveys. A mixed method approach was utilised. The baseline data collected in 2008-9 (n=400 ≥16 years), showed that 76% of participants identified as current tobacco users. More than half of the current users were thinking about, or actively trying to quit. Data related to motivators to quitting and triggers to relapse were used to inform clinical interventions in remote primary health care settings.

Paper #4 reports the findings from case studies in which a critical realist approach was utilised in order to identify elements of effective management of environmental tobacco smoke (ETS) in remote communities. Consideration was given to the particular context of each example in order to make practical recommendations for similar locations. This study recommended adequately

resourced “top-down, bottom-up” approach to the development and implementation of such policies.

Paper #5 provides further analysis of TETP baseline survey data in order to explore where, when and why survey participants restricted their smoking. The study concluded that household and workplace interventions targeting both men and women, and building on already accepted practices, were important strategies to reduce exposure to ETS.

Paper #6, a literature review, examined trends in the topics and types of indigenous tobacco research and associated outputs over the past decade. In order to further inform and expedite future research, policy development, health practice and community efforts, these outputs were also examined for evidence of alignment with identified research priorities and research translation strategies.

Preliminary analysis of the follow-up survey demonstrated very little change in smoking prevalence among the participants. Even so, more smokers were thinking about or actively trying to change their smoking, mostly by reducing daily consumption or lengthening periods of abstinence.

Discussion

Despite little change in prevalence over the five years of the TETP, community discourse on tobacco shifted well beyond that of ‘humbugging’, i.e. demand-sharing of tobacco, and cultural relationships with tobacco. At the close of the project, community members were discussing and acting on concerns about passive smoking. Interest in quitting or cutting down had increased. While there was clearly readiness for change in tobacco use at the individual level, the community environments where the research was undertaken provided little in the way of escape from constant exposure to tobacco smoke. This, coupled with limited quit support, challenged quit attempts.

However, the TETP demonstrated not only readiness, but also action, to extend smoke-free spaces across the participating communities in both public and private spaces. Analysis of the context and mechanisms at play with examples of observed community efforts to manage ETS, suggests that effective policy implementation may be achieved if these efforts are adequately resourced and there is local collaboration and ownership of the policies and/or implementation strategies.

Comprehensive local dissemination of the survey results contributed to raising the awareness of tobacco-related harms in an environment of many competing priorities. Although not included in the original study design, strategies to target tailored messages for identified knowledge users including decision makers were developed and refined throughout the study.

Summary of recommendations

Clinical interventions at the individual level would be improved by: the consistent inclusion and recording of brief tobacco interventions for all smokers attending clinics and the provision of more intense quit support. Active promotion of smoke-free spaces during the life of the project has been generally well-received, suggesting clinicians could advocate for a similar public health approach. These interventions are more likely to succeed if they are part of a range of concurrent community-based interventions. Despite a supportive policy environment at both the national and jurisdictional level, there appears to be a gap between policy development and implementation at the remote community level. Incorporating a 'top- down, bottom-up' approach in these populations, implementation strategies should acknowledge and integrate local cultural conventions. In small discrete communities, where high rates of tobacco use have been normalised, collection and comprehensive dissemination of local tobacco use data may improve the salience of messages regarding harmful effects, and contribute to a reduction in tobacco use. An increase in smoke-free spaces in communities with extraordinarily high rates of use will contribute to an environment that also encourages those changes. However, there is a need for adequate resourcing of community-level efforts to develop and effectively implement smoke-free policies and to bring equity of access to appropriate levels of quit support, including a wider range of cessation medications. Systematic use of research translation strategies integrated into evaluation study designs may contribute to an acceleration of uptake and use of new evidence by decision-makers seeking to reach targets to close the gap in life expectancy between Indigenous and non-Indigenous Australians.

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List of publications included as part of this thesis

Paper #1: Robertson J, Conigrave K, Ivers R, Usher K, Clough A**.** Translation of tobacco policy into practice in disadvantaged and marginalised subpopulations: a study of challenges and opportunities in remote Australian Indigenous populations**.** *Health Research Policy and Systems* 2012, 10:23

Paper #2: Robertson J, Conigrave K, Ivers R, Hindmarsh E, Clough A**.** Addressing high rates of smoking in remote Aboriginal communities: new evidence for GPs**.** *Health Research Policy and Systems* 2012, 10:23

Paper #3: Robertson J. Tackling tobacco; a call to arms for remote area nurses. *Contemporary Nurse* 2011, 37:1, 49-56

Paper #4: Robertson J, Pointing BS, Stevenson L, Clough AR. "We made the rule, we have to stick to it": towards effective management of environmental tobacco smoke in remote Aboriginal communities. *International Journal of Environmental Research and Public Health,* 2013, 10.

Paper #5: Stevenson L, Bohanna I, **Robertson J**, Clough A. Aboriginal people in remote communities in Arnhem land (Northern Territory) restrict their smoking in some environments: implications for developing and implementing policies to reduce exposure to environmental tobacco smoke. *Drug and Alcohol Review,* 2013, 32:6

Paper #6: Robertson J, Stevenson L, Usher K, Devine S, Clough A. A review of trends in Indigenous Australian tobacco research (from 2004 to 2013), its associated outputs and evidence of research translation reveals 'a need for speed' to enhance its impact. *Nicotine & Tobacco Research. Abstract accepted and article under review.*

List of other publications contributing to this work which the candidate has co-authored

Book: Robertson J (compiler) Short Ones: Tobacco stories from Arnhem Land. Cairns: James Cook University, 2011

Robertson JA, MacLaren DJ, Clough AR. Should the Pharmaceutical Benefits Advisory Committee extend the range of free nicotine replacement therapies available for Aboriginal and Torres Strait Islander people? *Medical Journal of Australia.* 2009, 191:5

Clough AR, **Robertson JA**, MacLaren DJ. The gap in tobacco use between remote Indigenous Australian communities and the Australian population can be closed. *Tobacco Control.* 2009, 18:4

MacLaren DJ, Conigrave K, **Robertson JA**, Ivers R, Eades S, Clough AR. Using breath carbon monoxide to validate self-reported tobacco smoking in remote Australian communities. *Population Health Metrics.* 2010, 8:2

Clough AR, MacLaren DJ, **Robertson JA**, Ivers RG, Conigrave K. Can we measure daily tobacco consumption in remote Indigenous communities? Comparing self-reported tobacco consumption with community-level estimates in an Arnhem Land study. *Drug and Alcohol Review.* 2011, 30:2

Thompson M, **Robertson J**, Clough A. A review of the barriers preventing Indigenous Health Workers delivering tobacco interventions in their communities. *Australian and New Zealand Journal of Public Health.* 2011, 35:10

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Appendix 6: Overview of non-thesis components

Glossary

*Word from the Indigenous language of Djambarrpuyngu, north-east Arnhem Land

bunggul*	ceremonial dance or dancing
Closing the Gap	a commitment by all Australian governments to improve the lives of Indigenous Australians and close the gap in the disparities between Indigenous and non-Indigenous Australians
dhuwa*	moiety name, the complementary opposite is *yirritja*
Djambarrrpuyngu*	sub-group of language spoken in north-east Arnhem Land
djunggayi*	manager, lawyer,
fly-in, fly-out	regularly flying to a remote site to work rather than living there permanently
lunginy*	pipe for smoking (wooden or bamboo)
manikay*	ceremonial song or ritual singing
moiety	either of two groups of which society and the known world is divided
ngandi*	mother
ngarali'*	tobacco
pituri	the common name applied to a range of wild tobacco plants, arising from Aboriginal language in Central Australia
stolen generations	the children of Australian Aboriginal and Torres Strait Islander descent removed from their families by government and church agencies from 1909 until the 1970's
Top End	northern region of the Northern Territory
trepang	sea cucumbers dried and used for boiled, dried and used for cooking in Asian cuisine
waku*	child
white coolabah	a species of eucalyptus tree
yapa*	sister
yolgnu*	Aboriginal person (of north-east Arnhem Land)
yirritja*	moiety name, the complimentary opposite is *dhuwa*

Abbreviations

ETS	Environmental Tobacco Smoke
EHO	Environmental Health Officer
FLSPI	Frontline Service Provider, Indigenous
FLSPNI	Frontline Service Provider, Non-Indigenous
IHW	Indigenous Health Worker
LIP	Local Implementation Plan
NFLSPI	non-frontline service provider, Indigenous
NFLSPNI	non-frontline service provider, non- Indigenous
NHMRC	National Health and Medical Research Council
NRT	Nicotine Replacement Therapy
NT	Northern Territory
NTER	Northern Territory Emergency Response
NPARSD	National Partnership Agreement: Remote Service Delivery
TETP	Top End Tobacco Project
TTFC	Time to First Cigarette

CHAPTER ONE: INTRODUCTION

This thesis is one component of a professional doctorate. The non-thesis components have been submitted by the candidate for internal marking and have been passed. The introduction provides a brief description of a professional doctorate, the aims of this thesis (by publication) and the research questions addressed.

The publications in this thesis report data drawn from the baseline data collection and intervention implementation stages of a five year tobacco intervention study in remote Australian Aboriginal communities. In this study the candidate had a lead role in managing ongoing community engagement, data collection and implementation of intervention components.

Background information describes tobacco use in Australia and the intervention study. The introduction also includes an overview of the structure of the doctoral components and standpoint of the candidate.

1.1: Introduction

The aim of a Professional Doctorate is to enable candidates to make a contribution to knowledge and practice within a given field – in this case, public health in general, and a reduction of tobacco use within Aboriginal and Torres Strait Islander community-controlled primary health care sectors, specifically. Unlike a doctorate of philosophy (PhD), a professional doctorate may be awarded through both a thesis plus a combination of components involving research and/or course work within a given field, in this case, that of public health (DrPH). In this thesis I draw on findings from a five-year multiple component tobacco intervention study in three remote Aboriginal communities in Arnhem Land (Northern Territory, Australia)(Figure 1). The five year study, the Top End Tobacco Project (TETP), sought to identify effective community-level interventions to reduce tobacco use in a region with the highest reported prevalence in Australia. I joined this study in the start-up phase and was therefore not involved in the study design. However, I had a key role in this study, managing ongoing community engagement and implementing intervention components. I also assisted with the collection, analysis and interpretation of data and contributed to publications. I had major input into, and therefore lead authorship of seven publications arising from the project, five of which are included in this thesis plus a further publication as third author.

This introductory chapter has been divided into four parts. The first part outlines the aims of the research and provides a structural overview of the thesis itself. Secondly, a background of the history and context of tobacco use in Aboriginal and Torres Strait islander communities is provided. Thirdly, the study upon which this thesis has been based - the TETP - is described, including the over-arching methodology. The final section of the introductory chapter positions the researcher and explains the role and field experiences of the researcher.

Figure 1: location of Arnhem Land in the Northern Territory

1.2: Aims of the research reported in this thesis

The integrative research question posed by this thesis is: what strategies can work to reduce tobacco use in remote Aboriginal communities? The research reported in this thesis has four aims. The first aim is of the thesis is to inform effective implementation of tobacco policies within the specific context of remote Australian Indigenous communities. A second aim of the thesis is to inform tobacco interventions undertaken by clinicians in primary health care settings in remote Aboriginal communities with high staff turnover of visiting clinicians, including nurses and medical officers. As a third aim, this thesis explores examples of community initiatives to manage environmental tobacco smoke in order to identify replicable elements in similar environments. The final aim of the thesis is to inform future research efforts relating to effective strategies to reduce Australian Indigenous tobacco use. The Australian Government has set a target of halving the smoking rate among Indigenous peoples by 2018 (1). As a matter of urgency, this ambitious target requires evidence from research approaches to inform best policy and practice. As such, the thesis seeks to answer the following four specific questions:

- **Question 1**: What are the perceived barriers and opportunities to implementing tobacco policies in remote Australian Indigenous communities and how can these challenges be overcome and opportunities maximised?
- **Question 2**: What are elements of good practice for clinicians undertaking tobacco interventions in remote Australian Indigenous populations?
- **Question 3**: What are the mechanisms that contribute to effective management of environmental tobacco smoke in in the context of some remote Australian Indigenous communities?
- **Question 4**: What types of tobacco control research among Indigenous Australian populations have been undertaken? Are these efforts aligned with identified research priorities and what evidence is there of strategies beyond peer-reviewed publication to translate the research into action?

1.3: Overview of the thesis

The thesis is presented as a series of publications. The publications report selected findings drawn from the TETP. The publications are drawn from data gathered during the baseline data collection and intervention implementation phases of the project. Publications with the candidate as lead author are presented in separate chapters each with its own abstract, introduction, methods,

results, discussion and references. Chapter Five includes an additional paper co-authored by the candidate.. Although the candidate co-authored other papers related to results from the TETP, the papers included in this body of work were selected in order to make a cohesive whole and, in the main, were papers to which the candidate was a major contributor. These papers are included in Appendix 2. As the literature related to use of tobacco by Indigenous Australians has been scoped significantly in recent years, a full literature review chapter was deemed unnecessary. Instead, a literature review of peer-reviewed outputs related to Indigenous Australian tobacco research has been included as part of the final chapter of the thesis. In this way, the literature review offers a way forward for future research to inform the practice of researchers, policy makers, health practitioners and community members in their efforts to reduce the harms associated with tobacco use by Australian Indigenous people in remote settings.

Chapter 1: Introduction

The introduction contains a statement of the aims of the thesis and background to the use of tobacco by Indigenous Australians. A brief description is also provided of the region where the research was undertaken and some specific information relating to the participating communities. An outline of the thesis contents is provided, plus a brief description of non-thesis components which contribute to this Professional Doctorate. The Introduction concludes with a description of the candidate's position as a researcher.

Chapter 2: Paper 1 (lead author)

Translation of tobacco policy into practice in disadvantaged and marginalised subpopulations: a study of challenges and opportunities in remote Australian Indigenous populations. *Health Research Policy and Systems* 2012, 10:23

This paper identifies challenges and opportunities to implementing the new initiatives in the specific settings of remote Aboriginal communities in the Northern Territory, as perceived by operational and management level service providers, community members and other stakeholders. Analysis of these interviews provided informed practical recommendation for effective policy implementation.

Chapter 3: Paper 2 (lead author)

Tackling tobacco: a call to arms for remote area nurses. *Contemporary Nurse* 2011, 37:1, 49-56

This discussion paper considers the capacity at the time of publication for remote area nurses to effectively engage with community members on the issue of addressing high rates of tobacco use. Recommendations are made for practice both inside and outside the clinic.

Chapter 4: Paper 3 (lead author)

Addressing high rates of smoking in remote Aboriginal communities: new evidence for GPs. *Australian Family Physician*, 2013, 42:6

This paper informs tobacco interventions by clinicians, particularly doctors, in primary health care settings in remote Aboriginal communities. Results of community level tobacco use surveys are used to examine motivators to quit among smokers and reasons for relapse in order to inform practice points.

Chapter 5: Paper 4 (lead author)

"We made the rule, we have to stick to it": towards effective management of environmental tobacco smoke in remote Aboriginal communities. *International Journal of Environmental Research and Public Health* 2013, 10.

Exposure to environmental tobacco smoke (ETS) is increased in remote Aboriginal communities because of high rates of smoking and poor adherence to smoke-free regulations. This paper examines three case histories of management of ETS and concludes with recommendations for community-level approaches to encourage and manage smoke-free places.

Chapter 5: Paper 5 (co-author)

Aboriginal people in remote communities in Arnhem Land (Northern Territory) restrict their smoking in some environments: implications for developing and implementing policies to reduce exposure to environmental tobacco smoke. *Drug and Alcohol Review* 2013, 32:6

This paper examines community-level tobacco survey data to identify behaviours around restricting smoking in specified locations. Suggestions are made for targeted interventions to reduce exposure to ETS.

Chapter 6: Paper 6 (lead author)

A review of trends in Indigenous Australian tobacco research (from 2004 to 2013), its associated outputs and evidence of research translation reveals 'a need for speed' to enhance its impact. *Nicotine & Tobacco Research* (abstract accepted and article currently under review).

This literature review examines trends in research types and topics of peer-reviewed outputs relating Indigenous tobacco control efforts. The review assesses whether the research of the last decade has aligned with established research priorities. The original research outputs are also

inspected for evidence of strategies to translate the results into action. Recommendations are made for the foci and type of future research to inform evidence-based practice.

Chapter 7: Conclusion

The principal results of the included studies are summarised, as are the strengths and weaknesses of the research. Recommendations are made for policy, practice and further research.

1.4: Structure of this Professional Doctorate

This doctorate is comprised of a combination of a thesis and separate non-thesis components situated around public health themes, as outlined in Table 1. The non-thesis components are two Master of Public Health (MPH) subjects by coursework completed prior to upgrade to a Doctorate of Public Health (DrPH), a series of conference presentations, plus two independent doctoral projects, all of which have been submitted for internal marking and passed (no grade awarded).

- Doctoral Project 1 is related to reducing social inclusion for remote Aboriginal community members by improving financial literacy and financial capability, recognising that social and economic circumstances are inextricably linked with people's health.

- Doctoral Project 2 is related to reducing tobacco-related harms by developing strategies to reduce exposure of a university campus population to environmental tobacco smoke. An overview of the non-thesis components is included in Appendix 6. The project aligns with The World Health Organisation's (WHO) Framework Convention on Tobacco Control, which identifies protecting non-smokers from exposure to second-hand smoke as one of six effective tobacco control policies.

Table 1: Structure of the Professional Doctorate by the candidate

STRUCTURE OF THE PROFESSIONAL DOCTORATE:	
COMPONENTS	**CREDIT POINTS**
Thesis Component	**48**
Non-thesis Components	
Coursework Theory and Practice of Public Health Empowerment and Change	**6**
Doctoral Conference Presentations	**6**
Doctoral Project 1 Evaluation of Yarrabah and Palm Island Money Management Programs	**6**
Doctoral Project 2 Development of a new tobacco policy, James Cook University, Cairns Campus	**6**
TOTAL	**72**

1.5: Background

The World Health Organization (WHO) reports that tobacco use is the foremost preventable cause of death globally (1). While tobacco use is growing more rapidly in low-income countries (2), there remain disparities in smoking prevalence in some developed countries relating to socio-economic and Indigenous status (3,4). Ample evidence exists, for example, of the effectiveness of interventions for reducing the prevalence of smoking in mainstream populations but most of these interventions have not been rigorously evaluated in Indigenous communities where recent rates of use as high as 82% have been reported (5). This section provides a summary of the available published evidence for the:

i) effects of nicotine and tobacco smoke in humans,
ii) current prevalence of tobacco use in Australia,
iii) current prevalence of tobacco use by Indigenous Australian,
iv) health impacts of tobacco use by Indigenous Australians,
v) historical context of tobacco use by Indigenous Australians,
vi) social context of tobacco use by Indigenous Australians,
vii) tobacco and Aboriginal people in Arnhem Land,
viii) cultural implications for tobacco use in Arnhem Land,
ix) contemporary policy context of the Northern Territory and
x) the Indigenous tobacco policy environment.

Effects of nicotine and tobacco smoke

Smoked tobacco products provide a rapid delivery system for nicotine and other components of the smoke to travel from the lungs to the brain by way of the arterial circulatory system. There, the highly addictive drug, nicotine, initially acts as a stimulant by increasing the release of a range of neurotransmitters including dopamine, serotonin, β endorphin and noradrenaline. These in turn, produce a variety of positive effects or 'neurological rewards' including increased concentration and memory, and some relief of anxiety or depressed mood (7). Conversely, nicotine can inactivate cholinergic receptors, replicating depressant or 'narcotic' effects (8).

Repeated exposure to nicotine causes tolerance or neuro-adaptation, the process whereby the number of binding sites on nicotinic cholinergic receptors increases. This is thought to occur in response to desensitisation or unresponsiveness of the receptors, also caused by the repeated exposure to nicotine. The nicotinic receptors become responsive when smoking ceases, causing

cravings and withdrawal symptoms (8,9). These symptoms include irritability, anxiety and depressed mood, and are alleviated by re-exposure to nicotine. Thus relief of withdrawal symptoms is a further 'reward' of smoking and poses a challenge to cessation (9). A further challenge to those seeking to quit smoking are smoking cues, or conditioned associations of smoking with certain circumstances, settings or emotional states (10). Common cues include consumption of alcohol and the presence of other smokers. The power of these cues lasts much longer than withdrawal symptoms and they have been long recognised as the main reasons for relapse following the first week of cessation (11).

Smoking tobacco exposes the user to approximately 4000 components of gases and particulate matter of a highly toxic nature (7, 8). Tobacco smoking has been identified as a risk factor for lung and other cancers, respiratory diseases such as bronchitis, chronic obstructive pulmonary disease and type 2 diabetes. Smoking is also associated with cardiovascular, cerebrovascular and other vascular diseases due to increased vascular spasm and atherosclerosis (8, 12). Smokeless use of tobacco, either chewed or snuffed, also causes oropharyngeal cancers (12). Passive smoking, or exposure to environmental tobacco smoke (ETS), is exposure to a combination of exhaled mainstream smoke (that inhaled by the smoker) and side-stream smoke (smoke from the burning end of the cigarette) (13). There is longstanding evidence that side-stream smoke is even more toxic than mainstream smoke (13, 14).

Smoking in pregnancy has been linked to low birth weight and other perinatal complications. These include intra-uterine growth restriction, preterm delivery and premature rupture of the membranes, all of which show dose-response effects. Other perinatal complications linked with smoking include placental abruption and placenta previa (15, 16). Maternal smoking may causes changes in utero and postnatal lung development, increasing the risk of Sudden Infant Death Syndrome. This risk is further increased by the infant's exposure to ETS and the associated increase in lower respiratory tract infections (15). Exposure in utero and to ETS is also linked to adverse cognitive and behavioural effects in children (8, 17).

Current prevalence of tobacco use in Australia

The 2010 National Drug Strategy Household Survey Report (18) notes continued declines in smoking among the whole Australian population, particularly for those aged in their early-20s to mid-40-s. The current rate of 15.1% demonstrates a 40% decline in daily smokers since 1991. The prevalence of smoking during pregnancy has decreased to 12.7%, with pregnant women under 35 years of age (where around 14% smoke) more likely to smoke than those over 35 years (with 9% smoking).

Smoking rates remains higher among population sub-groups particularly those with a low socio-economic status (SES) and those living in remote areas (18). Not only is the prevalence of use higher among those with low SES, the weekly consumption is higher (123 cigarettes per week compared to 70 per week for those with the highest SES) (18).

Current prevalence of tobacco use by Indigenous Australians

The first statistically significant decline in smoking rates among Indigenous Australians was noted between 2002 and 2008, falling from 53% to 49.9% (19), with a further decrease to 41% in 2012-13 (20). Despite the decreases, these rates remain more than twice that of non-Indigenous Australians. Current daily smoking rates of Indigenous people living in remote areas (50%) remain higher than those for Indigenous smokers in non-remote areas (38%) (20). Over half of Indigenous mothers (50.9%) reported smoking during pregnancy. Higher rates of use during pregnancy occur among the younger mothers (>20 years, 53.6%). These high rates of tobacco use among Indigenous mothers, in addition to poor nutrition and high rates of obesity, diabetes and alcohol use, contribute to an increase in perinatal morbidity and poor health outcomes later in life (21).

Health impacts of tobacco use by Indigenous Australians

The Indigenous health gap is described as the difference between estimates of the burden of disease between Indigenous Australians and that of the total Australian population. If Indigenous Australians suffered illness at the same rates of other Australians, around 60% of the additional burden of disease would be for conditions which are recognised as largely preventable (22). Those living in remote areas experience a disproportionate amount of the health gap (18), although available data is scarce. The main contributors to the Indigenous health gap are led by cardiovascular disease, followed by diabetes, mental disorders and chronic respiratory diseases (22) (Figure 2). Tobacco is estimated to be the main health risk factor, contributing to 17% of the health gap (23).

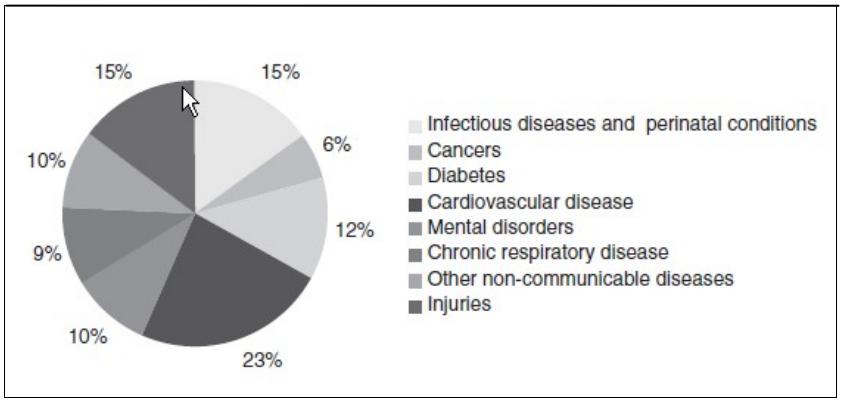

Figure 2: Indigenous health gap (Disability-Adjusted Life Year), proportional contribution by broad cause groups (23)

Historical context of tobacco use by Indigenous Australians

Types of tobacco used among Indigenous Australians include tailor-made cigarettes and loose tobacco in roll-your-owns, tobacco smoked in pipes or mixed with ash for chewing. Preferences vary according to periods in time, geography and gender (24). Prior to colonisation, Indigenous peoples, particularly Aboriginal people of south-west Queensland and Central Australia, used a range of nicotine-bearing plants as both stimulants and depressants (25). These plants included *Nicotiana excelsior*, *N. suaveolens*, *N. Ingulba*, the stronger *N. Gossei* and the rarer but even more potent *Duboisia Hopwoodii*, known in some regions as *pituri* (25, 26). Wads of the sun-dried leaves of the plants were mixed with the alkaline ashes of acacia tree bark in order to speed up the absorption of the nicotine as it was chewed. Pipes for smoking were introduced by Macassans and early Europeans (25). Strong social controls existed over the sourcing and consumption of these substances (27), restricting access and therefore levels of consumption and prevalence of use. Following colonisation, tobacco was often used by Europeans as a trade commodity or rations on missions and cattle stations for Indigenous peoples (24). Some commentators assert that the pre-existing desire for tobacco was exploited by colonisers to entice Aboriginal people away from their traditional lands to places of ready supply, in exchange for labour, generally under terrible conditions (27).

Social context of tobacco use by Indigenous Australians

The early processes of colonisation in Australia included massacres, dispossession of Indigenous peoples from their traditional lands and enforced separation of children and families (28, 29). The ongoing process of colonisation and dispossession, including racism, has been identified as a significant social determinant of health for Indigenous peoples (30,31). Disempowerment and social exclusion is manifest in the great socioeconomic differences between Australian Indigenous peoples and other Australians (32). Social gradient has long been identified as an important determinant of health with low gradient associated with an increase in health risk behaviours, including alcohol, drug and tobacco use (33). Furthermore, for Australians generally, social inclusion and socio-economic status are profoundly influenced by distance from major cities (34). While 31% of Indigenous Australians live in major cities, 24% live in remote or very remote locations of extreme marginalisation and disadvantage (35) (Figure 3).

Notwithstanding the pleasurable effects of smoking, several other major reasons for smoking have been identified among Indigenous Australian peoples. The sociocultural principle of reciprocity or sharing, particularly among family or kin, underpins Aboriginal behavior (36). The sharing of tobacco has been, as with other valued goods, a contributor to social cohesion (24).

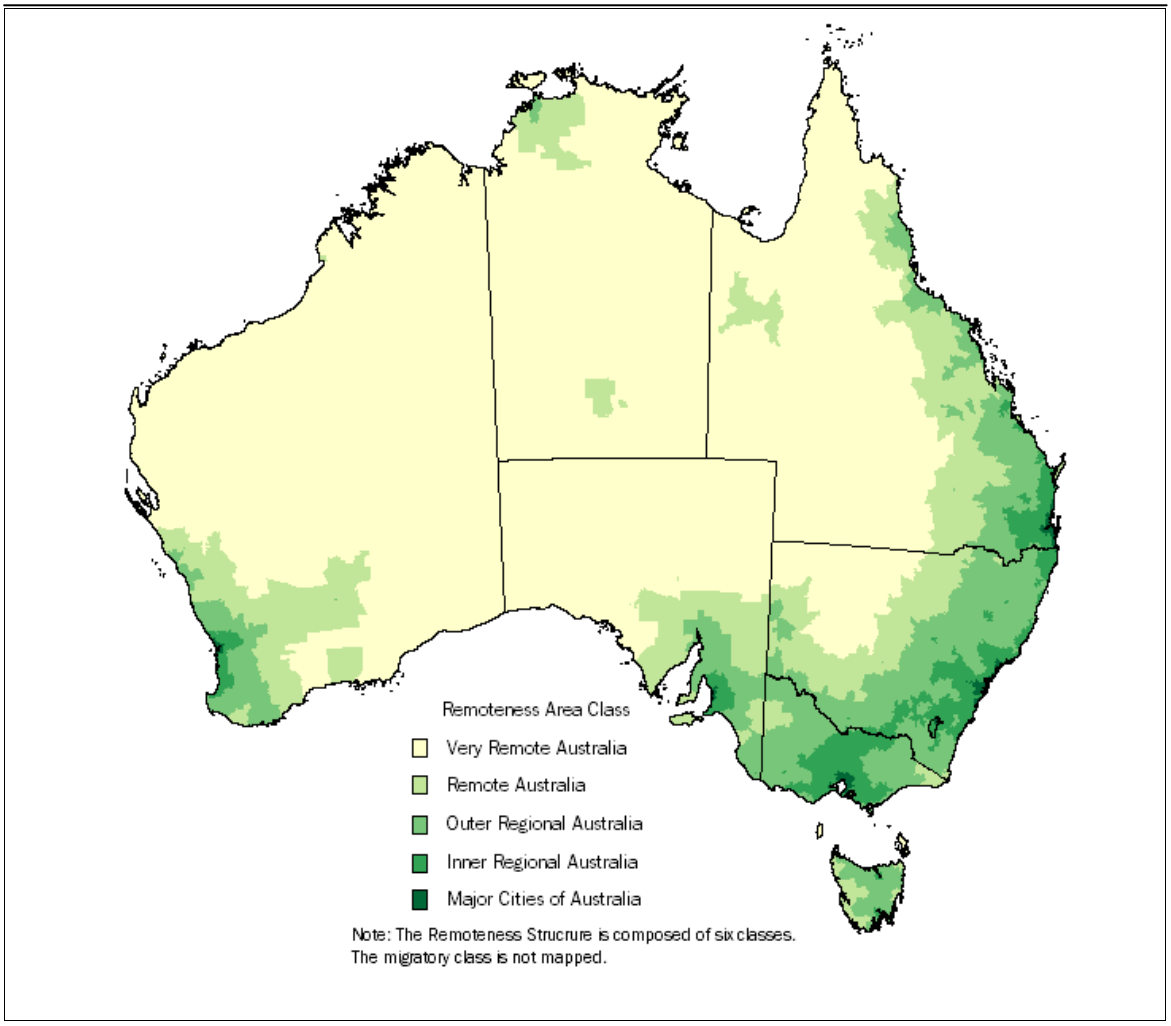

Figure 3: Map of Australia illustrating the 2011 remoteness structure according to the Australian Statistical Geography Standard (ASGS) (source: Australian Bureau of Statistics) (37)

Tobacco use and Aboriginal people in Arnhem Land

In small studies undertaken in the Northern Territory's Top End extraordinarily high rates of up to 83% appear to have changed little over the past 25 years (38-40). Tobacco use in this region appears to have been normalised by a diversity of historical, cultural and social conventions, although no systematic studies have documented this. Tobacco was introduced into north-east Arnhem Land several centuries prior to colonisation by Macassans sailing from Southern Sulawesi to trade annually with the Yolngu and other people of that region. Figure 4 shows a Macassan-style pipe used today in north-east Arnhem Land. As well as with other Aboriginal groups along the Marege coast, the Yolngu traded pearls, turtle shell and their labour to harvest trepang in exchange for alcohol, tobacco, rice and steel items such as knives, hooks, axes, fish-hooks and muskets (41). Cultural and ceremonial responsibilities relating to this early use of tobacco survive today, more thoroughly described below. In south-east Arnhem Land, according to older women, chewing tobacco was a

behavior acquired from white pastoralists rather than following the persisting Central Australian Aboriginal tradition of chewing *pituri* (unpublished data). Figure 5 depicts the current practice of mixing flake tobacco with ash for chewing.

Figure 4: Packing tobacco into a *lunginy,* or Macassan style pipe, with a sawn-off bullet shell used as the pipe bowl (north-east Arnhem Land).

Figure 5: Flake tobacco and the ash of white coolabah bark mixed for chewing (south-east Arnhem Land)

Initial social use of tobacco in Arnhem Land was restricted to the older men who only smoked a few times a day when resting from work and talking together. A series of films made in north-east Arnhem Land in the 1970s and 1980s documented a 30-year period of dramatic changes in social life associated with modernisation and mining development (42). During the 1970s, relaxation of cultural tobacco restrictions can be observed in the documentary series by the uptake of tobacco smoking by younger Yolngu men, and then later by women (42).

Cultural implications for tobacco use in Arnhem Land

In these unique settings, many languages and cultural practices have been retained. Illness is usually most deeply understood from a different cultural knowledge base and often attributed to sorcery (43, 44). Across the Top End of the NT, Aboriginal people view the universe in terms of complementary opposites or moieties (halves) (41). Throughout the region these moieties have different names, but are most commonly referred to as *dhuwa* and *yirritja.* All things in the universe, clan groups and their languages, plants, spirits, animals, or land will belong to one or the other of these moieties (41). People are further classified by their position in a complex kinship system and identified by 'skin names'. This system provides protocols for relationships and appropriate communication across age, gender and family groups at all times (45). People have a special responsibility to their *ngandi* clan, that is, their mother's clan and of the opposite moiety. Acting as *djunggayi* (manager, caretaker), these responsibilities include providing assistance to their *ngandi* clan in undertaking ceremonies and caring for country (46).

In north-east Arnhem Land the first Aboriginal people to make contact with the Macassan traders and gain access to tobacco were the y*irritja* clans of the Yolngu people, giving that moiety the ownership of the knowledge of tobacco. In the complementary position, *dhuwa* people have become the *djunggayi* (manager) for *ngarali* (tobacco). Moiety dictates significant and intimate relationships with *ngarali,* e.g. y*irritja* people regard *ngarali'* as "my *waku (*child*)*". Gestures in the *ngarali' bunggul* (ceremonial tobacco dance) demonstrate deep yearning and the *ngaraii' manikay* (ceremonial tobacco song) is "singing cigarettes into your heart, keeping tobacco in the heart" (47). This resonates with indicators of nicotine addiction noted by non-Indigenous ethnographers in the early 1900s (44) and with historical accounts by community members (47). These strong cultural connections with tobacco and its use carry implications for appropriate and respectful interventions to change behaviours at the population level.

Indigenous tobacco policy environment

Reducing smoking among Indigenous Australians was made the first priority among initiatives to close the gap in Indigenous health outcomes (48).T his commitment included an initial $14.5 million budget, as part of the "Closing the Gap: tackling Indigenous Chronic Disease package", to implement unprecedented tobacco-specific strategies (49). These strategies included the gradual development of a national network of skilled regional tobacco coordinators, community-based tobacco action workers and healthy lifestyle workers operating in teams. Other strategies included culturally-appropriate social marketing campaigns and enhancement of Quitlines to increase uptake of these

services by Indigenous peoples (50). However, with a recent change of federal government, continued resourcing of these initiatives is open to question.

1.6: The Top End Tobacco Project

The five-year Top End Tobacco Project (TETP) formally began in July 2007 in Arnhem Land.
The selected communities are located in the region of Arnhem Land, in the 'Top End' of the Northern Territory (shown in Figure 6). The communities have populations ranging from approximately 800 - 2000 with a combined population of more than 3500 people. Located in extreme corners of the region, these communities are isolated from each other and their regional centres by sea or seasonal flooding, which can last up to six months of the year. In terms of socio-economic status, the study communities are rated the same as other remote and very remote communities throughout Australia. Communities in these settings have very limited employment opportunities with large numbers of the populations receiving some form of income support. Education standards are low, with only five per cent of community members achieving post-high school qualifications. Houses are generally in poor condition and overcrowded (51).

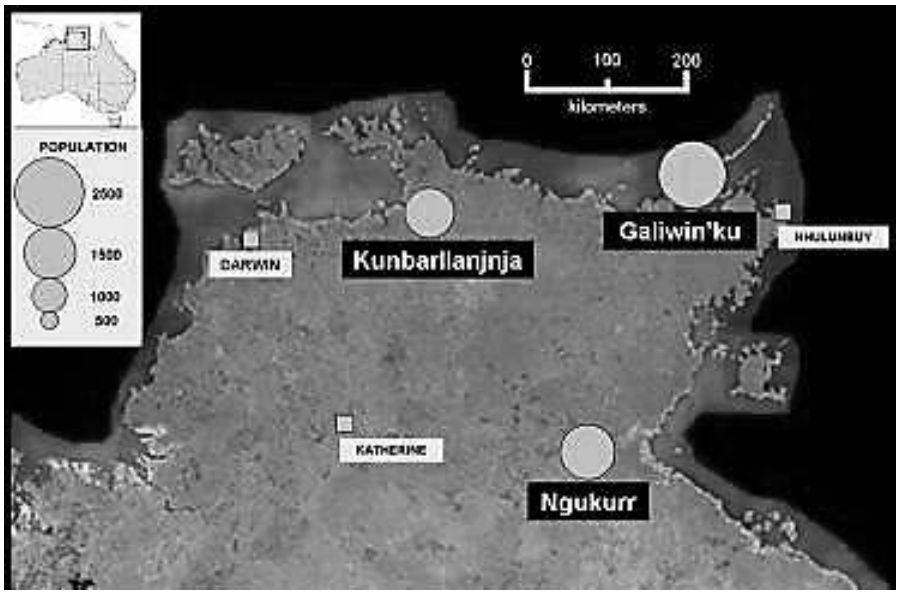

Figure 6: Location and population size of remote Arnhem Land communities participating in the Top End Tobacco Project and their associated regional centres.

Basic commodities including foodstuffs and tobacco (tailor-made and loose tobacco) are available in local stores (see Figure 7), where prices are high and availability of healthy food is limited (52). Types of tobacco used across the participating communities include loose tobacco used in pipes and roll-your-owns. Factory-made cigarettes are the most common form of use (53). The practice of chewing loose tobacco mixed with ash is limited to small numbers of older women in south-east Arnhem Land (53).

Figure 7: Stored tobacco products in a community retail outlet (west Arnhem Land)

The communities are highly dependent on the regional centres of Katherine and Nhulunbuy and the capital city of Darwin for the management and delivery of services. Many service-providers travel to the communities regularly from these centres, but they are challenged by flooded roads in the four to five months of the wet season and limited accommodation availability in the communities. Health services in each of the participating communities are provided by local health clinics staffed by nurses, Indigenous Health and Community Workers and visiting Medical Officers. Specialist and allied health services are generally provided by fly-in, fly-out staff. Regional hospitals are located in Katherine and Nhulunbuy, with some referrals made to the Royal Darwin Hospital.
Land-owning or clan groups in the region speak distinct and intricately-structured languages, and many people live in multi-lingual households. English may be the fifth or sixth language for some Aboriginal inhabitants of this region where many languages and cultural practices have been retained.

Community profiles

Galiwin'ku is located in north-east Arnhem Land on Elcho Island, southern-most of the Wessel Islands. The largest community both on Elcho Island and in Arnhem Land, and the largest of the participating study communities, was eventually established as a mission by the Methodist church in 1947. The Aboriginal people in this region, the Yolngu, were encouraged by the mission to stay on their traditional homelands, using Galiwin'ku as a service centre. Here the mission developed thriving market gardens, a fishing industry, pine logging and a saw mill. Today, only the market gardens remain. The community has been self-governing since the 1970s. The nine clan groups in the area each have their own languages with Djambarrpuyngu the most commonly used language

(54). An example of both Djambarrpuyngu (lines 1 and 2) and Gumatj (line 3) languages are shown in Figure 8.

Figure 8: Poster developed with the Adjumallarl Rangers (west Arnhem Land) Translated into both Djambarrpuyngu and Gumatj languages ("Time to stop or slow down smoking.")

The community of Ngukurr, in south-east Arnhem Land, is situated beside the Roper River and is inhabited by the Yugul Mangi people. The Church of England established the Roper River Mission in 1908 as a refuge for Aboriginal people who were being hunted and killed by settlers intent on seizing the land for cattle farming (55). The community was shifted due to frequent flooding to its present site in in 1940. The mission was taken over by the Australian Government in 1968 and became self-governing in 1988. Although most of the population speaks Kriol, a Northern Territory pidgin English, seven language groups are being kept alive by local linguists (56). An example of Kriol used is shown in a mural painted by Ngukurr community primary school students in Figure 9.

Figure 9: School mural in Kriol ("Smoking makes you lie down dead")

The third participating community of Gunbalanya, also known as Oenpelli, is located in west Arnhem Land and inhabited by people who describe themselves as Bininj. Despite being only 330 km east of Darwin, the community is often isolated by high tides and flooding of the East Alligator River, which forms the boundary between Arnhem Land and Kakadu National Park. Although an Anglican mission from 1916 until the early 1970s, this region, like the area around Ngukurr, has a long history of pastoralism established in the early 1880s. The community became self-governing in 1976. Despite 25 clan groups inhabiting this region only a few languages are still spoken. The main language, Kunwinjku, shown in Figure 10, is that of the area's traditional owners, the Burrwinjku (57, 58).

There are restrictions on access to alcohol in all of the participating communities. As in other communities in Arnhem Land with similar restrictions, cannabis use is widespread, with 70% of males and 30% of females identifying as current users. Of these, almost 90% reported both regular heavy use and symptoms of cannabis dependence (59). While these levels of use are reported to be associated with a range of social and mental health issues (59), a further concern is the common practice of mixing cannabis with tobacco. Earlier studies in the same region indicated that cannabis use may influence both the uptake and continuation of tobacco use, adding to the existing burden of tobacco-related respiratory and cardio-vascular disease (60).

Figure 10: Poster developed by community members with Northern Territory Department of Health in Kunwinjku language ("We leave tobacco – we don't get sick")

Social and Political Context

To fully understand the difficulties and challenges faced during the TETP project, it is important to understand the policy context in which the TETP operated. Commencement of the TETP came on the heels of the announcement of the contentious Northern Territory Emergency Response (NTER) initiative. In August 2006, the Australian Government had established a Board of Inquiry into the Protection of Aboriginal Children from Sexual Abuse, with a report released in June 2007 (61). This was quickly followed by the announcement of a huge commonwealth initiative, the NTER, to protect Aboriginal children in the NT (62). Contentious measures included: use of military personnel as part of the NTER Taskforce; widespread alcohol restrictions (see associated signage in Figure 11); quarantining of welfare payments; compulsory health checks for Aboriginal children; acquisition of townships prescribed by the Australian Government through five-year leases; increasing policing levels; scrapping of the entry permit system; suspension of the Racial Discrimination Act and appointment of government business managers in prescribed communities (63).

Figure 11: Signage erected outside remote Aboriginal communities as part of the Northern Territory Emergency Response

This 2006-2008 time period was marked by fear and confusion at the community level. In the initial two years of the TETP, community members were exposed to continuous and significant change engendered by a torrent of policy shifts (see Table 6, P 91). The sense of disempowerment produced by components of the NTER was compounded by major Local Government reforms, which came into force in July 2008 (64). Through shire mergers, the number of Local Governing Bodies was reduced

from 60 to eight (64). Local councils, formerly comprised of representatives of each local clan group, were transitioned to representation by a few councillors in each community with governance located in regional centres. In a further change, the NT Government's *Working Future* policy included plans to develop 20 of the territory's largest remote Aboriginal communities into regional hubs. Although the aim was to improve service provision, there were concerns among local people about the future of small homelands centres, and for traditional clan lands inhabited by small family groups that lacked the services of larger communities but encouraged spiritual and physical health. These anxious and stressful times had the potential to severely impact on the level of community engagement achievable by a team of visiting non-Indigenous researchers attempting to raise awareness of the harms of what was normalised, established behaviour – tobacco use.

The Australian Prime Minister's historic apology to the 'stolen generations' in February 2008 included commitments to close the life expectancy gap between Indigenous and non-Indigenous Australians 'within a generation' (65). This included $807million to continue measures initiated under the NTER (66). There may be immediate and long-term health benefits for members of the study communities from both current and proposed policy changes. Major efforts are being made to address some of the social determinants of health through employment, education, housing and health initiatives. However there has been limited inclusion of community members in development of the policies and local strategies (63). This ignores the need for genuine empowerment, which has been described as central to the social determinants of health (67).

Top End Tobacco Project study design and methods

A repeated interrupted time-series (multiple base-lines) study design (68) was used to evaluate tobacco interventions in the three remote communities. A mixed methods approach was used for the baseline and follow-up surveys, where qualitative and quantitative data were collected concurrently (69). Multiple intervention components were implemented at staggered intervals, in the three communities.

Self-reported tobacco use at baseline was collected by mixed methods surveys in each community prior to the implementation of intervention components. Smoking status was confirmed through the use of hand-held expired breath carbon monoxide monitors. Participants were recruited opportunistically with efforts made to reflect the age and gender balances of each community. Tobacco sales data were also collected throughout the project but are not part of this thesis. Participants reporting as smokers at baseline were followed up to determine any changes in their

smoking status, including changes in intentions towards smoking. In these small communities with highly mobile populations, several proxy respondents in each community assisted in ascertaining smoking status of absent participants at follow-up (70).

In those papers reporting research results, both quantitative and qualitative data sets were presented together to allow for an integrated and more critical discussion of the relevant issue. This process extended the breadth of inquiry and enhanced the interpretation of results. Methods are reported separately for each study included in this thesis.

Comprehensive face-to-face feedback of the baseline survey results was undertaken in each community. The ensuing discussions between the researchers, community members and local service providers further informed the intervention components. At the outset of the project the core intervention components included: provision of assistance of health workers to quit; increasing uptake of tobacco brief interventions at local health services; increasing the availability of Nicotine Replacement Therapy (NRT); workplace interventions, school-based interventions; public meetings to discuss local needs and current and potential initiatives to reduce tobacco use; and enhancing community resolve through community education activities including the collaborative production of information resources. The study design was sufficiently flexible to incorporate changes to the proposed intervention components in response to priority action areas identified by each community and changes in community contexts. Further ethics approvals were successfully sought to amend the TETP study protocol. These amendments included activities related to the process evaluation and implementation of intervention components to be undertaken as part of the candidate's doctoral research.

1.7: Methodology

The pragmatic paradigm has the research issue at its core, and uses a variety of approaches in order to understand 'what works' (71). This focus on the research question dictates both the methods of data collection and analysis. While this paradigm is considered suitable for mixed methods approaches (72), it is also congruent with the nature of the participatory action research approach undertaken in Top End Tobacco Project and studies included in this thesis. Levin and Greenwood state: "In pragmatism, two central features stand out: knowledge generation through action and experimentation and an emphasis on participative democracy" (73). Conclusions and recommendations were based on learnings generated by action in real world settings. The cyclical learning processes of action and reflection (74) involved both the researchers' and community

stakeholders' understanding of what can work in order to reduce tobacco use within the specific context of remote Aboriginal communities. See Figure 12.

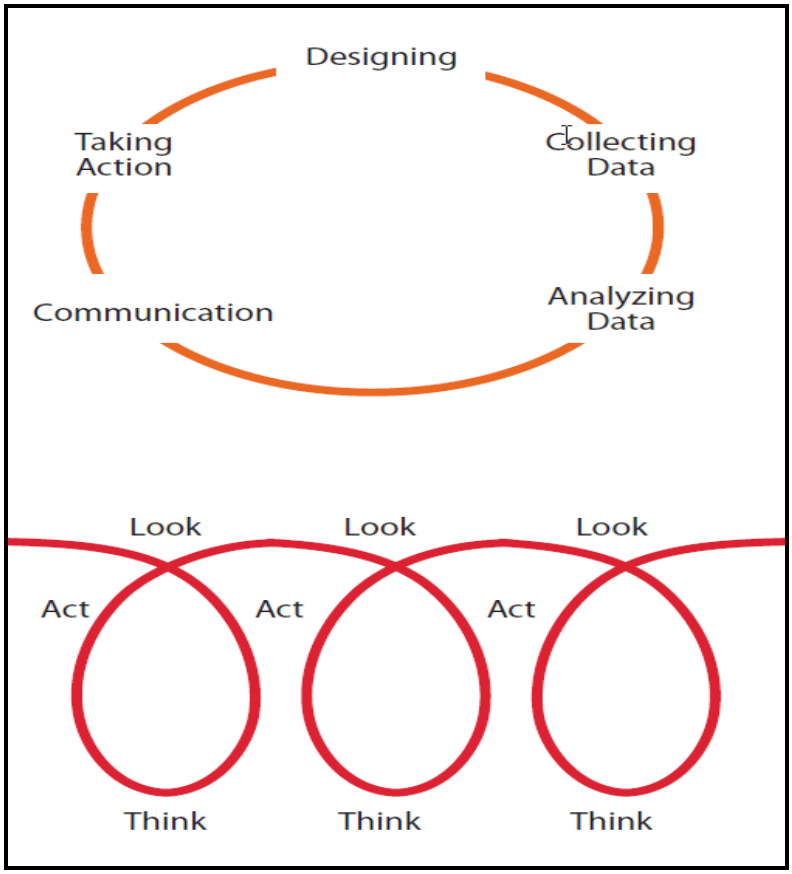

Figure 12: Cyclical learning process of action research (74)

Multiple methodologies were used across the sub-studies and included quantitative, qualitative and mixed-methods approaches.

In Paper # 1, qualitative data was collected through semi-structured interviews undertaken with Indigenous and non-Indigenous key stakeholders at local (front-line), regional and jurisdictional (non-frontline) levels across the Northern Territory. Purposive sampling was used. This non-random technique, where participants are chosen due to certain qualities, is appropriate for those studies requiring expert knowledge within a particular cultural domain (75). In order to achieve saturation, a snowball approach was also used. In this approach, also known as chain-referral sampling, initial participants were asked to provide other contacts who would meet the study criteria (76). Participants were invited to discuss 'opportunities' and 'challenges' to addressing tobacco-related issues in the particular setting of remote Aboriginal communities. Emergent themes were derived using a constant comparative method (77) in each of the domains of 'opportunities' and 'challenges'. Quantitative approaches were used to undertake cross-case comparisons between allocated attributes of participants.

Using a mixed methods approach (77), quantitative and qualitative data were collected concurrently in community-level tobacco use surveys at both baseline and follow-up. Separate analysis of the quantitative and quantitative data sets informed further interrogation and analysis of each data set. The baseline data informed Papers #2, 3, 4 and 5. Survey participants were opportunistically recruited using quotas to reflect the age and gender balances of each community. Local community members were employed to assist with participant recruitment. They also provided interpretation when necessary. Structured survey questions captured information about participants' current smoking status and future intentions, their smoking history (including any quit attempts), types and patterns of use, whether and where they restricted their smoking, any general concerns about tobacco use, and ways to reduce both the prevalence and harms relating to tobacco use. Hand-held expired breath carbon monoxide monitors were used to confirm self-reported smoking status. The quantitative data gathered in the surveys captured information regarding participants' smoking behaviours. The concurrently gathered qualitative data provided not only a deeper insight into these smoking behaviours occurring in a particularly unique context, but also provided corroboration of the quantitative data (78, 79).

Further qualitative data extracted from field notes of direct observations, made during community visits by the research team over the five-year period of the TETP, added important contextual knowledge to papers #2-4. This informed recommendations that might be generalized to other similar settings (79).

Comprehensive analysis of the follow-up survey data had not been undertaken at the time of writing of this thesis and was not considered to be part of the candidate's role in the TETP. Preliminary analysis only (not yet published) had been undertaken, in order to provide timely feedback to the participating communities**.**

As there is existing literature in the domain of reviews of Australian Indigenous tobacco control efforts, including smoking cessation (80-83), a more novel approach was used in this thesis. In order to further inform further research efforts, a systematic review and synthesis was undertaken to document the scope of and trends in recent peer-reviewed outputs relating to Australian Indigenous tobacco control efforts in Paper #6. Following electronic and hand-searches of health related databases, outputs meeting inclusion criteria were classified by type of research, topic and population location. The outputs were also examined for evidence of components of research

translation and compared with Australian tobacco research priorities previously identified in expert forums.

1.8: Positioning the Researcher

I have extensive experience in clinical drug and alcohol nursing in the Aboriginal and Torres Strait Islander community-controlled primary health care sector. Working in a dual role as a clinician and program manager, and in consultation with Indigenous Social and Emotional Wellbeing Service team members, I developed, resourced and implemented holistic prevention and treatment programs. Additionally, my work in this domain included staff development and contributions to Indigenous drug and alcohol policy development at commonwealth and state levels. The demands of service delivery, however, provided limited opportunities to properly evaluate novel approaches that may have informed the evidence-base. Due to my track record of strong community engagement, project management and clinical skills I was invited to join a research team in the School of Public Health, Tropical Medicine and Rehabilitation Sciences at James Cook University in 2007. Since then I have worked as a researcher on community-based projects in the Arnhem Land and Cape York regions to reduce substance misuse among remote Indigenous populations.

The catalyst for my clinical and scholarly work in the field of substance misuse in Indigenous communities occurred in the late 1990s when I began part-time work as a clinical nurse in a small prison. Located in far western New South Wales, the prison population had a large proportion of Aboriginal prisoners. Part of my work involved the preparation of health discharge plans for prisoners with complex health needs who commonly required support to avoid relapse into substance misuse. This was challenged by the extremely limited services available to the many prisoners returning to remote communities. During this time I undertook post-graduate studies in Women's Health and became deeply absorbed in the primary health care model of health service delivery, with a focus on health promotion. The course readings aroused my interest in Aboriginal community-controlled health services, which were cited as leaders in this model of health service delivery in Australia. Shortly after completing these studies I relocated to far north Queensland.

In 2000 I took up a newly created position as Project Officer in an urban Aboriginal and Torres Strait Islander community-controlled health service. The staff of 90 people across three sites was comprised of 70% Aboriginal and/or Torres Strait Islander peoples. Employed to set up a drug and alcohol program, over the subsequent seven years, I acquired funding and developed and implemented a range of treatment and prevention programs within a strong and supportive team

environment. In 2003 these services, based at Wuchopperen Health Service, Cairns, were identified in a report to the Australian National Council on Drugs as exemplars of elements of best practice among the top five of 277 Indigenous drug and alcohol projects nationally (84). Other activities included the development of culturally-appropriate health promotion resources and substance misuse training modules targeting staff, community members, students and other health service providers. My further roles included coordination of the Cairns Inhalant Action Group, membership of the Queensland Joint Ambulance Police Volatile Substance Misuse Expert Advisory Group, submission by invitation to a Senate enquiry on volatile substance misuse and facilitation of forums on petrol sniffing in Cape York at community requests. Initially I was the only non-Indigenous person in the large Social and Emotional Wellbeing team. This was a time when I began to substantially rethink my ideas of health and wellness within a new cultural construct.

The experience of readapting my skills and acquiring new knowledge in a culturally-rich and generous reciprocal learning environment was to build a strong basis for transitioning, not only into the world of research, but the 'otherly' world of Arnhem Land. These learnings impacted positively on my ability to engage effectively with community members across Arnhem Land. The transition to research was made more natural through my involvement in intervention studies, which utilised participatory action research approaches in the development and implementation of intervention components. My adoption (not an uncommon practice) into a *Yolngu* clan of the *dhuwa* moiety gave me a place in the kinship system and, to some degree, positively changed the dynamics of my relationships with community members, including an enhanced willingness of people to share information. The adoption also increased my responsibilities at the family and community levels, including a responsibility to share knowledge about *ngarali* (tobacco). Viewed through my non-Indigenous researcher 'outsider' lens, these dynamics had some potential to adversely affect the credibility of my findings and conclusions (85). However, ongoing examination of my research practices in the light of guidelines set for ethical conduct in Aboriginal and Torres Strait Islander Health research affirmed that my approach, particularly reporting these findings from a strengths rather than a deficit-base, was balanced and appropriate in these settings (86).

1.9: Chapter 1 References

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CHAPTER TWO: POLICY INTO PRACTICE

Paper #1: Translation of tobacco policy into practice in disadvantaged and marginalised subpopulations: study of challenges and opportunities in remote Australian Indigenous communities

The introduction (Chapter 1) contained descriptions of high rates of tobacco use amongst Australia's indigenous peoples, Aboriginal and Torres Strait Islanders, with much high rates in remote Aboriginal communities. The current policy environment of *Closing the Gap* in Indigenous disadvantage has fostered unprecedented initiatives to address this major risk for chronic disease. It is one thing to have sound policies and another to effectively implement them, particularly in environments beset by socio-economic, cultural and geographical issues.

This paper seeks to inform effective implementation of policies to reduce tobacco use by Indigenous Australians in a particular context - that of remote Aboriginal communities in the Northern Territory - where rates of use are among the highest in the country. Recommendations for policy implementation are drawn from the experience of key stakeholders across the Northern Territory including community members, politicians and those at operational and management levels of service delivery.

Robertson JA, Conigrave KM, Ivers R, Usher K, Clough AR. Translation of tobacco policy into practice in disadvantaged and marginalized subpopulations: study of challenges and opportunities in remote Australian Indigenous communities. *Health Research Policy and Systems* 2012, 10:23

2.1: Abstract

Background:

In Australia generally, smoking prevalence more than halved after 1980 and recently commenced to decline among Australia's disadvantaged Indigenous peoples. However, in some remote Indigenous Australian communities in the Northern Territory (NT), extremely high rates of up to 83% have not changed over the past 25 years. The World Health Organisation has called for public health and political leadership to address a global tobacco epidemic. For Indigenous Australians, unprecedented policies aim to overcome disadvantage and close the 'health gap' with reducing tobacco use the top priority. This study identifies challenges and opportunities to implementing these important new tobacco initiatives in remote Indigenous communities.

Methods:

With little empirical evidence available, we interviewed 82 key stakeholders across the NT representing operational- and management-level service providers, local Indigenous and non-Indigenous participants to identify perceived *challenges* and *opportunities* for translating new policies into successful tobacco interventions. Data were analysed using qualitative approaches to identify emergent themes.

Results:

The 20 emergent themes were classified using counts of occasions each time a theme occurred in the transcribed data as *challenge* or *opportunity*. The 'smoke-free policies' theme occurred most frequently as *opportunity* but infrequently as *challenge* while 'health workforce capacity' occurred most frequently as *challenge* but less frequently as *opportunity*, suggesting that policy implementation is constrained by lack of a skilled workforce. 'Smoking cessation support' occurred frequently as *opportunity* but also frequently as *challenge* suggesting that support for individuals requires additional input and attention.

Conclusions:

These results from interviews with local and operational-level participants indicate that current tobacco policies in Australia targeting Indigenous smoking are sound and comprehensive. However, for remote Indigenous Australian communities, local and operational-level participants' views point to an 'implementation gap'. Their views should be heard because they are in a position to provide practical recommendations for effective policy implementation faithful to its design, thereby translating sound policy into meaningful action. Some recommendations may also find a place in culturally diverse low- and middle-income countries.

2.2 Introduction

In Australia generally, tobacco use continues to decline with only 15.1% of the population aged over 14 years smoking daily (1). However, there are impoverished subpopulations in Australia, disadvantaged in similar ways to those living in low income countries, where this decline is not occurring. For example, daily smoking prevalence among Australia's 500,000 Indigenous people is estimated to be 47.7% in those aged 18 years and over, with higher prevalence in remote communities (53%) than in major cities (42%). For Indigenous Australians, there is evidence for a small but statistically significant decline in smoking rates after 2002 from 53% to 50%. However, in remote Indigenous communities in the 'Top End' of the Northern Territory (NT), where around 26,000 Indigenous people live, extraordinarily high smoking rates of 65%-83% have changed little over the last quarter of a century (2-4). Recent data available from surveys conducted in three communities in this region in 2008/09 showed that 76% from (71%-82%) of participants (aged ≥16 years) were self-reported current smokers (5). Despite these extremely high levels, an encouraging finding was that 58% of the current smokers were thinking of quitting and 17% were attempting to quit at the time of the survey or had tried to quit in the recent past (6). A widespread desire to quit suggests substantial opportunities in these communities to reduce tobacco use with effective programs if they can be implemented.

In 2008, the World Health Organisation (WHO) outlined a package of tobacco control policies to address the global epidemic of tobacco use, calling for political and public health leaders to make the implementation of these policies a matter of highest priority (7). These policies focus on monitoring of tobacco use, and on prevention; providing both warnings regarding tobacco-related harms and protection from second-hand smoke; offering cessation support; enforcing advertising and sponsorship bans and raising tobacco taxes. Many components of the current Australian policy environment surrounding efforts to reduce tobacco use by Indigenous Australians align well with WHO policies and are unprecedented in Australia. In 2008, the Council of Australian Governments

signed off on the National Indigenous Reform Agreement, committing all Australian States and Territories to 'Closing the Gap' in Indigenous disadvantage (8). Associated initiatives are backed by significant resource allocation for the five-year period 2009 to 2013, through National Partnership Agreements (NPA) between Commonwealth, State and Territory governments (9). The NPA on 'Closing the Gap' in Indigenous Health Outcomes specifically identifies "Tackling Smoking" as the first of five priority initiatives to address chronic disease risks (9). The widespread desire to quit among smokers documented in our recent surveys in remote communities suggests a high need to successfully implement sound programs in these localities arising from the new tobacco policies. The current policy environment in Australia provides the first major opportunity to reduce extraordinarily high smoking rates in remote Indigenous communities. Effective implementation will be reliant on successful translation of apparently sound policies into sustainable programs with practical actions.

In a recent review of evaluated international alcohol, tobacco and other drugs interventions at the community level, Geisbrecht and Haydon (10) recommended that government and funding bodies acquire local knowledge to inform policy relating to community interventions. In addition, a 'Better Practice Guide' for government policy and program implementation advises that policy development should be informed of "*risks, challenges and practical aspects that may have an impact on implementation*" (11). Guided by these recommendations to identify any 'implementation gaps', we focused on *challenges* and *opportunities* for program implementation in interviews with stakeholders mainly working at the operational level in remote communities in Arnhem Land, in the NT's 'Top End'.

2.3: Methods

Setting

The research reported here is part of the 'Top End Tobacco Project' (TETP), a five-year multiple-component, community-action intervention study to reduce tobacco smoking in three remote Aboriginal communities in Arnhem Land, a region east of Darwin in the NT's 'Top End' (Figure 13). The communities have populations ranging from around 800 to 2100. Tobacco is locally available from a small number (n=10) of community-based retail outlets. They are discrete and isolated communities, cut off from each other and the main regional centres in the NT's 'Top End' by sea or by wet season river rises. Socially, culturally and linguistically distinct, local languages and many traditional cultural practices are largely intact.

Figure 13: Location of study communities, Top End Tobacco Project Arnhem Land, Northern Territory

Remote communities in the region are highly dependent on regional centres for the management and delivery of services. Service providers who work at the community level travel from these centres, covering large distances by road or air with the frequency and duration of their community visits often constrained by flooded roads in the wet season, lack of accommodation and limited travel budgets. The NT's capital city of Darwin and the smaller regional centres of Nhulunbuy and Katherine, with populations between 4000 and 7000, respectively, are main service centres for the study communities (see Figure 13). Two of the three study communities have health clinics operated

by Aboriginal community-controlled health services based in the regional centres and the third has a clinic run by the NT Government's health department.

Policy environment

Contributing to the 'Close the Gap' targets is the 2009 National Partnership Agreement on Remote Service Delivery (NPARSD) in remote communities (12). The agreement incorporates coordination between Commonwealth and Territory governments and encourages active participation by Indigenous community members including their involvement in the development of Local Implementation Plans (LIPs). Of particular relevance to this paper, currently 10 of the 15 NT communities involved in this initiative include in their LIPs addressing high prevalence of tobacco use as a priority health action [personal communications JR 2012: M Klopper, Acting Area Manager, Regional Operations Centre, NPARSD]. NT Government reforms in July 2008 included the amalgamation of 53 remote community councils into eight larger shires (13). This shifted decision-making and management about most local community-level matters to the regional centres with implications for service delivery generally, and for implementing tobacco policies and programs at the community level in particular. Significantly, a smoke-free policy for all its facilities, including those in remote communities, was launched by the NT Department of Health and Families in 2009 (14).

Participants and sampling

Purposive sampling was used to recruit stakeholders with either a mandate or an interest in reducing tobacco use in the NT's Indigenous population. In the three study communities of the TETP, locally-based service providers in local government, education, health and allied services, community and church leaders and other community members were approached for interview. Incorporating a 'relational' perspective for qualitative research as described by Cummins et al (15), we extended the geographical reach of the interviews beyond the study communities. We sought

the views of those based in regional centres external to the study communities who were working in a similar context. We also interviewed others across the jurisdiction who, although geographically distant, were in relationships of power or influence for addressing tobacco use in these settings. Included were elected members of the NT Government and relevant policy advisors.

In order to achieve saturation, we coupled the purposive sampling with a snowball approach asking each participant at the end of the interview to recommend further participants. To understand opportunities and challenges for policy implementation at the community level in particular, we ensured that the sample included the main frontline service providers, defined as those who worked at the public interface in the community. Frontline service providers also included those based in a regional centre but who visited the communities on a regular basis in order to provide services such as nutrition education, substance misuse reduction programs and health promotion. A target of 50 interviews was initially set, aiming for a balance between Indigenous and non-Indigenous participants. Apart from two phone interviews, all interviews were conducted face-to-face in participants' workplaces for their convenience or where participants felt most comfortable. The interviews were mainly one-on-one, however some discussions were held in small groups when the participants preferred this approach. Indigenous participants tended to prefer group discussions. The interviews were conducted in plain English (by JR and AC) with limited use of local languages for key words and phrases. Interviews lasted from 20 minutes up to 90 minutes, in as much depth as participants were prepared to offer.

Interview framework

An unpublished pilot study conducted in one locality in the region in 2006-2007 provided preliminary indications of possible key themes that may emerge in further research. These included: 'competing priorities for service providers', 'current policy environment', 'cultural issues', 'accessible and appropriate health promotion resources' and 'treatment services'. This pilot project suggested

that these could be broadly grouped as '*challenges'* and/or '*opportunities'*. On this basis, an '*opportunity'* was defined for the purposes of this study as a chance to enhance tobacco intervention components and programs. A '*challenge'* was defined as a potential or actual limitation to implementing tobacco interventions. Using a semi-structured interview approach, participants were invited to discuss '*opportunities*' and '*challenges*' to addressing tobacco-related issues. Participant responses were transcribed from hand-written notes taken during the interviews.

Data analysis

We analysed data using a combination of qualitative and simple quantitative approaches. Following standard qualitative data analysis procedures, the data analysis program Nvivo (16, 17) assisted to extract responses relating to the domains of '*challenges*' and '*opportunities*' from interview transcripts. Emergent themes were derived using a constant comparative method, i.e. moving repeatedly between themes and the transcribed text (18). The themes were verified by inter-coder agreement following independent analyses (JR and AC). To assist with cross-case comparisons, each interview participant was classified as either:

- frontline service provider, Indigenous (FLSPI);
- frontline service provider, non-Indigenous (FLSPNI);
- non-frontline service provider, Indigenous NFLSPI) or
- non-frontline service provider, non- Indigenous (NFLSPNI).

Other attributes allocated included: 'location of work base', whether a 'resident in the community', 'experience in their field', 'key function' and 'government affiliation'.

To summarise the '*opportunities'* and '*challenges'* in the data as a whole, a scatter-plot was prepared comparing the number of occasions an '*opportunity'* was also mentioned as a '*challenge*'. This permitted a graphical assessment of the relative strength of views among those interviewed and how each '*challenge'* and *'opportunity'* clustered with others.

Ethics approvals

Ethics approval for the study was provided by the Human Research Ethics Committee of James Cook University and the NT Department of Health and Families, and Menzies School of Health Research. Permissions to visit communities were obtained from local Aboriginal community councils and from the Northern Land Council, as required under the NT Aboriginal Land Act (1980). Australia's National Health and Medical Research Council protocols for research with Indigenous Australians were followed. All participation was voluntary and all of those interviewed signed consent forms.

2.4: Results

A total of 82 key stakeholders participated in 65 interview sessions conducted over 13 months commencing March 2009. JR conducted 54 interview sessions and AC conducted 11. Of these, 17 interview sessions were completed with groups of two to seven participants. Interviews ceased when saturation of information was reached, indicated when new participants began to consistently refer us to the same stakeholder individuals or groups and when similar information was provided with the topics raised by participants converging.

Participant attributes

A majority (62%, n=51) of the 82 participants were non-Indigenous. Of the total group of 82 participants, 62 (76%) were frontline service providers and of these, around half (n=30) were Indigenous. Of the 20 (24%) non-frontline service providers interviewed, only one identified as Indigenous. Of the total group of 82, 63 (76%) had greater than five years' experience working in remote communities or were themselves community residents.

At the time of interviews, prevention and/or treatment of tobacco-related harms was, at the community level, just one component of the core business of health service providers. Of all those interviewed, 49 (60%) worked in health. Of the 62 frontline service providers interviewed, 24 (39%) were visitors, i.e. they were not resident in the communities. Service providers resident in the communities included health staff, teachers, shire employees and church leaders. Non-frontline service providers, not community-based, were interviewed in regional centres and these included: executive level managers, program managers, researchers, those with a specific advocacy role and politicians at the regional and NT Government levels including an NT Government Minister. With regard to government affiliation, 33 (40%) of those interviewed were employed in the non-government sector. The majority of these were health employees working in community-controlled health services.

Themes emerging from interviews

Twenty major themes emerged as both opportunities and challenges. It was first thought that there would be strong differences between the views of the Indigenous and non-Indigenous participants about perceived challenges and opportunities. Although numbers were too small for meaningful statistical significance testing or quantitative assessment of levels of agreement for each theme, we cross-tabulated the frequencies with which frontline service providers and Indigenous people mentioned each theme as an opportunity and/or a challenge. In these cross-tabulations it was more often the case that the counts for Indigenous and non-Indigenous participants were similar for each theme, but there were consistently greater differences between the front-line and non-frontline service providers, as Table 2 illustrates. This broad agreement of views regarding an opportunity or a challenge among front-line service providers was evident regardless of whether participants were community residents or visitors, Indigenous or non-Indigenous. Furthermore, front-line service providers provided the more considered and detailed responses to interview questions including practical suggestions for policy implementation.

Figure 14 is a scatter plot of the frequencies with which each of the themes was mentioned in the transcribed data as an opportunity and as a challenge, allowing us to group the themes. Inspection of Figure 14 suggests three groups each discussed in turn:

Group 1: Frequently seen by participants as an opportunity but along a continuum of challenge

Group 2: Often seen as an opportunity but not often as a challenge

Group 3: Not often seen as an opportunity but often seen as a challenge

Table 2: Occasions of mentions of themes identified as both 'challenges' and 'opportunities to tobacco policy and program implementation in remote Aboriginal communities: Group 1 themes (those frequently seen as an opportunity along a continuum of challenge)

THEME	PARTICIPANT STATUS	OPPORTUNITY		CHALLENGE	
		Frontline %	Non-frontline	Frontline	Non-frontline
Smoke-free policies	Indigenous	38%	6%	25%	0%
	Non-Indigenous	34%	22%	75%	0%
Smoking cessation support	Indigenous	44%	0%	26%	11%
	Non-Indigenous	48%	8%	58%	5%
Health promotion activities	Indigenous	25%	5%	31%	0%
	Non-Indigenous	50%	20%	46%	23%
Target groups	Indigenous	58%	0%	34%	33%
	Non-Indigenous	37%	5%	33%	0%
Policy environment	Indigenous	25%	19%	50%	12%
	Non-Indigenous	25%	31%	25%	13%
Health workforce capacity	Indigenous	13%	0%	8%	5%
	Non-Indigenous	80%	7%	54%	33%

Proportion of mentions as either an opportunity or a challenge, comparing Indigenous and non-Indigenous participants with frontline and non-frontline service providers

GROUP ONE: FREQUENTLY SEEN AS OPPORTUNITY ALONG A CONTINUUM OF CHALLENGE

Themes in this group are described in descending order of opportunity namely: 'smoke-free policies', 'smoking cessation support', 'health promotion activities', 'target groups', 'policy environment' and 'health workforce capacity' (Figure 14).

'Smoke-free policies' was most frequently mentioned by all participants as an opportunity and rarely as a challenge. Among the sub-themes linked with this opportunity, three types of spaces were identified where the policies are or need to be applied, namely workplaces (especially health clinics), peoples' homes and public spaces. An important initiative that was mentioned favourably was the NT Department of Health's introduction of a smoke-free workplace policy in July 2009 [14]. But there was a broader view expressed regarding the scope of smoke free policies. The notion that "*all homes should be smoke-free"* (FLSPI) was expressed at least once in each community by community members. These comments usually reflected a concern for reducing the risk of passive smoking for babies, young children and elderly people suffering from chronic diseases. Practical suggestions for smoke-free public spaces included commonly-frequented areas such as the front of community stores or sports and recreation areas. Informal gambling circles where participants noted that individual tobacco consumption rises markedly with the "stress" of card games were also recommended to be "*declared smoke-free*" (FLSPI).

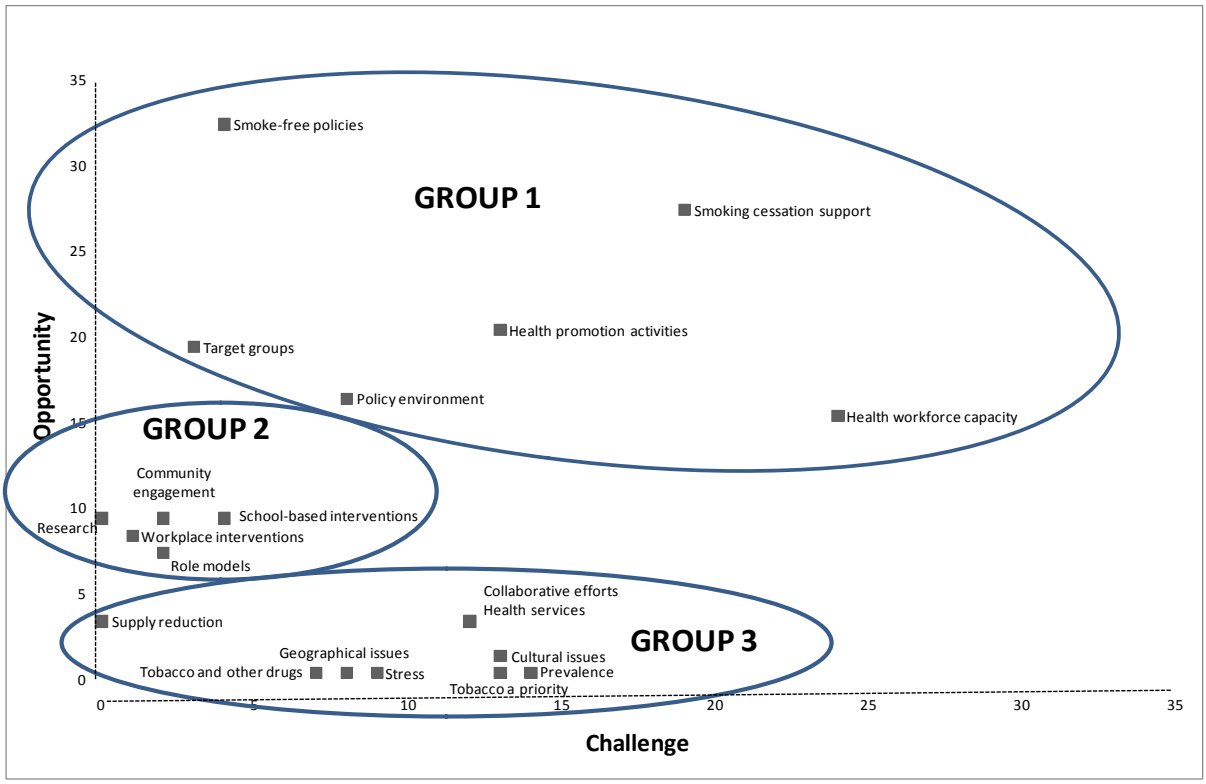

Figure 14: Scatter plot of frequencies with which each of the 20 themes were mentioned by 82 participants as an opportunity (y- axis) or as a challenge (x-axis)

Seen as a challenge, lack of enforcement of existing policies at the community level was mentioned mainly by non-indigenous, frontline service providers who called for more support from agencies external to the community to address a contentious and potentially divisive issue: *"...they don't acknowledge that it's difficult for people who live and work in the community to approach local services and organisations like the store and advocate for change*" (FLSPNI) and "*..it's impossible to enforce the smoke-free policy around council buildings – no-one takes notice. It's also difficult to enforce no smoking in vehicles"* (FLSPI).

'Smoking cessation support' was identified more frequently as an *opportunity* particularly by FLSPs, but was also often regarded as a *challenge*. Very little cessation support for individuals was available in communities and usually accessible only through local health clinics. Recommendations included: "*a QUIT* (telephone counselling) *NT specific service that accommodates, drives and supports*

interventions from a locally-based area" (FLSPNI) and "*access to frequent follow-up especially in the first month*" (FLSPNI). With mainly nicotine patches available in communities, there were calls for a wider range of Nicotine Replacement Therapy (NRT) products (e.g. nicotine gums) in order to provide: "*opportunity for combination therapy that may be more effective for highly dependent smokers*" (FLSPNI). Support models such as telephone and website quit support services in their current form were thought to be "…*culturally inappropriate and logistically impossible*" (FLSPNI) and that "*the government delivers the message* (quit smoking) *but doesn't provide the support needed to make the change*" (FLSPI).

Homelands or outstations are small isolated settlements located on traditional lands outside of the larger communities where there is a return to traditional activities like hunting and fishing. Often access to tobacco is constrained. Local community members noted these environments provided an opportunity to quit: "*Some go to the outstations to try to forget about ngarali* [tobacco]" (FLSPI). A local government shire manager stated there was also an "*opportunity in the workplace to offer support and quit groups*" (FLSPNI).

'Health promotion activities' in the data refer to local efforts to increase health literacy and strengthen community action relating to tobacco. This was often mentioned as an opportunity and less often mentioned as a challenge (Figure 14). It was recommended that health promotion activities should be delivered by community people in conceptually and culturally appropriate ways. "*Generally, approaches for education don't take into account cultural attitudes. Smoking is embedded, normalised. There are cultural responsibilities, fatalism*" (FLSPNI). Community members in particular felt that more information regarding the poisons found in cigarettes and about smoking-related harms would help to inform healthier lifestyle choices: "*Tobacco is mulkuru* [strange]*. It's a manymak* [good] *thing. But people also know it's not good for them. But they don't know why. Provide the real story about the damage"* (FLSPI).

The almost universal practice of mixing cannabis with tobacco among cannabis users, already documented in the study region (19) was referred to several times and recommendations included that this practice should be acknowledged and addressed in both education and quit support. Further recommendations for local health promotion activities included: using expired breath carbon monoxide monitors (as used by the research team at time of community tobacco surveys); providing information on addiction including withdrawal; resources in local language and *"talking in a good way with smokers, not being angry or judging them*" (FLSPI).

'Target groups': Pregnant young women were mentioned most frequently by both community members and service providers at the frontline as a target group for tobacco interventions. "A s*erious issue is the young pregnant women smoking – everyone notices that and that it's not a good thing to do but they all just let it slide"* (FLSPNI). The best opportunity for engaging with this group was thought to be through antenatal clinics, however there was uncertainty as to whether these opportunities were being used to their full potential.

Targeting families was frequently strongly advised across the range of interviewees, recommending strengths-based messages: *"There are ways of spending instead, support your family. Look at tobacco from a family perspective – second hand smoke, health of kids"* (FLSPNI).

Young age of tobacco uptake was of great concern generally: "*Prevention, prevention, prevention – work on the new generation"* (FLSPI). Interventions targeting pre-school children and school students were recommended with the recognition that "e*ducation at schools needs to coincide with whole of community campaigns as influences at home will far outweigh the influence of any changes at the school or elsewhere*" (FLSPNI). Although schools were seen by Indigenous community members as the prime location for prevention activities, most educators interviewed expressed

reluctance to take on the issue of tobacco, arguing that the curriculum was already overloaded by demands for extra programs such as "*breakfast and feeding programs and complex reporting requirements*" (FLSPNI).

'Policy environment': The contemporary health policy environment at the national and NT level was frequently mentioned as an *opportunity* (n=16) to address the high rates of tobacco use in these localities (Figure 2). "*The new COAG* [Council of Australian Governments] *announcement around tobacco allocation dollars….previous funding has been generic drug and alcohol funding. This is specifically tobacco"* (NFLSPI). *"Close the Gap efforts* [on indigenous disadvantage] – *especially for generations to come"* (FLSPI). Commonwealth subsidies on NRT patches were also mentioned as an opportunity. Jurisdiction-level policies mentioned as opportunities included local government reforms and the introduction of a jurisdiction-wide smoke-free workplace policy by NT Department of Health: "*The new structure and operations systems will make it easier to implement and enforce workplace and environmental policies"* (FLSPNI).

The current Territory and Commonwealth Governments' social and economic development policies (13, 20), i.e. other than those targeting tobacco, were mentioned as a *challenge* and are discussed more fully under the heading 'Group 3: stress'.

'Health workforce capacity': Although identified frequently as an *opportunity* (n=15) this was also highest on the *challenge* continuum (n=24) (Figure 14). Providing further capacity-building resources and opportunities for the community-based health workforces was seen as a major opportunity for contributing to addressing tobacco related issues. In particular mention was made of capacity building among those staff members who were local Aboriginal community members: "*Local staff are the constant. They should have ownership"* (FLSPNI). A service provider expressed the concern: "*There are less Health Workers in the NT than other jurisdictions – they are disappearing like flies"*

(FLSPNI). NT Health Department policies at the time of interviews were noted as an opportunity to increase capacity of Indigenous employees through *"good policies to try and encourage growth in the Indigenous component of the workforce with a flow-on effect, for example the cross-fertilisation of ideas and knowledge"* (NFLSPNI). There were indications that this can be difficult to realise at the local level. "*There's a lack of support or mentoring for* [Indigenous] *Health Workers when acquiring new skills*" (FLSPNI).

Further issues cited as *challenges* were the heavy workloads for nurses in community health centres with multiple programs and difficulties retaining clinical staff in remote communities. Non-indigenous staff noted that staff members with specialist drug and alcohol skills were irregular visitors to the communities: "*There is a lack of tobacco-dedicated staff – need a local person with local knowledge"* (FLSPNI).

GROUP TWO: OFTEN SEEN AS AN OPPORTUNITY, NOT OFTEN AS A CHALLENGE

This group contains themes grouped at approximately the same frequency on the opportunity axis but not often mentioned as challenge (Figure 14). This group includes the themes: 'workplace interventions' and 'role models'. "Research', 'school-based interventions' and 'community engagement' were mentioned with equal frequency as an opportunity (n=9) (Figure 14).

'Research': Tobacco research, community-based research in particular, was identified as an opportunity by both Indigenous and non-indigenous participants, particularly FLSPs. It was not mentioned as a *challenge.* 'Research' was described as having potential to *"...provide data to funding bodies*" (NFLSPI); *"…evaluate the effectiveness of local programs"* (FLSPI) and to *"...raise community awareness about tobacco-related harms"* (FLSPNI).

'Community engagement': Recommendations made to maximise opportunity included health staff increasing efforts to work outside of the clinic to improve engagement with community members and make better linkages with local community organisations. One clinic worker noted he had "*opportunities to go out bush and to outstations and talk with people in a more relaxed situation than in the main community"* (FLSPI). Cited as an example of community engagement by a regionally-based drug and alcohol service was their "*…outreach programs to remote communities and to colleges with boarders from remote communities* [i.e. children from remote communities in boarding schools]" (FLSPI).

'School-based interventions': Mentioned as an opportunity only by FLSPs these mainly focused on the provision of tobacco education by both teachers and visiting service providers: "*Send a messenger to the school monthly doing smoking education. Let them know smoking is the number one killer – that most men die in their forties"* (FLSPI). There was also mention of smoke-free policies for school campuses. Challenges to these interventions included: "*Tobacco is not the core business of the school"* (FLSPNI). *There has been a lot of noise … about tobacco on school grounds. Little has actually happened to address tobacco issues. It's probably been in the too hard basket*" (FLSPNI).

'Workplace interventions': Strategies identified as "*providing a supportive environment for staff to quit*" (FLSPNI) included the provision of quit support, setting up designated smoking areas or making workplaces totally smoke-free. At the time of interviews the workplaces caring for infants and elderly in the study communities were most effectively implementing smoke-free policies. A local government manager supervising staff in Council functions thought there was potential to "*…include tobacco education for staff as part of the induction process*" (FLSPNI). The only potential challenge to tobacco interventions in these settings mentioned was the service-related cost for the provision of quit support**.**

'Role models': Positive local role models were identified as a potentially effective strategy (Figure 14): "*Strengthen the blokes* [men] *that can help. Non-smokers can come and sit. They have more power to help. Ex-smokers can tell their experiences: how they stopped*" (FLSPI). However, poor role modelling by some parents, local Indigenous Health Workers, nurses, teachers and other non-Indigenous service providers was conversely noted as a challenge: "*Parents are poor role models smoking. Little grandkid picks up sticks and pretends to smoke"* (FLSPI). Aboriginal Medical Services were recommended "*to make quit support services available for staff. It's not good to be doing brief interventions in tobacco* [in a health service] *and be smelling of cigarette smoke"* (FLSPI).

GROUP THREE: NOT OFTEN SEEN AS AN OPPORTUNITY BUT OFTEN SEEN AS A CHALLENGE

Themes in this group all clustered around a low frequency of mentions as an opportunity (Figure 14). **'Supply reduction'** was mentioned as an *opportunity* only by Indigenous participants: "*Best way to stop with smoking is to stop where the smoke is coming from – the tobacco companies*" (FLSPI). "*Stop selling tobacco at the store….by taking it away, within two generations the kids won't have been exposed*" (FLSPI). "...*restricting availability of tobacco at stores to two to three days per week only*" (FLSPNI). Responsibility for driving these strategies was seen to be local, particularly by the committees responsible for the governance of local community stores.

'Collaborative efforts' between local agencies were mentioned most often as a challenge. "*All service providers* [in the community] *have their own focus*" (FLSPI). "*People are working in silos and not allied teams*" (FLSPI).

'Health services' were seen to be challenged because of insufficient funding for appropriate levels of staffing and program resources locally. Frequent use of the '*fly-in, fly-out*' service model was seen as problematic with visiting staff covering huge geographical areas exacerbated by a lack of suitable accommodation facilities restricting time spent in the communities. The resultant brief visits were

regarded as limiting for community engagement. In remote communities, access to the health workforce is largely through the local clinic where the priority for service is usually "*dealing with acute issues – tobacco isn't a priority*" (FLSPI)*. "The clinic is not the place that people come asking for quit assistance"* (FLSPNI). Government health services were seen as an opportunity for advocacy with a major role *"in empowering levels of responsibility and control to enable people to make their own choices. Community members are sick of being told what to do"* (FLSPNI).

'Cultural issues' were mentioned as challenges mostly by those working at the community level. In one of the communities there are strong cultural influences relating to knowledge and use of tobacco arising from a history of trade with Macassan fishermen from Indonesia prior to colonisation (21). During early community consultations, a prominent community elder informed the researchers that: "*Tobacco use is embedded in our culture, you won't be able to change it".* In the dual moiety system of Arnhem Land, the Yirritja moiety members have particular responsibility for keeping tobacco and smoking knowledge and ceremonies. Some perceive that quitting tobacco use interferes with adhering to these cultural responsibilities. On the other hand, those of the Dhuwa moiety declare: "*I can't leave this* (*smoking) because ngarali* (*tobacco) is my waku* (child).'" (FLSPI). Yirritja ownership of tobacco was not necessarily seen as a barrier to people quitting smoking. "*The Yirritja ngarali story is about the feeling and about the crying, not about smoking"* (FLSPI). The sole opportunity mentioned in the context of this theme is that these peculiar cultural arrangements provide the prospect of a return to using old cultural laws to limit the use of tobacco in some subgroups in the local community and to limit daily consumption.

The remaining themes were mentioned only in relation to challenge.

'Use of tobacco with other drugs' commented on only by FLSP's, the majority non-indigenous. "*Gunja* [cannabis] *is mixed with tobacco – you have to consider them together. When there's no*

gunja, people pack bongs [smoking utensils] *with just tobacco"* (FLSPNI). Participants advised this should be acknowledged and addressed in both education and quit support programs**.** Frequently commented on was: *"people are more likely to smoke when they are drinking* [alcohol]*"* (FLSPI). There was also mention that it is: "*hard not to smoke around kava* [a traditional drink from the Pacific used in one of the study communities since the 1980s (22)]. *You smoke like a train then*" (FLSPI).

'Geographical issues' were most frequently mentioned as a challenge by participants not living in the communities. "*In practice it is hard to deliver any programs in the communities – we have a huge area to cover with two staff – the logistics are impossible*" (FLSPNI). Regionally-based staff frequently travel huge distances, limiting time spent in the communities: "*they cram their work in*" (FLSPI). Isolation and limited amenities for community-based staff were identified as contributing to frequent staff turn-over (NFSPNI).

'Stress' was frequently mentioned by those working and living in the communities as a challenge to reducing tobacco consumption. Socio-economic contributors to this stress included high levels of unemployment, inadequate housing, limited services, high food costs and the impacts of colonisation during the early part of the 20th century in Arnhem Land. "*There is a high prevalence of mental health issues –people are self-medicating with tobacco"* (FLSPNI). Some stresses mentioned peculiar to these communities mainly relate to the recent major policy changes around local governance, and Commonwealth Government interventions precipitated by a report on the safety of children (23). The impact of these reforms was thought to be leading to increased tobacco consumption especially by decision-makers: "*Stress is so constant. Matters between clan groups and shire change. People carry a lot on their shoulders. Community leaders are smoking more due to these stresses*" (FLSPI).

'Tobacco is not regarded by many people at the community level as a priority': **"***Tobacco is not an in your face problem like alcohol, petrol sniffing"* (FLSPI), " *Cannabis is seen as the greater problem and children engaging in sniffing and truancy from school… these distract from the smoking issues"* (FLSPNI). "*Clinics are dealing with acute health issues – tobacco is not a priority"* (FLSPI).

'Prevalence of tobacco use': "*Indigenous people working in the communities…especially where there is greater than 80% smoking rate, feel there is no way out. No way of changing the smoking epidemic that is helping to suck the livelihood from the most marginalised*" (FLSPI). The high prevalence rate is regarded as underpinning normalisation of tobacco use and contributing to the strong triggers or cues to continue smoking.

2.5: Discussion

These results provide a unique picture of the entrenched inequalities between these isolated Indigenous communities at the extreme margins of a high-income country, Australia. These disparities make for comprehensive challenges for effectively implementing tobacco policy which inevitably is developed far away in Australia's capital cities. The main challenges are: very high rates of smoking which appear to be normalised, cultural and language barriers to delivering relevant health promotion information, health services and staff under-resourced to provide the most basic tobacco interventions, schools ill-equipped to prevent the uptake of tobacco, high levels of stress with reduced local control over local community governance and management and the extreme remoteness of these isolated populations from services normally available to other Australians in the urban centres. Policies targeting smoking in these remote Indigenous settings need to be more effectively implemented as a matter of urgency.

National policy documents targeting a reduction of tobacco-related harms among Australia's Indigenous peoples (9, 24-26) have major strategies in common. These include commitments to

workforce development; social marketing campaigns; improved delivery of cessation support and stronger regulatory efforts with a focus on reducing exposure to second-hand smoke. As part of 'Tackling Smoking' there is a national network being developed of appropriately trained tobacco action workers to support Indigenous communities, although few of these are currently based in remote communities (27). There is an upsurge in national, regional and local social marketing campaigns targeting Indigenous peoples to challenge the acceptance of smoking as normal behaviour.

Considering the results of interviews with the 82 participants in this study, it is clear that this current national policy framework is congruent with what frontline service providers are saying is needed in the communities. However it is equally clear from these results that policy implementation at the remote community level remains a challenge. It is therefore important to consider the best way to invest in the opportunities, and the best approach to overcoming the challenges.

As our data have indicated, strategies relating to smoke-free policies, smoking cessation support and health promotion were themes most frequently mentioned as opportunities. Evidence from evaluations of the effectiveness of smoke-free policies in settings other than remote communities suggest that cigarette consumption in adults and youth and exposure to second-hand smoke can be reduced and can have positive impacts on cardiovascular disease (28). There are indications in the results that robust smoke-free policies would be welcome in the study communities. Comments such as "*Smoke free policies in clinics: the policy has mostly worked well at the regional hospital and has helped some staff to either quit or cut down"* (FLSPI) reflect both community members' and service providers' views that enforced smoke-free policies, particularly in workplaces, may be effective for reducing consumption.

Smoking cessation and support services tailored to meet the needs of Indigenous peoples, particularly those living in remote communities where prevalence rates are the highest in the country, are slow to develop. Currently the few remote community-based tobacco workers have limited capacity to provide quit support. Early consultation in the TETP with communities demonstrated a preference for face-to-face support, delivered by community members who spoke their language. Daily tobacco consumption information was obtained from 177 smokers in TETP baseline tobacco surveys in the study communities. Of these, 55% reported smoking 10 or more sticks per day, indicating they may benefit from more intensive quit support recommended by current clinical guidelines i.e. counselling, pharmacotherapy or a combination of these (29). Government-subsidised cessation medicines, supplied in local community health centres, include only trans-dermal NRT and come with the requirement that recipients of the subsidised therapy have*"…entered into a comprehensive support and counselling program*" (30). Clearly further pharmacotherapies, such as nicotine gums should be more readily available on a subsidised basis in these impoverished communities. At the time of the baseline surveys in 2008/2009 some participants thinking about quitting stated that they did not know where to go for help. Despite more recent policy commitments at Commonwealth and Territory levels, appropriate and accessible quit support for smokers in these settings remains limited.

Centralised telephone counselling services provide a cost-effective service with a wide geographical reach (31) well-suited to the vast areas of service delivery in remote Australia. Such services are more effective if integrated with concurrent population-based approaches to reduce tobacco use. In several Australian jurisdictions efforts are being made to tailor such services. A model currently being developed in Western Australia (WA), initially for Aboriginal people living in a metropolitan area, contains components that could be used in remote communities. These include comprehensive community engagement and service promotion by senior Aboriginal staff, and incorporation of local knowledge into providing support or referrals [personal communications JR

2012: J Keene & P Parfitt, Drug & Alcohol Office, WA]. While such a service cannot provide face-to-face counselling with individuals in remote communities, it could provide face-to-face engagement with the community through occasional site visits to promote the service.

Opportunities mentioned for health promotion activities in these settings were mainly related to addressing the lack of understanding of the impacts of tobacco use. There is a need to consider historical and cultural origins of tobacco use, accurate word meanings and Indigenous concepts in order to effectively build and exchange tobacco knowledge (32, 33). In the experience of our team, this means taking a dialogical rather than a didactic approach (34).

Indigenous Health Workers are a vital component of the health workforce particularly in remote communities. Usually members of the communities they are working in, they are able to communicate in local languages, they provide translation of knowledge, community knowledge and linkages as well as a range of clinical services. While there are concerted efforts to up-skill a range of health professionals through workshops, generally held in regional rather than remote settings, access to information provided remains limited for those health workers from remote communities. The non-Indigenous health workforce in these settings requires support to enable an increased focus on addressing chronic disease risk factors such as tobacco. This would entail further investment in mentoring relationships incorporating reciprocal learning between Indigenous and non- Indigenous staff to tackle tobacco (35).

Limitations of the study

In this study we looked for ideas and statements believed by participants to be opportunities. Opportunities are not the same as what participants might have identified as the most effective strategies. Policy implementation could address this specifically as programs are developed. A second limitation of the study is that participant recruitment may have been influenced by

researchers' bias if, unintentionally, study participants were selected because of existing professional relationships and networks. However, in order to minimise this, we took advice from participants asking them to direct us to others for interview following their recommendations diligently. As in several previous studies in this region, conducting interviews in plain English without audio-recordings was not a limitation (4, 5).

The number of participants interviewed was small and over a short time frame. The results of the study therefore should be viewed as a 'snapshot' pertaining to just one time point when tobacco policy and program implementation targeting Indigenous smoking had unprecedented momentum. Standing against this limitation is the unique picture we have provided of community level views about implementing tobacco policies during perhaps Australia's most dynamic period of tobacco policy generation to address high and unchanging rates of smoking in these disadvantaged populations. The picture provided by our data is comprehensive because we believe we achieved saturation across a large part of the key individuals and agencies working across the NT with tobacco as their core business. Importantly, even though the sample was small we had representation of views from most key policy implementers, especially those at the front line in these three remote communities.

The responses of frontline service providers, both Indigenous and non-Indigenous, clearly demonstrated their deep understanding of local community issues and their thoughtfulness about the opportunities and challenges faced at this practical level of service delivery. Those interviewed who were not working at the frontline but at senior executive or management levels had potentially more impact on policy implementation decisions yet had less knowledge about community level issues.

2.6: Recommendations

On the strength of the high level of need and based on the reported results and discussion, it is recommended that in these remote settings:

- whole of community approaches are used to improve collaborative efforts between service providers, extending beyond those with health as core business
- cessation support is enhanced by: 1) access to a locally-based Indigenous tobacco-specific workforce equipped to confidently provide quit support and information about tobacco-related harms utilising local language and conceptual frameworks; 2) increased access to a wider range of subsidised pharmacotherapies to assist smoking cessation, including short-acting nicotine replacement products; 3) centralised phone services are funded to provide face-to-face service promotion of their activities in remote communities as an engagement strategy
- community-based support is sought for regulatory efforts to focus on the reduction of exposure to second-hand smoke and
- workplaces are a focus for interventions.

There is some congruence between the above cessation support recommendations and those based on findings from studies undertaken among Indigenous peoples in New Zealand and Canada (36-38). The above recommendations may also find a place in low- and middle-income countries struggling with rising cigarette sales in an environment of social and cultural diversity (39). Strategies more specific to the remote Indigenous populations in the NT include recommendations that further place-based approaches, including schools, are considered and that concomitant cannabis smoking is acknowledged and addressed in tobacco interventions. Further research is needed across a range of disadvantaged subpopulation groups to rigorously evaluate specific components of community-based interventions.

2.7: Chapter 2 References

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CHAPTER THREE: A CALL TO ARMS

Paper #2: Tackling tobacco: A call to arms for remote area nurses

The previous chapter reported that health workforce capacity was perceived by key stakeholders to be a major challenge to policy implementation relating to the reduction of tobacco use in remote settings. Recommendations were made to build the capacity of staff members who were local Aboriginal community members. However there are also nearly 400 nurses working across Australia in very remote primary health care clinics (without inpatient facilities). Professional development opportunities remain limited despite some recent improvement. Specific areas of need identified to upskill remote area nurses include extended clinical skills, public health and community development

This chapter reflects on challenges for remote area nurses in providing effective tobacco interventions. Some modestly successful approaches, both experienced and observed, are discussed.

Robertson J. Tackling tobacco: A call to arms for remote area nurses. *Contemporary Nurse* 2011, 37:1

3.1: Abstract

Tobacco-related conditions contribute significantly to the health gap between Indigenous and non-Indigenous Australians. Smoking rates in Australia's Indigenous population has failed to decline even though smoking rates in Australia have declined in general. In some Indigenous communities, smoking rates remain very high. This paper outlines a project undertaken to investigate appropriate strategies to assist Indigenous smokers to quit and outlines the important role nurses can play.

3.2: Introduction

Tobacco-related conditions such as cardiovascular disease, chronic respiratory diseases, diabetes and cancer contribute significantly to the health gap between Indigenous and non-Indigenous Australians (1). While smoking rates in Australia have halved in the past 30 years, eventually falling below 20% in 2004, smoking rates remain at around 50% in the Australian Indigenous population (2). In fact, extraordinarily high rates of smoking have changed little in the 'Top End' region of the Northern Territory (NT) over the past 20 years (3,4). In the opening keynote speech of the 2010 Oceania Tobacco Control Conference, Australia's then Aboriginal and Torres Strait Islander Social Justice Commissioner, Mr Tom Calma (2009), declared:

"It cannot be said loudly enough – smoking is the single most devastating cause of death and disease among our peoples."

While there is ample evidence for the effectiveness of interventions for reducing smoking in mainstream populations, it is not known whether these interventions work in Australia's Indigenous populations (5). Many of these interventions have either not been tried or have not been rigorously evaluated in Indigenous communities (6). There is currently little evidence for successful smoking reduction programs in these settings. In order to contribute to the evidence-base, the five-year Top End Tobacco Project (TETP) was commenced in July 2007 (National Health and Medical Research Council project grant #436012). The project aims to reduce smoking in three remote communities in the NT's Top End. I am a registered nurse and Senior Research Officer on this project. I am concurrently undertaking post-graduate research for a Professional Doctorate in Public Health. An essential component of my role has been to establish and maintain engagement with community members and key community groups, including liaison with government and non-government agencies and service providers. I have assisted with the baseline survey and have a lead role in establishing and maintaining the intervention components. The process evaluation component of the study is my responsibility.

In this paper I briefly examine the approach of the TETP, my role in the project and learnings to date based on preliminary results and observations. I reflect on the considerable challenges in the provision of tobacco interventions and discuss modest successes achieved in tackling smoking in these communities. In a 'call-to-arms', I urge remote area nurses to consider taking on these challenges in their routine practice aiming for even greater success. Implications for the role of nurses working in remote settings in addressing tobacco-related issues are discussed.

3.3: Background

Geographical setting

The project is located in three discrete, similarly-sized communities with a combined population of approximately 4200 (Figure 6). Although all located in the NT's 'Top End' the communities are widely separated geographically and are all socially, culturally and linguistically distinct. There is also differing cultural and historical considerations that contribute to current tobacco use (7-9).

Policy environment

Unprecedented policy developments surrounding efforts to reduce tobacco-related harm have emerged since the TETP commenced. In response to the 2005 Social Justice Report, in 2008 the Australian Government made a commitment to address Indigenous disadvantage within 25 years through the 'Closing the Gap' strategy (10). The National Health Partnership Agreement on Closing the Gap in Indigenous Health Outcomes identified 'Tackling Smoking' as the first of five priority initiatives (11). Demonstrating commitment to this initiative, in February 2010 the Commonwealth government appointed Dr Tom Calma as the inaugural National Coordinator for Tackling Indigenous Smoking (12). This was shortly followed by the announcement of the impending roll-out of an 'anti-tobacco workforce' including 'Regional Tobacco Coordinators', 'Tobacco Action Workers' and further 'Healthy Lifestyle Worker' positions. In this initiative a total of 82 'tobacco' and 'healthy lifestyle' worker positions will be rolled out over 20 regions across Australia. A further 37 regions will receive workers in the future (13).

In order to progress Closing the Gap policies, delivery of primary health care in the NT is currently undergoing significant reform through the 'Expanding Health Service Delivery Initiative' commenced in 2008 (14). My colleagues and I are currently working with both community-controlled and NT Government health services, staffed by Indigenous Health Workers, local Community Workers and

nurses. The Health and Community Workers are mostly local people but there is high turnover among medical officers and nursing staff.

The TETP has been in progress for three years and in this time we have observed community members exposed to continuous, significant change engendered by a torrent of major policy shifts. The TETP began when the July 2007 Commonwealth Government's Northern Territory Emergency Response (NTER) was announced. The NTER's controversial measures, mostly impacting at the community level, included: widespread alcohol restrictions; quarantining welfare payments; compulsory health checks for Aboriginal children; increasing policing levels and leasing of townships prescribed by the Australian Government for five years (15). Confusion related to the introduction of this policy was compounded by NT Local Government reforms which also came into force in July 2008 and resulted in the dissolution of the former locally-elected community councils which was comprised of representatives of all local clans. The outcome of the introduction of the reforms meant that only a few councillors represent each community and the transfer of governance and decision-making to regional centres (16). There is now a feeling among Indigenous people, as one elder put it, that *"the community has lost the power to rule themselves"*.

Clinical capacity

Each community has some level of health promotion work occurring around tobacco, which is largely seen by health centre staff as the role of local health or community workers and visiting staff from regional service centres. The clinics we work with face many challenges in the provision of quit support. Whilst tobacco has been firmly on the chronic disease agenda in terms of policy, there is currently little available support to quit smoking available through remote clinics in practice other than brief interventions. Many nurses express a lack of confidence in providing cessation support for clients. While the precise role of the new Tobacco Action Workers is yet to be clarified, there is a focus on a community-level prevention approach with workers facilitating referrals to quit support (12).

3.4: Approach: Top End Tobacco Project

Sanson-Fisher and colleagues (2008) underlined the importance of public health research which modifies health risk behaviours (17). Furthermore, such research should use systematic scientific means to test the effectiveness of interventions, providing evidence which can inform practice. Nurses working in primary health care settings are guided by the principles of the Ottawa Charter for Health Promotion 1986. These principles include strengthening community action through *"community ownership and control of their own endeavors and destinies"*. Pre-requisite to this

approach is ensuring the community population has access to information and learning opportunities and participates in decision making (18). A commitment to these principles in my nursing practice has made the transfer from nursing to community-based action research projects natural and uncomplicated.

The TETP involves a multiple-component, community-action intervention across three communities. The study has ethics approval from two ethics committees: James Cook University and the joint Menzies School of Health Research and NT Department of Health and Families. The intervention includes a combination of evidence-based strategies that have been applied to other populations along with community-driven strategies developed as the project progresses. The study's hypothesis is that the intervention will lead to an increase in the number of tobacco smokers who: consider quitting, seek support to quit, attempt to quit but relapse, or succeed quitting smoking tobacco between baseline and follow-up. Intervention components include: public meetings to discuss local needs and potential initiatives; assisting health workers to quit; increasing the uptake of brief interventions at health services; increasing the availability of nicotine replacement therapy (NRT); workplace and school-based interventions; and enhancing community resolve through developing suitable policies and strategies to reduce smoking. The effectiveness of the intervention will be evaluated with baseline and follow-up interview surveys and by monitoring monthly tobacco retail data. A process evaluation component is also being undertaken to ensure the study is implemented as designed and with the intervention components delivered as intended. It will also document the procedures used in mobilising the service system to support community tobacco strategies. The five-year time period permits comprehensive data collection and careful feedback of study results to communities.

With other project officers, the initial 10 months of the project were spent building relationships with stakeholders in each community and their associated homelands (outstations), learning about the local historical and social significance of tobacco, investigating community concerns and consulting on ways to move forward with the project, particularly the community tobacco surveys. Establishing good working relationships in such a challenging policy environment has required considerable effort, particularly as our team is based in another state, and spends just four to eight days per quarter in each community. All team members have been adopted into the kinship system of the communities placing us into reciprocal relationships with all community members. This system (19) operates in all study communities across language groups, facilitating relationships and engagement at the individual and family level.

The project employs local community members who are vital to successful community engagement. These are local co-researchers who also provide invaluable assistance with networking, interpreting, translation and managing cultural protocols. Following field testing of the survey questionnaires, participants (16 years and over) were opportunistically recruited for the baseline survey, using quotas to reflect age and gender balance. Interviews were conducted in homes, public spaces, and workplaces. A structured questionnaire was used to capture information on smoking status, smoking history, and styles and patterns of use. Self-reported smoking status was confirmed using an expired breath carbon monoxide monitor (20).

3.5: Progress on the Top End Tobacco Project to date

Baseline survey

We interviewed 400 people in the three study communities. The methods and survey design have been described elsewhere (20). Around 76% were self-reported current smokers (21). This data confirmed little change in smoking rates in the region over the last 20 years. However, the novel finding was that 58% of the current smokers were thinking of quitting, and 17% were actively attempting to quit or had tried to do so in the past. My colleagues and I concluded these results suggest that a large proportion of smokers in remote Indigenous Australian communities may be seeking to modify their smoking behavior. Comments at the time of the survey included: *'I want to know how to quit;' 'I don't know where to go for help'* and '*I am wondering how I am going to stop for health'.* Those surveyed had little knowledge of cessation strategies for themselves and very limited access to community-based support (21).

Feedback of survey results to communities

Following the completion of the baseline survey, preliminary data was presented to community members and service providers for discussion. Those consulted indicated that the results were useful and provided advice on ways to present both the study information in a culturally-relevant and conceptually-meaningful manner. It was agreed that we should use pictorial representations of prevalence proportions and local concepts of life stages, a model previously used in an Arnhem Land cannabis study (22). Community members requested that we include further information on the health effects of tobacco in our feedback of survey results (see Figure 15) and that we take this information *"from clan to clan, family to family"*.

Feedback was delivered through public meetings or discussions with small groups, families and individuals throughout each community. The team used flip charts, 'power point' presentations and posters to inform discussion with stakeholders including health service providers, educators, retailers in the local community stores, shire service providers, community members and clan leaders, elected NT Government and shire representatives and church leaders. Local co-researchers assisted with translation where necessary.

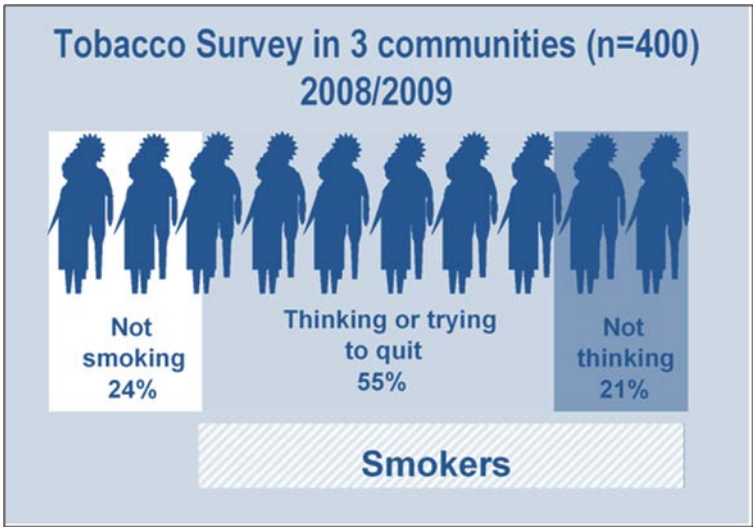

Figure 15: Baseline community tobacco survey results across three communities in the 'Top End' of the Northern Territory Community responses to survey feedback

Responses to these discussions varied according to local community capacities but we found willingness in each community to engage with tobacco-related issues. One community organised a quit competition among sporting teams, run entirely by community members. In another community, clan leaders are currently considering extending existing smoke-free areas. A collaborative approach has been used to develop information resources including posters encouraging people to *"stop or slow down"* smoking and stickers in local language to encourage families to keep their homes smoke free. Recently, local reference groups in all three participating communities have made tobacco a priority health issue in plans and agreements with all levels of government.

Building health workforce capacity

Project work like this can be unpredictable. Some intervention components have changed from those intended. Our initial focus was to encourage an increase in brief interventions by clinic staff but there was a clear need for building of health workforce capacity around a range of tobacco interventions, whether prevention or treatment. I developed a training program '*Supporting*

smokers to change', targeting health and community workers. The program uses a reciprocal learning approach that accommodates local languages and cultural and conceptual frameworks (see Figure 16). As found with similar programs delivered in Indigenous health care settings in north Queensland (23), some smokers committed to changing their own smoking as a result of participation in the training.

Figure 16: Health worker discussing ways of working together to reduce tobacco use

We have adjusted these modules for delivery to nurses as some clinic staff expressed a lack of confidence in providing advice to clients on tobacco cessation strategies. There is a need in these settings for the provision of essential education, training and other professional development opportunities for nurses and ensuring access (24). It is encouraging to note that over recent years there have been improvements in these opportunities (25) but some barriers to accessing these remain. Despite the project offering tobacco local cessation training, few sessions have been delivered by nurses, who struggle to find time to take advantage of the training they receive. Some clinic staff remarked to us that even *'building brief intervention into routine clinical practice is a challenge because of acute care needs'*. Further, ongoing training is essential as staff turn-over is high in these settings (26).

Smoking cessation support

Currently the provision of face-to-face individual or group support to change smoking is almost non-existent in the three study communities. This is not uncommon across the NT, where referrals are more usually made to Quitline or visiting health service providers. During recent community visits we worked with people wanting to change their smoking behavior in order to develop local capacity to support smokers and find ways to overcome challenges such as constant cue exposure. We provided regular, face-to-face follow-up over eight days or so, then phone follow-up where possible. Despite the extremely limited capacity in the communities to maintain this level of support, some participants have managed to maintain reductions in their daily tobacco use.

3.6: Implications for Remote Area Nurses: A call to arms

There are many evidence-based strategies to reduce tobacco consumption in other settings and it can be tempting to impose these in urgent haste in remote communities. In keeping with the principles of the Ottawa Charter, community ownership of local tobacco strategies is imperative. It is our experience that the communities we work with are gradually making tobacco a higher priority and many smokers clearly want to quit. Community members have demonstrated willingness to share cultural and conceptual frameworks in order to ensure local strategies are realistic and relevant. With ongoing support for whole-of–community approaches, local communities are developing and implementing their own solutions which are sometimes unique and often highly creative.

Despite challenges to the provision of clinic-based tobacco strategies in remote settings, there have been positive outcomes. Successful approaches by health centres in Groote Eylandt, and in Eastern Arnhem Land, include community awareness campaigns through developing health promotion resources. They have facilitated the extension of smoke-free public spaces. The centres in these communities have made tobacco part of their everyday business and formed part of the pilot study for the larger TETP. One clinic manager stated:

"Our approach has taught us the importance of conducting public health initiatives in an inter-disciplinary manner and at a pace that is determined by community-readiness and clinic workload" (Clinic staff: Angurugu 2007).

Further support for community-based strategies could include enhancement of opportunities for nurses to engage in mentoring roles with Indigenous staff working in the community. For example,

the work of Community Education Workers and, where possible, members of the anti-tobacco workforce, could be encouraged by nursing participation. Firtko et al (27) state that the role of a mentor "requires a mutually accepted relationship". The process of mentoring has also been described as a "dynamic and collaborative process" and encourages nurses to embrace a mentoring culture that empowers both the mentor and mentee (28). Mentoring relationships between nurses and local Indigenous staff has the potential to provide appropriate opportunities for reciprocal learning in remote settings. Such approaches during the project to date have resulted in an increase of evidence- based practice being translated into more locally and culturally relevant tobacco strategies. An example of this has been the consideration of cultural tobacco practices in the development of realistic individual cessation care plans.

A major challenge for remote area nurses in many communities is the high level of patient morbidity (25) resulting in prioritisation of acute care. The need for nurses to focus on acute care problems limits the time they have to devote to addressing chronic health problems such as tobacco use. National competency standards for Australian registered nurses, however, state that their role includes promotion of health and prevention of illness (29). Disappointingly, a recent study of nurses found limited understanding of health promotion (30). The study concluded that further education was needed in order to equip nurses with the planning and implementation skills required to ensure health promotion becomes an integral part of practice. A significant component of successful clinic-driven strategies we have observed is ongoing community engagement. Following a workshop we held with nurses on both prevention and treatment strategies relating to tobacco use a clinic manager commented "*It's good to get out into the community where the people are – under the trees, outside their home. Put a mat into the vehicles and go out into their world".* Nurses can therefore have an impact on behaviour change given the right opportunities.

Nurses who are smokers themselves may feel a tension between their personal and professional beliefs with regard to health promotion roles in smoking (31). Access for nursing students to smoking cessation programs is recommended (31) as nurses are looked to as role models for health in the community. The high prevalence of smoking among remote area nurses has been remarked upon by members of the communities we work in. The issue was also raised in a workshop facilitated for RNs and allied health professionals. Discussion included the tension between feeling "*like a hypocrite*" and duty of care to the client to provide smoking interventions. However, the RNs who attended the workshop recognised there are levels of example, for example one participant said, "*a smoker can abstain from smoking at work".*

Bittoun, Fagerstrom, Baker and Mendelsohn (2010) state, *'If a society makes such a harmful substance as tobacco legally available it has a responsibility to provide medical services for those affected adversely by it.'* (32). Discussions with clinic staff revealed that brief interventions in tobacco are not part of routine screening practice in all the study communities (unpublished data). It is also clear from the results of the baseline survey and observations that many community members are ready for more than brief interventions and instead require ongoing support to change their current tobacco use. However, as nurses lack current evidence–based practice in regard to advice for smoking cessation, further work in the area is required to ensure nurses are better prepared to take on this role in the future.

3.7: Conclusion

If our profession is to rise to the 'call to arms' to help close the health gap between Indigenous Australians and the rest of the population, tobacco smoking must become a priority in the clinics as well as well as out in the communities. Building the capacity of nurses to deliver smoking cessation programs requires education, mentoring and a vision that goes beyond the clinic walls. It also requires appropriate professional development and the incorporation of a primary health care approach consistent with the Ottawa Charter. Tobacco use is often seen as the work of everyone but has unfortunately become the work of no-one in many remote communities in the NT's 'Top End'. Nurses have an important role in ensuring that smoking rates in Indigenous communities are reduced in the future as a way to close the gap in health disparity in this country.

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CHAPTER FOUR: NEW EVIDENCE FOR GPs

Paper #3: Addressing high rates of smoking in remote Aboriginal communities: new evidence for GPs

As part of baseline tobacco surveys across three remote Aboriginal communities, participants were asked to share details of any quit attempts. The majority of those who had made at least one quit attempt provided information about motivators to quit. Highly ranked among these motivators was advice from a doctor to quit. This evidence suggests doctors are well placed to provide effective tobacco interventions in remote Aboriginal communities.

Using further evidence from the baseline survey, combined with national guidelines, we recommend practice points and provide examples appropriate to the environment.

Robertson J, Conigrave K, Ivers R, Hindmarsh E, Clough A. Addressing high rates of smoking in remote Aboriginal communities. *Australian Family Physician* 2013, 42:6

4.1: Abstract

Objective:

To inform smoking interventions by clinicians, particularly doctors, in primary health care settings in remote Aboriginal communities.

Methods:

During 2008-2009 in three remote communities in the Northern Territory 400 people (aged ≥16 years) were asked about their tobacco use.

Results:

Extremely high rates of smoking persist: 71%, 78% and 82% of those interviewed in community A, B and C respectively. More than half the smokers were either thinking about or actively trying to quit despite limited access to appropriate support. Among former smokers, the most common motivator for quitting was 'health concerns'. Of those citing 'health concerns', 22% specifically mentioned receiving advice from a clinician, usually a 'doctor'.

Conclusions:

GPs and their colleagues in similar primary health care settings are well-placed and are strongly encouraged to take every opportunity to make what could be a significant impact on reducing harms related to smoking and environmental smoke.

4.2: Introduction

Smoking rates halved in Australians generally over the past 30 years, falling below 16% (1). In Indigenous populations, smoking rates have remained at more than twice this level, with higher rates reported in remote communities (2). Currently there is limited evidence as to what constitutes effective smoking cessation interventions among Indigenous Australians (3), particularly in the unique environments of remote communities.

In the Northern Territory (NT), several surveys since 1986 have documented remote community smoking rates ranging from 61%-85% (4-6).These have remained relatively unchanged, particularly in the 'Top End'. Clinicians working in remote communities face significant challenges to consistently deliver smoking interventions. These include rapid staff turnover, geographical isolation and their principal obligation to provide acute patient care (7).

To inform and encourage provision of smoking interventions by clinicians working in these settings, we describe the results of tobacco surveys in remote NT communities. The surveys provided a baseline for a five-year tobacco study. Preliminary unpublished analysis of the recently completed follow-up surveys demonstrates little change in smoking prevalence, but an increase in the number of smokers thinking about or actively trying to quit. This, along with the baseline survey results, reinforces the pressing need for clinicians to take every opportunity to encourage smoking cessation. We make practical recommendations, specifically for doctors working as part of primary health care (PHC) teams, to support smokers wanting to change.

4.3: Methods

The data for this study are derived from a multiple-component, community-action intervention and evaluation study to reduce tobacco smoking in three Aboriginal communities in the NT's Top End.

Settings

Located in three corners of Arnhem Land, the populations of these communities range from 1100-2000. Comprised of >90% Aboriginal people, language and cultural practices largely remain intact. People living in these communities suffer extreme socio-economic disadvantage. Geographical isolation reduces access to many services. Strong social and historical factors have 'normalised' tobacco in everyday life, creating significant barriers to smoking cessation (8).

Interviews and survey data

Community surveys were undertaken in 2008/09. Paid, local community members assisted the non-Indigenous research team with participant recruitment and data collection, described in detail elsewhere (9). The survey captured both qualitative and quantitative data in order to deepen understandings of local cultural and social contexts of tobacco use.

Quantitative data

Smoking status was recorded as 'current', 'former' (no tobacco use ≥ 6 months) or 'never' (including those who had tried once but had not taken it up). Daily tobacco consumption was assessed using questions about purchasing, sharing and personal use. Time-to-first -cigarette (TTFC) and cigarettes per day (CPD) assessed tobacco dependence (10). Self-reported smoking status was confirmed using a hand-held expired breath carbon monoxide (BCO) monitor. Current smokers were asked to clarify any intentions about quitting (thinking, trying, not thinking). Former and current smokers were asked if they decided to quit with or without medical advice or support. Knowledge and use of cessation medicines, factors contributing to changing smoking and whether participants restricted smoking in selected environments were documented.

Qualitative information

'Current' and 'former' smokers were invited to plot their tobacco journey from uptake to time of interview. Details of general concerns about tobacco use, quit attempts and relapse were recorded. Free nicotine replacement therapy (NRT) in the form of patches (21mg) and gums (2mg and 4mg) were offered where appropriate for participants to try, along with information about effective use.

Ethics approvals

The Human Research Ethics Committees of the NT Department of Health and Families, Menzies School of Health Research and James Cook University provided approvals.

4.4: Results

Tobacco users in the sample

The study sample (n=400 ≥ 16 years) comprised 15% of the combined communities' populations. In the sample, 76% were current tobacco users with prevalence varying from 71% to 82% across communities. There was little difference between the proportion of males and of females who were current users overall. Former users comprised 10% of the sample while 14% had never used tobacco (Table 3).

Average age of first use among current users was 17 years (range=4 years-38 years), varying little between the communities (P=0.161) and between males and females (P=0.946). The average age of first use among younger current users (aged 16-29 years) was consistently lower than in older users (aged 30+years) by 1.5 years to -2.1 years.

Table 3: Tobacco use by gender (305 current users and 41 former users) in a sample of 400 Indigenous people aged 16 years and over in three remote Aboriginal communities, Arnhem Land, Northern Territory (Australia) including patterns of use by gender among current smokers (n=301).

	Female n=194	**Male n=206**	**P***
Never used tobacco	31 (16%)	23 (11%)	0.337
Former user	18 (9%)†	23 (11%)§	
Current user	145 (75%)‡	160 (78%)	
	Current smokers (n=301)		
Daily smoker	107 (76%)	116 (73%)	0.550
Consumption			
Smokes <10 cigarettes per day	59 (54%)	41 (35%)	0.005
Smokes >=10 cigarettes per day	50 (46%)	75(65%)	
Time to first cigarette			
After breakfast	61 (45%)	57 (37%)	0.134
First thing/during the night	74 (55%)	99 (63%)	
Intentions towards smoking			
Thinking about/trying to quit smoking	91 (65%)	125 (80%)	0.005
Not thinking about quitting	49 (35%)	32 (20%)	

*Pearson chi^2 comparing proportions in each group and t-tests comparing mean age of first use in each age group.

† including two women who were former users who exclusively chewed tobacco
‡ including four women in one community currently using tobacco who chewed but did not smoke it
§ including one former male user in one community who exclusively chewed

Current smokers

The few users who exclusively chewed tobacco were excluded. Around 75% of the current smokers smoked daily (Table 3) with no differences in daily smoking between males and females across the communities. Daily use was often reported as constrained by lack of money on the “off” pay week.

Of those who provided details of daily consumption, 44% smoked <10 CPD. Generally, males were heavier smokers than females (P=0.005).

Among the current smokers, 291 provided information about TTFC. Of these, 41% reported that they had their first cigarette after breakfast or later. In data not shown, we found heavier smokers were almost three times more likely to smoke 'first thing' (P=0.001) and nine times more likely to smoke 'during the night' (P<0.001). However, it is noteworthy that one-third of those who smoked during the night or smoked first thing were lighter smokers.

Across the communities, one in eight of the current smokers reported they were actively trying to quit or cut down at time of interview (Table 4): "*Trying to wait at least 2 hours between smokes*"; "*I'm trying to quit. I go out bush to get away."* A further 60% reported they were thinking about quitting:*" I want to quit - want to live long to see granddaughter"; "I'm thinking about quitting a little bit – I'm in footy training now".* The remaining 27% said they were not thinking about changing their smoking: "*I can't quit, it's difficult; everyone will say we want to quit, but can't."; "I can't quit, I will smoke till I die".* Overall, females were around half as likely to report thinking about or actively trying to quit.

There was general willingness to try nicotine gum and patches. Several participants reported that patches did not adhere well to skin in humid conditions. Some participants reported that the gums reduced "*starving for ngarali [tobacco]"*, enabling reduced daily consumption.

Females were considerably more likely to restrict their smoking in selected environments, such as inside homes or cars (data not shown) (P=0.005): "*I take the kids outside when I'm smoking*"; *"I smoke outside the house – my uncle had an operation so I don't smoke around him".*

Overwhelmingly the most frequently mentioned concerns were regarding tobacco's impact on health of self and/or others, children smoking and their young age of uptake: "*Too many kids smoking - younger than me when I started."; " Children as young as 8-9 years old starting to smoke"*

Quit attempts

Information about quit attempts was provided by 145 current and 38 former smokers. With very little difference between current and former smokers, these groups have been combined (Table 4). Females seemed more likely to attempt to quit with medical advice, males making their own decision. Less than a third of the current and former smokers knew about cessation medications and

only 16% reported having ever tried them (Table 4). Medicines most frequently identified by participants were NRT "*patches and gums"*. Only three reported being prescribed varenicline and all stated they had not felt confident to use it. Knowledge about how to use any of these medications effectively was rare.

Periods of both voluntary and enforced abstinence were regarded uniformly by participants as quit attempts and therefore have been reported as such e.g. lack of access to tobacco through bed-ridden hospitalisation or isolation from a retail outlet. Spending time on outstations away from the main community was perceived as a good opportunity to quit because of reduced access to tobacco, reduced cue exposure and more diversion opportunities *"I was stuck on the outstation in the wet season. Ran out of tobacco. I was eating well, hunting turtle and dugong, helps stay off the ngarali* [tobacco]".

Table 4: Characteristics of the quit attempts made by 145 current smokers and 38 former smokers by gender in a sample of 400 Indigenous people aged 16 years and over in three remote Aboriginal communities, Arnhem Land, Northern Territory (Australia)

		Current (n=145) & Former Smokers (n=38)		
		Female n=79	Male n=104	P*
Quit attempts (n=183)*				
	1 only	59 (75%)	79 (76%)	0.842
	>1	20 (25%)	25 (24%)	
Quit attempt informed by(n=154)*				
	Own decision without medical advice or support	34 (58%)	72 (77%)	0.004
	Medical advice and/or diagnosed tobacco-related medical condition	27 (44%)	21 (23%)	
Knowledge and use of cessation pharmacotherapies(n=158)*				
	Knew nothing about them	24 (37%)	36 (39%)	
	Knew about them but never used	27 (42%)	46 (49%)	0.243
	Tried pharmacotherapies	14 (22%)	11 12%)	
*Number of current and former smokers who provided this information				

* Pearson chi^2

Information about relapse was provided by 72 of those who made at least one quit attempt (data not shown). 'Cue exposure' was identified by 65% of these as the main reason for relapse, e.g. "*I*

came back to the community and I'm surrounded by smokers" and "*My wife and friends all smoke, so it's too hard to give up*".

Of the 145 current smokers who had made at least one quit attempt, 134 provided information about motivators to quit. Major motivators in descending frequency of mention include:

- concern about a diagnosed chronic or acute health condition or physical sign such as shortness of breath
- lack of access to tobacco
- pregnancy
- advised by a doctor to quit (neither nurses or Indigenous Health Workers [IHWs] were reported as having provided this advice)
- concern for future health
- role model, particularly as a parent but also as a Health Worker
- wanting to increase fitness
- demand sharing pressures
- death in the family
- social marketing
- cost

4.5: Discussion

Community-based approaches have been advocated to promote health and prevent disease, particularly those that emphasise changing social norms (11). With extraordinary rates of smoking in these populations, we advise that interventions by clinicians at the individual level are more likely to be successful if part of a range of concurrent community-based intervention components. Recent research has identified the need to improve the uptake of secondary preventive strategies such as brief interventions (12). Offering assistance with quitting is more effective than merely advice to quit (13). Among the current and former smokers it was evident that doctors played an important role motivating smokers to quit. Because smoking journeys were long, quit attempts were recounted by participants as having occurred over the past 40 years, indicating that the work of doctors had been a consistent, long-term force for change in these settings (14) (See Table 4).

While biofeedback has been found to have limited impact on increasing cessation (14), the BCO monitor was found to be a consistently useful tool to engage survey participants and other community members in brief interventions.

Time to first cigarette (TTFC), including waking through the night, is an indicator of dependence which may require more intense levels of treatment (10). This study showed that even light smokers woke overnight for a cigarette, possibly reflecting the impact of environmental factors, such as overcrowding with consequent disturbed sleep, rather than nicotine withdrawal, *per se*. Thorough exploration of compulsion to use and presence of withdrawal symptoms before prescribing cessation medications is recommended (15).

A 2008 Australian survey (n=697) revealed that 45.6% of quitters used cessation medications (16), a considerably higher proportion than found in these communities. Despite their reported readiness for change, smokers in the study communities had little knowledge of cessation methods or medications. This raises issues of both access and awareness. More time may be needed to ensure that patients understand effective treatment regimes. Less dependent smokers may benefit from short acting NRT which is not readily available (17). When prescribing varenicline, potential risks should be weighed up against cessation benefits, and patients asked to immediately report adverse effects (18).

Follow-up is an important feature of relapse prevention, addressing prolonged withdrawal symptoms, and developing relapse prevention (19). Initial follow-up should be within the first week (20), which may entail a home visit. Local IHWs or Tobacco Workers may be able to assist. Engaging in reciprocal learning approaches with local IHWs should contribute to the adaptation of cessation interventions to suit the cultural context (7). Cue exposure was cited as the major reason for relapse. In other settings, smoke-free homes encourage quit attempts and reduce relapse (21). Advocacy for smoke-free homes and other environments has generally been well-received over the life of the project (23).

Among the general population of Australia, the main motivators for changing smoking have been concerns about health impacts and the financial cost (1). In our base-line surveys, while health concerns were also a major motivator, cost ranked last perhaps because daily consumption is about half that of the general Indigenous population, and therefore less of a financial burden. Highly-ranked motivators included pregnancy and advice by a doctor. A major opportunity to engage in

brief interventions should be well-received at ante-natal presentations. Lack of access to tobacco was a major factor in quit attempts and those embarking on cessation may be encouraged to spend some time on an outstation in the early weeks of a cessation attempt.

Limitations

The study sample was not randomly selected so results cannot be generalised. However, participants were opportunistically recruited, reflecting age and gender balances of each community.

4.6: Recommendations and conclusion

We refer readers to national guidelines for preventive health assessment (24). Recommendations for practice and examples are given in Table 5. Despite high rates of tobacco use, there is a great readiness for change with more than half the smokers thinking about or actively trying to quit. Health concerns, including pregnancy, are the major motivator for quitting. With cue exposure cited as the major cause for relapse, smoke-free homes should be promoted both as a strategy to aid cessation and decrease health impacts on other family members. There is a need for improved access and awareness of cessation medications. Finally, it is clear that GPs working in PHC teams in these remote populations are well-placed to make a significant impact on the extremely high rates of smoking.

Table 5: Practice points and examples for clinicians undertaking tobacco Interventions in remote community settings

RECOMMENDED PRACTICE POINTS	PRACTICAL EXAMPLES
Record the smoking status of all patients	This may be systematically collected through Adult Health Checks or other routine screening processes. NB National recommendations are to screen those patients >10years.
Make the most of every opportunity to engage all smokers in brief interventions	Ask if the patients have any concerns about smoking. Results from the BCO monitor can open the doorway to brief interventions, e.g. discussing the presence of invisible poisons from the burning cigarette. Also that carbon monoxide is only one of thousands of poisons in tobacco smoke. Offer cessation support as well as quit advice.
Engage with pregnant women who are smokers	Many clinics do not have on-site midwives. IHWs, particularly those working in w*omen's business* as either clinic-based HWs or community educators should have thorough knowledge of tobacco-related harms and cessation support, including medications.
Establish the patient has a clear understanding of how to use cessation medications effectively	This may involve simple but thorough explanations of the process of addiction particularly if prescribing NRT. E.g.: Talking about craving in terms of *the brain starving for nicotine.* A Health Worker may assist with interpretation and also confirm or clarify the patient's understandings.
Be prepared to discuss tobacco use within the local cultural context	How is tobacco used? Is it chewed or smoked? In parts of Arnhem Land, NT, there are strong cultural connections to tobacco including ceremonial obligations that would need acknowledgement in treatment plans. Find a cultural mentor who will explain these matters. Are there community-based or visiting Tobacco Workers you can liaise with?
Actively promote the benefits of smoke-free environments particularly homes and cars	Discuss the idea of not sharing poisons with other non-smoking family members especially babies, little children and the frail elderly. If family members are trying to quit, a smoke-free home is the rest of the family's commitment to supporting a healthy choice. Have signage or posters on hand that can go up in houses. Often families shifting into new houses are interested in starting out with smoke-free rules.

4.7 Chapter 4 References

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CHAPTER FIVE: ENVIRONMENTAL TOBACCO SMOKE

Paper #4: "We made the rule, we have to stick to it": Towards effective management of environmental tobacco smoke in remote Australian Aboriginal communities.

Paper #5: Aboriginal people in remote communities in Arnhem Land (Northern Territory) restrict their smoking in some environments: implications for developing and implementing policies to reduce exposure to environmental tobacco smoke.

In stakeholder interviews undertaken in the NT (as described in paper #2), smoke-free policies were identified most frequently as perceived opportunities to address high smoking rates in remote Arnhem Land communities.

The first paper in this chapter examines three case studies of community efforts to manage environmental tobacco smoke using observational data from the intervention phase of the Top End Tobacco Project. Consideration was given to the particular context of each example in order to make practical recommendations for similar locations.

The second paper, drawing on baseline survey data, explores where, when and why participants restricted their smoking (i.e. in the home, at work or in vehicles). Based on these results, recommendations are made for targeted interventions.

Robertson J, Pointing BS, Stevenson L, Clough AR. "We made the rule, we have to stick to it": Towards effective management of environmental tobacco smoke in remote Australian Aboriginal communities. *International Journal of Environmental Research and Public Health, 2013*, 10.

Stevenson LC, Bohanna I, **Robertson JA,** Clough AR. Aboriginal people in remote communities in Arnhem Land (Northern Territory) restrict their smoking in some environments: implications for developing and implementing interventions to reduce exposure to environmental tobacco smoke. *Drug and Alcohol Review,* published online: 2013, DOI:10.111/dar.12070

Paper #4: "We made the rule, we have to stick to it": Towards effective management of environmental tobacco smoke in remote Australian Aboriginal communities.

5.1: Abstract

This paper celebrates a grassroots approach to control of environmental tobacco smoke (ETS) in remote Australian Aboriginal communities. Smoking prevalence in these settings remains extraordinarily high, with rates reported of up to 82%. Widespread exposure to environmental tobacco smoke (ETS) is exacerbated by overcrowded housing. Implementation of existing smoke-free policies is challenged by the normalisation of smoking and a lack of appropriate regulation resources.

We report on selected findings from a tobacco intervention study in Arnhem Land, Northern Territory, in 2007-2012. In community-level tobacco use surveys at baseline (n=400 ≥16 years), participants reported concern about the constant exposure of non-smokers to tobacco smoke. Suggestions for action included restricting smoking in private and public spaces. In order to develop and examine a hypothesis regarding more effective management of ETS in these environments, we selected three case studies from observational data during the study's intervention phase. Using a critical realist approach, the context and mechanisms that contributed to specific strategies, or outcomes, to manage ETS were examined. We conclude that in discrete, disadvantaged communities, some local ownership of smoke-free policies and development of implementation strategies at the grassroots level may contribute to more effective management of ETS.

5.2: Introduction

The prevalence of smoking in the general Australian population is 15.1% (1). Similar to Indigenous peoples of Canada, the United States of America and New Zealand (2), smoking rates of Australian Aboriginal and Torres Strait Islander peoples, while declining, are more than double the general population rate at 45.1% (1). Additionally, smoking rates in remote Aboriginal communities have changed little over the past 20 years, remaining extraordinarily high, up to 82% (3). In these communities domains of extreme disadvantage include especially poor health, limited education and low employment, all exacerbated by geographical isolation. Also overcrowded houses, coupled with very high smoking rates, point to health impacts of environmental tobacco smoke (ETS), which may be considerably worsened (4).

The current tobacco policy environment in Australia is unprecedented, featuring efforts to reduce the high rates of smoking among Australia's Indigenous peoples. We previously reported that key stakeholders in the 'Top End' of the Northern Territory (NT) considered smoke-free policies in particular as a major opportunity to reduce tobacco use in these unique settings (5). Spaces linked to these policies were identified as workplaces, public spaces and people's homes. A key challenge to maximising this opportunity is the lack of resources to ensure local compliance with policies that have been developed far away, at jurisdictional and regional levels.

This paper provides suggestions to encourage more smoke-free spaces in marginalised and disadvantaged communities, including effective implementation of smoke-free policies. The paper will use data collected during the Top End Tobacco Project (TETP), a recently completed five-year tobacco intervention study in three remote Aboriginal communities in Arnhem Land, located in the Top End of the NT.

A significant component of this intervention study comprised a process evaluation to understand what worked to reduce tobacco use among indigenous Australians in remote community settings. The TETP aimed to understand not only what worked but for whom and in what circumstances, consistent with a Realist Evaluation approach (6). To frame this evaluation, in this paper we formulate the following hypothesis:

In discrete disadvantaged populations where there is high prevalence of tobacco use and tobacco use is normalized, management of ETS will be more effective if policies and implementation strategies are developed at the grassroots level.

We also seek to align this hypothesis within existing policy frameworks. To do so, we use already published and further empirical data from the TETP, and the Critical Realism methodology to understand the mechanisms and contexts regarding the local development, implementation and regulation of strategies to manage environmental tobacco smoke in shared spaces in these communities.

5.3: Methods

1. Critical Realism

The Critical Realist tradition of social inquiry has a long history since Bhaskar (1978) first introduced the concept in "A Realist Theory of Science" (7). The aim of Critical Realism is to identify the causal mechanisms which produce patterns - the data regularities identified through qualitative and

quantitative scientific methods (8). In this paper we apply this Critical Realist method to the qualitative and quantitative findings of the TETP, and the policy and cultural environments to reflect on one central question: "What **contexts** and **mechanisms** contributed to the **outcomes** of the identified ETS control strategies in each community?"

Using Koenig's approach embedded in critical realism we used case studies to consider this hypothesis (9). Three examples of management of environmental tobacco smoke were selected for case studies: 1) the development of smoke-free signage for homes in the three participating communities; 2) the development and implementation of a smoke-free policy for a remote community store area; and 3) development of a community Tobacco Action Plan with a community-determined focus on passive smoking. Exploring the case studies we sought to pull apart and understand the contexts and causal mechanisms in which they operated to explore the above hypothesis. The contexts explored in detail below include policy, geographical and cultural settings surrounding tobacco use and impacting on a particular outcome, that is, the management of ETS. Following the identification and deconstruction of the contexts and mechanisms, we applied Realist Evaluation (6). A logic diagram (10) depicts this process showing the relationship between CONTEXT, MECHANISMS and OUTCOMES (Figure 17)

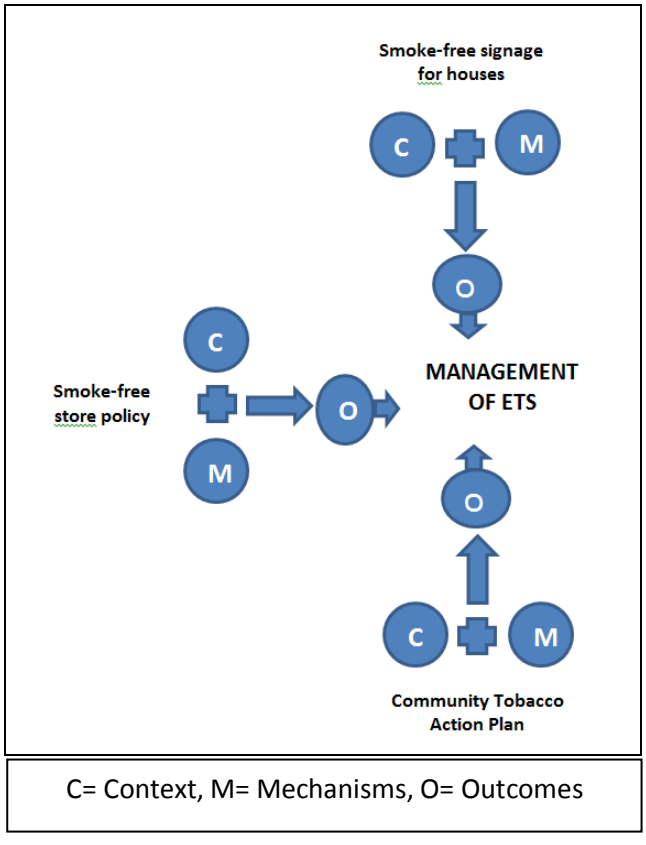


Figure 17: Logic diagram of case studies analysis (after Pointing 2012)

2. Settings

Policy environment

The general policy environment in which the TETP took place was tumultuous. In response to a report released in 2007 on the sexual abuse of Aboriginal children in the NT, *Little children are sacred*, a national emergency response was announced (11). The report recommended collaborative efforts between the Northern Territory and Australian governments and a commitment to consultation with Aboriginal communities to address this complex issue. Despite this commitment the Australian Government quickly imposed measures affecting approximately 45,500 Aboriginal people living within 'prescribed areas' (12). These included alcohol restrictions; banning possession of pornography, compulsory health checks for children (with logistical support supplied by the army), compulsory income management for those receiving welfare payments and control of townships through leasing of assets including housing. Related legislation included the highly controversial suspension of the Racial Discrimination Act. Despite some community support for some of the measures, the implementation of these with little consultation badly damaged the relationship Aboriginal people have with the governments of Australia and contributed further to a sense of disempowerment (12).

On the heels of this major policy change and the social upheaval that followed came reforms of the Local Government structure in the NT in 2008. Through the merging of local councils into shires, the number of Local Governing bodies were reduced from 61 to 15 (13). Local councils, formerly with representation of each of the local traditional owner clans, transitioned to representation by a few elected local representatives with governance located in regional centres. Many local clan leaders perceived this as the removal of decision-making beyond their sphere of influence (14).

In a commitment made in 2008 to 'Closing the Gap' in disadvantage between Indigenous and non-Indigenous Australians, the Council of Australia Governments set up National Partnership Agreements (NPA) between the Commonwealth of Australia and the states and territories (15). Relevant to this paper is that the agreements include the National Partnership Agreement on Remote Service Delivery (NPARSD) and the National Partnership Agreement on Remote Indigenous Housing (NPARIH). The NPARSD encourages active participation of community members through the development of Local Implementation Plans (LIPs) to improve coordinated service delivery and accelerate local development. Members of participating communities are represented by their Local Reference Group (LRG), which provide opportunity for more thorough representation of clan groups following the implementation of local government reforms. Support and guidance is provided to the

LRGs by the paid Community Engagement Coordinators (usually non-local and non-Indigenous) and the paid Indigenous Engagement Officers (usually a local Indigenous person). These positions report to Regional Operations Centre representing the interface of both commonwealth and jurisdictional governments (16). The LIPs focus on 'Closing the Gap' domains of early childhood, schooling, health, healthy homes, economic participation, community safety and governance and leadership. Reduction in tobacco use has been identified as a priority area for action. The NPARIH, also relevant to this paper, has committed to building nearly 1000 new houses, and rebuilding and refurbishing almost 3000 other houses in 73 remote communities and town camps across the NT by the end of 2013 (17).

Specific tobacco control policy development at both the commonwealth and state/territory level has been dynamic and unprecedented. In 2009, the Australian Government committed $100.6 million for the Tackling Indigenous Smoking program over the subsequent four years. The program included funding for tackling smoking, and for healthy lifestyle teams across 53 regions. Further commitments totaling $37.84 million came from the states and territories (18). The current NT Tobacco Action Plan (2010-2013) includes a strong focus on community-level interventions including programs to reduce passive smoking (19).

The Top End Tobacco Project

The Top End Tobacco Project (TETP) was a multiple-component intervention study to reduce tobacco use in remote Aboriginal communities**.** Key milestones of the project are listed in Table 6.

Table 6: Timeline of key milestones of the Top End Tobacco Project aligned with selected national and jurisdictional policies impacting on remote Aboriginal communities

DATE	TOP END TOBACCO PROJECT PROGRESS	SELECTED NATIONAL ANDJURISDICTIONAL POLICY DEVELOPMENT AND IMPLEMENTATION
2007 Jun		Australian Government announces the NT Emergency Response (NTER) to protect Aboriginal children from sexual abuse. Includes deployment of army in communities
Jul	Community engagement visits commenced	
Aug		Legislation in support of NTER passed including *Welfare Payment Reform* establishing compulsory income management and suspension of the *Racial Discrimination Act 1997*
Nov		Change in federal government
2008		Prime Minister delivers 'Apology to Australia's Indigenous

Feb		peoples'
Mar		Statement of Intent between the Government of Australia and the Aboriginal and Torres Strait Islander peoples to achieve equality in health status and life expectancy by 2030
Mar		Federal Government commits $14 million to address high smoking rates among Indigenous peoples
May	Community baseline surveys commenced	
Jul		NT Local Government reforms reduce 61 local governing bodies to 16
Aug	Community feedback of survey results commenced	
	Tobacco Action Group formed in Community 1	
	Intervention components commenced	
Dec		National Partnership Agreement (NPA) on Closing the Gap in Indigenous Health Outcomes signed
		NPA on Remote Indigenous Housing signed
2009 Feb	Baseline surveys completed	
Mar		NT Tobacco Summit develops NT Tobacco Action Plan
Jul		NT Health Department implements Smoke Free Policy for all services & facilities
2010 Feb		National Coordinator to Tackle Indigenous Smoking appointed
		Start building new houses Community 1
		Start building new houses Community 3
Mar	Smoke-free (SF) house signage Community 1	Formal signing of Local Implementation Plan Community 3
May		Announcement of anti-tobacco workforce targeting Indigenous peoples. 82 initial positions nationally
Aug	Community follow-up (FU) surveys commenced	
Nov		Formal signing of Local Implementation Plan Community 1
2011 Mar		Formal signing of Local Implementation Plan Community 2
Apr		Start building new houses Community 2
Jun	SF house signage Community 2	

	SF store opens Community 2
Aug	SF house signage Community 3
Sept	FU surveys completed
2012 Jun	Community 1 Local Reference Group (LRG) reviews Local Implementation Plan, decides to focus on passive smoking
Aug	FU survey feedback completed
	Community 1 LRG & TETP workshop to develop Tobacco Action Plan (TAP).
	TAP endorsed at LRG General Meeting

Teams of two to four researchers travelled to each community for four to five days on a quarterly basis. Paid local co-workers facilitated local introductions and participant recruitment, enabling the team to manage local cultural protocols while also acting as interpreters. Special translation services were mostly provided by paid local linguists. Self-reported tobacco use in the population was measured in each community at baseline (total Indigenous population > 16 years =2319). Previously published data reported extremely high prevalence of current tobacco use among those aged 16 years and over (n=400): Community 1: 71%; Community 2: 78%; and Community 3: 82%. As a component of the project's translational research approach (20, 21), we ensured the data collected during the research was made immediately accessible to community members and relevant stakeholders including local and regionally-based service providers. Results of this survey (3, 22, 23) were comprehensively fed back to community members in a culturally-relevant and conceptually meaningful manner, as described elsewhere (14). Information on the health impacts of tobacco was also included at the request of community advisors. We also presented comparisons between national and community level smoking rates which clearly challenged the normalcy of such high prevalence. Discussions arising from the face-to-face feedback of these results at the community level were able to inform intervention components which included: capacity building among local health staff to prevent tobacco uptake and provide cessation support; place-based approaches with a strong focus on workplaces; and mobilisation of community resolve to implement local policies and strategies to reduce tobacco use including information resources in local languages. To date, only preliminary analysis of the follow-up survey data has been undertaken. This reported little change in prevalence but captured substantial changes in participants' attitudes to smoking. Our observational data demonstrated, through the selected case studies, that this included a greater interest in increasing smoke-free spaces in each community.

In order to develop and examine the hypothesis we used the following data sources:

1. Further selected findings from community surveys of self-reported tobacco use undertaken in 2008/09 in the three remote communities described above. Participants (n=400 ≥ 16 years) were opportunistically recruited from community members using quotas to reflect age and gender balances. Those current and former smokers who had made quit attempts were asked to provide information about relapse. They were also asked what their concerns were about tobacco use in the community and to provide suggestions for actions to address these concerns. Using structural coding, responses were grouped into categories agreed upon by authors JR and LS.
2. Field notes of direct observations, including transcripts of community-level discussions relating to ETS, made during community visits by the research team over the five-year period of the TETP. Three case studies relating to the management of ETS were chosen for this paper in order to try and represent activities across the study communities.

Regional setting

Arnhem Land is located in the north eastern corner of the 'Top End' of the NT (Figure 18). The study communities have a combined population of 3100, and are located in isolated corners of Arnhem Land, one of them on an island. Covering 97,000 kilometers, the region is almost twice the size of England but with a population of only 16,500 (24) and with approximately 300 languages. Entry into the region to travel or work requires a permit from traditional owners of the land. In the region's tropical monsoon climate, many remote communities can be isolated by flood waters for over six months of the year. Two of the communities are 'dry', that is, they do not have legal access to alcohol locally. The third is in a liquor restricted area but has a social club licensed to sell liquor on site within strict parameters governed by both community rules and the NT's liquor licensing commission. Substance misuse has been an ongoing concern in Indigenous communities in the NT. Within the region of the TETP study communities, use of cannabis, alcohol, kava and sniffing petrol bring further health and socio-economic burden to these already disadvantaged populations (25). Cannabis is widely used across the study region, usually smoked with a mix of tobacco, reinforcing continued tobacco use (26).

Figure 18: Location of Arnhem Land, Northern Territoty, Australia (area shaded red)

Cultural setting

In these isolated settings, many languages and cultural practices have been retained. Illness is often attributed to malevolent magic (27). Management of shared space takes place within a complex framework of cultural law, including a kinship system which codifies communication within and between communities. Across the Top End of the NT, including the three study communities, a concept of balance underpins the conceptual division of much of the known world into moieties or halves: *dhuwa* and *yirritja* (7, 28). People are also *dhuwa* or *yirritja*, and further classified according to their position in the kinship system. At a general level, kinship is reckoned through a classificatory system which, in eastern Arnhem Land, is known as *mälk* (28, 29). The system of *mälk* initially distinguishes an individual's position in the system, which is known by everyone, young and old. Space does not permit a full description of how *mälk* operates. However, relevant to this paper, once *mälk* is established, all relationships with others who also have *mälk* is predetermined and can be reckoned upon first encounter, including whether one is *dhuwa* or *yirritja*.

Rules around communication across segments within *mälk* are inherent to the system. These rules provide the protocols for respectful communication across all groups at all times. There are rules regarding avoidance of direct communication with, especially, one's siblings and 'poison cousin', i.e. the mother of your wife. Requests from one's brother or one's uncle (from the perspective of a male) for resources, including tobacco or the money to buy it, are met with little or no questioning. This is within a context of demand sharing where everyone will share in a surfeit of a resource and all will share similarly in a dearth. Sharing is a powerful force as *gä ngarali* means in Djambarrpuyngu language, 'give me tobacco', as much a command as a request. Our team was told by community elders that *ngarali* is a word which recalls the startling experience of an initial nicotine rush in people unfamiliar with its use. *Ngarali* also describes the experience of eating the very rich meat of a

particular sea turtle at a time of the year when it is regarded as especially rich in flavour and nourishment with a mild stimulant effect. For tobacco, in eastern Arnhem Land, *yirritja* people are the keepers of the knowledge regarding *ngarali*, as *ngarali* is also *yirritja*. Hence a *yirrtja* man will refer to *ngarali* as his *waku* (son) (30). 'That's my *ngarali'* is a statement of kinship, or personalised relationship people have with tobacco, as much as it is a statement of ownership.

The land and environment and all spaces within it are also *dhuwa* or *yirritja.* However, land and the places it contains are managed very carefully through a complex overlay of land ownership reflecting the interests of a local land-owning group (31). Control of all aspects of the land is vigorously enforced and defended by the group. Access to land and the places and resources it contains is by respectful negotiation with the owner. Abiding by the conditions set by the landowner is paramount in this lore full and tightly regulated system. Arnhem Land people are very much accustomed to operating within rigid frameworks of rules, lore or *rom*, which include the management of environment and land. As with many remote Indigenous community populations, inhabitants have two systems of law to manage: their cultural law and the law of the dominant culture, that is, Australian parliamentary and common lore.

5.4: Results

1. Baseline survey data

The proportions in the total Indigenous population (n=2300) aged 16-29 years (47%m, 43%f) and aged >=30 years (53%m, 57%f) were similar to the proportions in the sample aged 16-29 years (39%m, 42%f) and >=30 years (62%m, 58%f) (P=0.064 for males, P=0.428 for females for respectively).

Italics (other than in headings) are used to denote direct quotations from community members and other significant stakeholders.

Quit attempts and relapse

Despite the high prevalence of tobacco use across the communities, well over half of the current smokers were considering or actively trying to quit (3, 13). Of the 183 current and former smokers who had made quit attempts, 60% (n=109) provided information about relapse (data not shown). Reasons for relapse were coded into categories which were ranked according to frequency of mention. In descending order of frequency of mention the reasons cited for relapse were: cue exposure, alcohol use and peer pressure. C*ue exposure* was by far the most common reason for relapse, cited by 47% (n=51). Examples of this included close proximity to other smokers: *'started*

(smoking) again seeing people smoking and inhaling fumes of smoke'; 'too many people smoking around me' and the ubiquitous custom of sharing smokes: '*because sharing and starting up others' smokes for them, now I'm smoking full time. I try to stop but it's hard'.* Many participants had been able to quit smoking when they left their community and visited or worked in places where the prevalence was lower '*After going away for training I came back to my job* (in the community) *and started smoking again*'; *'I started when I came back from boarding school'* or there was limited access to tobacco '*I started smoking again when I came back to the community from the outstation'*.

Community concerns about tobacco use

Despite the high prevalence of tobacco use, over 300 survey participants, including smokers, expressed concerns about tobacco for either themselves or the community as a whole (Table 7). The impact of tobacco use on health was mentioned most frequently as an area of concern, particularly cancer and cardiac disease followed by worries about exacerbating asthma, and concerns about *short wind* (emphysema). Community members were also clearly dismayed about the decreasing age of uptake of tobacco use among children. The average age of uptake was 17 years (data not shown) with a range of 4-38 years. Passive smoking was the third most frequently mentioned area of concern. Smokers and non-smokers alike commented on the pervasiveness of tobacco smoke *'Everywhere is smoke'; 'Sometimes there is too much smoke'; 'I worry about breathing in other people's smoke'.* Most commonly mentioned were worries regarding the exposure of babies, small children and '*old sick people'* to ETS: '*I don't like smokers near my baby. The smokers know it's poison. I make them stop smoking before they hold my baby.'* '*Young pregnant women smoking, newborn babies passive smoking'.* More females than males expressed concern about passive smoking.

Community suggestions for action

Nearly 200 participants made suggestions as to what might work to reduce tobacco use in their communities (Table 7). Five participants (four in Community 1) provided comments emphatically stating that dealing with smoking was a matter of individual choice about quitting, not offering suggestions about population approaches. '*People make their own choice to stop – none of our business what others do*'. For the purpose of this paper only the theme of smoke-free spaces will be discussed. This was ranked fifth in the top five themes identified and frequently linked with the pervasiveness of smoke: *'Everywhere is smoking – stop that*'. Suggestions for management of smoke-free spaces included private as well as public and workspaces "*There should be no smoking in front of the shop, ban smoking at clubs and pubs. Not in the house or car with kids'; 'Staff need to*

smoke outside'. Some people specifically mentioned linking the management of smoke-free spaces with encouragement for smokers to quit '*Encourage people, you better stop ngarali, as I do. Always ask people to smoke outside the house and not in front of kids and also in the car*'; '*More activities like workshops on quit smoking. Develop other smoke-free areas, spaces*'. Women saw management of smoke-free spaces more frequently as an opportunity to address concerns about the high prevalence of tobacco use in the communities. This is in keeping with other data from the same survey reporting that women were more likely to restrict their smoking in selected environments such as houses, cars and the workplace (data yet to be published).

There was a greater proportion of people >=30 years who provided responses to the survey questions above (3.1.1: 62%, 3.1.2: 66%, 3.1.3: 70%) with similar proportions of males and females in this age group.

Table 7: **Top End Tobacco Project community baseline survey: participants' responses to questions regarding i) their concerns about tobacco use and ii) suggestions to reduce tobacco use**

COMMUNITY CONCERNS ABOUT TOBACCO USE/SMOKING Occasions of mention				
Most frequently occurring themes	**Female (n=136*/194)**	**Male (n=166*/206)**	**Total**	**Selected participants' comments**
Health (own or Others)	47	58	105	*Short-wind when running. Worry about dropping dead.* *Dangerous-lots of people short of breathing. Asthma. Cancer. Pregnant smokers have skinny babies*
Young age of uptake/kids smoking	33	29	62	*Kids starting to smoke younger than 10* *Little kids smoking…watching and copying others around*
Passive smoking	18	10	28	*I worry about breathing in other people's smoke* *Young mums smoking around babies*
Poor role model	6	6	12	*Smoking next to kids, that's not good and they look at us smoking.* *Little kids…watching and copying others*

				around
Addiction	3	8	11	*We can't stop bakki [tobacco], never* *I can't sit without ngarali [tobacco]*
	Female	**Male**	**Total**	
	(n=113*/194)	**(n=138*/206)**		
Health promotion	25	49	74	*Never get kids to light up (others cigarettes for them)*
Activities				*Need to have pictures to see that ngarali [tobacco] is a killer.* *Make resources in Yolngu Matha (language)*
Quit support	19	26	41	*Need to learn about ways to quit* *Provide gums and patches. We have enough information now. There is no need for more. Just need to give up*
Supply reduction	19	13	32	*Tell factory not to sell cigarette because it kills people's hearts and minds* *Should ban tobacco in the community* *Ban smokes from the shop*
Diversionary activities	19	13	20	*Go out bush long term. To an outstation for 3 or 4 weeks and give up there. Lots of hunting and fishing and collecting bush tucker. Teach the kids to make spear then get kids off cigarettes*
Smoke-free spaces	12	3	15	*First step is to encourage people to smoke outside – special smoking areas so the butts aren't everywhere* *Make the houses and streets smoke-free*

* Number of baseline survey participants of total (by gender) who provided a response

2. Observational data from intervention and follow-up survey phase

Feedback of the baseline survey results and preliminary results of the follow-up survey was a catalyst for discussions on strategies to reduce the impacts of tobacco use. In Community 2 a conversation about the health impacts of smoking took place with women who, respectively, were the local Housing Officer and the Environmental Health Officer (EHO). They decided: *'instead of you coming here, we can do these things. Carry stories about passive smoking to houses, encouraging smoke-free homes and making smoke-free signs.'* The EHO, who also provided education about nutrition and tropical infectious diseases, stated '*the tobacco message will be the most important message to bring to homes*'. They discussed incentives that the local councils could provide for community members to declare their houses smoke-free, such as garden implements, heaters for the winter or 'power cards' (vouchers for payment of electricity usage). In Community 3 community members discussed policies regarding the management of smoke-free spaces outside of their communities '*People are thinking a bit more. There are more government rules. Even when we go to the pubs (outside the community), people ask: where is the smoking zone, where can we smoke?*' One person, recently returned from a nearby town, wondered why there were not more similar stringent rules about smoking in his community.

We reflected on baseline survey results reporting on the most commonly mentioned reason for relapse, that is, cue exposure, and community concerns expressed about exposure to ETS. Also that in spite of being seen as a major opportunity to reduce tobacco use and related harms, effective implementation of smoke-free policies in these communities was thought of as hampered by lack of strategies encouraging compliance (5). Because we had, however, observed some community actions to manage ETS emerging throughout the life of the project, we wanted to gain an understanding of what lead to these actions. Since there is little reported about regulatory tobacco control efforts in these settings, our data lead us to developing our hypothesis:

In discrete disadvantaged populations where there is high prevalence of tobacco use and tobacco use is normalized, management of ETS will be more effective if policies and implementation strategies are developed at the grassroots level.

We found three case studies within the project relating to management of ETS (see Figures 19,20 and 21) to explore this hypothesis. The case studies selected were those where there was a degree of community ownership and control over the activities and which resulted in tangible outcomes. The studies were chosen to ensure that an activity relating to management of ETS from each community was included.

Case study One: development of smoke-free signage for homes (Communities 1,2 & 3)

Our baseline surveys reported that the majority of smokers wanted to quit but as one participant noted: "*There isn't much help here in the community for people wanting to quit*". We wanted to understand the challenges faced by those smokers trying to quit in environments where they are "*surrounded by smokers*". We provided intense quit support to self-selected smokers for up to ten days. After initial assessment and development of individual care plans we followed up participants in their homes and workplaces every second or third day. Early in 2010 in Community 1 (smoking prevalence: 71%) we visited a couple at home who stated they were managing to abstain during the day. They both worked in the local child-care centre, where smoke-free policies are universally respected in the communities. But coming back to their home, inhabited by several generations of family, many of whom were smokers, they felt very tempted to smoke in the late afternoon and evening. Acknowledging the influence of the kinship system that ruled family relationships and communications, we discussed the possibility of negotiating with others in the house about smoking outside the house and away from the verandah. They concluded that: "*The family will follow our rules*". They also thought some signage in the house might help. Sitting together in the cool shade of an old tamarind tree we worked on the wording in Djambarrpuyngu language, one of four major Yolngu languages across the north eastern region of Arnhem Land. Due to enduring cultural relationships with tobacco in this community there is some reluctance for individuals to tell others to stop smoking. The resultant message was courteous rather than explicitly directive: *Manymak gurrutumirr yaka buny'tjun ngarali* [Good/healthy family - no smoking tobacco].

Later in 2010, in Community 2 (smoking prevalence 78%), we showed a group of women the sticker during an informal discussion about encouraging people to smoke outside the home. They knew the family pictured on the sticker, and wanted something similar for their homes in Kriol, the lingua franca of their community which has several languages. Lively discussion about the message included comments: "*Don't reject the person, reject the smoke" "If you be nice no-one will listen" "Can you talk to the housing mob and get them to build us smoking areas outside the house?"*. The ladies came up with a no-nonsense message: *Nomo smok insaid. Smok atside theingkyu!* [No more smoking inside. Smoke outside thank you!].

Another group of women in this community also decided "*We can make a sign for the new houses, give them to all the heavy smokers to put up' 'We want all our family who smoke to smoke outside. We got kids inside, have a place in the yard for the smokers.*' Young women remembered anti-tobacco murals painted as part of a school project and thought the community should use those.

In 2011 in Community 3 (smoking prevalence 82%) there were nearly 90 new houses under construction in the community. One man told us: "*I don't really want to quit. Next time you come back I will have my own house. I will be able to control my own space. I'll be able to have a 'no smoking' house and yard*". Another, who told us he was "*desperate to quit*" stated: *"I cut down a little. I want to stop but it's hard at home. My mother chews (tobacco) and my father smokes. They both spit. I want you to go and talk to them about not smoking inside. When I get into my new house I won't have smoking inside. I might try to stop then*". In a meeting with men in their workplace, we commented on the number of people wanting to make their new houses smoke-free for the sake of non-smokers, especially old people, babies and small children. They agreed this was a good idea, and that there should be a smoke-free sign in their language, Kunwinkju, suggesting: *Bakki nowarre. Ngiwungme kuberrk* [Tobacco is no good. Smoke outside].

All the messages were checked by local linguists. We observed that the accompanying photos of local family members frequently elicited expressions of prideful recognition. In response to requests by both community members and service providers, and with funding from the Commonwealth Government, over 6000 stickers were printed and distributed across Arnhem Land in regions appropriate to the languages.

Smoke free signs in local languages

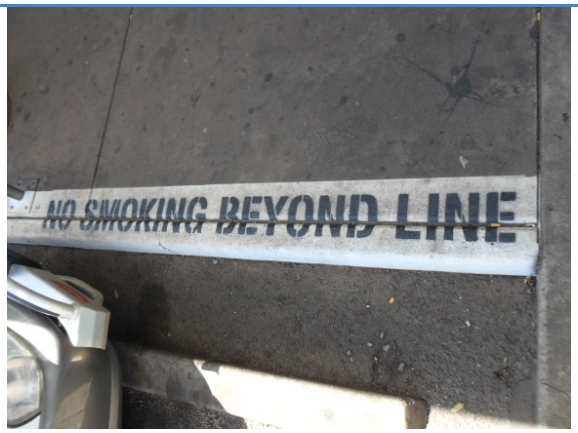
Figure 19: Case study on the development of smoke-free signage for homes across the three remote Aboriginal communities participating in the Top End Tobacco Project.

Case Study Two: development and implementation of a smoke-free policy for the local community store area (Community 2)

In the torrid tropical climate of the three study communities, the large verandahs of local stores afford protection from sun and rain. Popular gathering spaces, they are alive with the hustle and bustle of shoppers, their families, and those assembling to share a yarn and, often, a smoke. Although Territory-wide legislation bans smoking within two metres of the shop entrances, busy store managers said they had insufficient resources at that time to ensure these regulatory requirements were met.

In early 2010, while providing cessation support to a community member "*desperate to quit*", the research team accompanied her to the store around mid-morning. The woman had managed to abstain from smoking since the evening before with the aid of nicotine replacement therapy. However, the smokers were about three deep along the verandah and she had shared a couple of 'short ones' (shared cigarettes) before entering the shop. We realised that the almost daily visit to the local store would be overwhelming for many trying to quit. We reflected that clan leaders here had responded to feedback about the local smoking prevalence, particularly in comparison with the rest of Australia, with: *"We have to do something to narrow that gap. Even us leaders who smoke, we've got to show leadership too."* We promptly shared this story with a local clan leader, who advised us to write to both the clan leaders group and the local store committee. We did this, citing some of the ideas that came up when we were talking to people around the community: "*With the new store owned by the Traditional Owners (TOs) to be built in the community, maybe there could be a new smoking policy, for example, no smoking within 10 metres of the shopping complex*"; "*Smoking at the shop should be away from the verandah – the shop committee would make decisions like that*"; *"Go the political way with community by-laws, making new smoking rules about No Smoking areas".* We also contacted the store management. Owned by the Australian government with an independent board of directors, the company returns profits from the store back to the community and is committed to the provision of healthy, affordable food to remote Indigenous communities. The company (head office) was already working to comply with tobacco legislation and also support healthy lifestyle choices for staff and customers.

Opening of new smoke-free store precinct



Line of demarcation for smoke-free zone

In 2011 the new store and precinct opened, with a line designating the whole area smoke-free "*which has been well-received by local residents*". At the time of our next community visit, the policy was actively being enforced by the store security officer, an elderly traditional land owner who sat outside the entrance beneath a 'No Smoking' sign. When asked to provide some detail about how he ensured the policy was kept he replied: "*I tell people that we have a rule (smoke-free store) that we made. We made the rule, we have to stick to it.…You need some-one to point the rule out.*"

Figure 20: Case study on the development and implementation of a smoke-free policy for the local store in a remote Aboriginal community participating in the Top End Tobacco project

Case Study Three: development of a community Tobacco Action Plan (Community 1)

The baseline community tobacco use survey and data analysis was completed in this community in 2008. We invited key community members and service providers to a presentation on a review of the project findings and asked them to advise us on 1) how to get these stories back to the community; 2) what actions might arise and 3) who should be involved in implementing these actions. The group agreed that the survey results were useful for all of the community and needed to be delivered in a way that people could understand. They decided that our team should feed the information back to the community "the same you collected it: work clan by clan, family by family, with co-workers from the community". Suggestions for action included: "*Look for rupiah [money] to employ Yolngu to do house to house education, every house, clan by clan, using pictures and models. This needs to keep going to see change in smoking*"; *"(quit) support groups should be formed – away from the clinic because they are busy with other djama [work]*" "*We need to make a Tobacco Action Group (TAG) for the community and homelands"* [small communities established to maintain connection with traditional, ancestral land]. The majority of those attending agreed to be part of the TAG. However the group dwindled and folded within six months due to the lack of a local driver.

In 2010 Tackling Indigenous Smoking funding was received by a regionally-based health service for two local dedicated Tobacco Worker positions in this community. We were able to assist with recruitment and capacity building of the male and female Yolgnu workers, being mindful of recommendations made for these positions in 2008 during the initial survey feedback discussions. The Tobacco Workers, in turn, collaborated with us on the TETP particularly during the follow-up survey and community feedback phase. However there was still need for a locally-driven, whole of community approach. In 2011 Community1 signed off their Local Implementation Plan for the National Partnership Agreement on Remote Service Delivery, including strategies to reduce smoking as part of a priority health area. On our final visit to this community in 2012, elements of the LIP were under review by members of the LRG who included the two community Tobacco Workers, the Community Engagement Coordinator (a former smoker) and the Community Engagement Officer (a senior member of local government experienced in policy development). We were invited to attend a workshop to develop a Tobacco Action Plan informed by results of research undertaken by the TETP over the past five years. The desired outcome for the workshop was a plan that reflected the community's desire to focus on strategies that addressed the impacts of passive smoking, particularly on children.

The workshop resulted in identification of the following key objectives: smoke-free homes and cars; provision of incentives for smoke-free homes; development of Designated Smoking Areas in public spaces; provision of tobacco information and education; review of smoke-free policies of all local organisations/service providers and alignment of community tobacco rules with jurisdictional tobacco legislation. Actions (strategies), required resources and key local and non-local stakeholders were identified. A participant noted: *'Today, this planning is closing the gap. Getting people together and trying.*" A local Health Committee was nominated to progress the actions identified in the Tobacco Plan. This plan was endorsed the next day at 0the General LRG meeting.

Figure 21: Case study on the development of a Community Tobacco Action Plan by a remote Aboriginal community participating in the Top End Tobacco project

Using a critical realist approach we examined the contexts and mechanisms that produced outcomes relating to management of ETS (see Table 8).

Table 8: Analysis of three case studies from the Top End Tobacco Project describing remote community efforts to manage environmental tobacco smoke, using a critical realist approach to explore context, mechanisms and outcomes.

ANALYSIS OF CASE STUDIES USING CRITICAL REALIST APPROACH			
STUDY	CONTEXT	MECHANISMS	OUTCOMES
Case study1	COMMUNITY 1 Couple wanting manage ETS in their home to support smoking cessation Ceremonial and cultural connections to tobacco Overcrowded housing COMMUNITY 2 & 3: Wanting to manage ETS in their home due to concerns about passive smoking Wanting to take stronger steps to managing ETS as shifting into newly built homes	Quit attempt encouraged by smoke-free workplace policy Use of local language and images of community members Use of style of speech appropriate to the community Managing relapse prevention by reducing cue exposure Negotiation of physical boundaries to manage ETS in homes Funding supplied by commonwealth tobacco-specific taskforce	Smoke-free signage for homes Theme of signage replicated in other communities
Case study 2	COMMUNITY 2 Many community members visit store daily or more Store verandah viewed as public space for socialising Few public spaces shielded from the sun and rain Store managers reluctant to enforce legislation under NT Tobacco Control Act	Strong community leadership (translation to action) Local committees/groups with authority for tobacco action (Clan leaders group, Store committee) Collaborative approach (Clan leaders group, store committee, store management, research team) Store management actively committed to tobacco control Effective enforcement strategy included signage and a designated	Smokefree policy for community store

		person	
Case study 3	COMMUNITY 1 Local Implementation Plans that require action on reducing tobacco use up for review. LRG (community representatives) decides to focus on 'passive smoking'	Local Tobacco Worker LRG member – keeps tobacco on the group's agenda Workshop developing tobacco action plan informed by recent tobacco research in community Clear sense of ownership of the TETP data by the community	Community Tobacco Action Plan targeting ETS

We examine the elements identified in the mechanisms to understand what has contributed to the specific outcomes (Table 8). Common across the case studies was the direct involvement of community members in development and/or and implementation of specific strategies. In Case Study 1 devices such as local language and images of local community members were used to increase salience of the messages. Particularly in Case Study 2 we noted a strong collaborative approach among stakeholders at the local level. Case Studies 2 and 3 involved the presence of local drivers (individuals or groups) who have either a mandate or interest to be actively involved in tobacco control efforts. Financial and human resources were available to support the above efforts. These included: the provision of funding to print and distribute the household signage; existing local committees to develop and ratify the store policy and a supportive store management that extended the position description of their security officer to include managing compliance with the new 'no-smoking' policy that suited the cultural context. In Case Study 3 national policy implementation related to closing the gap in Indigenous health-supported tobacco control efforts through the provision of human resources. These were community-based Tobacco Workers and staff to support community representatives to develop local implementation plans to improve remote service delivery. These plans specifically identified reducing tobacco use and related harms as a health priority for services. Local tobacco use prevalence data and information relating to tobacco use harms disseminated by the research team was utilised to inform community plans.

5.5: Discussion

At the time of the commencement of the project, the foremost context common to each community was the normalisation of an extremely high prevalence of tobacco use. Social, cultural and historical factors have embedded tobacco use in these settings, creating significant barriers to change. In response to community concerns, local and regionally based service providers with the core business

of substance misuse have had their time consumed with addressing the more overt and immediate results of alcohol abuse and petrol sniffing. The lengthy lag-time of the onset of symptoms and signs of tobacco-related disease has made this substance less of a priority in these often crisis-riven settings with limited resources forcing more focus on reactive responses rather than preventive strategies. However the baseline survey demonstrated that there was considerable awareness of tobacco related harms, particularly the respiratory and circulatory system effects, indicating some success for prior local health information initiatives. The baseline surveys also confirmed what had been found in similar settings over 10 years ago, that among the majority of smokers there was a readiness to quit (32). However, our surveys also reported there was still a paucity of knowledge among tobacco users about cessation techniques and limited access to local quit support (23), including the full range of cessation medications available in less remote environments (33).

Reducing tobacco use among the Indigenous peoples of Australia has been designated as a priority action area to reduce the gap in Indigenous disadvantage (34). In an effort to similarly reduce health inequalities in England, smoking cessation services were set up targeting disadvantaged areas. An assessment of this strategy noted a 'modest' impact, resulting in recommendations for more innovative cessation interventions and a call for a wider range of strategies relating to tobacco control (35). The need for culturally appropriate cessation services has been identified for Indigenous populations (2, 36) but these are extremely limited in remote community settings in Australia due to health services stretched by geographic isolation and lack of local capacity. As part of the TETP our team held workshops targeting local Indigenous Health Workers (IHWs) throughout the life of the project, utilising reciprocal learning approaches to build health promotion and clinical capacity. We found, though, that management structures generally constrained both clinic and community-based IHWs to brief interventions, rather than venturing into the area of intense quit support.

Recommendations to reduce inequalities in tobacco use in these and other disadvantaged populations included a comprehensive range of strategies including population-level approaches (37, 38) rather than relying on clinical interventions with individuals (38). These include: community interventions targeting youth; media campaigns; reinforcement of tobacco retail legislation; education about second-hand smoke, particularly in homes; and restriction of smoking in public spaces (38, 40).

In other populations smoke-free policies in workplaces and public areas have been shown to reduce tobacco use (41, 42). In a study across four 'affluent, western' countries, smoke-free public spaces were thought to be a catalyst for the adoption of similar policies for private homes, which in turn, was associated with increased quit attempts (43). Although there is little literature published regarding similar courses of action and outcomes in discrete remote Aboriginal communities, Case Study 1 indicated that these international findings may also have some application in Australia. Access to new and less crowded housing has provided opportunity for greater control over private space. For some community members this has had a spillover effect of prompting new rules and behaviours around tobacco use, including smoke-free houses which may reduce consumption.

"A policy which is embraced by a Minister, approved by Cabinet, announced publicly, but inadequately delivered is worse than no policy at all…" Secretary of the Department of the Prime Minister and Cabinet (44).

It is one thing to have a policy and another to effectively implement it. Place-based smoke-free policy development guidelines, including smoke-free *maraes* (45) (New Zealand Maori sacred community meeting places) and Indigenous Australian workplaces (46), discuss the importance of evaluating the effectiveness of the policy and compliance. A vital component of effective enforcement of policies is the provision of public education in order to rally grassroots support for the laws, resulting in improved compliance (47). In the study communities, the ongoing activities of the TETP substantially helped to increase community awareness of the impacts of tobacco use, including passive smoking, and may be considered as a sustained 'de facto' public education campaign albeit limited to providing an understanding as to why such policies exist. Compliance strategies ideally should identify who is responsible for policy enforcement and also the process for dealing with any breaches (48). We observed NT tobacco policy was generally poorly enforced in the participating communities, with little evidence of who was responsible for enforcement. Directed by regionally based supervisors, local managers shrank from what they perceived as a potentially contentious task (5). But the case studies demonstrated that small, community-driven steps were being taken to limit exposure to ETS.

Limitations

We could not use the follow-up data because it had not yet been fully analysed. Also, this is largely a descriptive paper (with no comparison group) therefore we are cautious with our recommendations. A possible further limitation was 'fly-in, fly-out' approach by the research team, however over the life of the project, the team was in the communities as consistently as many other visiting services.

The five-year timeframe enabled the research team to build relationships of trust with community members and service providers, demonstrate preparedness to act on community recommendations, and have a sufficiently sustained presence to make the most of opportunities that presented.

5.6 Conclusion and recommendations

We conclude from the findings that management of ETS, including smoke-free policies, in discrete disadvantaged populations with high prevalence and normalisation of tobacco use may be more effective if implementation strategies can be considered at the grassroots level. Importantly, this can allow for the acknowledgement and incorporation of cultural contexts where appropriate. As described earlier in this paper, several aspects of the policy context common to the three participating communities have contributed either directly or indirectly to supporting efforts to reduce tobacco use in these settings. Reducing tobacco use had been viewed in communities as the domain of health services, but the NPAs in particular provide an exemplar of the whole-of-government approach, including collaboration with non-government organisations called for in Australia's National Tobacco Strategy (18). For the TETP this was a beautiful alignment of policy opportunities. At the grassroots level we have seen these policies provide opportunities to reduce tobacco smoking and its associated harms through collaborative efforts between local government, workplaces, educators, clan leaders and other community members. We have found these remote, discrete communities to be environments where new knowledge is shared quickly, leading to rapid adoption of novel practices. Successful practices are often quickly copied by other communities.

Based on the findings of this paper we make practical recommendations for community-level approaches to management of smoke-free spaces in these remote settings. Some of these may find application in other discrete and marginalised communities:

1. **Policies developed at a non-local (regional or jurisdictional) level:** get informed from the local level about potential barriers to policy implementation. Provide local people the opportunity to put some ownership on the policies through developing implementation strategies.
2. **Smoke-free workplace policies**: Is there one? What do staff know about the policy? Review the policy in a workshop with local staff. Should the site be totally smoke-free? Or could this be better achieved in stages, that is, commence with designated smoking areas. Develop detailed policy implementation strategies including realistic timeframes, locally developed signage, information dissemination about the policy, its timeframes and enforcement.

3. **Smoke-free homes:** Are there Environmental Health Officers in the community? Ensure they are equipped to provide information about the harms of passive smoking (a hand-held expired breath carbon monoxide monitor is a great tool for engaging people in brief interventions (22)). For those living in public housing, Local Government and Housing organisations may be able to provide incentives for declaring their home smoke-free.
4. **Smoke-free public spaces**: In environments where there is traditional ownership of land ensure there is clarity of ownership and the landowner is involved in the decision making. This may impact on the location of designated smoking areas, for example, where construction of a shelter against the elements is required.
5. **Local coalitions:** try to get tobacco onto the agenda of existing coalitions or forums of local key stakeholders. In smaller communities those with greater capacity are often the busiest and most burdened and may not be able to attend yet another meeting.
6. **Cultural issues:** ensure policies and implementation strategies acknowledge and incorporate local cultural conventions**.**

When 'rules' about ETS management are made at the local level, these efforts need to be vigorously encouraged, appropriately informed and adequately resourced with consideration to staffing, skills and finances. More comprehensive reporting systems which are sensitive to community narratives about tobacco action may also do justice to capturing activities which, in our experience, are bound to include some very innovative practices that are worthy of sharing widely

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Paper #5: Aboriginal people in remote communities in Arnhem Land (Northern Territory) restrict their smoking in some environments: implications for developing and implementing interventions to reduce exposure to environmental tobacco smoke.

5.8: ABSTRACT

Introduction and Aims:

In Arnhem Land's remote Aboriginal communities [Northern Territory], very high smoking rates and overcrowding mean high exposure to Environmental Tobacco Smoke. This study compared smokers who restrict their smoking in these environments with those who do not.

Design and Methods:

In 2008–2009, 258 smokers (137 males and 121 females) aged ≥ 16 years, provided information permitting categorisation of those who 'RESTRICT' their smoking in the house, car or workplace from those who do 'NOT RESTRICT'. Univariable and multivariable logistic regressions compared 'RESTRICT' and 'NOT RESTRICT' groups by gender, age group, daily use, tobacco consumption, time-to-first-cigarette and quit intentions. Those in the 'RESTRICT' group explained their motivations, summarised using qualitative data analysis.

Results:

Men were almost twice as likely to 'NOT RESTRICT' their smoking (odds ratio = 1.88, 95% confidence interval = 1.14–3.08, P= 0.013). Time-to-first-cigarette was the strongest predictor to 'NOT RESTRICT' in women (odds ratio = 3.48, 95% confidence interval = 1.44-8.41, P= 0.006) with daily consumption the strongest predictor in men (odds ratio = 3.15, 95% confidence interval = 1.39–7.18, P= 0.006). Men and women shared similar motivations for restricting smoking.

Discussion and Conclusions:

Smoke-free homes and workplaces are important opportunities to reduce exposure to Environmental Tobacco Smoke in remote Indigenous communities.

5.9: Introduction

Tobacco smoking contributes to preventable illness (1) and social inequities (2) worldwide. In Australia generally, smoking prevalence is 15.1% (3) while for Aboriginal and Torres Strait Islander Australians prevalence is 48% (4). It is less well known that in more isolated communities, e.g. remote Aboriginal communities in Arnhem Land (Northern Territory, NT), the prevalence is high as 83% (5). In these communities, access to quit support is limited (6) with little implementation of NT tobacco policies to maintain smoke-free spaces to reduce exposure to Environmental Tobacco Smoke (ETS) (7). Overcrowding in homes is common and exacerbates ETS concerns (8).

ETS contains high concentrations of chemicals and carcinogens and causes significant ill-health and death to non-smokers (9). Smoke-free spaces significantly reduce exposure to ETS. Studies in non-Indigenous populations indicate that smoke-free workplaces, homes and public spaces reduce tobacco consumption and exposure of non-smokers (including children) to ETS (10). Smoke-free public spaces can, in turn, encourage smoke-free homes, smokers delaying the day's first cigarette, reduced tobacco consumption and more quit attempts (11). There is existing evidence that Aboriginal women apply restrictions in their own homes, e.g. smoking away from the house, no smoking near children or people suffering illness (12, 13). However, few studies have attempted to examine Aboriginal smokers' responses to such important local initiatives (13, 14).

For three Arnhem Land communities, information is available from current smokers in a baseline survey in a large tobacco intervention study (6). This information permits a comparison between smokers who restrict their smoking in some environments with those who do not.

5.10: Design and methods

Setting

This study draws data from a large tobacco intervention study (6, 15). The Aboriginal population of the communities when surveyed in 2008-2009 was 2319 people aged ≥ 16 years. With geographic isolation exacerbated during wet seasons (15), the communities

have limited mainstream work opportunities, limited access to health services, including quit support services (16). Overcrowding of homes is a significant issue (4).

Smoking is embedded in many social practices including ceremony and ritual, and sharing tobacco is almost universal (6, 15). Despite language, social and cultural differences between the communities (16), all have strong traditions of control and management of the land and environments around them (17).

Data collection and analysis

The 400 survey participants included 301 current smokers (6, 15) of whom, 258 provided information about whether they smoked in the house, car or workplace. Those who said they 'RESTRICT' their smoking in any of these environments were distinguished from those who said they do 'NOT RESTRICT' their smoking. Those in the 'RESTRICT' group were asked to explain their motivations.

Smoking status was confirmed using expired breath carbon monoxide (18). Smokers were asked:

- usual quantity consumed, categorised as '<10 cigarettes/day' or '≥ 10 cigarettes/day' (15)
- smoke daily, 'yes' or 'no'
- time-to-first-cigarette: 'after breakfast' or 'first thing in the morning and/or during the night'. Distinguishing time of day of cigarette consumption is an indication of physical nicotine dependence (19)
- quit intentions or behaviours, categorised as 'not thinking about quitting' and 'thinking about and/or trying to quit'.

Univariable and multivariable logistic regressions (SPSS version 20, IBM, Armonk, New York, USA) compared 'RESTRICT' and 'NOT RESTRICT' groups by gender, age group, daily use, consumption level, time-to-first-cigarette and quit intentions. Qualitative data analysis summarised the motivations of smokers in the 'RESTRICT' group.

Ethics

The Human Research Ethics Committees of the NT Department of Health and Families, Menzies School of Health Research and James Cook University provided approvals.

5.11: Results

The 258 current smokers included 137 males and 121 females. Half were in the 'RESTRICT' group (n=130) and half in the 'NOT RESTRICT' group (n=128) (Table 9). Men were almost twice as likely to 'NOT RESTRICT' their smoking compared to women (OR= 1.88, 95%CI=1.14-3.08, P=0.013) (Table 9). Data not shown indicates that men were heavier smokers (OR=2.12, 95%CI=1.27-3.55, P=0.004), and were more likely to smoke in cars (OR=1.71, 95%CI=0.96-3.07, P=0.071), at work (3.10, 95%CI=3.33-7.27, P=0.009) or in their house (OR=2.38, 95%CI=1.31-4.31, P=0.004).

The expected positive associations between time-to-first-cigarette and daily use (P=0.007), time-to-first-cigarette and consumption (P<0.001) and daily use and consumption (P=0.001) reflect tobacco dependence, with those having their first cigarette 'first thing/during the night' significantly more likely to 'NOT RESTRICT' their smoking than those who said they delayed until 'after breakfast' (OR=2.53, 95%CI=1.51-4.24, P<0.001).

Time-to-first-cigarette remained the strongest predictor to 'NOT RESTRICT' smoking in the multivariable analysis (OR=2.01, 95%CI=1.13-3.55, P<0.017) (Table 9). In women, this association remained strong (OR=3.48, 95%CI=1.44-8.41, P=0.006) while in men it weakened (OR=1.28, 95%CI=0.56-2.88, P=0.558) with daily consumption becoming the strongest predictor in men (OR=3.15, 95%CI=1.39-7.18, P=0.006) (data not shown). Men were more likely than women to report thinking about or trying to quit (OR=1.82, 95%CI=1.04-3.18, P=0.034) (data not shown).

For the 59 men and 71 women in the 'RESTRICT' group, the four main emergent themes of 'outside house rule', 'smoke-free rule at work', and concerns for exposure of 'children and people with illness' to ETS were consistent across genders and were, moreover, similarly-ranked by code density (Table 10).

Table 9. Characteristics of 258 current tobacco smokers (aged ≥16 years) in three remote Aboriginal communities in the 'Top End' of the Northern Territory (NT, Australia) comparing those who restrict their smoking in some environments (n=130) and those who do not (n=128)

	Restrict smoking?		Univariable analysis			Multivariable analysis		
	RESTRICT N=130	NOT RESTRICT N=128	OR	95%CI	P	OR	95%CI	P
Gender								
Female	57% (71)	43% (50)	1.00			1.00		
Male	43% (59)	57% (78)	1.88	1.14-3.08	0.013	1.74	1.02-2.98	0.041
Age group								
16-29 years	44% (57)	39% (51)	1.00			1.00		
≥ 30 years	56% (73)	61% (77)	1.18	0.72-1.93	0.515	1.02	0.60-1.75	0.928
Daily use								
No	29% (38)	16% (21)	1.00			1.00		
Yes	71% (92)	84% (107)	2.10	1.15-3.84	0.015	1.64	0.86-3.17	0.134
Consumption								
<10 cigarettes/day	48% (60)	30% (38)	1.00			1.00		
≥ 10 cigarettes/day	52% (66)	70% (88)	2.11	1.26-3.53	0.005	1.53	0.87-2.68	0.136
Time to first cigarette								
After breakfast	50% (65)	72% (36)	1.00			1.00		
First thing/during the night	50% (65)	28% (91)	2.53	1.51-4.24	<0.001	2.01	1.13-3.55	0.017
Intentions								
Not thinking about quitting	27% (35)	27% (34)	1.00			1.00		
Thinking about quitting and/or trying to quit	73% (95)	73% (93)	1.01	0.58-1.75	0.978	1.11	0.61-2.03	0.741

Table 10. Principal motivations, and examples of explanations, for restricting smoking in some environments provided by 130 current smokers in the 'RESTRICT' group in a sample of 258 current tobacco smokers (aged ≥ 16 years) in three remote Aboriginal communities in the "Top End' of the Northern Territory (NT) Australia.

	House	Car	Work	All 3	Themed qualitative responses
Male N=51	24	30	12	3	Outside house rule in place: "Uncle doesn't smoke inside and so I follow this" Smoke free rule at work: "Work rule", "At work I am very careful, follow rules, I smoke only at the back of the school" Children: "Smokes outside the house because has six kids", "Smoke outside because of kids" Illness: "Mainly smokes outside, my wife is an asthmatic", "Has a nebulizer inside the house"
Female N=79	44	38	16	7	Outside house rule in place: "No smoking rule in the house", She has a no smoking rule in the house and asks people to smoke on the back verandah - they respect this request" Smoke free rule at work: "Does not smoke in government vehicles.", "smokes outside fence at work" Children: "I have a baby", "Doesn't like kids to be near her when smoking - takes care with their passive smoking" Illness: "Uncle had operation so don't smoke around him" , "I smoke outside when the children get sick" Others are non-smokers: "Because my husband is a non-smoker"

5.12: Discussion and conclusion

Support for smoke-free homes and workplaces are important opportunities for designing programs to reduce ETS exposure in remote Indigenous communities, supporting existing published evidence (20). Males and females in the 'RESTRICT' group offered similar reasons for doing so, suggesting that household and workplace interventions targeting men and women appropriately are worthwhile. Time-to-first-cigarette for women and level of consumption for men are the specific components of dependence which should be addressed with targeted cessation support. Barriers such as stress and social situations which cause women to be less likely to try to quit (21) should also be considered when implementing programs to reduce exposure to ETS.

This information relates to current smokers in a sample of Aboriginal communities with very high smoking rates, in a remote region of Australia. Half the smokers interviewed reported that they effectively restricted their own and others smoking in one or more locations, with specific reference by some to the importance of restricting smoking around children and people who are ill. This suggests that interventions to reduce exposure to ETS can effectively build on already accepted practices to further reduce exposure to ETS in homes and workplace in remote Indigenous communities.

5.13: Chapter 5, Paper#5 References

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CHAPTER SIX: A NEED FOR SPEED

Paper #6: A review of trends in Indigenous Australian tobacco research (from 2004 to 2013), its associated outputs and evidence of research translation reveals a 'need for speed' to enhance its impact.

The final publication included in this thesis reviews the trends in topics, types of research and geographic location of Indigenous Australian tobacco research and associated outputs over the past decade. These outputs are also examined for evidence of alignment with identified research priorities and research translation strategies

The paper offers a way forward for future researchers, policy makers, health practitioners and community members in their efforts to reduce the harms associated with tobacco use by Indigenous Australian peoples.

Robertson J, Stevenson L, Usher K, Devine S, Clough AR. A review of trends in Indigenous Australian tobacco research (from 2004 to 2013), its associated outputs and evidence of research translation reveals a 'need for speed' to enhance its impact. *Nicotine and Tobacco Research. Special Issue: Tobacco-related health disparities*. Abstract accepted and paper under review.

6.1 Abstract

Introduction

Smoking prevalence among Indigenous Australians nationally (45%) is more than double that of other Australians but ranges up to 82% in remote communities, causing significant health disparities. This paper examines trends in peer-reviewed research outputs related to Indigenous Australian tobacco control over the past decade and describes their research translation potential and alignment with national and jurisdictional policy priorities.

Methods

Systematic searches of electronic databases were conducted: Medline, CINAHL, Cochrane Systematic Reviews, PsychInfo and Australian HealthInfoNET for English-language peer-reviewed publications (2004-2013) primarily focusing on Indigenous Australian tobacco use. Publications were categorised by types, topics and geographic location. Following established procedures, 'reviews' and 'commentaries' were distinguished from 'original research', the latter further classified as 'measurement', 'descriptive' or 'intervention' studies. Research translation categories used were: 'synthesis', 'dissemination', 'exchange' and 'application'.

Results

The majority of 76 publications meeting selection criteria focused on cessation treatment (27.6%), monitoring and prevalence (23.7%) and passive smoking (11.8%). 'Original research' was mostly 'descriptive/epidemiologic' (81%) with few 'intervention' studies (9%). Many studies were in remote communities. Components of research translation were identified in 50% of the publications with little evidence of dissemination strategies.

Conclusion

Remote community populations are an area of great need. However, generally it is disappointing that since 2004, few intervention studies have been made available to guide efforts to reduce tobacco-related health disparities. Stronger and more immediate alignment of policy with research that contributes to the evidence-base is required together with more systematic use of research dissemination translation strategies to better match evidence with priorities which may develop rapidly over time.

6.2: Introduction

In 2008 the Council of Australian Governments (COAG) committed to 'Closing The Gap' in life expectancy between Indigenous and non-Indigenous Australians 'within a generation' or around 25 years (1). With smoking contributing to 17% of this health gap (2), this leading risk factor for chronic disease among the Indigenous (Aboriginal and Torres Strait islander) peoples of Australia has been made a national priority action area. An ambitious target has been set to halve the smoking rate among Indigenous Australians nationally by 2018, currently at 45.1% (3), which is more than double the smoking rate in other Australians. Australia's Aboriginal and Torres Strait Islander peoples are a diverse group featuring differences strongly influenced by geography. In 2006, Indigenous Australians comprised 2.5% of the population, with most living in major cities (31%) and the remainder distributed across inner regional (22%), outer regional (23%) and remote (24%) /very remote (22%) localities (4). Indigenous Australians living in remote communities (4) may experience an additional 40% of the preventable health gap (2). Daily smoking rates in these settings in 2008 were estimated at 49%, considerably higher than for Indigenous Australians living in non-remote areas (5). However, alarming evidence is available from a number of studies in small, very remote communities that smoking rates are as high as 82% current smokers (6). In many of these isolated, marginalised and severely disadvantaged areas, this extraordinarily-high prevalence of tobacco use has probably been normalised by historical, cultural and social conventions. In order to halve the Indigenous Australian smoking rate from 45% overall, smoking prevalence would need to fall by 2-3% per year (7). Clearly, in the very remote communities, the starting point is higher, making the challenge even more urgent, especially since very limited support services are available in such regions (6).

Recent efforts in Indigenous Australian tobacco control research need to be assessed against the need to rapidly reduce smoking rates among all Indigenous Australians. In this paper we examine trends in research outputs in this field focusing on peer-reviewed articles or papers published over the last decade. The decade commencing 2004 was chosen because, in that year, Australia ratified its signature to the World Health Organisation's Framework Convention on Tobacco Control (8). Research outputs will be assessed in light of Indigenous- specific national tobacco control research priorities set between 1999 and 2013 to capture the potential influence of earlier policies on the 2004-2013 decade.

Over the same period, in public health research generally, there has been a call for increased efforts to expedite the translation of research into action (9, 10). In order to respond to this call, in this

paper, we also assess the translation of Indigenous Australian tobacco control research into policy and action by examining the decade's research outputs for any evidence that research translation components have been incorporated, explicitly or implicitly, into the research design and its reporting. We particularly looked for dissemination approaches designed to take the research results beyond their publication in peer-reviewed journals.

6.3: Methods

This review is not a critical appraisal of the literature included, which is a subject for a further paper. Rather, it is a scoping of the types of recent outputs relating to Australian Indigenous tobacco control efforts.

Search strategy

Electronic searches were undertaken (author JR) of databases with a focus on health, public health and health sciences: Medline, CINAHL, COCHRANE SYSTEMATIC REVIEWS, and PsychINFO. Using a combination of keywords and MeSH headings, the following search terms were used: Aborig*, Indigenous Australian, Aboriginal Australian, tobacco, smok* , tobacco products, passive smoking, smoke-free, environmental tobacco smoke, smoking cessation, tobacco use cessation, tobacco use cessation products, tobacco use disorder. A further hand search of the Australian Health InfoNET 'Tobacco' section[11] was also undertaken, examining 'Publications' and 'Programs and Projects' for any associated publications. This internet resource has a specific focus on Indigenous health research and related information (www.healthinfonet. ecu.edu.au/about).

Inclusion criteria

Study protocols were excluded since outputs from completed research were sought. Original research and reviews were included if they were published in a peer-reviewed journal between 2004 and 2013 and with their primary focus being Indigenous Australian tobacco use. Publications reporting on tobacco use in non-Indigenous populations were also included if they reported disaggregated data for Indigenous Australians. Commentaries or discussion in the forms of letters, editorials, reflective pieces including recommendations for practice, or opinion pieces were included in the review, as they potentially have some impact on policy and practice, representing an opportunity for knowledge exchange or debate.

Types of outputs

Following established procedures (12-14), research outputs were first categorised as 'original research' outputs (i.e. those that reported new data); 'other research' (i.e. reviews) and 'other outputs' (i.e. 'commentaries' and 'discussions'). Those reviews using an explicit and replicable method, including pre-defined inclusion criteria to identify, collate, assess and synthesise findings of empirical evidence were categorised as 'systematic reviews' distinguishing them from 'other reviews'. 'Original research' outputs were further classified as 'measurement', 'descriptive' or 'intervention' research. Outputs classified as 'measurement' were those that reported the development of a tool or measure for assessing tobacco use specifically for Indigenous Australians. Outputs classified as 'descriptive' included cross-sectional, epidemiological studies at both community and wider-population levels. 'Intervention' research outputs were those that tested the effectiveness of specific tobacco-related interventions of either a clinical or public health nature.

Topics

Using standard qualitative data coding techniques (15), in the first cycle of coding, the topic of each paper was assigned a descriptive code based on its primary focus (by authors JR and LS). We used, where possible, terminology that thematically aligned with identified tobacco research priorities for Australia documented between 1999 and 2013. This was in order to facilitate comparisons between identified priorities and actual outputs. Topics were categorised as follows:

- smoking 'cessation treatment'
- 'health workforce' capacity
- 'exposure to environmental tobacco smoke' (ETS)
- 'smoking in pregnancy'
- 'maternal and child health'
- 'tobacco control policy' including policy development, implementation and regulatory efforts
- 'information campaigns and programs' including social marketing
- 'monitoring and reporting' including tobacco sales data or prevalence of use or tobacco-related mortality and morbidity
- 'multiple interventions'
- 'smoking initiation' or uptake
- 'tobacco and other drugs' and
- 'historical use' of tobacco

Specific locations

Since, in Australia, social inclusion and socio-economic status are profoundly influenced by distance from major metropolitan areas, we attempted to identify the broad geographical locations of the populations reported on or discussed. Locations were aligned with the Australian Bureau of Statistics (ABS) classifications of population distribution according to the Remoteness Structure: 'major cities', 'inner regional', 'outer regional', 'remote' and 'very remote' Australia (16).

Research translation components

The translation of research findings (or knowledge) into evidence-based health policies and practices has become a science of its own (9), but currently lacks a standardised terminology, in part due to its origins being in a range of non-health disciplines (17). This contributed to challenges in reaching consensus regarding identification and classification of research translation (RT) components.

For this paper, RT was considered to encompass 'knowledge transfer', or 'knowledge- to- action', that is, the use of what is known to improve both health outcomes and health care systems (10). Using the Canadian Institutes of Health Research (CIHR) definition (18, 19), we categorised components of the knowledge transfer process as: 'synthesis', 'dissemination', 'exchange' and 'ethically-sound application'. Under this schema,

- 'Synthesis' is defined as the integration of findings from individual research studies, e.g. those described in the research types section under the heading 'review'.
- 'Dissemination' refers to activities where research findings are delivered to audiences or stakeholders using tailored messages and media. Audiences may include policy makers, health practitioners and other knowledge users including community members in remote populations. The messages may be in the form of policy briefs, educational sessions, summary reports for stakeholders including research participants, or media engagement.
- 'Exchange' of knowledge refers to interaction between the researchers and a range of knowledge users, resulting in mutual learning. This exchange may occur either on completion of the research (end of grant knowledge transfer) or throughout the research process (integrated knowledge transfer) (19).
- 'Ethically sound application' describes the iterative process where research knowledge is put into use in a manner that aligns with ethical, social and regulatory frameworks (20).

Quantitative data analysis

Authors JR, LS and AC independently categorised each publication. Levels of agreement between these three authors were calculated using the *kappa (κ)* statistic (21). For types of research, agreement was assessed using the two main types 'original research' and 'other' first, and then using the five different sub-types of publication. For RT, agreement was also assessed using *κ* for the four different components. Calculations were performed using Stata 12.0 (Stata Corporation, College Station, Texas).

For the final categorisation into the five research types and the four translation components, where there was no initial agreement, (i.e. the article was assessed as being in three different categories), two of the authors (JR and AC) further reviewed the article for a final determination. Trends in the number of publications in each year since 2004 were examined and charts produced using Microsoft Excel©.

6.4: Results

Of the 272 publications retrieved by the searches, 99 duplicates were removed. Following screening of abstracts and some full texts by authors JR and LS a further 97 records were excluded, leaving 76 publications for review. This process is depicted in Table 11. The reader is referred to Table11, at the end of this paper, which lists the 76 papers included in the review.

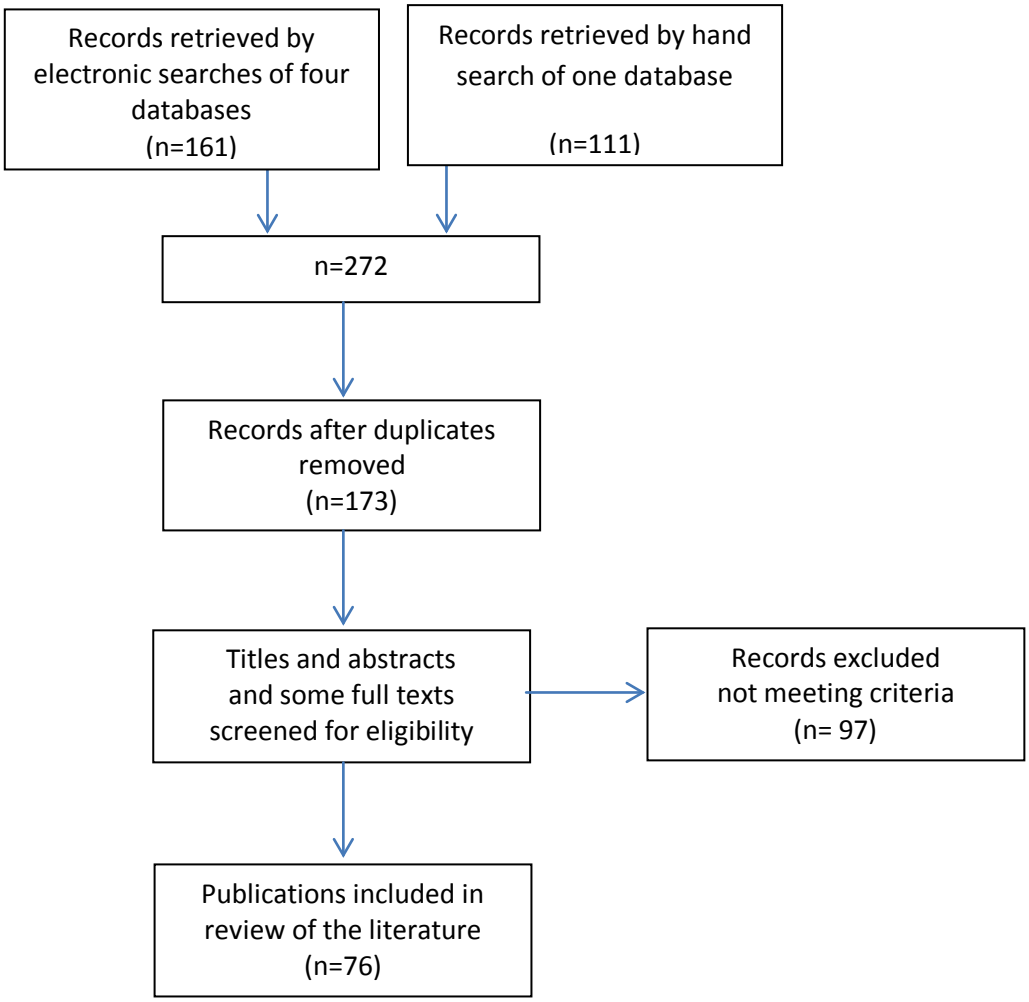

Figure 22: Depiction of the process of selection of peer-reviewed outputs relating to Indigenous Australian tobacco control from 2004-2013

Types of outputs

There was universal agreement among the three assessing authors (JR, LS, AC) regarding the major research categories, 'original' or 'other' research. In the 'other research' category, according to established guidelines (21), there was 'moderate' to 'good' ($0.4< \kappa \leq 0.8$) agreement about what was a 'review' (κ=0.70) and what constituted a 'commentary or discussion' (κ=0.48). For 'descriptive' studies (κ=0.61) and 'measurement' research (κ=0.72) agreement was 'good' in the original research category, but only 'fair' agreement ($0.2< \kappa \leq 0.4$) about 'intervention' research (κ=0.37).

The majority of outputs were categorised as 'original research' (n=53, 70%). Of the subcategories of original research, there was a preponderance of descriptive studies (n=43, 81%) with much smaller and equal proportions of measurement (n=5, 9%) and intervention studies (n=5, 9%). 'Other research', 'reviews' (n=11, 14%) and 'other outputs', (n=12, 16%), i.e. commentaries and discussions, comprised the remainder (see Figure22). The majority of outputs were categorised as 'original research' (n=53, 70%).

Of the eleven reviews identified, eight were systematic (#17, 36, 46, 49, 50, 60, 67, 68), (Table 12), four of which related to Indigenous populations across other countries but included data pertaining to Indigenous Australians. In the 'original research' category, there were five papers reporting results from intervention studies (#3, 4, 5, 40, 53) Although described by the authors as "*not a research study"*, one paper was included in the 'intervention' category as this was explicitly stated in its design (#5). With regard to types of study design, only one randomised control trial was reported (#53). The quasi-experimental studies included: a population level multi-component multiple baseline study (#3, 4); and other service level follow-up studies (#5, 40). There were several outputs from a further multiple-component intervention study, but follow-up results had not been reported in the review period, therefore the outputs were excluded from this classification (# 12, 18, 28, 29, 31, 35, 45, 46, 58, 73, 74). Thorough descriptions of the processes involved in delivery of the interventions were included in all but one of the papers.Evaluation of the cost effectiveness of the interventions was not reported in any of the included studies. Discussing a range of interventions, 12 commentaries/discussions appeared between 2008 and 2012 (#6, 12, 18, 24, 31, 34, 36, 45, 51, 71). The overarching theme of the majority of these papers was advocacy.

Trends in outputs over the decade

The trends in outputs by type are presented in Figure 3, demonstrating the marked increase in the number of peer-reviewed publications relating to Indigenous Australian tobacco control from 2008. Despite the large amount of descriptive studies throughout, the numbers of these increased dramatically in 2012.

Topic categories and trends

There was cross-over within some papers between tobacco use and maternal and child health, smoking during pregnancy and exposure to ETS. Following initial coding of topics, authors JR and LS combined these three topics and categorised them as 'passive smoking' in order to include exposure

in utero in that category. Topics occurring three times or less were grouped together as 'other' (see Figure 23) but are reported on separately below.

In order of frequency, topic categories included: 'cessation treatment' (n=21, 28%); 'monitoring and reporting' including tobacco sales data or prevalence of use or tobacco-related mortality and morbidity (n=18, 24%); 'passive smoking' (n=9, 12%). Subcategories of 'passive smoking' were: those studies where there was an exclusive focus on prenatal smoking (n=3), ETS (n=4) or combinations of both (n=2). Less common topics were: 'multiple interventions' (n=7, 9%); 'health workforce' capacity (n=6, 8%); 'tobacco control policy' (n=5, 7%) and 'information programs' (n=4, 5%). 'Other topics' included; 'smoking initiation' (n=3, 4%); 'tobacco and other drug use' (n=2, 3%) and 'historical use' of tobacco (n=1, 1%).

Of the original research, descriptive studies focused more intensely on 'monitoring and reporting', 'cessation treatment' and 'passive smoking'. Measurement studies, in the main, focused on correlating levels of self-reported or community-level trends of tobacco use with a range of other measurement tools.

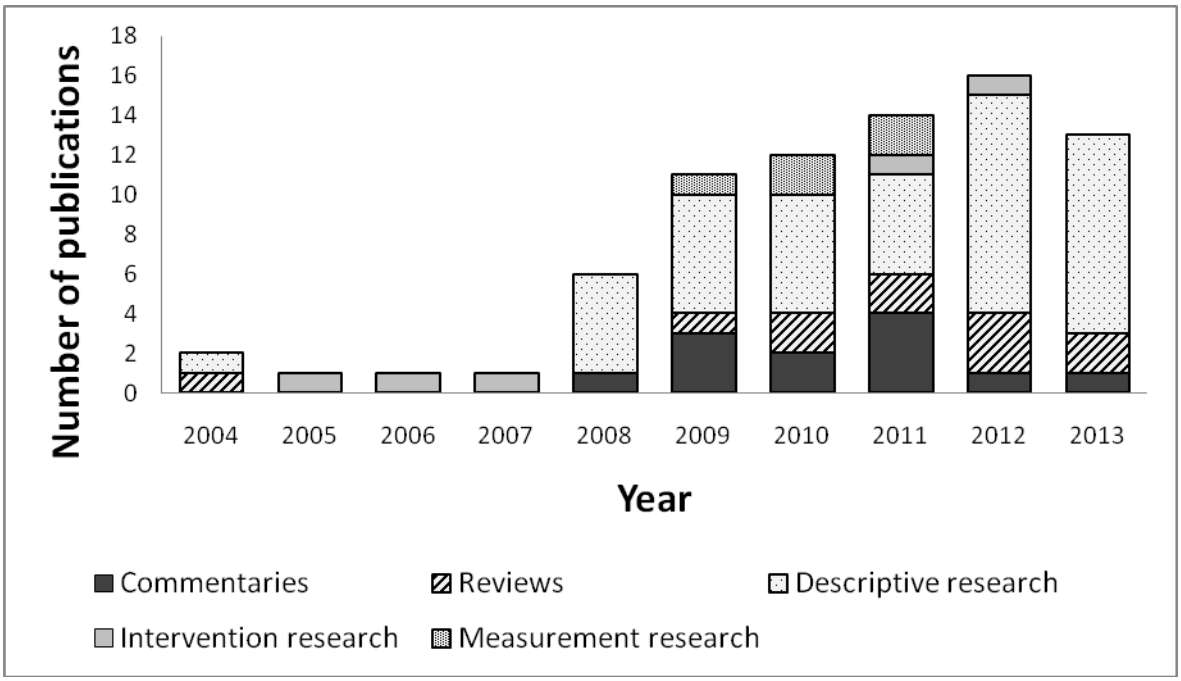

Figure 23: Categories of peer-reviewed outputs by year relating to Indigenous Australian tobacco control from 2004-2013

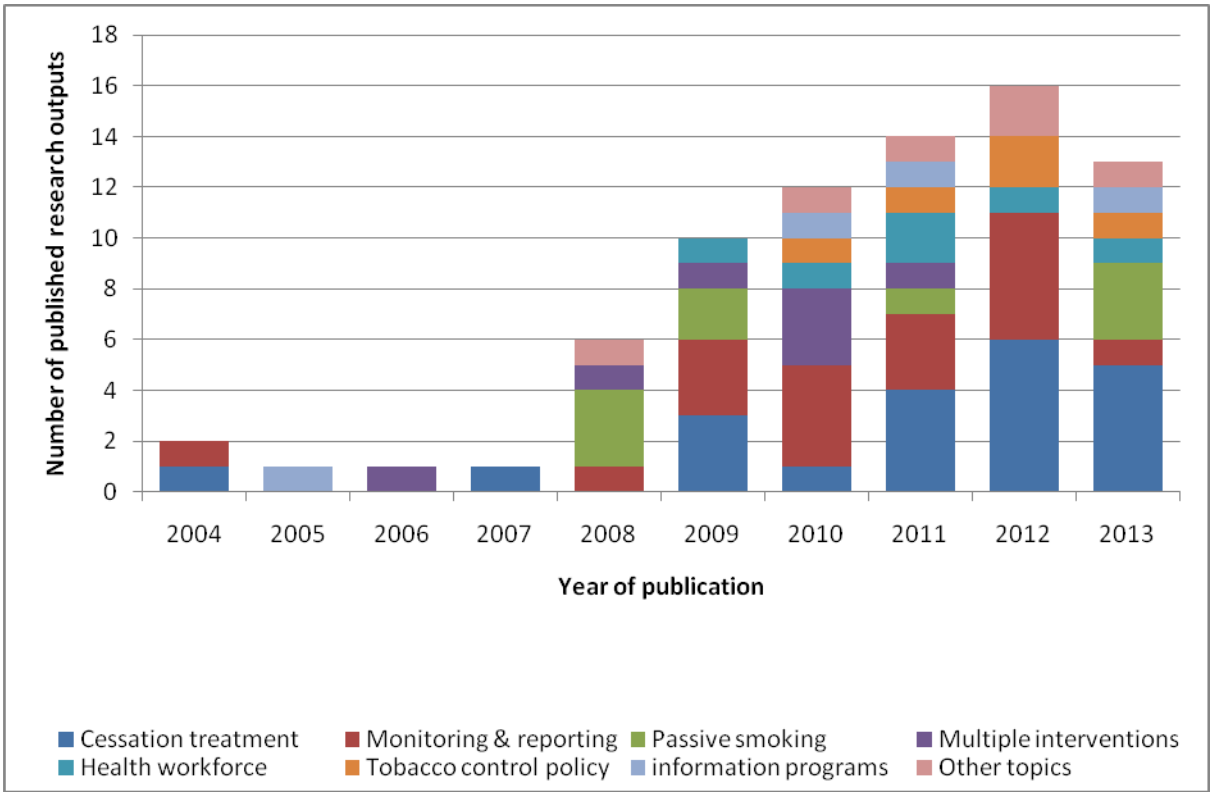

Figure 224: Focus of peer-reviewed outputs by year relating to Indigenous Australian tobacco control from 2004-2013

Of the eight 'systematic reviews', three focussed on 'cessation treatment' concluding overall there was a paucity of evidence identifying effectiveness of such interventions and identifying the need for further research to address barriers to accessing treatment services. The remaining reviews examined i) barriers to accessing treatment services, ii) barriers preventing Indigenous Health Workers delivering tobacco interventions, iii) smoking initiation, iv) targeting of Indigenous Australians by the tobacco industry and v) cultural targeting of anti-tobacco media messages. 'Other reviews' included a review each of: other systematic reviews (#2), historical tobacco use (#30) and tobacco control research focussed on children and pregnant women (#33). Smoking 'cessation treatment' (n=4) (#12, 18, 51, 71) and 'multiple interventions' (n=5) (#6, 31, 34, 39, 69, 70) were most frequently the topic of 'commentaries/discussion'. Figure 23 summarises topic trends. 'Cessation treatment' research has consistently comprised a major proportion of outputs over most of the decade and with a marked increase in recent years.

Location of the research

Of the 76 publications, 40 (53%) specifically identified a location which could be classified by the Australia's remoteness index (22). The majority of these 40 outputs (n=24, 60%) focussed exclusively on remote populations and almost exclusively in one jurisdiction, the Northern Territory. None of the papers reported Indigenous tobacco research that had been undertaken in the Torres Strait

islands (far north Queensland) or Tasmania. The remaining 16 outputs were in: 'outer regional' (n=6, 15%), 'major cities' (n=5, 12.5%) or combinations of population locations (n=5, 12.5%).

Research translation components

'Moderate' agreement among the three assessing authors (JR, LS, AC) was found for 'synthesis' (κ=0.44) with 'fair' agreement about the 'exchange' component (κ=0.38). There was 'poor' agreement ($\kappa \leq 0.2$) found for both the 'dissemination' (κ=0.12) and the 'application' components (κ=0.05).

One or more research translation components were identified in half (n=38) of the 76 outputs. Of the 15 papers with evidence of knowledge 'synthesis', nine were systematic reviews. These have been described more fully under the heading 'research types'. Of the remaining papers, five were syntheses of other studies, data sets or case studies.

Papers reporting the use of specific 'dissemination' strategies were few (n=4) and all were published in 2010 and 2011. Strategies described included: the regular dissemination of local tobacco sales data using posters in remote communities (#44), direct feedback of research results by researchers to remote community members (#28, 31) and routine dissemination of research data by the internal e-mail system in a workplace study (#38).

Knowledge 'exchange' was the most commonly described component of research translation, appearing in 25 papers. This included five separate outputs reporting on multiple components from one study. All strategies described were integrated into the research projects, rather than end-of project, consistent with participatory approaches. In descending order of reported use, the following knowledge transfer approaches were found to be integrated into research projects where 'exchange' criteria were met:

- Aboriginal co-researchers or research assistants involved in data collection and/or interpretation or dissemination (#17,27,31,38,49,50,51,52,54,73,74,75).
- reference groups including Aboriginal community members or service providers guiding and overseeing research processes (#11,42,55,56,69)
- development and/or delivery of reported intervention components by Aboriginal people (#4,22,26,61)
- research partnerships with peak Aboriginal Health bodies (#52,66)

- co-authorship of papers with knowledge users in a specified role (e.g. peak health body staff or a policy officer) (#23,60)
- exchange between Indigenous clients and clinicians to develop appropriate care plans used in an intervention (#5).

Explicitly stated effects or outcomes of these knowledge exchange approaches were rarely reported. There was little evidence supporting direct and specific ethical application of research results. However, the intervention studies included in the review explicitly stated that the interventions were built on evidence of success in other populations and adapted to the cultural context.

6.5: Discussion

In the decade covered by this study, a surge in peer-reviewed outputs relating specifically to indigenous tobacco control was noted in 2008. This reflects the extent of the research response after the 2004-2005 Australian National Tobacco Strategy four years previously (23), which identified the need for tailored approaches to reduce tobacco use among disadvantaged groups, including Aboriginal and Torres Strait Islander peoples. The strategy also called for the development of more focused research and evaluation including improvement of monitoring and surveillance and trials of 'promising approaches'. A reduction in tobacco use by 2018 has been identified as the highest priority in addressing Indigenous disadvantage in health outcomes (24). Translation of research into policy and action ***must*** be accelerated to achieve these important goals because, overall, there has not been a systematic or explicit approach to research translation in the design and implementation of the research being done and reported.

In order to translate research findings to action in the public health domain, there is a need for effective research, i.e. that which trials interventions in a real-world context (25). However, intervention studies remain costly and require considerable time and effort to develop and implement. A 2008 review of public health research outputs suggests that funding issues have influenced these outputs (13). Australia's National Health and Medical Research Council (NHMRC) funded all intervention studies and contributed to the majority of the remainder of the research reported in this review. The processes to access Australian state or territory funding for research are often obscure and diffuse with grants gained in an opportunistic rather than strategic fashion. State health departments bear huge costs of tobacco-related illnesses. It has been argued that stronger investment by Australian state and territories health jurisdictions in tobacco control would reduce expenditure on tobacco related illness and also contribute generally to public health (26). We agree

and would also suggest that greater investment at this level of government is extended to research which informs tobacco control, particularly by those jurisdictions with large populations of Indigenous peoples living in remote communities and bearing a disproportionate burden of tobacco-related disease.

The literature reviewed contains many descriptive studies, the numbers of which appear are increasing, despite longstanding calls for a better balance with more intervention studies (12, 27). A more strategic use of descriptive studies would be to focus them on discussing the more novel, ground-breaking topics. The range of topics covered in the peer-reviewed literature included in this review, while comprehensive, focuses a great deal on treatment. The following examination of the research focus over the decade in light of identified Indigenous Australian tobacco control research priorities allows us to reflect on the implications of this imbalance and limited focus for the policy context.

Implications of a research imbalance for Indigenous tobacco control research

Australia's first priority-driven research agenda for tobacco control was developed in 1999 and, included informing the community (public information campaigns and youth-targeted programs to reduce smoking uptake); tobacco cessation; reduction of supply and availability; product regulation; reducing product promotion; reducing exposure to tobacco smoke; and monitoring (28). Specific research questions for the agenda included inquiry about effective strategies to assist Indigenous peoples to quit smoking. Subsequent national strategy documents to address substance misuse including tobacco continued to recommend systematic approaches to tobacco research particularly noting continued gaps in evidence-based knowledge relating to interventions for indigenous peoples (23, 29, 30). There were also important calls for action research approaches to inform best practice for programs at community levels for culturally-appropriate strategies and exploration of cultural and social determinants of tobacco use.

Specific Indigenous tobacco use research priority areas identified between 2009 and 2013 by expert forums echoed those defined for the broader population in 1999 with emergent priority areas identified as building health workforce capacity particularly Aboriginal Health Workers; 'whole of family' approaches; addressing use of tobacco and other drugs; and targeting prisoners while incarcerated and post-release. High priority was given to youth uptake and smoking in pregnancy (31-33) (personal communication 2013, V Briggs, Director, Centre for Excellence in Indigenous

tobacco Control) and a focus on regulatory efforts, i.e. evaluation of the impact of recent tobacco control strategies in Australia.

With regard to the emergent research priorities described above, a reasonable expectation for immediate research efforts would include further evaluative studies of the capacity of health service providers to deliver tobacco interventions among Indigenous populations, particularly the tobacco action workforce developed as part of the national 'Tackling Indigenous Smoking' initiative (34-35). Family-centred intervention studies have yet to be reported. There is some evidence of the high prevalence of cannabis in remote Aboriginal communities influencing the continued use of tobacco (36). This connection may require further exploration in other settings and could be a topic for further descriptive research. Aboriginal & Torres Strait Islander people make up 2.5% of the total Australian population but 27% of the prison population (37). The highest proportion of Indigenous prisoners is in the Northern Territory (86%), the first jurisdiction in Australia to ban tobacco products in their prisons in mid-2013, with other states and territories planning to follow suit (38). Rapid dissemination of the results of evaluation of this policy implementation, including process evaluation and post-release strategies, could inform these imminent efforts. Major regulatory changes in tobacco control are very recent, including an increase in tobacco taxes by 25% in 2010 and the introduction of plain packaging in 2012. A short-term evaluation of the impact of tax increases was undertaken in remote Aboriginal communities (#76). While there is evidence that increased prices of cigarettes has been shown to reduce smoking prevalence in the general population and more strongly so in low income groups (39), the study found no associated significant reduction in tobacco consumption concluding that high prevalence, lack of quit support and normative nature of smoking in these populations remained as challenges to potential impact.

Research priorities identified in 2013 acknowledge the need to direct research efforts to specific population groups that have a high prevalence of tobacco use (33). As described earlier, the more remote Aboriginal communities have an extremely high prevalence and it is encouraging that a large proportion of research outputs report on work undertaken in such remote communities despite the high direct research costs associated with travel and other logistics. We note that reported studies based in remote locations are almost exclusively in one jurisdiction which appears to be due to the influence of two research groups based in northern Australia. In the Australian context, 'remote' and 'very remote' need to be consistently differentiated, in order to improve comparability of research findings with national data sets that make these distinctions. The absence of studies based in the

Torres Straits and Tasmania may reflect logistical difficulties due to either their extreme isolation and/or relatively small and sparsely distributed populations.

Overall, the more consistently identified research priorities since 1999 for Australian Indigenous tobacco control have been information campaigns or programs, youth smoking initiation and reduction in exposure to ETS. Less consistently identified priorities have been smoking cessation and monitoring. Comparison of identified Australian Indigenous tobacco research priorities with the outputs from 2004-2013 suggests a reasonable alignment with priorities in terms of topic range but there has been a much greater focus on treatment rather than prevention. The utility of the research identified and reviewed remains limited by a lack of intervention studies to convincingly inform the evidence-base.

There is currently no international standardised terminology for the science of translating research knowledge into action (17). There is also a lack of valid methodologies to evaluate the effectiveness of research translation (9). A further consideration, which is beyond the scope of this paper, is the differing paradigms of translation of knowledge to action between the Western research community and the strong Indigenous knowledge translation traditions (40). Historically, research has not always been viewed positively in Aboriginal communities and participatory approaches in the research translation components of dissemination and exchange, including the use of traditional knowledge translation methods, may overcome some of the historical mistrust. In such settings the importance of relationships, an important element of effective research translation (41), between the researchers and community members cannot be overestimated.

Research can provide answers for healthcare management and policy makers regarding what works, especially in the form of knowledge synthesis such as systematic reviews. However, other questions should also be addressed, including' how effectively?', 'how cost effectively?', 'why?' and 'in what settings?' (42). There is a need for evaluation methodologies that can provide appropriate answers or recommendations to the inquiries likely to be made by healthcare management and policies. Realist approaches to evaluation of interventions using integrated quantitative and quantitative data (mixed methods approaches) show promise and may provide decision-makers with understandings as to why an intervention worked and under what conditions, informing knowledge users of the context in which the intervention is more likely to work and therefore reducing risk (43, 44).

In the papers examined there was a lack of structured research translation strategies incorporated into study designs. Examples of 'knowledge exchange' were often outlined, consistent with participatory action research approaches recommended for research translation (45). The knowledge exchange approaches described appear to have been limited to very local reach, except for those approaches that involved representatives of peak bodies, who potentially have influence on decision making beyond the study environment. Recommendations for effective research translation approaches highlight not only the need for dissemination of information tailored for targeted audiences but the need for interaction between a wide range of stakeholders or knowledge users including decision-makers encouraging knowledge exchange at multiple levels of decision-making (46). Currently in Australia there is an unprecedented Indigenous tobacco policy environment and opportunity for research to progress policy implementation. Knowledge exchange partnerships between policy makers and researchers are exemplified by i) the Australian National Preventive Health Agency established by the Council of Australian Governments to support the development of evidence and data to monitor preventive health and evaluate preventive health interventions and ii) the national Tobacco Technical Reference Group that advises the National Coordinator of Tackling Indigenous Smoking.

6.6: Conclusions and recommendations

Australian Indigenous tobacco control research over the past decade has aligned reasonably well with established research priorities in terms of topics but performed poorly in informing the evidence base through a wide range of properly evaluated intervention studies. Clearly, to meet the Australian Government's target of halving the prevalence of smoking among Australia's Indigenous peoples by 2018, there is also an urgent need to accelerate the incorporation of new evidence into policy, health practice and community-level action which can promote behavior change as rapidly as possible. Based on the findings in this study we make the following recommendations:

- research efforts should encompass the geographical and cultural diversity of Australia's Indigenous peoples
- adequately resourced and well- designed intervention studies with a focus on efficacy are prioritised including those incorporating multiple baseline designs, participatory action and realist evaluation approaches
- greater investment is made by states and territories for research to inform specific Indigenous tobacco control measures
- study proposals are more strongly aligned with emerging research priorities

- there is continuation of regular national research priority forums, however representative of a wider range of knowledge users including policy-makers, practitioners and community-level stakeholders
- structured integrated research translation approaches are included in study designs and evaluations with dissemination strategies that enhance opportunities for knowledge exchange with decision-makers
- there is critical review of RT components to develop a method of appraisal of both their use and impacts.

Table 11: All papers included in the review of trends in Indigenous Australian tobacco research (from 2004 to 2013), identifying year of publication, first author, title, journal, journal issue, main topic of paper, output type and evidence of research translation components.

Paper Number	First Author	YEAR	TITLE	JOURNAL	ISSUE	SPECIFIC TOPIC	OUTPUT	TRANSLATION Yes/No
1	Gilchrist	2004	Aboriginal mothers, breastfeeding and smoking	Australian and New Zealand Journal for Public Health	28 (3) 225-228	Monitoring/ reporting	Descriptive	N
2	Ivers	2004	An evidence-based approach to planning tobacco interventions for Aboriginal people	Drug and Alcohol Review	23 (1) 5-9	Cessation/ treatment	Other review	Y
3	Ivers	2005	Television and delivery of health promotion programs to remote Indigenous communities	Health Promotion Journal of Australia	16 (2) 155-158	Health Promotion/ Prevention	Intervention	N
4	Ivers	2006	Evaluation of multi-component community tobacco intervention in three remote Australian Aboriginal communities	Australian and New Zealand Journal for Public Health	30 (2) 132-136	Multiple Interventions	Intervention	Y
5	DiGiacomo	2007	Stressful life events, resources, and access: key considerations in quitting smoking at an Aboriginal Medical Service	Australian and New Zealand Journal for Public Health	31 (2) 174-176	Cessation/ treatment	Intervention	Y
6	Ivers	2008	Tobacco and Aboriginal people in NSW	NSW Public Health Bulletin	19 (3-4) 65-67	Multiple Interventions	Commentary	Y
7	Jacoby	2008	The effect of passive smoking on the risk of otitis media in Aboriginal and non-Aboriginal children in the Kalgoorlie-Boulder region of Western Australia	Medical Journal of Australia	188 (10) 599-603	Passive smoking	Descriptive	N
8	Johnston	2008	Smoking behaviours in a remote Australian Indigenous community: The influence of family and other factors	Social Science and Medicine	67, 1708-1716	Smoking initiation	Descriptive	N
9	Thomas	2008	The social determinants of being an Indigenous non-smoker	Australian and New Zealand Journal for Public Health	32, 110-116	Monitoring/ reporting	Descriptive	N

10	Wills	2008	Effect of smoking among Indigenous and non-Indigenous mothers on preterm birth and full-term low birth weight	Medical Journal of Australia	189 (9) 490-494	Passive smoking	Descriptive	N
11	Wood	2008	Indigenous women and smoking during pregnancy: Knowledge, cultural context and barriers to cessation	Social Science and Medicine	66, 2378-2389	Passive smoking	Descriptive	Y
12	Clough	2009	The gap in tobacco use between remote Indigenous Australian communities and the Australian population can be closed	Tobacco Control	18(4), 335-336	Cessation/ treatment	Commentary	N
13	Gilligan	2009	Knowledge & attitudes regarding smoking during pregnancy among Aboriginal and Torres Strait Islander women	Medical Journal of Australia	190 (10) 557-561	Passive smoking	Descriptive	N
14	Hudson	2009	Tobacco smoke exposure in hospitalised Aboriginal children in Central Australia	Journal of Paediatrics and Child Health	45(4), 224-227	Passive smoking	Descriptive	N
15	Panaretto	2009	Tobacco use and measuring nicotine dependence among urban Indigenous pregnant women	Medical Journal of Australia	191(10), 554-158	Cessation/ treatment	Descriptive	N
16	Pilkington	2009	Tobacco control practices among Aboriginal health professionals in Western Australia	Australian and New Zealand Journal for Public Health	15(2), 152-158	Workforce capacity	Descriptive	N
17	Power	2009	Tobacco interventions for Indigenous Australians: a review of current evidence	Health Promotion Journal of Australia	20(3), 186-194	Multiple Interventions	Systematic Review	Y
18	Robertson	2009	Should the Pharmaceutical Benefits Advisory Committee extend the range of free nicotine replacement therapies available for Aboriginal and Torres Strait Islander people?	Medical Journal of Australia	191, 293-293	Cessation/ treatment	Commentary	N
19	Thomas	2009	Smoking prevalence trends in Indigenous Australians, 1994 - 2004: a typical rather than an exceptional epidemic	Bio Med Central - International Journal of Equity in Health	8(37)	Monitoring/ reporting	Descriptive	Y
20	Thomas	2009	Monitoring local trends in Indigenous tobacco consumption	Australian and New Zealand Journal for Public Health	33(1), 64-66	Monitoring/ reporting	Measurement	N
21	White	2009	How do trends in smoking prevalence among Indigenous and non-Indigenous Australian secondary students between 1996	Australian and New Zealand	33(2), 147-153	Monitoring/	Descriptive	Y

			and 2005 compare?	Journal for Public Health		reporting		
22	Boyle	2010	Awareness and impact of the 'Bubble wrap' advertising campaign among Aboriginal smokers in Western Australia	Tobacco Control	19, 83-86	Health promotion/ Prevention	Descriptive	Y
23	Butler	2010	Low daily smoking estimates derived from sales monitored tobacco use in six remote predominantly Aboriginal communities	Australian and New Zealand Journal for Public Health	34(S1), S71-S75	Monitoring/ reporting	Descriptive	Y
24	Fredericks	2010	Goreen Narrkwarren Ngrn-toura Healthy Family Air: a literature review	Aboriginal and Islander Health Worker Journal	34(6), 12-13	Cessation/ treatment	Commentary	N
25	Gilligan	2010	Assessing the accuracy of self-reported smoking status and impact of passive smoke exposure among pregnant Aboriginal and Torres Strait Islander women using cotinine biochemical validation	Drug and Alcohol Review	29(1), 35-40	Monitoring/ reporting	Measurement	N
26	Gussy	2010	The journey to 'Our space smoke free' environment at Wuchopperen Health Service	Aboriginal and Islander Health Worker Journal	34(5), 3-4	Tobacco Control Policies	Commentary	Y
27	Johnston	2010	What works in Indigenous tobacco control? The perceptions of remote Indigenous community members and health staff	Health Promotion Journal of Australia	21(1), 45-50	Multiple Interventions	Descriptive	Y
28	MacLaren	2010	Estimating tobacco consumption in remote Aboriginal communities using retail sales data: some challenges and opportunities	Australian and New Zealand Journal for Public Health	34(S1), S66-S70	Monitoring/ reporting	Descriptive	Y
29	MacLaren	2010	Using breath carbon monoxide to validate self-reported tobacco smoking in remote Australian Indigenous communities	Bio Med Central - Population Health Metrics	8(2)	Monitoring/ reporting	Measurement	N
30	Ratsch	2010	The pituri story: a review of the historical literature surrounding traditional Australian Aboriginal use of nicotine in Central Australia	Bio Med Central- Journal of Ethno biology and ethno medicine	6(26)	Historical use	Other review	N

31	Robertson	2010	Tackling tobacco: A call to arms for remote area nurses	Contemporary Nurse	37(1), 49-56	Workforce capacity	Commentary	Y
32	Thomas	2010	Lessons for Aboriginal tobacco control in remote communities: an evaluation of the Northern Territory 'Tobacco Project'	Australian and New Zealand Journal for Public Health	34(1), 45-49	Multiple interventions	Descriptive	N
33	Thomas	2010	Smoking and Aboriginal and Torres Strait Islander and Maori children	Journal of Paediatrics and Child Health	46(9), 516-520	Multiple interventions	Other review	N
34	Calma	2011	Tackling Indigenous smoking	Of Substance	9(2), 28-29	Multiple interventions	Commentary	N
35	Clough	2011	Can we measure daily tobacco consumption in remote Indigenous communities? Comparing self-reported tobacco consumption with community-level estimates in an Arnhem Land study	Drug and Alcohol Review	30(2), 166-172	Monitoring/ reporting	Measurement	N
36	DiGiacomo	2011	Smoking cessation in Indigenous populations of Australia, New Zealand, Canada, and the United States : Elements of effective interventions	International Journal of Environmental Research and Public Health	8(2), 388-410	Cessation/ treatment	Systematic Review	Y
37	Doyle	2011	The National Summit on tobacco smoking in prison: Australian National University, Canberra, August 2010- An Aboriginal Perspective	Aboriginal and Islander Health Worker Journal	35(3), 10	Cessation/ treatment	Commentary	Y
38	Fletcher	2011	Having a yarn about smoking: Using action research to develop a 'no smoking' policy within an Aboriginal Health Service	Health Policy	103(1), 92-97	Tobacco Control Policies	Descriptive	Y
39	Gould	2011	Jumping the hurdles for smoking cessation in pregnant Aboriginal and Torres Strait islander women in Australia	Journal of Smoking Cessation	6(1), 33-36	Cessation/ treatment	Commentary	N
40	Hearn	2011	Evaluating NSW Smoke Check: a culturally specific smoking cessation training program for health professional working in Aboriginal health	Health Promotion Journal of Australia	22(3), 189-195	Workforce Capacity	Intervention	N

41	Johnston	2011	Maternal smoking and smoking in the household during pregnancy and postpartum: findings from an Indigenous cohort in the Northern Territory	Medical Journal of Australia	194(10), 556-559	Passive smoking	Descriptive	N
42	Passey	2011	"It's almost expected': rural Australian Aboriginal women's reflections on smoking initiation and maintenance: a qualitative study	Bio Med Central- Women's Health	11(1), 55	Smoking Initiation	Descriptive	Y
43	Stewart	2011	Potential effectiveness of specific anti-smoking mass media advertisements among Australian Indigenous smokers	Health Education Research	26(6), 961 -975	Health promotion/ Prevention	Descriptive	N
44	Thomas	2011	Wholesale data for surveillance of Australian Aboriginal tobacco consumption in the Northern Territory	Tobacco Control	20(4), 291-295	Monitoring/ reporting	Measurement	Y
45	Thompson	2011	The best bang for our buck: Recommendations for the provision of training for tobacco action workers and Indigenous Health Workers	Contemporary Nurse	37(1), 90-91	Cessation/ treatment	Commentary	N
46	Thompson	2011	A review of the barriers prevention Indigenous Health Workers delivering tobacco interventions to their communities	Australian and New Zealand Journal for Public Health	35(1), 337-342	Workforce Capacity	Systematic Review	Y
47	Thrift	2011	Maternal smoking during pregnancy among Aboriginal women in New South Wales is linked to social gradient	Australian and New Zealand Journal for Public Health	35(4), 337-342	Monitoring/ reporting	Descriptive	N
48	Bond	2012	"It had to be my choice" Indigenous smoking cessation and negotiations of risk, resistance and resilience	Health Risk and Society	14(6), 556-581	Cessation/ treatment	Systematic Review	N
49	Carson	2012	Interventions for smoking cessation in Indigenous populations (Review)	The Cochrane Collaboration	(1)	Cessation/ treatment	Systematic Review	Y
50	Carson	2012	Interventions for tobacco use prevention in Indigenous youth (Review)	The Cochrane Collaboration	(8)	Cessation/ treatment	Systematic Review	Y
51	Conigrave	2012	Smoking or alcohol dependence among Indigenous Australians: Treatment may be needed, not just education	Australian and New Zealand Society of Cardiac and	21(10), 626-631	Tobacco & other drugs	Commentary	Y

				Thoracic Surgeons				
52	Dawson	2012	"I know it's bad for me and yet I do it": exploring the factors that perpetuate smoking in Aboriginal Health Workers- a qualitative study	Bio Med Central- Health Services Research	12(1), 102	Cessation/ treatment	Other review	Y
53	Eades	2012	An intensive smoking intervention for pregnant Aboriginal and Torres Strait Islander women: a randomised controlled trial	Medical Journal of Australia	197(1), 42-46	Cessation/ treatment	Intervention	N
54	Johnston	2012	Starting to smoke: a qualitative study of the experiences of Australian indigenous youth	Bio Med Central- Public Health	12(1), 963	Smoking Initiation	Descriptive	Y
55	Passey	2012	Factors associated with antenatal smoking among Aboriginal and Torres Strait Islander women in two jurisdictions	Drug and Alcohol Review	31(5), 608-616	Monitoring/ reporting	Descriptive	Y
56	Passey	2012	Knowledge, attitudes and other factors associated with assessment of tobacco smoking among pregnant Aboriginal women by health care providers; a cross-sectional survey	Bio Med Central- Public Health	12(1), 165	Cessation/ treatment	Descriptive	Y
57	Pircher	2012	Trends analysis of hospital admissions attributable to tobacco smoking, Northern Territory Aboriginal and non-Aboriginal populations, 1998 to 2009	Bio Med Central- Public Health	12(1), 545	Monitoring/ reporting	Descriptive	N
58	Robertson	2012	Translation of tobacco policy into practice in disadvantaged and marginalized subpopulations: a study of challenges and opportunities in remote Australian Indigenous communities	Bio Med Central- Health Research Policy and Systems	10, 23	Tobacco Control Policies	Descriptive	Y
59	Thomas	2012	National trends in Aboriginal and Torres Strait Islander smoking and quitting, 1994-2008	Australian and New Zealand Journal for Public Health	36(1), 24-29	Monitoring/ reporting	Descriptive	N
60	Thomas	2012	The tobacco industry and Aboriginal and Torres Strait Islander people	Medical Journal of Australia	197(1), 24-26	Tobacco Control Policies	Systematic Review	Y
61	Wise	2012	Developing and implementing a state-wide Aboriginal health promotion program: the process and factors influencing	Health Promotion Journal of Australia	23(1), 25-29	Workforce capacity	Descriptive	Y

			successful delivery					
62	Hoad	2012	Student Aboriginal health worker smoking: findings from a training college in Western Australia	Australian and New Zealand Journal for Public Health	36(3), 296-297	Monitoring/ reporting	Descriptive	N
63	Thomas	2012	Changes in smoking intensity among Aboriginal and Torres Strait Islander people, 1994 - 2008	Medical Journal of Australia	187(9), 479	Monitoring/ reporting	Descriptive	N
64	Campbell	2013	Stages of changes, smoking behaviour and readiness to quit in a large sample of Indigenous Australians living in eight remote north Queensland communities	International Journal of Environmental Research and Public Health	10(4), 1562-1571	Monitoring/ reporting	Descriptive	N
65	Cosh	2013	Aboriginal and Torres Strait Islander utilisation of the Quitline service for smoking cessation in South Australia	Australian Journal of Primary Health	19(2), 119-118	Cessation/ treatment	Descriptive	N
66	Dawson	2013	Identifying multi-level culturally appropriate smoking cessation strategies for Aboriginal health staff: a concept mapping approach	Health Education Research	28(1), 31-45	Cessation/ treatment	Descriptive	Y
67	Gould	2013	Should anti-tobacco media messages be culturally targeted for Indigenous populations? A systematic review and narrative synthesis	Tobacco Control	22(4), e7-e7.	Health Promotion/ Prevention	Systematic Review	Y
68	Gould	2013	Knowledge and views about maternal tobacco smoking and barriers for cessation in Aboriginal and Torres Strait Islander: A systematic review and meta-ethnography	Nicotine and Tobacco Research	15(5), 863-874	Cessation/ treatment	Systematic Review	Y
69	Gould	2013	"Nobody smokes in the house if there's a new baby in it": Aboriginal perspectives on tobacco smoking in pregnancy and in the household in regional NSW Australia.	Women and Birth	26(4), 246-253	Passive smoking	Other review	Y
70	Passey	2013	Supporting pregnant Aboriginal and Torres Strait islander women to quit smoking: Views of antenatal care providers and pregnant indigenous women	Maternal Child Health Journal	1-7	Cessation/ treatment	Other review	N

71	Passey	2013	How will we close the gap in smoking rates for pregnant Indigenous women?	Medical Journal of Australia	199(1), 39-41	Cessation/ treatment	Commentary	Y
72	Passey	2013	Tobacco, alcohol and cannabis use during pregnancy: Clustering of risks	Drug and Alcohol Review	134, 44-50	Tobacco & other drugs	Descriptive	N
73	Robertson	2013	Addressing high rates of smoking in remote Aboriginal communities- New evidence for GPs	Australian Family Physician	42(6), 492-496	Workforce capacity	Descriptive	Y
74	Robertson	2013	"We made the rule, we have to stick to it": Towards effective management of environmental tobacco smoke in remote Australian Aboriginal communities	International Journal of Environmental Research and Public Health	10(10), 4944-4966	Passive smoking	Descriptive	Y
75	Stevenson	2013	Aboriginal people in remote communities in Arnhem Land (Northern Territory) restrict their smoking in some environments: Implications for developing and implementing interventions to reduce exposure to environmental tobacco smoke	Drug and Alcohol Review	32(6), 627-630	Passive smoking	Descriptive	Y
76	Thomas	2013	Impact and perception of tobacco tax increase in remote Australian Aboriginal communities	Nicotine and Tobacco Research	15(6), 1099-1106	Tobacco Control Policies	Descriptive	N

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CHAPTER SEVEN: CONCLUSION

This chapter presents a summary and interpretation of the findings reported in this thesis. The strengths and limitations of the research undertaken for this thesis are also discussed.

Recommendations are made for health practice, policy development and implementation, and future research efforts related to the reduction of the high prevalence of tobacco use reported in remote Aboriginal communities.

7.1 Summary and interpretation of findings

The research described in this thesis examined the impact of a five year multiple component tobacco intervention study in three remote Aboriginal communities in Arnhem Land in the NT of Australia. This chapter presents a summary and interpretation of the findings reported in this thesis in relation to the research questions set out in Chapter 1. The strengths and limitations of the research undertaken for this thesis are also discussed.

Based on the evidence presented, recommendations are made for health practice, policy development and implementation, and future research efforts related to the reduction of the high prevalence of tobacco use reported in remote Aboriginal communities.

Question 1: What are the perceived barriers and opportunities to implementing tobacco policies in remote Australian Indigenous communities and how can these challenges be overcome and opportunities maximised?

This study (Chapter 2, paper #1) found health workforce capacity, lack of local smoking cessation support and the high prevalence of tobacco use in these settings to be the challenges most frequently mentioned among a cohort of stakeholders. However, both health workforce capacity and quit support were also mentioned frequently as opportunities.

Health workforce capacity

Challenges relating to the role of the NT health workforce in the prevention of chronic disease include inadequate staffing levels, high turn-over of staff and insufficient support for, and poor understanding of the roles of Aboriginal Health Workers (1, 2). Generally Indigenous Health Workers (IHWs) are residents of the communities in which they work, and strongly connected to other community members and service providers (3). IHWs have a significant role to play in addressing high rates to tobacco use as brokers of knowledge relating to cultural issues and concepts and medical information between Indigenous clients and non-Indigenous health staff (4). Despite IHWs' knowledge and experience, they have not often been included in decision-making processes of the services that employ them (5). A recent review of the profession recommended 'ongoing professional development, support and empowerment' of IHWs (4). Building IHW's capacity in tobacco interventions would seem a reasonable investment, as the IHWs are more likely than other health workers to remain in the community, thereby building knowledge capital that is more likely to be retained in the community. However, among IHWs who are smokers themselves, there is a reluctance to provide tobacco interventions (6, 7). As briefly reported in Chapter 3 (paper#2),

participation in cessation training has been shown to lead to quit attempts by the workers. Although this training was undertaken in less remote settings, these efforts may bear the same results with IHWs in remote communities.

Quit support

Results from the TETP baseline survey demonstrated a desire or readiness to quit among a majority of smokers (Chapter 4, paper #3), but also revealed that knowledge was limited about quit strategies and where to get support (Chapter 3, paper#2). Health workforce capacity to provide tobacco interventions can be poor in remote settings (8). In the study communities there was limited access to the intensive support recommended to those who have made previous short-lived attempts to quit. This support, available in larger Australian population centres, includes psyco-social strategies (such as tailored self-help materials), multiple sessions of counselling and/or cessation medications (9). There has been recent debate over the efficacy of professional assistance versus unassisted smoking cessation generally (10) and this may warrant further research in the specific settings of remote Aboriginal communities.

While current policies are supportive of the provision of both brief interventions, and quit support at the health service level, there is a lack of clarity about how to define these approaches, and how and whether they are properly implemented and documented (11). Federal clinical practice guidelines developed in the United States include recommendations for health system level changes to improve the delivery of tobacco cessation interventions (12). These recommendations include the identification and documentation of the smoking status of all clients, provision of cessation treatment by trained, dedicated staff and assessment of the interventions. These recommendations could also be applied in the context of clinical settings in remote communities, ensuring consistency of practice across sites.

High prevalence of tobacco use

The high prevalence rate of tobacco use in remote Aboriginal communities in the NT communities has been normalised by social, cultural and historical contexts, discussed in Chapter 1 (introduction) and Chapter 5 (paper #4). These social, cultural and historical factors were identified in Chapter 2 (paper#1) as a challenge to reducing successful implementation of tobacco control measures. Successful strategies to denormalise smoking globally have included use of news media, media education campaigns and the implementation of smoking restrictions, (13, 14) with a resultant increase in cessation attempts by smokers. An evaluation of the impact of televised tobacco

campaigns in communities similar to those participating in the TETP was undertaken using both national campaign advertisements and those specifically developed for Aboriginal people (15). Although participants reported high recall of the anti-tobacco advertising among participants, the associated cessation rate was low. A recent Australian review of mass media tobacco control campaigns indicated that their effectiveness in small population sub-groups with high rates of smoking may be limited because of both reduced exposure to the messages and lack of access to quit support (16). This highlights the need for a range of concurrent strategies. Estimation of the reach and impact of cessation media campaigns in remote communities warrants further exploration.

During the feedback of survey data to communities participating in the TETP (Chapter 5, paper #4), the depiction of community prevalence data in comparison to national rates evoked expressions of dismay and alarm. This form of feedback arose from community requests to make the research results relevant to the community. The new knowledge proved to be a powerful challenge to the normalisation of high rates of tobacco use and immediately prompted a commitment to action among some community leaders. This paper also reports community concerns expressed about the impacts of passive smoking and a readiness to further develop smoking restrictions, in keeping with those implemented in wider Australian society. As discussed in Chapter 2 (paper #1), implementation of such rules had been problematic in these settings. However, effective implementation of these regulations was also perceived by some members of the communities participating in the TETP to be associated with better health: "*They (the community) don't follow balanda [people of European descent] rules like smoke-free workplaces. We need mass education about non-smoking areas…there's more healthy lifestyle in balanda communities"* (community member, unpublished data TETP).

As reported in Chapter 2 (paper #1), the high prevalence of tobacco use is a huge challenge to those seeking to quit, with constant exposure to triggers to smoke. During the surveys and the intervention phase of the TETP many community members informed us they would need to leave the community to escape the relentless exposure to other people's smoke, and increase their chances of success in quitting. Being out in the bush also created opportunities for diversionary activities: *"Being out bush will help me get strong to quit. Being out bush you drink water, eat fish, everything. Things like chasing buffalo. When you go bush…listen to the birds…smell everything…is just fresh. And when you come back here, everything smells like smoke"* (17). The workplaces that effectively implemented smoke-free policies in the communities provided welcome respite from

exposure to ETS for those trying to quit (Chapter 5, paper #4). Of the 258 current tobacco smokers who participated in the baseline survey, half reported they restricted their smoking in one or more environment (of homes, workplaces or vehicles) settings (Chapter 5, paper #5). Evidence exists in other populations that restrictions on smoking impact on both denormalisation of smoking and encouragement of cessation (18-20). A major opportunity to reduce high rates of tobacco use in remote settings is evident when smoking restrictions are combined with a demonstrated community readiness to act. Provision of adequate resources such as signage, appropriate information for communities about the effects of exposure to ETS, staff to coordinate the development and delivery of local implementation strategies, is essential for the effective implementation of these policies.

Question 2: What are elements of good practice for clinicians undertaking tobacco interventions in remote Australian Indigenous populations?

This section will discuss clinical interventions appropriate for remote settings, based on findings from the TETP reported in Chapters 3 and 4 (papers #2 and #3). The NT Chronic Conditions Prevention and Management Strategy 2010-2020 identifies the need for health professionals to acquire increased understanding of chronic disease risk factors and to be able to take action to address these by supporting patients in healthy behavior (21). The key objective of the NT's Tobacco Action Plan 2010-2013 is to improve the access of the whole population to cessation treatments and services (22). During the life of the TETP we observed tobacco treatment services delivered to varying degrees by both Government and non-government services, and generally by doctors, rather than by nurses or clinic-based IHWs. The following story illustrates the point that nurses are playing a limited role in smoking cessation support. A Registered Nurse in a dedicated chronic disease role was invited to act as a proxy respondent in the TETP follow-up survey to identify the smoking status of community members who had participated in the baseline survey. The nurse responded: "*I wouldn't have any idea who smokes in the community*". The role of IHWs in regard to tobacco were limited to community-based education about related harms. The few community-based Aboriginal dedicated Tobacco Workers located in one of the study communities provided cessation support in homes and workplaces in the form of verbal encouragement. There are clearly untapped health professionals who could make greater contributions to the delivery of cessation support in both the clinic setting and through outreach services. The necessary systems level requirements for chronic disease risk reduction are carefully described in strategy plans but can be difficult to translate into practice in primary health care clinics in remote communities that are overcome by acute patient needs (Chapter 3, paper #2). Collaborative efforts between all health team members would likely

lead to reciprocal learning opportunities and integrated care co-ordination for cessation support, including community-based follow-up.

Clinical guidelines produced by the NT Department of Health and Families recommend use of the shortened Fagerstrom Test for Nicotine Dependence (23). Time to first cigarette on waking (TTFC) and daily consumption is estimated in order to determine the appropriate NRT dosage. A range of rapid release NRT products are recommended in the NT guidelines as well as slow-release patches. Since 2008, nicotine patches have been available at a subsidised cost for Indigenous Australians under the Pharmaceutical Benefits Scheme (PBS) (24). Since then other cessation medicines have been subsidised, excluding other NRT products. While a wide range of NRT products are available over-the-counter in less remote settings, patches and other cessation medications are only available in local health clinics. Apart from patches, it was observed in the study communities that these medications were not usually kept on-site but had to be ordered into the community. The lag time between the patient's request for support and the arrival of the medication sometimes meant opportunities were missed, due to the patient not returning to the clinic or changing their mind. Echoing other calls since 2008, a priority area for practice identified by a 2011 expert forum on Indigenous Australian tobacco control called for improved access to NRT, including more NRT products listed on the PBS (25). This will require further advocacy to achieve the desired outcome.

Patients presenting at remote community clinics who are smokers may not be ready to reduce consumption or quit. However the papers in this thesis demonstrate a readiness among many community-members, both smokers and non-smokers, to act on making environments smoke-free. This indicates: i) that even smokers are concerned about the impact their smoking may have on others and ii) that regular encouragement of smokers to avoid harming non-smokers around them by restricting smoking to outside of homes and vehicles may be well-received.

Question 3: What are the mechanisms that contribute to effective management of environmental tobacco smoke in in the context of some remote Australian Indigenous communities?
In 1981 a ground-breaking study linked passive smoking to lung cancer among non-smoking Japanese women (26). The negative health impacts of exposure to environmental tobacco smoke have since been widely reported, sparked by a burst of further studies in the 1990s (27-30). The impacts of environmental tobacco smoke have been shown to be reduced by the development of smoke-free areas in homes, workplaces and public spaces, as well as reduced daily consumption and cessation as discussed in Question 1. These restrictions can arise through private decisions,

government and non-government policies, regulations and legislation (31). Successful implementation of these policies is contingent upon increased support of the policies among the affected populations (32). In New Zealand wide-spread support of new national smoke-free legislation, including among Maori stake-holders, has been achieved through dissemination of information regarding both the legislation and the health effects of exposure to ETS (33). This information, used in mass media campaigns, was also translated into Maori language and aired on Maori channels, indicating similar strategies might be useful in Australia through media typically found in remote communities which include Indigenous community radio stations, community and local government newsletters, noticeboards and announcements by loudspeaker.

Paper 4# (Chapter 5) briefly described the process to comprehensively return baseline survey results to members of each community participating in the TETP. In response to community requests, information on tobacco-related harms, including those related to exposure to ETS, was added to the feedback information. This process is likely to have contributed to local initiatives to increase smoke-free environments during the life of the project in homes, workplaces and public spaces. Collaborative efforts between a range of stakeholders, including clan leaders, the local store committee, the store management company and the research team, resulted in a large smoke-free zone around the new community store precinct.

Under the National Partnership Agreement on Remote Indigenous Housing, nearly 1000 new homes were to be built in remote Aboriginal communities in the Northern Territory by 2013 to ease widespread overcrowding due to a severe housing shortage (34). The construction of many of these new homes was taking place in the latter stages of the TETP, invigorating interest in smoke-free homes among the potential new home owners (35). Intervention studies to examine the effectiveness of incentives to keep homes smoke-free in remote communities to reduce prevalence compared to other interventions may be useful.

For effective implementation of smoke-free policies or restrictions in workplaces or public spaces, recommendations include the training of dedicated enforcement staff to encourage compliance with the restrictions (33, 36, 37). Compliance with a smoke-free policy developed for the store precinct mentioned above (Chapter 5, paper #4) was effectively encouraged by a staff member - the security officer – who was on hand to point out signage and remind community members of the new rule that they had developed themselves. This was the only observation by the candidate of someone with a dedicated role to encourage adherence to new smoke-free rules in a remote community.

While there are programs and policies aiming to reduce exposure to ETS in Aboriginal workplaces and homes, they have not been properly evaluated (38). There is a need for further research into the development and effective implementation of smoke-free policies in remote Indigenous communities, to inform further efforts, particularly in settings where there has been little tobacco control activity.

Question 4: What types of tobacco control research among Indigenous Australian populations have been undertaken? Are these efforts aligned with identified research priorities and what evidence is there of strategies beyond peer-reviewed publication to translate the research into action?
Over the past decade, more focused efforts have been made to find ways by which new public health knowledge can be applied in a real world context more efficiently and systematically (39). Recommended research types or approaches to turn research knowledge into action in health include participatory action research, mixed methods and pragmatic trials of interventions (40-42). The review of trends in Indigenous Australian tobacco research undertaken for this thesis (Chapter 6, paper#6) reports a focus on descriptive rather than intervention research. Intervention research that can reliably inform 'real world' strategies is challenged by logistical complexities and funding constraints. There also needs to be a better balance of contribution to public health research funding by both levels of Australian Government, i.e. commonwealth and state or territory, in order to encourage an increase in intervention studies.

The foci of research reported over the past decade aligned reasonably well with research priorities identified by expert forums since 1999. From 2005 there were specific calls to address gaps in knowledge regarding effective interventions for Australian Indigenous peoples (43-45). Overall, there has been, however, a greater focus on professional cessation treatment rather than prevention. Given the challenges to quitting experienced by those tobacco users in remote communities, targeting the environment rather than the individual may be an equal or even higher priority for research efforts. Given the ethnic and geographical diversity of Australia's Indigenous peoples, the location of the research needs to be distributed more evenly. While the amount of intervention studies being undertaken in remote settings is encouraging, due to the exceptionally high rates of tobacco use in these locations, there needs to be a more proportionate focus on Indigenous peoples residing in major cities and regional settings.

Evidence of components of research (or knowledge) translation appeared in half of the papers included in the review. The most frequently occurring component was that of 'knowledge exchange'

in keeping with both Indigenous Knowledge Translation (KT) and participatory approaches. These participatory approaches to community-based research attempt to overcome the historical power imbalances between researchers and colonised communities (46-48).These approaches included working in partnership with Aboriginal co-researchers, clients, community members or reference groups. The knowledge exchange also occurred where Aboriginal people developed and/ or delivered intervention components or assisted with data interpretation and dissemination. Some of these elements of knowledge exchange incorporate Aboriginal Knowledge Translation recommendations for a democratic approach to research with researchers and community-members collaborating to produce work that is more likely to be strengths-based rather than deficit-based, useful and contextually meaningful (49,50). Dissemination strategies were rarely reported and all had very limited reach, thus limiting opportunities for knowledge exchange with a wider range of key decision-makers.

Based on the findings of this research, there appears to be a readiness to reduce tobacco use in the participating communities in order to reduce the associated harms. The discourse around tobacco shifted dramatically over the five years of the TETP research, during which time there was also a gradual increase in tobacco prevention activity outside of the project. The processes of the survey and community feedback of results contributed to the raising of general community awareness of smoking issues. At the commencement of the project, tobacco was not a high priority issue for community leaders. Awareness of the comparatively high prevalence of tobacco use in their communities, as demonstrated by the community tobacco use surveys, compared to the general Australian population prompted commitments to action. These commitments were later reinforced by agreements between communities and the Commonwealth and Territory Governments to include tobacco as a priority health issue. More than half of the current smokers were desirous of quitting at baseline. While analysis and reporting of the follow-up survey data from the TETP was not part of this thesis, unpublished preliminary analysis was undertaken to provide timely feedback to the participating communities (Chapter 5, paper #4). The preliminary analysis showed no significant change in prevalence but a marked increase in those participants thinking about or actively trying to quit, indicating a shift in attitude to change smoking status (unpublished data). Despite the TETP's efforts to provide further information on the harms related to tobacco use, including potential financial impacts, to build the capacity of health staff, and encourage the extension of smoke-free spaces, few people managed to maintain abstinence. Tobacco control efforts were enhanced by the presence in one community of dedicated Tobacco Workers. The workers were well-respected

members of the community, sat on a local planning group, and were able to actively encourage this group to keep the reduction of tobacco use a priority health issue.

The main domain of community-driven action was the further development of smoke-free spaces, indicating community readiness to own these strategies. This included effective community-driven efforts to increase the number of smoke-free public spaces. Another community developed strategies to minimize harms related to passive smoking, and incorporated these strategies into local community planning documents. While many individual smokers were ready for change, the environment provided real challenges; cultural and historical associations with tobacco use and the prevalence of other smokers prompted relapse and limited smokers' access to quit support. A useful focus in these settings, therefore, would be the extension of smoking restrictions driven by the communities. This would lead to the development of community environments that are conducive to and supportive of quitting and the prevention of uptake. Effectiveness would be increased through suitable cessation support.

In terms of raising the priority of addressing high rates of tobacco use, the tobacco surveys and the community-level feedback of survey results appeared to be a powerful intervention component, and demonstrated that the research process itself can be a catalyst for change. Dissemination of study results to key decision-makers, including those beyond the local community like policy makers and those who hold the purse-strings, may sustain successful components and encourage and resource further recommended research.

7.2: Strengths and limitations of the research

This research had a number of limitations. All participating communities were in one region of Australia and are therefore not representative of communities across Australia. Ideally the study should have encompassed more communities, but limits to funding constrained this. The sample size was small in the community tobacco use surveys and the views of the respondents might not reflect those of all community members. Participants were recruited opportunistically for the baseline survey, rather than a randomised sample, although efforts were made to ensure the participants represented age and gender quotas of each community. While the community members were mobilised into action, there was great difficulty in mobilising service providers, particularly the majority of health services, thus limiting the embedding of successful intervention components into routine practice. A further limitation was the lack of comprehensive analysis of the follow-up data which may have indicated changes in participants' restriction of smoking in particular environments

and provided further information about daily consumption and quit attempts. The candidate will assist with the analysis of qualitative components of the follow-up data, interrogation between and integration of quantitative and qualitative data sets, and contribute to further publications as part of post-graduate efforts.

A major strength of the study was the lengthy time-frame that permitted frequent returns to the community, and for the research team to work at a pace that respectfully accommodated community priorities and ceremonies. Duration of site visits was from four to eight days quarterly, enabling better engagement by the research team with community members who were regularly exposed to a high-turnover of many specialist staff flying in and out on the same day. One Traditional Owner, in response to a research member's enquiry about ways to improve the intervention components, replied: "*Just keep coming back"*. The five year period also permitted ongoing capacity-building of health staff and the newly recruited Tobacco Workers at a pace that incorporated local methods of knowledge exchange, including story-telling, translation and lengthy discussion. There was also opportunity provided to engage regularly with community leaders to discuss project findings, and also report to them community suggestions for action. Community-driven initiatives arose from this process in two communities, described in Chapter 5 (paper #4). The lengthier engagement also engendered relationships of trust between the researchers and community members. This may have contributed to the interest in information provided during community-level feedback of the survey results and the willingness to engage in thoughtful discussions of the meaning and implications of these results. The candidate was the only member of the team, apart from the Chief Investigator, that was involved throughout the course of the entire project. The five-year time-frame lead to the development of professional and personal relationships in unique and powerful cultural contexts. This was important because the relationships of trust built with community members and service providers contributed to an improved participatory approach to the research process, including the development of research dissemination strategies.

Australia's peak body for supporting health and medical research, the National Health and Medical Research Council of Australia, has facilitated the development of a strategic framework to guide Aboriginal and Torres Strait Islander health research, underpinned by a set of principles to reduce the disparities in health status between Australians in general and Indigenous Australians (51). These principles are set out in Table 13. The research processes utilised in the TETP demonstrates some alignment with these principles through the provision of employment opportunities over the life of the project and the building of the research capacity of those involved. Use of local

translators and interpreters ensured appropriate contextualisation of the results. Community advice was sought and followed faithfully regarding the conduct of the research, and presentation and dissemination of the results at the local level. The flexible study design permitted adaptation of intervention components in response to community suggestions for action. The research findings were first disseminated back to the communities involved before wider distribution. The comprehensive feedback process of local, rather than national data, contributed to a sense of ownership of the data and informed community-driven action (Chapter 5, paper #4), as acknowledged by a community leader on the last site visit of the project: *"Sometimes people can do a survey or other research and don't work WITH us. But we Yolngu have the bigger picture. This is really encouraging. We can build on this (research) and make it bigger".*

Table 13: Principles for Aboriginal and Torres Strait Islander Health Research (NHMRC: Values and Ethics: Guidelines for Ethical Conduct in Aboriginal and Torres Strait Islander Health Research (2003)

1. Health being conceived of as "… not just the physical wellbeing of the body but a whole of life view, which embraces the life, death, life concept."
2. Community involvement in the development, conduct and communication of the research.
3. Communication of research plans, progress and results.
4. Ethical research aiming to be of practical value to Aboriginal and Torres Strait Islander peoples and their service providers.
5. Research support including the enhanced development of skills, knowledge and capacity in the Aboriginal and Torres Strait Islander research workforce.
6. A focus on identifying 'positive models' or examples of success.

Based on the studies reported in this thesis, recommendations are made below for health practice, policy development and implementation, community mobilization and research efforts.

7.3: Recommendations for health practice

- The smoking status of all patients in remote community health services should be recorded routinely. All smokers should be engaged in brief interventions accompanied by offers of quit support.
- The cultural context of tobacco use should be acknowledged and incorporated into care plans.
- Estimates of daily consumption may require clarification of amounts of tobacco shared in order to ascertain the amount actually consumed.
- Ensure those patients prescribed cessation medications have a clear understanding of what constitutes effective use. For those patients who are recommended NRT, ensure they have an understanding of withdrawal symptoms in order to achieve effective dosage.
- Provide community-based follow-up in collaboration with IHWs for those people actively trying to quit.
- Employ public health approaches by actively encouraging smoke-free homes and vehicles, and developing community-based initiatives engaging a range of stakeholders.
- Engage in reciprocal learning and mentoring approaches with Indigenous staff.

7.4: Recommendations for policy development and implementation

- Acknowledgement of both the cultural and geographical diversity of Australia's Indigenous peoples in order to avoid a 'one size fits all' approach.
- An increase in the range of nicotine replacement therapies currently authority-listed for Australian Indigenous peoples by the Pharmaceutical Benefits Advisory committee.
- Use identified successful models of practice to adapt cost-effective cessation services such as centralised telephone quit support suited to Indigenous clients. These strategies have included community-level promotion of the services along with Indigenous counsellors.
- Extension of the national Indigenous Chronic Disease Package's funding for Tobacco Worker positions, targeting remote communities where prevalence remains the highest in the country.
- Support for whole-of-community approaches.
- Efforts to increase and effectively implement smoke-free policies should be adequately resourced at the community level.

7.5: Recommendations for community mobilisation

- Undertake community tobacco surveys and feedback the results to raise the profile of the issue in these settings. Surveys could be undertaken by school students, health or local council staff.
- Locally developed models to improve health literacy of communities. These may include the use of hand-held expired breath carbon monoxide monitors.
- The development and implementation of community-driven initiatives to provide incentives for smoke-free homes.

7.6: Recommendations for research

- Funding of more intervention studies that can both credibly inform the evidence base, particularly around prevention and non-clinical approaches to cessation.
- Funding of research undertakings that allow suitable time frames to effectively engage with communities in participatory approaches.
- Further research into the levels of nicotine dependence in these settings.
- Incorporation of comprehensive research translation strategies in the research study designs, targeting key knowledge users at all levels of decision-making.
- Capacity building to enable active participation by remote community members in all parts of the research cycle.

7.7: Chapter 7 References

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