Screening and brief intervention in Aboriginal Primary Health Care: towards evidence-based practice

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Screening and brief intervention in Aboriginal Primary Health Care: towards evidence-based practice

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Background: While the disproportionately high burden of Smoking, poor Nutrition, Alcohol misuse and Physical inactivity (SNAP risk factors) related harm borne by Indigenous Australian communities has been documented over many years; attempts to redress this imbalance appear to have been inadequate to date. Therefore, there is a clear need for well controlled intervention and dissemination efforts in this area. Given the evidence that brief intervention is effective at modifying health risk behaviours among non-Indigenous Australians, its feasibility and effectiveness for Indigenous Australians should be determined. Implementing brief intervention into Aboriginal Community Controlled Health Services (ACCHSs), as an evidence-based strategy using established resources, would appear a logical and critical step before evaluating its effectiveness for reducing SNAP related-harm in the Indigenous Australian community.

Aims: Examine the process of implementing and adapting an intervention to enhance delivery of evidence-based screening and brief intervention for SNAP risk factors in ACCHSs.

Methods: Action Research using qualitative methods in an emergent and developmental manner in one regional and one rural ACCHS.

Results: Qualitative findings and an examination of the literature informed the development of a multi-component intervention comprising training, provision of brief intervention materials, influential colleagues, educational outreach, and audit and feedback. Of the five intervention strategies, training and the provision of brief intervention materials were effectively implemented in both ACCHS. The effective implementation of educational outreach in one ACCHS facilitated the involvement of health professionals in tailoring preventive health care screening items, checklists and prompts, and increased the involvement of Aboriginal health workers (AHWs) in delivering the Adult Health Check. Less than optimal Information Technology (IT) systems in both ACCHSs presented a major barrier to auditing preventive health care processes, and providing timely and accurate feedback of preventive health care performance to health professionals.

Conclusion: ACCHSs can implement significant changes in their practice environments to facilitate evidence-based screening and brief intervention. Crucial components for creating change in ACCHSs participating in this study were systems tailoring, educational outreach and influential colleagues. This study produced subjective benefits to participating ACCHSs as well as a worked-up multi-component intervention that can now be more widely tested.

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Appendices

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Abbreviations

ABS	Australian Bureau of Statistics
AH&MRC	Aboriginal Health and Medical Research Council
ACCHS	Aboriginal Community Controlled Health Services
Admin	Administration
AERF	Alcohol Education Rehabilitation, the Foundation
AGDHA	Australian Government Department of Health and Ageing
AHW	Aboriginal health worker
AIHW	Australian Institute of Health & Welfare
AMA	Australian Medical Association
AMS	Aboriginal Medical Service
AOD	Alcohol and other Drugs
AUDIT	Alcohol Use Disorders Identification Test
AUDIT-C	Alcohol Use Disorders Identification Test-Consumption
CCCTR	Cochrane Controlled Trials Register
CDSR	Cochrane Database of Systematic Reviews
CEO	Chief Executive Officer
CME	Continuing Medical Education
CO	Carbon Monoxide
D&A	Drug and Alcohol
EN	Enrolled Nurse
EPC	Enhanced Primary Care
FAS	Fetal Alcohol Syndrome
Five As	Ask, Assess, Advise, Assist and Arrange Follow-up
FLAGS	Feedback, Listen, Advice, Goals and Strategies
Four As	Ask, Assess, Advise and Assist
FRAMES	Feedback, Responsibility, Advice, Menu, Empathy and Self-efficacy
GP	General Practitioner
IRIS	Indigenous Risk Impact Screen
IT	Information Technology

MBS	Medicare Benefit Schedule
MD	Medical Director
NACCHO	National Aboriginal Community Controlled Health Organisation
NATSIHS	National Aboriginal and Torres Strait Islander Health Survey
NDARC	National Drug and Alcohol Research Centre
NDSHS	National Drug Strategy Household Survey
NHF	National Heart Foundation
NHMRC	National Health & Medical Research Council
NRT	Nicotine Replacement Therapy
NSW	New South Wales
OM	Otitis Media
PAR	Participatory Action Research
PIRS	Patient Information Recall Systems
RCT	Randomised Controlled Trial
RN	Registered Nurse
SBI	Screening and brief intervention
SNAP risk factors	Smoking, poor Nutrition, Alcohol misuse and Physical inactivity
STI	Sexually transmitted infections
SIDS	Sudden Infant Death Syndrome
UNICEF	United Nations International Children's Emergency Fund
UNSW	University of New South Wales
WHO	World Health Organization

Background to thesis

The work embodied in this thesis evolved from a project grant awarded by the Alcohol Education Rehabilitation Foundation (AER the Foundation Ltd) to develop an evidence-based brief intervention for SNAP risk factors (Smoking, poor Nutrition, Alcohol misuse and Physical inactivity) suitable for Aboriginal Community Controlled Health Services (ACCHSs). The researchers awarded the grant included Dr Rowena Ivers, Professor Robyn Richmond (School of Public Health & Community Medicine, UNSW), Dr Anthony Shakeshaft (National Drug & Alcohol Research Centre [NDARC], UNSW) and Professor Richard Mattick (NDARC, UNSW). In late 2003, management of the Healthy Lifestyle Project was transferred to Associate Professor Lisa Jackson Pulver, Director of Muru Marri Indigenous Health Unit (Faculty of Medicine, UNSW), who invited me to be a co-researcher on the project. In March 2003, I began working as a part-time Research Fellow in the Muru Marri Indigenous Health Unit, shortly after enrolling full-time in a doctoral program in the School of Public Health & Community Medicine, UNSW. The Healthy Lifestyle Project comprised a component of the early part of my doctoral thesis, but it was necessary to extend the parameters of this project to better address the unique needs and circumstances of individual Aboriginal Community Controlled Health Services participating in the project.

In June 2005, I was awarded an Aboriginal and Torres Strait Islander post-graduate training scholarship from the National Health and Medical Research Council (NHMRC). In March 2007, based on preliminary qualitative findings of this thesis, Dr Anthony Shakeshaft and I received funding from the Australian Government Department of Health and Ageing (AGDHA) to conduct a pilot study of integrating the Alcohol Treatment Guidelines for Indigenous Australians in ACCHSs. Some preliminary results of this pilot study are reported in Chapter Seven.

Synopsis

The primary aim of this thesis is to examine the process of implementing an intervention to enhance the dissemination of evidence-based SBI for Smoking, poor Nutrition, Alcohol misuse, poor Nutrition and Physical inactivity (SNAP) in Aboriginal Community Controlled Health Services (ACCHS), describing the level of tailoring required to optimise the likelihood of the integration and sustainability of evidence-based SBI in routine clinical care.

This thesis consists of three key sections. The first section, Chapters One to Three, identifies key issues pertaining to dissemination and intervention research in the Indigenous health field, and examines the quality of dissemination and intervention research and brief intervention materials targeting Indigenous Australian communities. Chapters Two and Three have been written in the style of a journal article.

The second section, Chapter Four, describes action research, reviews action research studies undertaken in the Indigenous health field and outlines the action research design applied in the primary research component of this thesis.

The third section, Chapters Five to Eight, describe an action research study examining the implementation of an intervention to enhance evidence-based screening and brief intervention (SBI) for SNAP risk factors in one regional and one rural ACCHS. Chapters Five to Seven have been written in the style of a journal article in an attempt to make more explicit the findings of each stage of action research inquiry and their implications for subsequent stages. The implications of this action research study are discussed in Chapter Eight.

Chapter One presents epidemiological data pertaining to SNAP risk factors in the Indigenous Australian context, highlighting the disproportionate burden of SNAP-related harm borne by Indigenous Australian communities. It outlines the evidence for the cost-effectiveness of brief intervention as a secondary preventive strategy to reduce SNAP related harm in the non-Indigenous Australian community. Chapter One identifies the main problems encountered in previous efforts to disseminate brief intervention into routine clinical care, both in Indigenous and non-Indigenous health

care settings. It also identifies four broad approaches that have been applied to address these problems. Chapter One argues that, given compelling evidence that brief intervention is effective at reducing SNAP-related harm in non-Indigenous Australian communities, its feasibility and effectiveness for Indigenous Australian communities should be established. As such, an opportunity exists to examine the process of implementing brief intervention as an evidence-based strategy in ACCHSs.

Chapter Two describes and reviews the methodological and contextual aspects of intervention and dissemination studies targeting Smoking, poor Nutrition, Alcohol misuse and/or Physical inactivity (SNAP risk factors) in the Indigenous Australian population, and examines the effects of these studies on reducing SNAP related harm in Indigenous Australian communities. The findings of this chapter identify specific methodological weaknesses of evaluations of SNAP interventions among Indigenous Australians, and describe current mechanisms for disseminating cost-effective interventions in Indigenous health care settings.

Chapter Three describes and reviews the components of brief intervention kits specifically designed to reduce SNAP-related harm among Indigenous Australians, and discusses the broader implications of these findings for the dissemination of brief intervention in Indigenous health care settings.

Chapter Four defines the purpose and process of action research and describes how action research is being used to identify problems, implement solutions and monitor process and outcomes of change in primary health care settings. Intervention action research studies implemented in Indigenous Australian communities are reviewed, with the implications of key findings for future action research in Indigenous Australian communities discussed. This chapter concludes with an overview of the action research design, including methods, data sources and data analysis, employed in this thesis.

Chapter Five describes the service characteristics and activities of one rural and one regional Aboriginal Community Controlled Health Service. Organisational structure, roles of health professionals, systems and processes for preventive health care, episodes of care, client contacts and preventive health care delivery are described. Health professionals' knowledge, attitudes and practices in screening and brief intervention for

SNAP risk factors are examined, and their interest in and preferences for ongoing education and training in prevention identified.

Chapter Six is a qualitative analysis of health professional, management and client perceptions of factors that influence evidence-based SBI for SNAP risk factors in one rural and one regional ACCHS. Qualitative findings, a collective group process, and evidence from the literature informed the selection of evidence-based strategies to reduce barriers and reinforce enablers to evidence-based SBI for SNAP risk factors in each ACCHS. One process for combining these strategies into a multi-component intervention for implementation in each ACCHS is described.

Chapter Seven examines the process of implementing and adapting the multi-component intervention to improve SBI for SNAP risk factors in one rural and one regional ACCHS. An action research approach, using a variety of qualitative methods in an emergent and developmental manner in collaboration with each ACCHS, was employed to monitor and assess implementation of the multi-component intervention.

Chapter Eight links the key findings of each chapter and discusses their implications for future efforts to implement evidence-based SBI in ACCHSs.

Chapter One

Introduction

BACKGROUND

Indigenous Australians (Aboriginal and Torres Strait Islander peoples) have the poorest health outcomes of any identifiable group in Australia.[1] The key social determinants of poor Indigenous health status include low levels of education, high rates of unemployment, low household income and poor access to suitable housing.[2] These social determinants interact with risk behaviours, [3, 4] contributing to premature and excess Indigenous mortality and morbidity from chronic diseases, such as diabetes, cardiovascular disease, cancers and renal disease. [5] Smoking, poor Nutrition, Alcohol misuse and Physical inactivity (SNAP risk factors) are universally recognised as key risk behaviours for chronic disease. [6] SNAP risk factors are disproportionately higher among the Indigenous population than the non-Indigenous population, and are more likely to co-exist in Indigenous individuals. [7]

The negative impacts of the interaction of Indigenous social disadvantage with SNAP risk factors on the burden of chronic disease in the Indigenous population is worsened by Indigenous Australians' limited access to cost-effective interventions. [8, 9] Therefore, although the high burden of chronic disease and related risk factors among Indigenous Australians means there is great potential for them to benefit from cost-effective interventions, their access to these interventions is less than optimal. [10-12]

There is relatively strong evidence from the non-Indigenous population that screening and brief intervention (SBI) cost-effectively reduces SNAP related harm, [13-17] yet its cost-effectiveness at reducing SNAP related harm among Indigenous Australians is yet to be adequately determined. Implementing SBI to cost-effectively reduce SNAP-related harm among the Indigenous Australian population, based on evidence engendered in the non-Indigenous population, requires knowledge about what approach/es is/are most likely to ensure its integration in services delivering health care to Indigenous Australians. Without this knowledge, SBI is unlikely to be adopted into the provision of routine health care to Indigenous Australians, limiting the extent to which it will improve health outcomes among Indigenous individuals, defined Indigenous groups at increased-risk of harm, and the broader Indigenous Australian community.

Given this high level of uncertainty regarding the feasibility of implementing evidence-based SBI in Indigenous health care settings, this thesis will employ action research methodology to examine the process of implementing an intervention to enhance the implementation of evidence-based screening and brief intervention (SBI) for Smoking, poor Nutrition, Alcohol misuse, poor Nutrition and Physical inactivity (SNAP) in Aboriginal Community Controlled Health Services (ACCHS), describing the level of tailoring required to optimise the likelihood of the integration and sustainability of evidence-based SBI in routine clinical care.

SNAP risk factors among Indigenous Australians

Smoking

The percentage of smokers in the Indigenous population aged ≥ 15 years is 51% compared to 18% in the non-Indigenous population, [7] with up to 80% of Indigenous people reporting to be smoking in some Indigenous communities [18]. Tobacco use is a leading cause of premature morbidity and mortality among Indigenous Australians, [18] with evidence that smoking-related cancer deaths are increasing in some Indigenous Australian populations. [19] Overall, estimates suggest that tobacco-related disease accounts for between 1.5 times and eight times more deaths in the Indigenous population than in the non-Indigenous population. [20]

Alcohol

Various studies have attempted to accurately quantify the impact of alcohol on Indigenous Australians in terms of the extent of use and the magnitude of consequent harm, as well as the association between patterns of use and types of harm. Data from the 1994 National Drug Strategy Household Survey (NDSHS), [21] considered the most reliable in regard to Indigenous drinking, [22] found 59% of Indigenous Australians aged 13 years and older identified alcohol as one of the main health problems faced by their community. In terms of the patterns of alcohol use, data indicate that while the proportion of the Indigenous Australian population that consume alcohol is less than in the non-Indigenous Australian population, a greater proportion of Indigenous Australian drinkers consume alcohol to harmful levels. More specifically, 38% of respondents

reported they were abstinent, 11% reported drinking at low-risk levels and 51% reported drinking at high-risk levels. [21] One indicator of the difficulty in obtaining reliable and valid data on rates of Indigenous drinking is evident in subsequently collected data, showing only 15% of Indigenous people aged 15 years and over reported risky/high risk alcohol consumption in the past 12 months. [7]

By way of comparison with the 1994 Indigenous-specific alcohol consumption patterns, data for the general Australian community from the most recent NDSHS indicates abstinent, low-risk and risky or high-risk drinking rates of 16%, 74% and 10% respectively [7]. The extent of comparability between the 1994 Indigenous-specific survey and the 2005 NDSHS might be questioned given that definitions of risky and high-risk drinking have generally become more conservative over time. [23, 24] However, the most likely consequence is that a higher proportion of Indigenous Australians would meet current definitions for risky and high-risk drinking. Specifically, it appears that Indigenous Australians are approximately twice as likely to consume alcohol at a level that increases their risk of harm in the long term and approximately 1.5 times as likely to consume alcohol in a manner that increases their risk of harm in the short term [7].

Nutrition and Physical activity

Many of the leading causes of ill-health and chronic disease among Indigenous Australians, such as obesity, diabetes, cardiovascular disease and renal disease are nutrition-related. [7] Disproportionate rates of poor nutrition among Indigenous Australians are evident across all life stages, [25] with under-nutrition during fetal and infant development and over nutrition in adulthood implicated in the early onset of biological precursors to chronic disease in Indigenous adults. [25, 26] For example, obesity, is closely related to key risk factors for cardiovascular disease and Type 2 diabetes,[27] the two leading causes of mortality and morbidity in the Indigenous population.[1] Despite this close relationship between poor nutrition and chronic disease, data on nutrition among Indigenous Australians is limited. [25] Given that an increase in the consumption of sugar and saturated fats are implicated in rising levels of overweight and obesity at the population level, [17] data on the extent of overweight

and obesity in the Indigenous Australian population provides some indication of dietary intake. The National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) reported that obesity is an increasing problem in the Indigenous Australian population, [5] suggesting an increase in the proportion of Indigenous Australians who consume a diet high in refined carbohydrates fats and sugar Although the proportion of Indigenous Australians who were overweight or obese (57%) was only slightly higher than the proportion of non-Indigenous Australians (52%), a significantly greater proportion of Indigenous Australians were classified as obese (29%) than were non-Indigenous Australians (19%). [5] One factor most likely contributing to this disparity is physical activity levels, with a significantly greater proportion of Indigenous Australians reporting to be sedentary or exercising at low levels (78%) compared to non-Indigenous Australians (69%). [1] More specifically, the level of sedentary physical activity reported by Indigenous people increased from 37% to 47% for the period 200-01 to 2004-05, but only from 31% to 33% for non-Indigenous people for the same period.[5]

Co-occurrence of SNAP risk factors

The clustering of SNAP risk factors in individuals is common among Indigenous Australians. For example, in 2002, Indigenous Australians who had used alcohol at risky levels in the previous 12 months were more likely than those who had used alcohol to low risk levels to smoke regularly, (67% compared to 50%), be physically inactive (59% compared with 45%), and use illicit substances (41% compared with 25%). [7] Furthermore, the effects of multiple SNAP risk factors are typically cumulative, and extend beyond the individual to family and community. For example, the excessive consumption of alcohol has important nutritional implications for the individual, [28] as well as negative social impacts on families and communities, such as increased risk of exposure to violence. [29]

Reducing SNAP-related harm among Indigenous Australians

Research issues

The disproportionately high burden of SNAP related harm borne by Indigenous Australian communities highlights the urgent need for evidence-based, cost-effective interventions to reduce this level of harm. Although Indigenous health and social disadvantage associated with SNAP risk factors have been documented over many years, attempts to redress this imbalance appear to have been inadequate to date. A 2006 critical review of Indigenous health research found that the majority of publications in this field have been descriptive, rather than focused on measurement or intervention, and that this pattern of research output has persisted over time. [30] In 1997-1998, for example, 75% of publications were descriptive, 7% were measurement and 18% were intervention studies. While the overall number of publications was greater in 2001-2003 (101 compared to 80), the type of studies remained similar: 78% descriptive, 9% measurement and 13% intervention. The principal problem with this trend is that, contrary to what might reasonably be expected, research efforts appear not to have progressed over time from describing health issues to generating data on how positive change might be facilitated. [30] In addition, the relatively little effort that has been expended in developing reliable and valid standardised measurement instruments specific to Indigenous Australians, suggests that the accuracy of descriptive data and intervention outcomes is questionable, while comparison across studies is difficult. [31]

In addition to the relative lack of intervention and measurement research, previous reviews have identified a number of methodological limitations with the intervention studies which comprise this body of literature. In 2000, a review specifically of alcohol interventions among Indigenous Australians identified 14 evaluations which had appeared to date in a range of both peer-reviewed and non-peer-reviewed publications. [32] This review indicated that a range of intervention strategies have been employed in conjunction with Aboriginal communities, including treatments based on abstinence principles, health promotion activities, acute interventions and supply reduction strategies. Despite some encouraging results, the review concluded that an insufficient number of intervention evaluations appear to have been conducted, and that the evaluations which have been undertaken are of insufficient methodological rigour to allow the results to be confidently generalised. [32]

Effectiveness Issues

Since adequate Indigenous-specific, evidence-based interventions are yet to be identified, a logical progression might be to apply evidence distilled from intervention trials in non-Indigenous populations to the Indigenous Australian population. A compelling argument for this approach is clearly delineated by the augmentation of a number of factors: the lack of methodologically rigorous intervention trials in Indigenous specific settings; [32, 33] the widening gap between the burden of harm experienced by Indigenous Australians relative to non-Indigenous Australians; [5] and the inevitable delay between the call for intervention research effort and the dissemination of cost-effective strategies. [31]

Nevertheless, advocating the uptake of interventions into practice that are not supported by adequately rigorous intervention trials conducted in relevant populations is controversial, requiring an extraordinarily high degree of caution. On the one hand, there is the increased risk of adverse events, primarily associated with Indigenous peoples being subjected to interventions with lesser levels of evidence than has been applied to non-Indigenous peoples. Indeed, different levels of risk for adverse reactions to cardiovascular drugs have been shown among different ethnic groups, with the possibility that these differences are genetic, cultural or both. [34] For example, in relation to alcohol policy in Australia, the impact of historical events and cultural differences between Indigenous and non-Indigenous Australians in inhibiting the dissemination of national alcohol and other health-related policies to Indigenous communities has been clearly articulated. [10] On the other hand, there are clear examples of public health benefits resulting from the implementation of interventions with no evidence of their effectiveness from randomised trials, or the implementation of interventions into populations that differ from those in which the intervention evidence was obtained. [35] One solution, to this question as to how rigorous and relevant the evidence should be before implementing an intervention, is to advocate those strategies for which the positive consequences are likely to outweigh the negative. [36]

Implementation Issues

Determining the likely consequences of implementing SNAP interventions in Indigenous-specific health settings requires an examination of whether there are interventions from non-Indigenous settings with sufficient evidence for their effectiveness, and little likelihood of deleterious outcomes should they not translate well to Indigenous Australian communities. Methodologically rigorous intervention trials in smoking, nutrition, alcohol and physical activity more generally are relatively rare in comparison to the proportion of descriptive research. [37] In general terms, intervention efforts can broadly be classified as primary (eg. education, legislation), secondary (eg. brief intervention in general practice) or tertiary (eg. therapeutic communities) level strategies. [38] Of these, the evidence base is relatively weak for both primary and tertiary level interventions, and there is uncertainty as to how these approaches would translate to Indigenous Australian communities. For example, for alcohol, a volumetric tax (primary level intervention) is likely to have differential effects on communities of lower, compared to higher socio-economic status, while there are currently no data deriving from randomised trials on the appropriateness and physiological impacts of pharmacotherapies for Indigenous Australians (tertiary level intervention). Despite this uncertainty, the prevention of alcohol problems in Indigenous Australian communities continues to emphasise primary and tertiary prevention.[10, 32] In contrast, there is relatively strong evidence from non-Indigenous settings for the cost-effectiveness of secondary level interventions, particularly brief intervention, [13] yet this intervention appears to be underutilised in Indigenous settings. [10, 12]

Brief intervention— definition and effectiveness

Although difficult to define accurately, brief intervention describes a range of activities typically delivered in primary health care settings, such as general practice, community counselling and hospital emergency departments, and targeting individuals who may not be presenting specifically for a related problem. [39]

There have been some attempts to distinguish between different types of brief intervention or identify constructs common to all of them. [40] Typically, brief intervention activities might include screening, the provision of brief advice, referral to

specialist support where indicated and counselling techniques, such as motivational interviewing. [16]

Brief intervention for Smoking

Brief interventions for smoking (<5 minutes) delivered by doctors are effective in increasing the number and success of smoking cessation attempts, and preventing relapse. [15] Pharmacological interventions, prescribing nicotine gum or patch and/or medication for nicotine dependent smokers, can significantly increase the success of cessation attempts. [41] Self-help materials are most likely to be effective when tailored to the needs and cessation stages of the individual. While the weight of evidence pertains to doctors, [14] there is some evidence that brief intervention for smoking can be effective when delivered by other types of health professionals, [42] suggesting that the key components of brief intervention for smoking are transferable across a range of health professions and health care settings. Indeed, implementing training and systems to facilitate the incorporation of brief intervention for smoking into routine health care seems more critical for increasing the likelihood of patients being asked about their tobacco use and given advice and/or counselling to encourage and support their quit attempts, than does the role of the health professional or type of health care setting. [14, 43]

Brief intervention for poor Nutrition

The results of one systematic review found that nutrition interventions were particularly effective, at least in the short term, at improving dietary intake among individuals already at high risk of disease. [44] Although this review included studies assessing the effectiveness of a range of nutrition interventions, 50% of studies were a type of brief intervention, such as nutrition counselling in primary care, behavioural interventions, or computer tailored nutrition education. There is also some evidence that simple healthy lifestyle prompts delivered by General Practitioners (GPs) in primary care are effective at increasing fruit and vegetable intake among patients. [45] Despite evidence suggesting that brief intervention can encourage patients to improve their dietary intake,

one Australian study found that General Practitioners (GPs) seldom discuss the benefits of healthy eating with their patients. [46]

Brief intervention for Alcohol misuse

Brief intervention is an integral component of recommended approaches to prevent and treat alcohol misuse. [47] [48] Screening for excessive alcohol consumption, followed by advice and/or counselling to those drinking hazardously to reduce their consumption, continues to prove effective in reducing both alcohol consumption and alcohol-related harm. [49] Brief intervention has shown to be most effective in reducing alcohol consumption among non-dependent drinkers who are not seeking treatment. [40] Although brief intervention is much less effective at reducing alcohol-related harm among dependent drinkers, it can be a useful predecessor to more intensive and specialist treatment. [40] With regards to reducing alcohol-related harm, brief intervention is particularly effective at reducing alcohol-related problems in low-dependent drinkers, the group of alcohol consumers who experience the greatest burden of alcohol-related harm. [50] More specifically, brief intervention for alcohol has been shown to reduce alcohol-related trauma, [51] hospitalisations, [52] and deaths. [53]

Brief intervention for Physical inactivity

There is some evidence that brief advice from doctors can lead to short-term improvements in the physical activity levels of sedentary people, particularly when the primary focus is on physical activity. [54] Interventions that promote moderate levels of physical activity and do not require attendance at a specialised facility appear more likely to be successful, with one randomised controlled trial (RCT) of physical activity in general practice demonstrating that patients who received an exercise prescription had higher levels of physical activity and quality of life after 12 months than those who did not. [55] Individualised physical activity advice by an exercise specialist in primary care has also proven to be effective at increasing physical activity levels in older Australians over the long term [56].

Brief intervention in Indigenous health care settings

Given the strength of the evidence base for brief interventions in non-Indigenous populations, along with the relatively small likelihood of negative consequences resulting from providing brief advice to individuals at risk of SNAP-related harm, especially by trained health professionals in health care settings, the feasibility of implementing this type of intervention in Indigenous health care settings ought to be thoroughly examined. Indeed, brief intervention has already been recommended for use in Indigenous-specific communities, with guidelines and resources to support its implementation into Indigenous health care settings developed. [48, 57] Furthermore, brief intervention has been utilised in some health services delivering health care to Indigenous Australians: a 1998 survey of 29 agencies primarily servicing Aboriginal people found that approximately half of these were offering a range of treatment options for alcohol problems, which in some cases included brief intervention,[11] and the methodological review of SNAP interventions reported in Chapter Two of this thesis identified three evaluations of brief intervention for smoking in Indigenous health care settings. Although this provides some evidence of the use of brief intervention in Indigenous health care settings over at least the previous 10 years, the need for a formal evaluation of the cost-effectiveness of brief intervention in reducing SNAP-related harm among the Indigenous Australian population remains. Despite this lack of formal evidence, there appears to be some consensus that, on balance, brief interventions are likely to provide more benefit than harm for Indigenous Australians. [11, 32, 33, 58] Aboriginal Community Controlled Health Services (ACCHS) would seem to be an appropriate place to offer brief interventions to Indigenous Australians, since there is evidence that Indigenous Australians typically prefer to seek health care in community-based, rather than private GP settings. [59]

Barriers to implementing brief intervention

Despite the compelling evidence that brief interventions are cost-effective in non-Indigenous settings, their dissemination into mainstream primary care practice has been, and continues to be, problematic. [39, 60] In general terms, dissemination refers to the uptake of evidenced-based interventions by health professionals and their adoption and continued use in clinical care. [60] Although dissemination is a relatively new field of study, it is now clear that the development and publication of new knowledge is insufficient to change clinical practice initially, [61] while barriers to the ongoing maintenance of change over time have also been identified. [60, 62] A number of specific reasons for the difficulty in modifying and maintaining changes in health professionals' practices have been articulated in the research literature, and can be broadly categorised into factors associated with individual health professionals (e.g. a lack of time and perceived lack of knowledge and self-efficacy); [63] the organisation (e.g. factors in the practice environment that make the desired change difficult, such as inefficient systems and processes to facilitate systematic prevention and treatment activities); the external environment (e.g. factors in the health care system that impact upon the capacity of an organisation to implement and maintain the necessary systems and processes to facilitate prevention and treatment activities, such as lack of funding and skilled workforce shortages); and the patient (e.g. their preferences for clinical care). [64, 65]

Overcoming barriers to implementing brief intervention

Research in primary care settings has shown that although barriers to the provision of preventive health care are numerous, complex and dynamic, they can be modified to promote changes and improvements in health professionals' practices. [66, 67] Although there is no single strategy or combination of strategies identified to date that will successfully overcome these barriers, those for which there is at least some evidence of effectiveness can be categorised under four broad approaches: education and training, social influence, quality assurance, and targeted approaches. [67]

Education and training

Education is a broad term underpinned by multiple theories of learning. Adult learning theories inform strategies for the ongoing education and training of health professionals. [68] Educational strategies are generally one of two broad types: passive information transfer and interactive or participatory information transfer. [69] Both strategies predispose health professionals to think about change, and can be used to reinforce change once it has occurred.

Passive information transfer refers to the transmission of knowledge, such as the distribution of educational materials and didactic teaching methods. The role of the educator is to transmit knowledge through the provision of information and the role the health professional is to receive this knowledge and use it to improve his/her performance. However, passive information transfer strategies alone rarely result in significant changes in health professionals' performance. [68]

Participatory and interactive strategies of information transfer involve interaction between the educator and the learner. Information exchange between the educator and the learner is generally reciprocal, increasing the likelihood that the information and learning needs of the learner will be addressed. [70] Some examples of participatory and interactive approaches commonly used to improve health professionals' preventive health care practices include Continuing Medical Education (CME) activities, small group workshops and outreach visits. [69] Educational strategies that are combined with enabling or practice-reinforcing strategies are more likely to be effective than those that are not. [70] For example, there is evidence that the impact of education and training on health professionals' rates of preventive health care delivery is enhanced by reinforcement contact. [71] Reinforcement contact involves visits or contact with health professionals in their practice setting for a period following training to provide ongoing information and support. [62]

Social influence

Social influence approaches are based on the premise that individuals acquire and change behaviour as a result of their interaction with, and the influence of people they perceive to be important. [72] In these circumstances, socially accepted norms of appropriateness and peer acceptance are likely to be stronger motivators for change than rational motives, such as evidence of outcomes. Diffusion of innovation and other behavioural change theories maintain that information is transmitted more effectively between people with strong social connections. [73] Some of the more commonly applied social influence approaches in the preventive health care field include local consensus processes, local opinion leaders who influence the attitudes and behaviours of others through example, professional role models and patient mediated interventions. [67]

Quality assurance

Quality assurance approaches measure the quality of care provided to individual patients in order to improve the appropriateness, adequacy and effectiveness of care. Audit and feedback is a quality assurance approach most commonly used to measure health professionals' adherence to guidelines, in terms of the delivery of scheduled services, [67] and has demonstrated mixed effects. [74] Feedback to health professionals of the results of an audit is generally a summary of clinical performance based on medical records, computerised databases or other sources of information, with evidence that it is most likely to result in improvements in clinical performance if it is provided in a simple, comprehensible format, at regular intervals. [75]

Targeted approaches

Targeted approaches include intervention strategies to address specific barriers to preventive health care delivery within a specific health care setting. A tailored intervention— different strategies combined and tailored to address specific barriers to health care delivery in a specific setting—is an example of a targeted approach. [67]

Offering incentive payments to health professionals to modify their preventive health care practices and reward high performance is another example of a targeted approach. [76] With regard to different intervention approaches designed to provide health professionals with ongoing training and support to take up evidence-based SBI, a recent analysis showed that, while there is little difference between academic detailing, computerised reminder systems and interactive continuing medical education, each of these is more cost-effective than incentive payments. [77]

Methods for combining and tailoring strategies within these broad approaches to optimise their effectiveness in defined settings, such that they are most likely to result in the successful integration of brief intervention in routine clinical care, needs to be carefully examined in Indigenous health care settings. This is no straight-forward task, as is evidenced by the relative lack of rigorous evaluations of dissemination strategies in mainstream health care services, as well as the early termination of the most comprehensively designed RCT of brief intervention for alcohol in Indigenous-specific health care settings reported to date, due primarily to a lack of clarity about how clinic, patient, Aboriginal health worker (AHW) and GP factors might best fit together in an Indigenous specific healthcare setting. [78]

Improving preventive health care delivery to Indigenous Australians

In recognition of the potential for brief intervention to reduce the burden of SNAP-related harm in Indigenous Australian communities, policy makers [79, 80] and researchers [10, 33, 58, 81] in the Indigenous health field recommend more widespread and effective implementation of brief intervention in Indigenous health care settings. Following lobbying by the National Aboriginal Community Controlled Health Organisation (NACCHO), and its affiliates, the Australian Commonwealth Government introduced three Medicare Benefit Schedule (MBS) health assessment items [82] to encourage the detection and diagnosis of, and intervention for chronic disease and early risk factors in Indigenous Australians. [83] In chronological introduction, these items were: the 1999 Aboriginal and Torres Strait Islander Older Persons' Health Check (55 years and over); the 2004 Aboriginal and Torres Strait Islander Adult Health Check (15-54 years); and the 2006 Aboriginal and Torres Strait Islander Child Health Check (0-14

years). The detection, treatment and management of health risk behaviours to reduce the risk and prevent or delay the onset of chronic diseases is a primary objective of these MBS items, with screening for SNAP risk factors mandatory. It is also mandatory for health professionals identifying clients at risk of SNAP related harm to develop a preventive health care plan, including action/s the client should take to reduce their level of risk and improve their overall health. [84] Indeed, guidelines for conducting MBS preventive health assessments and developing preventive health care plans provide recommendations, standards and procedures for the provision of evidence-based SBI for SNAP risk factors to Indigenous Australians.[85] The development of guidelines and the introduction of MBS items to facilitate their implementation are useful starting points, however the dissemination of evidence-based SBI for SNAP risk factors in Aboriginal Community Controlled Health Services (ACCHS) will require a range of supportive and reinforcement strategies [9, 83] if their rates of delivery by health professionals [86] [87] and uptake by Indigenous Australians [88] is to significantly improve.

Smoking Nutrition Alcohol and Physical Activity (SNAP) Risk Factor Framework

The SNAP risk factor framework (SNAP framework) was jointly developed by the Joint Advisory Group (JAG) on General Practice and Population Health and Chairs of National Population Health Strategies to provide a system-wide approach to support and enhance general practice settings in the prevention and management of SNAP risk factors [6]. As such, the framework offers a potentially useful model for disseminating brief intervention for SNAP risk factors into Indigenous health care settings. The identification and implementation of strategies to support the provision of evidence-based SBI for SNAP risk factors is a critical component of the SNAP framework. [89] A feasibility study of implementing the SNAP framework in two divisions of general practice in NSW was conducted in 2003 and 2004. The main positive outcomes of this study were the good level of fit between the SNAP framework and general practice consultations, increased confidence among GPs to deliver SBI for SNAP risk factors, and an increase in the number of referrals for patients identified at risk of SNAP related harm. [90] Although one Aboriginal Community Controlled Health Service (ACCHS) located in one of the divisions of general practice participating in the study was

included, testing the feasibility of implementing the SNAP framework in ACCHSs was not a primary objective. Therefore, the overall findings of the study are not directly applicable to ACCHSs, which are notably distinct from general practice settings. Some of the key characteristics that distinguish ACCHSs from general practices include community controlled; a primary health care model; >90% of clients are Indigenous Australians; a client demographic characterised by a younger population, earlier onset of chronic diseases; disproportionate rates of co-morbidity; a health workforce comprised primarily of AHWs; and different health issues and priorities. [91] More specifically, two studies comparing consultations with Indigenous patients in ACCHS with those in general practice, found that health professionals working in ACCHSs' managed a greater number and complexity of problems per consultation than did those working in general practice.[92, 93] Differences in approaches to health are delivery between ACCHS and general practice settings are also notable, with comprehensive primary health care, involving a team approach to clinical care; increased emphasis on health promotion and preventive health care; and collocation of health-related services and programs, is the model of health care delivery typically adopted by ACCHS, [94] but not general practice services. [92]

The role of Aboriginal Community Controlled Health Services

Origins

Aboriginal Community Controlled Health Services are primary health care services initiated, planned and managed by local Indigenous communities, aiming to deliver high quality holistic and culturally appropriate health care. [91] Internationally, the primary health care model emerged from the Alma Ata Conference in 1978. Convened by the World Health Organisation (WHO) and UNICEF, the Alma Ata conference identified health as a fundamental human right and a global social goal of *'health for all'*, [95] and proposed a health care model termed Primary Health Care to accomplish this goal. Seven years prior to the Alma Ata conference, however, Indigenous Australians, responding to the failure of the Australian Government to provide them with appropriate, acceptable, affordable and accessible health care, established the first Aboriginal Medical Service (AMS) in Redfern in 1971. The AMS in Redfern provided Indigenous Australian people with a community owned health care service that

addressed their health needs within a comprehensive primary health care framework. [96] Significantly, ACCHSs did not spring up in isolation, but arose out of the political struggle for the Indigenous Australian population to achieve self-determination. [97] The establishment of the AMS at Redfern was a community driven initiative, did not receive government support, and defied strong and widespread opinion by non-Indigenous Australians that Indigenous Australians were incapable of managing their own affairs. A watershed in Indigenous health and politics, its philosophy: community control of and community participation in the provision of comprehensive primary health care, paved the way in relation to alternative approaches to address Indigenous health care issues. [91]

Impact

Since their establishment, ACCHS have proven pivotal to improvements in Indigenous health, perhaps best exemplified by Copeman's paper on the rapid impact the establishment of an ACCHS had on reducing the number of Aboriginal children admitted to hospital. [98] The activities of ACCHSs have directly contributed to increases in immunisation rates of Indigenous children, [91] reductions in rates of sexually transmitted infections (STIs) in remote Indigenous communities, [99] and the development of programs to improve treatment and care in obstetrics, [100] diabetes and mental health. [101]

The impact of ACCHSs in Indigenous Australian communities, however, extends beyond effective health care to community development [102] and advocacy for the implementation of Indigenous health policy. [103] According to Hunter et al., ACCHSs have become strategic sites for community development through their role in Aboriginal employment, engagement, empowerment and social action. [91] The advocacy role of ACCHSs is closely linked to the reasons for their establishment, [104] and is critical to the development of appropriate and acceptable strategies to address Indigenous health issues. [105] ACCHSs' continued advocacy role is particularly impressive given the ongoing lack of funding and ineffective implementation of Indigenous health policy at all levels of government. [106]

ACCHSs also have key roles in Indigenous health research. Some Indigenous health research projects have been initiated and controlled by ACCHSs, [107, 108] while others have involved collaborations between ACCHSs and, government [109] and/or research institutions. [110] These research projects have, in one way or another, demonstrated the value for processes and outcomes of research conducted in collaboration with or under the control of ACCHSs. For example, the NACCHO Ear trial, a multi-centre, randomised controlled trial among Aboriginal children attending ACCHSs in Western Australia and Queensland, demonstrated that ACCHSs are well positioned to lead quality and rigorous research without compromising the values and principles of those being researched. [107] The value of Indigenous health research involving ACCHSs is articulated in Indigenous health policies and strategies, which emphasise the importance of ACCHSs involvement in research, and identify ACCHSs' research as a research priority. [79, 80]

Given the multiple and innovative ways in which ACCHSs have been able to address Indigenous health disadvantage, it is not surprising that of the 140 Australian government funded Aboriginal health services operating in urban, rural and remote regions of Australia, 127 of these are ACCHS. [111] ACCHSs have developed state and national, and in some cases regional, representatives and resource bodies, as a strategy to improve policy formulation and resource allocation decisions for their communities. NACCHO is the umbrella body of community controlled health organisations at the national level, [112] with similar umbrella structures operating at the state and territory level. In New South Wales this body is the Aboriginal Health and Medical Research Council (AHMRC). [113]

Structure

There is no such entity as a generic ACCHS. They are distinct and independent health services owned and run by local Indigenous Australian communities according to their needs and priorities. As such, they vary in size and function. Larger ACCHSs provide a range of clinical services and other health related programs, and typically employ several full-time doctors and nurses to provide clinical care, as well as a significant

numbers of AHWs. Smaller ACCHSs, which are typically located in remote locations, often do not have access to on-site medical and/or nursing care, thereby requiring AHWs to fill this role. [112] Even in remote ACCHSs with on-site medical and/or nursing staff, AHWs in these locations will generally have a greater role in clinical care than those working in urban or rural locations.

Workforce composition

In many ACCHSs, a hierarchical structure of the workforce has emerged. Tsey, among others, describes this as a pyramid structure, of which the apex is occupied by a small group of Aboriginal managers, the middle predominately by non-Indigenous health professionals, and the base predominately by AHWs in semi or non-professional roles. [114] This hierarchy reflects the composition of the health workforce more generally, in which 97% of the Indigenous workforce is employed as AHWs. [115]

Aboriginal health workers

Aboriginal health workers have been employed by ACCHSs since their establishment. Over time, the role of AHWs has evolved from that of cultural broker to one with greater responsibilities, requiring, in many cases, recognised training qualifications. [116] As indicated previously, the roles and responsibilities of AHWs can vary considerably. Aside from differences in the size and function of ACCHSs in which AHWs are employed, this variation can be explained by differences in standards and recognition of AHW training and qualifications between states and territories [115]; AHW curriculum delivered by tertiary institutions and the vocational sector [116]; and local community's perception of the role of AHWs. [117] The recent development of national competency standards for AHW qualifications [118] should increase the likelihood that AHWs across all states and territories and geographic locations have a common set of core knowledge and skills, thereby reducing variation in AHW qualifications and standards across services and jurisdictions.

Indigenous Australians' access to ACCHS

A significant proportion of clients attending ACCHSs are Indigenous Australian and approximately 90% of episodes of care at ACCHSs are with Indigenous Australians. [112] This compares with the results of one study which found that out of 96,901 consultations randomly selected from 1,000 GPs, only 1% were identified as Indigenous Australian. [119] Although this data is reflective of the low rates of access to general practice by Indigenous Australians, it should be interpreted with caution, given the high rates of underreporting of Indigenous status in health services and the non-random distribution of the Indigenous Australian population. [120]

Two key explanations have been proposed by NACCHO for Indigenous Australians' preferences to access ACCHSs over non-Indigenous health services. [121] Firstly, the ACCHSs model of ownership and management, which is ultimately achieved through a locally elected Indigenous board of management, facilitates local Indigenous community involvement in setting priorities and policies, management structure, the provision of services and programs, and the composition of health staff. This model has also proven to be appropriate for and acceptable to Indigenous peoples internationally. [105] Secondly, barriers reducing Indigenous Australians' access to mainstream health care services are numerous, widespread and persistent. [122] The detrimental effects of cultural, financial and locality barriers were highlighted in a study exploring issues around Aboriginal peoples' access to GP services in Central Western NSW. Aboriginal representatives from Aboriginal communities in Central Western NSW identified a lack of GP outreach clinics, GPs' poor understanding of Aboriginal culture, and a lack of GP services with bulk billing arrangements and unwelcoming reception staff, as the main reasons for low rates of access to GP services by local Aboriginal people. [123] In contrast, ACCHSs continue to deliver accessible, culturally appropriate and comprehensive primary health care to numerous Indigenous Australian communities. [91]

CONCLUSION

Aboriginal Community Controlled Health Services have a demonstrated commitment to the provision of comprehensive primary health care. By definition, comprehensive primary health care encompasses primary, secondary and tertiary prevention. [124] However, routinely delivering preventive interventions within a primary health care setting that is characterised by insufficient resources and a disproportionately high number of patients presenting with acute, chronic and co-morbid conditions presents multiple challenges. [87] Presenting health problems have to be treated and managed comprehensively, while evidence-based interventions to prevent or delay the onset and progression of acute and chronic conditions are routinely delivered to patients identified at risk of harm. The emerging body of evidence from dissemination studies suggests that, in order for this to happen, a number of factors relating to the needs of individual health professionals, and the environments in which they work, must first be addressed. [125] These needs include the initial availability of reliable and valid screening tools and resources for use with patients, the provision of cost-effective training and ongoing support mechanisms for clinical staff, administrative and system changes to reflect new procedures (such as the integration of new screening questions into routine patient data collection processes) and recognition of the need to involve and support the roles of non-clinical staff in such system-level modifications. [60, 126-128] As such, an opportunity exists to explore what specific factors need to be addressed to enhance the implementation of evidence-SBI for SNAP risk factors in ACCHSs, demonstrating the level of tailoring to individual services required to optimise the likelihood of successful integration and sustainability into routine care. Such work will potentially make a contribution to both Indigenous and non-Indigenous health care service provision, by demonstrating a process of tailoring the implementation process to specific and defined clinical settings, in order to ensure that evidence-based interventions are integrated successfully into routine systems of clinical care.

Before undertaking intervention and dissemination based research in the Indigenous health field, a systematic review of the Indigenous evidence base is important for three main reasons. Firstly, to examine the quality and type of previous intervention and dissemination studies to identify current gaps in knowledge and processes. Secondly, to examine the outcomes of dissemination and intervention studies to identify which

strategies are most likely to be feasible, acceptable and effective. And thirdly, to draw on the findings and lessons learned from these studies to improve the implementation of future dissemination and intervention studies in the Indigenous health field.

Chapter Two

Intervention and dissemination research targeting Smoking, poor Nutrition, Alcohol misuse and Physical inactivity (SNAP) in Indigenous Australians: quality and type.

BACKGROUND

Despite the disproportionately high burden of SNAP-related harm borne by Indigenous Australians, evaluations of Indigenous specific interventions designed to reduce this harm appear to be inadequate, both in terms of their quantity [30] and their quality. [32-33, 129] With regard to quantity, approximately 10% of original research publications between 1987 and 2003 (inclusive) were intervention studies, while approximately 81% were descriptive studies. [30] With regard to quality, a review of alcohol interventions in 2000 showed less than one quarter of intervention evaluations were published in peer-reviewed journals, leading the authors to conclude that, while a broader range of interventions ought to be implemented, these needed to be more rigorously evaluated in collaboration with Aboriginal organisations. [32]

The impact of any intervention is determined not only by its cost-effectiveness, but also by the extent to which it is adequately disseminated. The relatively new field of evidence-based medicine has emerged in response to recognition of the gap between research evidence and clinical practice. [130] Without adequate dissemination, cost-effective interventions are unlikely to be adopted into the provision of routine health care, limiting the extent to which they will improve health outcomes among individuals, defined groups at increased-risk of harm, and the broader community. [31] Thus, to increase the likelihood of cost-effective interventions improving health outcomes for Indigenous Australians in practice, dissemination strategies which have been shown to be effective, and models of tailoring these to specific Indigenous health care settings should be examined and their effective components identified.

One possible solution to the lack of intervention and dissemination evaluations in Indigenous specific settings might be for Indigenous Australians to access mainstream health services offering SNAP relevant interventions. However, as identified in Chapter One, there is some evidence that suggests Indigenous Australians often find mainstream health services inappropriate, unacceptable and inaccessible. [131-132] Increasingly, interventions to reduce the disproportionate burden of SNAP related harm experienced by the Indigenous Australian population are being developed and implemented by those in the Indigenous health field. [133-135] Indeed, Indigenous people themselves have

developed and implemented a range of SNAP interventions, both in response to the unacceptability of mainstream interventions and as an expression of self-determination. [136, 137]

To complement this apparent growth in Indigenous specific SNAP interventions, a critical review of the Indigenous Australian literature is timely for a number of reasons. First, the existing comprehensive review of alcohol interventions [32] is now seven years old. Secondly, the most recent smoking review is four years old but, more importantly, was primarily a descriptive report of the main types of smoking interventions being implemented in Indigenous communities, with some comments on their effectiveness but minimal examination of relevant methodological issues. [33] Thirdly, there have been no systematic, critical reviews to date of interventions aimed at improving nutrition and physical activity. Fourthly, applying different criteria in this review that differ to that used previously will most likely further validate findings by increasing the probability that existing intervention studies are relatively methodologically poor, rather than the alternative possibility that the criteria are inadequate. Fifthly, there have been no attempts to date to systematically identify and critique dissemination strategies. As such, the results of this review will provide specific guidance as to how both intervention and dissemination evaluations might best be improved.

This chapter has two aims:

1. Describe and critique the methodological and contextual aspects of published SNAP intervention and dissemination studies targeting Indigenous Australians.

2. Examine the effect of these studies on reducing SNAP risk factors and related harm in Indigenous populations.

METHODS

Search Strategy

Search 1: A simultaneous search of electronic databases, MEDLINE, EMBASE, CCTR, CDSR, ACP Journal Club and DARE was conducted to locate articles relating to smoking, nutrition, alcohol or physical activity and Indigenous Australians published between January 1990 and August (week 1) 2007.

Search 2: A separate search of the electronic database PsychINFO was also conducted.

Search 1 and 2 were conducted using the terms "Indigenous or Aborigin$ or Torres Strait Islander," "nutriti$ or diet$ or physical or exercis$ or alcohol$ or grog or tobacco or smok$ or nicotine" and "evaluation or intervention or prevention or outcome or dissemination."

Search 1 resulted in 431 articles, after electronic removal of duplicates and search 2 resulted in 181 articles after electronic removal of duplicates.

Search 3: The National Indigenous Australian Alcohol and Other Drugs Bibliographic Database was searched using the key search term *Intervention*, resulting in the identification of 540 publications.

In addition to the above searches, a search of the reference lists of identified literature reviews and the Australian Indigenous Health*Info*Net Bibliography [138] was also conducted. Four additional journal articles were located from the Australian Indigenous Health*Info*Net Bibliography through this process.

The searches combined resulted in 1,156 publications.

Identification of intervention and dissemination studies

1. Exclusion Criteria: Articles were excluded if: (a) the study sample was not predominantly Indigenous Australians (n=377); (b) smoking, nutrition, alcohol or physical activity was not the primary focus of the study or a primary outcome measure (n= 214); (c) publications were duplicates or not journal articles (n=404).

A total of 995 articles were excluded, leaving 161 articles.

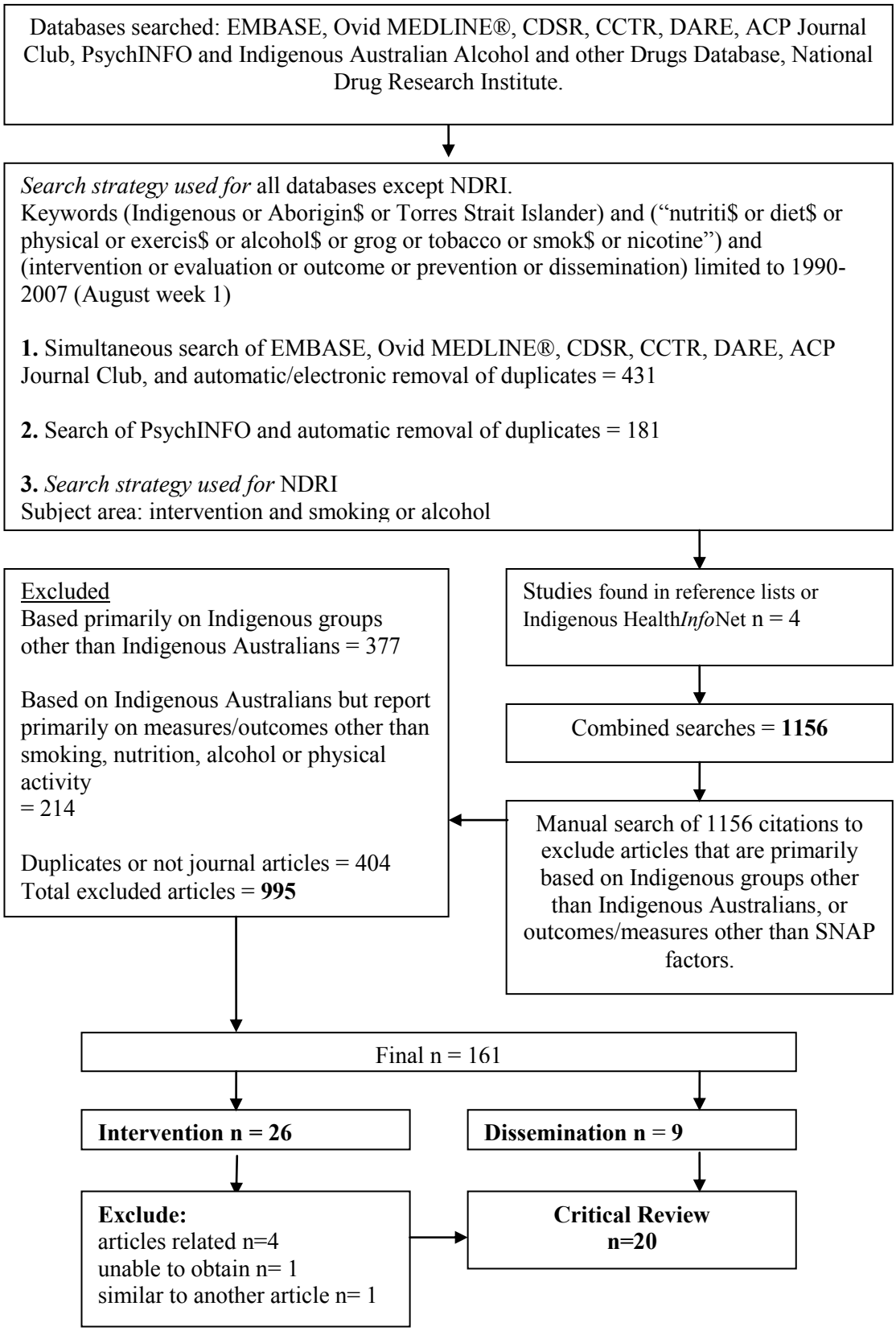
2. The abstracts of the remaining (n=161) studies were reviewed, with definitions used in previous reviews [31] used to identify intervention (n=26) and dissemination (n=9) studies.

Intervention studies: defined as an evaluation or intervention trial implemented in an Indigenous community or primarily targeting Indigenous Australians.

Dissemination studies: defined as research that evaluates strategies for dissemination and/or adoption of programs/interventions in Indigenous health care settings or to Indigenous Australians. This includes research which evaluates strategies to improve the delivery of programs/interventions to Indigenous Australians or create the necessary conditions for delivery.

I manually examined studies. For intervention studies (n=26), one could not be obtained, one was similar to another article and four reported on outcomes for the same intervention study, leaving 20 intervention studies for review. Nine dissemination studies were retained for review. The process used to identify and extract studies is summarised in Figure 2.1.

Figure 2.1. Process to identify and extract studies



Review criteria

Intervention studies

Criteria used to review intervention studies were adapted from a schema designed to evaluate public health interventions. Criteria included study design, sample characteristics, intervention characteristics, intervention outcomes, and effectiveness. Criteria were selected that prioritised issues of internal rather than external validity, [139] since the focus of this review was the methodological rigour of evaluations. [140]

Dissemination Studies

Criteria used to describe dissemination studies were developed from an overview of systematic reviews to disseminate research findings into practice. [130] The overview primarily summarised different strategies for the dissemination of research findings and identified their effectiveness.

RESULTS

Intervention Studies

The characteristics of intervention studies are summarised in Table 2.1

Table 2.1: Summary of intervention studies

First author and year published	SNAP risk factor	Region of study sample	Study Design	Control Group	Sample size	Sample characteristics reported (i.e. age, gender)	> 80% completed the study	Validated measures	Intervention exposure	Outcome measures			
										Behaviour	Knowledge attitudes	Harm	Health effects
Smith 2000	nutrition/ physical Activity	remote	Cohort	✓	×	✓	✓	✓	not reported	×	×	×	✓
Chan 2007	nutrition/ physical activity	urban	Cohort	×	101	✓	×	✓	not reported	×	×	×	✓
Rowley 2000	nutrition/ physical activity	remote	Pre/post	×	*1 (437, 424)	✓	×	✓	not reported	×	×	×	✓
Chang 2006	nutrition	rural	RCT	✓	187	✓	×	✓	✓	×	×	×	✓
Fraser 1996	nutrition	remote	Pre/post	×	271	✓	×	✓	✓	×	×	×	✓
Kruske 1999	nutrition	remote	RCT	✓	51	✓	✓	✓	✓	✓	×	×	✓
Kukuruzovic 2002	nutrition	remote	RCT	✓	180	✓	✓	✓	✓	×	×	×	✓
Lee 1996	nutrition	remote	Pre/Post	×	*1	partly	NA	✓	not reported	✓	×	×	✓
Lee 1994 Lee 1995 Rowley 2003	nutrition/ physical activity	remote	Time series	✓	*1 (68, 45, 50, 29, 46)	partly	×	✓	not reported	✓	×	×	✓

Table 2.1: Summary of intervention studies cont…

Rowley 2000 Rowley 2001	nutrition/ physical activity	remote	cohort	✓ (self-selected)	49 (high risk cohort) *1 (200, 185, 132)	✓	×	✓	✓	✓	×	×	✓
Scrimgeour 1994 McDermott 2000	nutrition	rural	pre/post	×	*1 (335, 331, 304)	✓	×	✓	not reported	✓	×	×	✓
Egger 1999	physical activity	remote	pre/post	×	57	✓	✓	✓	not reported	×	×	×	✓
Douglas 1998	alcohol	remote	time series	✓	*1	partly	NA	✓	not reported	✓	×	✓	✓
Gray 2000	alcohol	remote	time series	×	*1 (270)	partly	NA	✓	not reported	✓	✓	✓	✓
Crundall 1997	alcohol	remote/rural	pre/post	✓	52	✓	✓	×	✓	✓	×	✓	✓
Ivers 2005	tobacco	remote	pre/post	×	643	✓	×	×	✓	✓	✓	×	×
Mark 2004	tobacco	urban	pre/post	×	115	✓	×	✓	not reported	✓	×	×	×
Ivers 2003	tobacco	remote	pre/post	✓	111	✓	✓	✓	✓	✓	✓	×	×
Gray 1998	alcohol/ tobacco	rural	pre/post	×	#27	×	not reported	✓	not reported	✓	✓	×	×
Johnston 1998	tobacco	remote	pre/post	✓	220	✓	×	✓	✓	✓	✓	×	×

* n=1 for intervention implemented at the community level. Reported number of population participating in x-sectional surveys listed in brackets.
\# Original sample only—authors recruited additional subjects but exact number is unclear.

SNAP factors targeted

SNAP factors targeted by the 20 intervention studies comprised: nutrition, 30% (n=6); alcohol, 15% (n=3); smoking, 20% (n=4); alcohol and smoking, 5% (n=1); physical activity, 5% (n=1); nutrition and physical activity, 25% (n=5).

Study design

Seventeen (85%) interventions were evaluated using a non-randomised experimental design: time series (n=3); cohort (n=3); pre-test/post-test with no control group (n=8); and pre-test/post-test with control group (n=3). Three (15%) interventions were evaluated using an RCT.

Sample characteristics

Sample Size

Sample sizes of interventions targeting individuals (n=13) ranged from 27 to 643, with a mean of 165 and a median of 113.

Gender

Sixteen studies (75%) reported the gender of participants, with the proportion of males ranging from 26% to 100%, with a mean of 53%. Of the 18 studies that recruited study participants, seven (39%) reported mean age of participants, which ranged from 14.1 months to 56.5 years with a mean age of 26.5 years. Eleven studies (61%) reported the percentage of study participants in age groups.

Participation rates and attrition to follow-up

Thirteen (65%) of the 20 articles reported the percentage of the eligible study population recruited, or participating in cross-sectional surveys, which ranged from 10% to 100%, with a mean of 75%. Thirteen studies (65%) reported attrition rates. Of these, six studies (46%) reported that more than 80% of study participants completed the intervention and were followed up successfully.

Measures

Measurement instruments

Seventeen interventions (85%) used validated measurement instruments, including biochemical or clinical measures (n=11), population data (n=6) and validated questionnaires (n=3). Five studies using questionnaires did not report if they were validated.

Process measures

Nine (45%) of the 20 studies measured participants' level of exposure to the intervention using checklists (n=5) and self-report (n=4). Three of these studies reported percentages of activities or treatment regime completed as 50%; 80%; 80% and 10%.

Outcome measures

a) Smoking

For interventions targeting smoking (n=5), attitudes and/or knowledge were the most common outcome measure (n=4), followed by point prevalence abstinence (n=3) and self-efficacy (n=2).

b) Nutrition and/or Physical Activity (n=12)

Health outcomes were the most common type of outcome measure (n=9 studies), comprising biological indicators (n=7) and anthropometry (n=7). Behaviour was the second most common outcome measure (n=4 studies) comprising individual dietary intake (n=3), community dietary intake (n=4) and physical activity levels (n=3).

c) Alcohol

For interventions targeting alcohol (n=4), alcohol consumption was the most common outcome measure (n=4) comprising, per capita consumption (n=2) and individual consumption (n=3). Alcohol-related harm (n=3), self-efficacy (n=3) and attitudes (n=3) were the next most common outcome measures.

Data collection methods

a) Smoking

Four of the five smoking intervention studies reported administering self-report questionnaires, of which two adapted existing questionnaires. Of the three smoking interventions measuring point prevalence abstinence, one validated self-reported smoking status with carbon dioxide (CO) monitoring.

ii) Nutrition and Physical Activity

Reported data collection methods for nutrition intervention and/or physical activity interventions (n=12) comprised: clinical assessment/examinations (n=6), health assessment survey (n=6), food store turnover (n=4) and observations (n=1).

iii) Alcohol

Reported data collection methods for alcohol interventions (n=4) comprised: questionnaires (n=3), audit of alcohol retail sales (n=2), semi-structured interviews (n=2) and audit of health, crime and welfare data (n=2). Three studies used two or more methods to collect data.

Data collection points

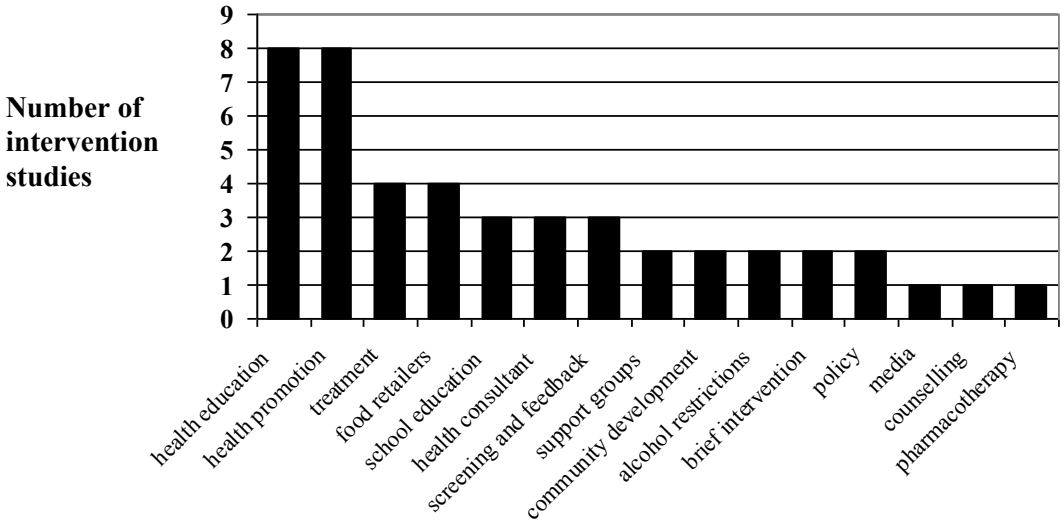
Eighteen of the 20 interventions clearly stated the timeframe for data collection, which included after the intervention ceased (n=10) and at intervals during interventions that were ongoing (n=8).

Intervention Characteristics

Intervention strategies

Figure 2.2 shows the range of intervention strategies used. Thirteen interventions (65%) employed multiple strategies. Fifteen different types of intervention strategies were identified across the 20 interventions. Eleven studies (55%) used one to two intervention strategies, seven studies (35%) used three to four strategies and two studies [82] used five or more strategies.

Figure 2.2: Interventions strategies employed across interventions



Health education (40%) and health promotion (40%) were the two most common reported types of intervention strategies, followed by treatment (20%) and food retailers (20%). Interventions employing treatment (n=4) did not report employing other strategies. Community-wide interventions generally employed more strategies than individual-based interventions.

Dissemination strategies

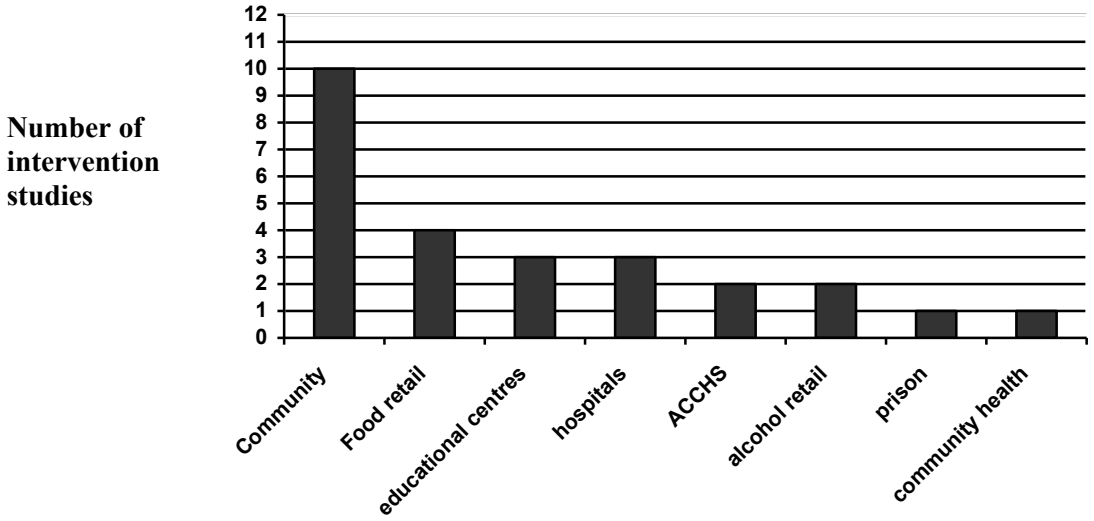
Ten intervention studies (50%) reported implementing strategies with the potential to enhance dissemination of the intervention. Dissemination strategies implemented across interventions (n=10) comprised Indigenous community/consumer input into intervention design (n=10), distribution of resources to health staff (n=3), training health staff (n=3), training Indigenous community members (n=1), outreach support (n= 2), feedback (n=2) and nominated health staff (n=3).

Intervention setting

Figure 2.3 shows the range of settings in which interventions were reported to be implemented. Interventions (n=20) were implemented in a range of settings including, community (n=10), food retail (n=4), educational centres (n=3), hospital (n=3), ACCHS (n=2), alcohol retail (n=2), prison (n=1) and community health centre (n=1).

Twelve interventions were implemented in one type of setting. Five interventions were delivered in two settings. One intervention was delivered in three settings.

2.3: Intervention settings



Effectiveness

Heterogenic outcome measures make it difficult to reliably compare effectiveness across interventions. Even for those interventions targeting the same risk factor, outcome measures were incomparable.

For nutrition, treatment interventions were more likely to demonstrate a significant effect than interventions targeting behavioural change. Behavioural change interventions resulted in significant improvements in biochemical markers of chronic disease, but this did not transfer into declines in the prevalence of obesity and chronic

disease, with the exception of one intervention which reported small but significant reductions in waist circumference, an indicator of obesity.

For alcohol, restrictions (n=2) [141, 142] yielded better results than education interventions (n=2) [143, 144] with results of the latter inconclusive. Interventions implementing alcohol restrictions achieved reductions in annual per capita consumption of pure alcohol, 19.4% [142] and 5 % [141] respectively over two years. Reductions in per capita alcohol consumption were accompanied by declines in some indicators of alcohol-related harm, including hospital admissions for alcohol-related conditions, police arrests and the number of criminal offences.

For interventions with smoking cessation as an outcome (n=3), cessation rates were 15% (six months), declining to 10% when only participants with CO validated smoking status were included [145]; 6.1% (three months) [146] and 6% (12 months) [135]. Few positive effects were reported for changes in knowledge of, and attitudes to smoking [143-145].

Costs

Two of the 16 intervention studies reported the cost of the intervention: $ 32,100, $65,000.

DISSEMINATION STUDIES

Key characteristics of dissemination studies are summarised in Table 2.2

Table 2.2: Summary of dissemination studies

First author and year published	Targeted health activity	Number of health services	Number of health professional	Patients recruited	Dissemination strategies employed							Outcome measures			
					Resource or guidelines	Education and/or Training	Outreach support	Recall/ reminder	Audit and/or feedback	Organis change	Community engagement	Processes of care	Health professional		Health effects
													Knowledge/ attitudes	Self efficacy	
Hunter 2004	Alcohol	nr	749	0	✓	one-off workshop	×	×	×	×	×	×	✓	✓	×
Shepard 1999	Diabetes care	30	×	0	✓	Ongoing	phone support	×	✓	×	×	✓	×	×	
Bailie 2004	Preventive health Care	7	×	137	✓	appeared one-off	appeared minimal	✓	✓	✓IT system	×	✓	×	×	✓
McDermott 2001	Diabetes Care	21	×	678	×	one-off	phone support	✓	✓	×	×	✓	×	×	✓
Harvey 2002	Smoking brief intervention	3	4	0	✓	one-off workshop	✓ poorly described	×	×	×	×	✓	×	×	×
Brady 2004	Alcohol brief intervention	1	14	0	✓	one-off	×	×	×	×	×	✓	✓	✓	×
Midford 1994	Alcohol restrictions	1	×	0	×	×	×	×	×	×	✓	✓	✓	×	×
Walley 1998	Smoking intervention	nr	×	0	✓	workshops	×	×	×	×	×	✓	×	×	×
Si 2007	Diabetes care	12	×	295	×	one-off conference	✓	×	✓	✓	×	✓	×	×	✓

Primary factor targeted

The specific health care activities targeted by dissemination studies (n=9) comprised: diabetes care (n=3); preventive health care (n=1); brief intervention for alcohol (n=1); brief intervention for smoking (n=1); smoking interventions (n=1); alcohol harm minimisation (n=1); and clinical management of alcohol problems.

Health care settings

Six (67%) dissemination studies reported the number of health services targeted, comprising: 1, 3, 7, 12, 21 and 30 respectively. Seven studies (n=78%) specified the type of health service targeted, or in which health services targeted health professionals were employed. These included ACCHS (n=5); government health care services (n=5); hospital (n=2); and general practice (n=1). Three studies reported targeting three different types of health services.

Health professionals

Five dissemination strategies reported on the type of health professional targeted, including AHWs (n=5), doctor (n=3), nurse (n=2), allied health professional (n=2) and administration staff (n=1). Three dissemination studies targeted more than one type of health professional.

Strategies

Four dissemination studies (45%) employed one to two strategies, three studies employed (33%) three to four strategies and two studies (22%) employed five strategies. Education and/or training was the most common type of dissemination strategy (89%) employed, in the form of one-off workshops or conferences (n=7) and ongoing training workshops (n=1). Distribution of resources (75%) in the form of clinical guidelines (n=3), training manuals (n=3) and intervention tools and resources (n=3) was the second most common type of dissemination strategy, followed by audit and feedback (44%). Three studies (33%) provided support in the form of phone support (n=2) and on-site support (n=1). Two additional studies mentioned follow-up support but did not specify the type of support they provided.

Evaluation methods

Dissemination studies (n=9) employed various methods to monitor the progress of and/or evaluate the effect of dissemination strategies, including quantitative assessment of patient records (n=3), qualitative interviews (n=3), questionnaire (n=2); and participant observation (n=3).

Dissemination studies conducting a quantitative assessment of patient records (n=3) reviewed records for 137, 295 and 678 patients respectively.

Outcome measures

Processes of care was the most common outcome measure (n=6), followed by patient health outcomes (n=3), health professional knowledge/attitudes (n=2) and health professional self-efficacy (n=2).

DISCUSSION

Potential limitations

The search method used may not have located all intervention and dissemination studies published in the peer reviewed literature. However, the search of electronic health and medical databases was complemented by a search of electronic libraries specific to Indigenous health, and an examination of reference lists from recent publications. Publication bias is also a potential limitation of this review, with evidence that preference is given to publishing studies demonstrating a statistically significant effect [147]. The potential outcomes of this scenario would be underestimation of the actual number of studies conducted, under-representation of studies demonstrating a weak effect, and therefore overestimation of program effectiveness. As such, the studies here most likely represent a best-case scenario for intervention effectiveness in Indigenous communities. In addition, only a small number of intervention studies across a wide range of risk behaviours were identified, limiting the generalisability of their effectiveness to the broader Indigenous Australian population and the conclusions that can be made.

Consistent with previous reviews, few intervention studies targeting Indigenous Australians were identified in the peer reviewed literature [30, 32, 33, 148]. Also in line with previous reviews was the evidence of weak effects and methodological deficiencies of intervention studies [32, 33, 148]. While some interventions yielded results suggestive of a positive effect, non-randomised study designs, a lack of a comparison group and poor attrition rates resulted in less than optimal evidence. As such, only tentative conclusions can be drawn.

Quantity of intervention and dissemination studies

The lack of well evaluated intervention strategies is not unique to the Indigenous health field [149], but does indicate that an adequate Indigenous specific evidence-base is yet to be established. Therefore, as identified previously, a logical approach would be to judiciously apply evidence distilled from intervention trials in the non-Indigenous population to the Indigenous population, at least until a credible Indigenous-specific evidence base is established. The findings of this review suggest that this approach is not being widely applied, or at the very least, the outcomes of studies applying this approach are not being regularly published in the peer reviewed literature.

Intervention studies

Study designs

The study designs employed to assess the effectiveness of intervention studies were less than optimal. For example, only three studies (15%) were evaluated using an RCT and only seven of the 17 studies (41%) using a non-RCT design recruited a control group for comparison. Well designed RCTs are the most effective study design to control for bias, as indicated by their high level of evidence rating. [140] While the credibility of the RCT is widely acknowledged within evidence based medicine, its value for researchers and Indigenous communities might differ. Some authors of studies in this review expressed a preference for study designs with control groups or randomisation, but community preferences were for alternative study designs. [145] RCTs may not always be feasible for Indigenous health research projects. The RCT implemented in one AMS to evaluate the effectiveness of brief intervention for alcohol, as identified in Chapter One, turned into a feasibility study when it was realised that it would not be

possible to recruit a sufficient number of study participants and preserve randomisation. [78] This highlights the importance of assessing the feasibility of disseminating cost-effective interventions into Indigenous health care settings, through pilot studies, before conducting widespread evaluations of their effectiveness at improving health outcomes among Indigenous patients. If implementing an RCT is not feasible, alternate methodologically rigorous designs such as interrupted time series with a control group and comparative studies with concurrent controls should be considered. These study designs are lower cost and maintain the advantages of randomisation with potentially fewer practical challenges than RCTs. [150] For some studies, implementation of the chosen study design was also less than optimal, which possibly increased the likelihood of methodological weaknesses inherent in the chosen study design influencing intervention effect.

Reporting standards

The standard of reporting of key methodological issues was variable. For example, two-thirds of studies reported attrition rates, but less than half reported a measure of exposure to the intervention. Key features of interventions were not always well described. For example, only two interventions reported on costs. Reporting on the cost of an intervention is important, especially in a climate of uncertain and inadequate funding provision. Some authors reported that the effects of the intervention were circumscribed by lack of resources and/or organisational deficiencies, suggesting they were inadequately funded.

It is encouraging that 85% of studies reported using validated instruments. Less encouraging was that less than 50% of studies administering a questionnaire reported that it was validated or adapted from an existing instrument. Without standardised measurement instruments, the accuracy of research findings is questionable and comparison across studies is difficult. [31, 37] Few measurement studies have been conducted in the Indigenous population, resulting in limited knowledge of what measurement instruments are methodologically sound and culturally appropriate in Indigenous settings. [30] Until the validity of measurement instruments in Indigenous settings is established, researchers should examine the reliability and validity of

outcome measures through pilot studies or test/re-test before using them to measure the effect of an intervention among Indigenous Australians.

Outcome and process measures

Only two interventions reported quantitative results for exposure to the intervention. The remaining interventions either failed to report exposure or simply reported the method used to measure exposure, making it difficult to determine if poor outcomes were attributable to poor exposure or the weak effect of the intervention.

For smoking interventions with smoking status as an outcome (n=3), one intervention used CO monitoring to validate self-reported smoking status, while the remaining three interventions relied on self-report. The validity of self-report is high when measuring the effect of smoking interventions in the general population. Self-report has also proven to be a valid measure when measuring smoking prevalence in the Indigenous population, [151] although its validity when measuring the effect of an intervention is yet to be tested. Smoking cessation rates of one smoking brief intervention study in this review were 16% when measured by self-report, but only 11% when measured by CO monitoring. This possibly indicates the potential for self-report to overestimate the effect of smoking intervention on Indigenous cessation rates, and reinforces the importance of using validated self-report measures. [33]

Intervention studies with smoking status as an outcome measured point prevalence abstinence rates at three, [146] six, [33] and 12 months [135] follow-up, respectively. Three months is not an ideal time to follow-up, with evidence that the full impact of a smoking cessation intervention is evident after 6 months [152]. The smoking intervention with 12 months follow-up was a television advertising campaign, so participants' exposure to it and other types of smoking interventions, while determined by self-report, most likely varied considerably.

Two smoking studies obtained self-reported measures of the number of cigarettes smoked per day, but did not report administering the Fagerstrom Dependence questionnaire or other validated measures of a person's level of nicotine addiction. Assessment of nicotine dependence can help predict the likelihood of a smoker

experiencing nicotine withdrawal on stopping smoking, information which might assist health professionals to tailor a smoking intervention to a smoker's needs. [152] For example, smokers at greater risk of experiencing severe or prolonged withdrawal symptoms might require more intensive cognitive and behavioural interventions and/or higher pharmacotherapy dosages than those experiencing mild to moderate withdrawal symptoms.

Changes in alcohol sales, per capita consumption and harm are appropriate indicators of the effect of alcohol restrictions on a defined community [153-155]. Although alcohol restrictions appeared to reduce alcohol-related harm, there is clear scope to improve the reliability and validity of existing measures, such as hospital and police data.

For nutrition interventions, the store turnover method was generally used to measure dietary intake at the community level. This method has generally proven more acceptable and reliable than other methods. [156] Nevertheless, there have been recent calls for a more simplified version of the store turnover method for community members and health professionals working in remote communities to apply when monitoring improvements in food provision, in order to further increase the potential for community members and Aboriginal health professionals to be more involved in the evaluation process. [157] Although nutrition interventions appeared to change behaviour sufficient to reduce biochemical markers of poor nutrition, there is clear scope in community-wide interventions to improve the reliability and validity of measures of obesity.

Most interventions collected outcome measures at reasonable follow-up periods, although two interventions failed to report the follow-up interval. Nutrition and alcohol interventions were more likely to be ongoing and concerned with both short and long term outcome measures. Smoking interventions, with smoking status as the primary outcome, had a defined end point and follow-up periods between three to 12 months, versus alcohol interventions that were ongoing with follow-up periods of one to two years.

Effectiveness of Interventions

Heterogenic outcome measures meant that reliable estimates and comparisons of the effectiveness of interventions in a meta-analysis were not possible. At best, tentative conclusions regarding the effectiveness of different types of interventions can be made. For example, alcohol restrictions and pharmacotherapy interventions were more likely to demonstrate a positive effect than other types of interventions. In addition, the effect of brief intervention on smoking was encouraging, but weakened by methodological limitations, such as non-randomised study designs, poor measures of exposure and high loss to follow-up. In addition, strategies implemented to reduce barriers to Aboriginal smokers quitting appeared to be constrained by insufficient resources and participants' under utilisation of support staff and services [145, 146]. As such, future evaluations of brief intervention for smoking in Indigenous Australian communities should not only test the effectiveness of this intervention at reducing Indigenous smoking rates, but also different strategies designed to assist Indigenous smokers to overcome social, economic and environmental barriers to quitting. Finally, the effectiveness of nutrition and physical activity interventions at reducing advanced obesity might be improved by the inclusion of treatment interventions in healthcare settings [17, 158].

Interventions

Two-thirds of intervention studies were implemented at the community level, and included community components such as media, alcohol and food retailers, community services and schools. Such components have been known to increase the impact of community-based interventions, [159] so their inclusion is encouraging. There would likely be value in evaluating an intervention approach that combines several components in the one co-coordinated strategy. Indeed, methodologically rigorous and practical evaluation designs for such community-wide strategies have been identified [150].

Only two brief interventions were identified by this review, both of which targeted smoking. Although this signifies a slight increase in evaluations of brief interventions since previous reviews, [32, 33] the lack of such studies for alcohol is less than optimal, given compelling evidence for the effectiveness of brief intervention as a cost-effective strategy to reduce alcohol-related harm. [13]

Dissemination Studies

Encouragingly, all of the dissemination studies included in this review attempted to improve the dissemination of cost-effective interventions in Indigenous health care settings. The number and combination of strategies employed by these dissemination studies to achieve this, however, would appear to be less than optimal. For example, four of the nine studies employed only two strategies: distribution of resources and one-off education/training sessions. Although authors' reports suggested that health professionals considered education/training to be beneficial, the absence of outreach support reduced the likelihood of education/training translating into significant improvements in health professionals' practices. Even for those dissemination studies providing outreach support, phone contact was the primary type of support provided. The resource and cost implications of providing more intensive outreach support may have prohibited studies from employing more intensive strategies. A lower cost alternative to providing on-site outreach support might be the identification of influential colleagues within the organisation. Where influential colleagues have possessed the right mix of motivation, expertise and authority, they have been able to support their colleagues to initialise and sustain knowledge and skills acquired through education and training in practice. [160]

Dissemination studies targeting the primary and secondary prevention or management of chronic disease were more rigorously evaluated than those targeting smoking or alcohol, with outcome measures of the former being primarily quantitative assessments of changes in patient health outcomes and processes of care, and outcomes of the latter being primarily qualitative assessments of changes in health professional knowledge/attitudes, self-efficacy and/or processes of care. Dissemination studies quantitatively measuring changes in processes of care reported significant effects. However sustaining improvements over the long term proved difficult. Even the one dissemination study supporting health services to develop and implement organisational change strategies to improve diabetes care could not achieve significant improvements in patient health outcomes, although reported improvements in process outcomes were greater than that reported in other dissemination studies. Improvements in process outcomes following the addition of organisational strategies were reported in a review

of interventions to improve the management of diabetes, with recall and reminder systems to promote patient contact identified as being especially beneficial. [161]

CONCLUSION

This review confirms findings of previous reviews regarding the need for more rigorous evaluations of interventions among Indigenous Australians, and efficient mechanisms for disseminating cost-effective interventions. In addition, it confirms that interventions being implemented and/or evaluated in Indigenous communities are still typically targeting primary prevention, with few targeting secondary prevention, such as brief intervention. As identified in Chapter one, the strong evidence base for the cost-effectiveness of brief intervention in primary health care and the disproportionately high burden of SNAP-related harm borne by Indigenous Australians warrants that future research focus on disseminating brief intervention in ACCHS. With this mind, Chapter Three reviews the availability and quality of brief intervention kits specifically developed to reduce SNAP-related harm among Indigenous Australians.

Chapter Three

Brief intervention kits targeting reductions in Smoking, poor Nutrition, Alcohol misuse and Physical inactivity among Indigenous Australians: are they adequate?

BACKGROUND

Chapter one identified the disproportionate burden of SNAP-related harm among the Indigenous Australian population. Chapter two identified both a lack of intervention research to reduce this disproportionate burden of SNAP-related harm and a lack of dissemination research to enhance the uptake of cost-effective interventions in Indigenous Australian communities. This chapter identifies and reviews brief intervention kits specifically targeting the reduction of SNAP-related harm among Indigenous Australians.

In the past decade, there have been increased efforts to combine individual components shown to support the delivery of brief interventions, for example, screening tools, clinical decision-making tools, health professional training and patient education resources, into comprehensive evidence-based brief intervention packages. For example, in Phase III of the WHO collaborative study, Australian-based investigators developed the Drink-Less program, an evidence-based brief intervention package for alcohol. 49] The Drink-Less program has since been widely disseminated in general practice. [162] In addition, 'Smoke Screen,' a program to facilitate the uptake of brief intervention for smoking by GPs in primary care was widely disseminated during the 1990s, [43] and has since been extensively studied. [60, 71]

Essentially, the development of evidence-based brief intervention kits appears to involve first, identifying individual evidence-based components crucial to the delivery of brief interventions; secondly, customising these components so that they are suitable for deliverers (health professionals and health services) and recipients (patients), yet still consistent with evidence-based guidelines; and thirdly, combining these components into a practical evidence-based kit for dissemination in primary health care.

There would appear to be at least three potential benefits of brief intervention kits. First, they present the evidence-base to health professionals in a more accessible, comprehensible and practical format than evidence-based guidelines, potentially increasing the likelihood that health professionals will follow evidence-based guidelines

in routine clinical care. Secondly, as identified in Chapter one, increasing the accessibility of reliable and valid SBI tools and resources for use with patients, and the provision of cost-effective training in how to use these tools and resources, has been shown to reduce the impact of some of the more common barriers to brief intervention delivery, such as lack of time, lack of resources and lack of self-efficacy. Thirdly, if evidence-based brief intervention kits can be widely disseminated in primary health care, there is greater potential for valid comparisons across studies testing the cost-effectiveness of brief interventions in these settings.

Brief intervention kits and resources targeting SNAP risk factors in Indigenous primary health care have been developed. [163] Some of these kits have been developed by local Indigenous Australian communities and others by government and non-government agencies. Furthermore, evidence-based preventive health care guidelines specifically for Indigenous Australians recommend some of these brief intervention kits and resources. [48, 57] Although there is some qualitative evidence that such kits are acceptable, [12] [164] there have been no attempts to date to systematically identify the quantity and review the quality of these kits. Given the lack of information regarding the availability and quality of these kits, the potential benefits of implementing evidence-based brief intervention kits in primary health care, and the need to identify evidence-based brief intervention kits for this study, an audit and review of brief intervention kits specifically designed to reduce SNAP risk factors among Indigenous Australians was undertaken.

This aims of this chapter are to:

- Identify brief intervention kits targeting SNAP risk factors among Indigenous Australians and review the content of these kits, including evidence-based components and the readability of patient education brochures.
- Discuss the implications of these results for a feasibility study of disseminating evidence-based SBI for SNAP in Indigenous primary health care settings.

METHODS

Identifying resources

A brief intervention kit was defined as a set of resources specifically designed to support healthcare workers to deliver brief intervention for SNAP risk factors to Indigenous Australians in routine health care.

Brief intervention kits were identified using three steps:

1. Identifying phone contacts

A list of phone contacts for NSW-based ACCHSs (n=40) and state representative bodies of ACCHSs (n=7) was generated from the web-site of the National Aboriginal Community Controlled Health Organisation (NACCHO) [94] and the Aboriginal Health and Medical Research Council (AH&MRC) [165]. In addition, phone contacts for state/territory and commonwealth government health departments (n=8) and non-government health organisations (n=6) in Australia were identified from the Australian Government Department of Health and Ageing (AGDHA). [166]

2. Phone survey

The first author contacted all of the organisations identified in step one (n=61) by telephone. Phone contacts were asked if their organisation knew of brief intervention kits specifically targeting reductions in smoking, poor nutrition, alcohol misuse or physical inactivity in Indigenous Australians. If the phone contact answered yes, additional questions were asked to determine the type, purpose and availability of the kit. The first author requested a copy of the kit if it was relevant to this review or if its relevance was unclear by the information provided. If the phone contact answered no, the first author asked them if they knew of organisation/s or person/s that might be of assistance. All phone contacts were also asked if they knew of lifestyle programs targeting Indigenous Australian communities, on the basis that health promotion resources are often utilised in such programs. Eight additional contacts working in the Indigenous health promotion field were identified through initial phone contacts.

3. Examination of Indigenous resource guides

The 2006 edition of the 'Indigenous Health Promotion Resources Guide,' an annual publication of health promotion resources targeting Indigenous Australians, [163] and the Indigenous health *Info*net, a web-based Indigenous health resource, [167] were examined. Five organisations not identified in steps one or two, but listed as having a SNAP-related resource were contacted. In total, 74 organisations were consulted.

Review criteria

Brief intervention resources were reviewed using criteria adapted from three main sources: current evidence-based guidelines and recommendations applicable to each SNAP risk factor, [17, 43, 47, 168] recommendations for presenting evidence to health consumers [169], and a published guide for evaluating health promotion resources. [170] Specific review criteria included resource format, evidence-based components, evidence based content of information and readability of patient brochures.

The readability of patient brochures was assessed on the basis that there is strong evidence of a difference between the reading levels of written materials and the reading skills of target populations [171]. Flesch Reading Ease (formula A), a validated reading formula assessing the difficulty of written material in relation to the number of words in sentences and the number of syllables in words, [172] was used to assess the readability of patient brochures. This formula was chosen on the basis that other formulas designed to assess the readability of written material indicate the approximate level of schooling from USA Grade 4 to Grade 18 required for comprehending this material, yet many individuals who attain a Grade 10 level of education are unable to fully comprehend written material at that level [173]. For example, one study found that the grade level attained and the reading levels of patients attending Family Planning Clinics in the USA were incompatible [174]. Furthermore, Indigenous Australians are unlikely to attain a level of formal education equivalent to that of non-Indigenous Australians. [5]

A score from 0-100 represents the percentage of the population who would be expected to understand a written passage. [172] Scores in the range of 60 to 70 are considered to indicate plain English, as shown in Table 3.1. Scores were generated using Microsoft Office Excel 2003.

Table 3.1 Guide to interpreting Flesch Reading Ease scores

Flesch Reading Ease score	Description of style	Publication type
0-30	Very difficult	Scientific Journal
30-50	Difficult	Academic
50-60	Fairly difficult	The New Yorker
60-70	Standard	Readers Digest
70-80	Fairly easy	Slick Fiction
80-90	Easy	Pulp fiction
90-100	Very easy	Comics

Source: [172]

RESULTS

The characteristics of brief intervention kits are summarised in Table 3.2.

Table 3.2: Characteristics of brief intervention kits

Title and year of production	Target risk factor/s	Format	Evidence based Components				Content			Readability of brochures
			Evidence based delivery framework	Patient education brochures	Screening tool	Training manual	Health effects	Harm reduction strategies	Evidence based guidelines	Flesch Reading Ease
Talking about alcohol with Aboriginal and Torres Strait Islander patients 2003	Alcohol	Flipchart	✓	×	×	×	✓	✓	✓	NA
The Grog Kit 2005	Alcohol	CD ROM	✓	✓#	✓	×	✓	✓	✓	NA
Alcohol and your health: Australian alcohol guidelines for Indigenous Australians 2000	Alcohol	Flipchart	✓	✓	✓	×	✓	✓	✓	66.3
When you smoke your baby and family smokes too! 2002	Smoking	Flipchart	×	✓	×	×	✓	✓	x	74.2
The Tobacco Book 2001	Smoking	Package	✓	✓	×	✓	✓	✓	✓	86*
QLD Smoke Check 2005	Smoking	Package	✓	✓	✓	✓	✓	✓	✓ mostly	81.8*
NSW Smoke Check 2006	Smoking	Package	✓	✓	✓	✓	✓	✓	✓	80.5*
The Lung Story 1997	Smoking	Flipchart	×	×	×	×	✓	minimal	×	NA
Alcohol and other Drugs can affect your baby 2000	Alcohol and smoking	Flipchart	×	×	×	×	✓	✓	×	NA

* Average score across multiple brochures # Designed to print out personalised patient feedback

Of the nine brief intervention kits reviewed, five targeted smoking, three targeted alcohol, and one targeted alcohol and smoking. No brief intervention kits targeted nutrition or physical activity. Results of applying the criteria to brief intervention kits are presented separately for alcohol and smoking.

Alcohol

Format

For brief interventions targeting alcohol (n=4), three were flipcharts and 1 was an interactive CD-ROM.

Evidence-based component/s

Evidence-based components of brief intervention kits targeting alcohol (n=4) comprised: EB delivery framework (n=3), patient education brochures (n=2), clinical decision making tool (n=3), screening tool (n=2), health professional training resource (n=0).

* NB one brief intervention kit targeted alcohol and tobacco.

Consistency with evidence-based guidelines

The consistency of alcohol kits with evidence-based guidelines was assessed in relation reporting of definitions of standard drinks, definitions of drinking risk and harm reduction strategies.

a) Standard drink

Three of the brief intervention kits for alcohol provided definitions of a standard drink and information on safe levels of alcohol consumption consistent with the recommended standard drinks guide. Two of these kits also identified and illustrated a broad range of different alcoholic drinks, identifying the percentage of alcohol and quantity of standard drinks contained within each. Additionally, these kits provided recommendations for individuals consuming alcohol to read the label on the alcoholic container to monitor personal consumption, and described the difficulties monitoring alcohol consumption when drinking from non-standard, shared containers or home brewed kits.

b) Drinking risk

Two alcohol kits provided specific definitions of low risk, binge and high risk drinking consistent with evidence based guidelines and advised against saving up drinking days for a binge. One kit provided definitions of low and high risk drinking but did not provide a definition of binge drinking. Definitions of drinking risk for pregnant women varied, with two kits recommending abstinence and two kits recommending no more than 1 or 2 alcohol drinks a day.

c) Harm reduction strategies

All alcohol kits (n=4) recommended some appropriate harm reduction strategies to reduce alcohol-related harm including: drink light beer (n=1); drink slowly (n=2); eat before and/or when drinking alcohol (n=3); set personal limits (n=2); participate in alternative activities (n=2); stay away from fellow drinkers (n=1); have non-drinking days (n=1); avoid drinking when unhappy (n=1); fill up own glass (n=1); restrict money when going out (n=1); restrict alcohol consumption to one standard drink a day when pregnant (n=1); and consume alternative beverages (n=1). Three alcohol kits recommended abstinence from alcohol for: individuals taking medication or other drugs, and individuals driving, swimming or operating machinery. One alcohol kit recommended abstinence for individuals who are alcohol dependent.

Identified harms

All brief intervention kits targeting alcohol presented information on harms related to alcohol misuse. Specific information on harms presented in these alcohol kits is detailed below.

Short term

All alcohol kits (n=4) identified some short term health effects of alcohol misuse including: headache (n=2); stomach ache (n=1); nausea (n=1); bleeding in pregnancy (n=1); gestational diabetes (n=1); high blood pressure during pregnancy (n=1); tiredness (n=1); hangover (n=3); vomiting (n=2); and dehydration (n=1).

Three of the four kits targeting alcohol identified short term health effects for the baby of a mother consuming alcohol during pregnancy. These included: growth retardation

(n=3); learning difficulties (n=3); physical abnormalities (n=3); heart and bone damage (n=1); and poor coordination and movement (n=1).Two of these kits also identified short term health effects for the baby of a mother consuming alcohol during pregnancy: weak muscles (n=1), poor feeding (n=2), and being less active (n=1).

Long term

All alcohol kits (n=4) identified some long term health effects of alcohol misuse including: brain related conditions (n=3); heart related conditions (n=3); stomach problems (n=3); pancreatitis (n=3); diabetes (n=3); sexual impotence (n=2); liver related conditions (n=3); high blood pressure (n=1); alcohol dependency (n=2); and foetal alcohol syndrome (n=3).

In addition to long term health effects, all kits (n=4) identified some negative social consequences of alcohol misuse including, violence (n=1); car accidents (n=1); trouble with police (n=1); arguments (n=1); loss of drivers licence (n=1); unable to look after family (n=1); spending money (n=1).

Disadvantages of drinking

Risk binge drinking (n=2); risks of taking alcohol with medication or other drugs (n=1); risks of drinking while pregnant or breastfeeding (n=2); risks of driving or operating machinery when drinking (n=1); and risks of drinking for specific age groups (n=1) were reported. One kit provided information on the proportion of alcohol misuse and alcohol related harm among the Indigenous population, with instructions to health professionals to present this information to clients when discussing the risks in drinking alcohol.

Flesch Reading Ease (formula A)

The one alcohol kit including patient health education materials recorded a Flesh Reading Ease score of 66.3.

Smoking

Of the brief intervention kits targeting smoking (n=6), four targeted smoking generally, one targeted smoking in pregnancy, one targeted smoking in Aboriginal children and one targeted the effects of passive smoking on babies and families.

Format

Of the brief intervention kits targeting smoking (n=6), three were flipcharts and three were packages.

Evidence based components

Evidence based components of brief intervention kits targeting smoking (n=4) comprised: Evidence based delivery framework (n=2); patient education brochures (n=4); clinical decision making tool (n=2); screening tool (n=2); and health professional training resource (n=2).

* NB one brief intervention kit targeted alcohol and tobacco.

Consistency with evidence based guidelines

The consistency of smoking kits with evidence-based guidelines was assessed in relation to harm reduction strategies and quit methods.

a) Harm Reduction Strategies

Five of the six tobacco smoking kits recommended strategies to reduce the effects of passive smoking including: quit smoking (n=1); smoke outside (n=3); don't smoke around babies, children and/or older people (n=3); don't allow children to roll or light up cigarettes (n=3); home and car smoke-free zones (n=4); don't smoke while pregnant

(n=2); don't smoke when breastfeeding (n=1); and remove ashtrays from inside the home (n=1). All of these kits emphasised the importance of reducing children's exposure to passive smoke. Two of the six tobacco smoking kits recommended smokers reduce the number of cigarettes smoked to reduce their level of harm. One of these kits identified cutting down on the number of cigarettes smoked as the next best alternative to quitting for individuals (including pregnant women) unable to quit and provided tips on how to cut back, while the other kit targeting drug use in pregnancy recommended that husbands help their wives quit by cutting down on their own smoking.

b) Quit methods

Three of the six kits targeting smoking provided information on evidence-based quit methods, including Bupropion (n=3); Nicotine Replacement Therapy (NRT) (n=3); cold turkey (n=3); and quit support group (n=3). Two kits recommended reducing the number of cigarettes smoked as a means to quit smoking. One of these kits recommended smoking cessation within two weeks of reducing the number of cigarettes smoked, and described the health risks and problems associated with reducing the number of cigarettes smoked solely for harm reduction purposes.

Identified harms

All brief intervention kits targeting tobacco smoking presented information on harms related to smoking. Specific information on harms presented in tobacco smoking kits is detailed below.

Short term

Short term health effects of smoking included: coughing (n=2); breathlessness and tightening of the chest (n=3); and increase in heart rate and blood pressure (n=1). Information targeted only smokers thinking about giving up and smokers not ready to give up for two resources of the four resources targeting tobacco smoking generally.

Long term

Two of the four kits targeting tobacco smoking generally presented information on the long term health effects for only those smokers thinking about giving up and smokers not ready to give up. Components of these two kits targeting pregnant women and non-

smokers did not describe long term health effects. The other two kits included the long term health effects of smoking within information targeting all recipients of the intervention. Three of these four kits used an illustration of the human body to assist in describing the long term effects of smoking.

Passive smoking

All kits targeting smoking (n=6) identified some effects of passive smoking, including: ear infections (n=2); chest infections and asthma (n=5); lung damage (n=1); increased visits to the hospital (n=1); SIDS (n=3); and growth problems (n=1). Two tobacco smoking kits included the effects of passive smoking in the information targeting all categories of smokers.

One tobacco smoking kit only incorporated the effects of passive smoking in the information targeting pregnant women, while another incorporated the effects of passive smoking only in the information targeting smokers thinking about giving up and smokers not ready to give up. This kit also identified how quitting lowers the risk of child health conditions affected by passive smoking in information targeting ex-smokers.

The two tobacco smoking kits specifically targeting smoking in pregnancy identified the risks of passive smoking for unborn babies only. All tobacco smoking kits identified the risks of passive smoking for babies and children.

Smoking and pregnancy

Six of the seven tobacco smoking kits identified some risks of tobacco smoking for the unborn baby of pregnant mothers who smoke, including, low birth weight (n=5); premature birth (n=4); miscarriage or stillbirth (n=2); infertility (n=1); baby addiction to nicotine (n=1); respiratory-related illness (n=3); SIDS (n=3); ear infections (n=1); poor growth (n=1); reduced breast milk supply (n=1); and colic (n=1). Tobacco smoking kits specifically targeting smoking and pregnancy identified more risks than those targeting smoking more generally.

Social consequences of smoking

Four tobacco smoking kits identified some negative social consequences of smoking, including social exclusion (n=1); sorry business (n=1); less physically active (n=3); financial cost (n=4); and kids don't like it (n=3).

Flesch Reading Ease (formula A)

Four brief intervention kits for smoking included patient education materials. Flesch Reading Ease scores of these patient education brochures comprised 74.2, 80.5, 86 and 81.8.

DISCUSSION

Limitations

All brief intervention kits in use may not have been identified for two main reasons: the kit identification methods employed were inadequate, or those who were contacted reported erroneously. However, the consultation process involved phone calls to NSW-based ACCHSs, which snow-balled into phone contacts in Western Australia, Queensland and the Northern Territory, as well as all state and territory representative bodies of ACCHS. Further, both the Indigenous Health Promotion Resources Guide and Indigenous Health*Info*net were examined. Once services were contacted, a specific request was made to speak with individuals most likely to be aware of brief intervention kits, such as those working in the Indigenous health promotion field. Where information provided about a resource was ambiguous, the resource was obtained to determine its relevance to this review. Sixteen kits were obtained in this manner, all of which proved irrelevant.

Intervention kits

Despite the disproportionately high rates of overweight and obesity among Indigenous Australians, [25] none of the brief intervention kits reviewed targeted nutrition or physical activity. Limited evidence for the effectiveness of brief interventions for physical activity [55] and nutrition [175] in the general population may reduce the

likelihood of brief interventions being developed in these areas for Indigenous Australians. Despite the uncertainty of the evidence, regular assessment of patients' level of physical activity and dietary intake within primary care is recommended and promoted in both general practice [17] and Indigenous primary health care. [85] As such, adequate brief intervention resources to support the delivery of brief interventions to Indigenous Australians identified as being at risk of physical inactivity and poor nutrition in primary care are required. A physical activity and nutrition brief intervention targeting Indigenous Australians was being developed at the time of this audit review by experts in Queensland. If this resource is evidence-based, outcomes from a study of its implementation and evaluation might prove valuable.

Evidence-based components

Only three of the nine intervention kits contained each of the five evidence-based components included in the review criteria, of which all were smoking kits. The two kits that did not contain any evidence-based components were flipcharts developed by local Aboriginal communities in the Northern Territory. Generally, kits developed with input from government departments or specialist health agencies comprised more evidence-based components than those that appeared to be developed by local Indigenous communities alone. This might suggest a lack of expertise, resources and/or funding within local Indigenous communities to develop evidence-based health resources.

Evidence-based framework

No alcohol kits included widely recognised evidence-based brief interventions approaches: FLAGS (Feedback, Listen, Advice, Goals and Strategies) [176] or FRAMES (Feedback, Responsibility, Advice, Menu, Empathy and Self-efficacy). Three alcohol kits promoted general principles of brief intervention, such as motivational interviewing, [134, 177] one of which provided a definition of a brief intervention and provided clear instructions for its delivery. [177]

For smoking, three kits recommended the Four As (Ask, Assess, Advise and Assist) to structure smoking cessation in health care settings. This approach was updated almost a decade ago to the 5As to include Arrange follow-up. [43] Two of these kits assessed

readiness to quit using Stages of change, a behavioural model for assessing a person's readiness to change their behaviour. [178]

Preferably, brief intervention kits should use recognised evidence-based brief intervention approaches. First, the elements involved in these approaches are clearly defined and are compatible with more general evidence-based strategies such as motivational interviewing. [179] Secondly, the effectiveness of brief interventions utilising these approaches has been demonstrated.

Screening tools

Two of the four kits targeting alcohol included a full version of the Alcohol Use Disorders Identification Test (AUDIT), a 10-item validated screening tool to detect alcohol misuse in primary health care. [126] AUDIT is most effective at identifying patients with at-risk, hazardous, or harmful drinking. [180] AUDIT has successfully been used in a range of health care settings to detect harmful and dependent drinkers, has demonstrated good validity across different cultural and social groups, and has proven acceptable and practical to use among a range of health professionals. [47] Encouragingly, one of these alcohol kits provided detailed instructions to health professionals on how to administer the AUDIT and interpret client responses, while the other kit incorporated the self-administered version of the AUDIT into an interactive CD-ROM for health practitioners. Despite its utility and value, AUDIT is yet to be formally validated in Indigenous primary health care, [48] and there have been suggestions that its standard form of administration may not be feasible or acceptable to Indigenous Australian patients. [86] Indeed, the failure of previous attempts to implement AUDIT in Indigenous health care settings appeared to be the basis for one of the alcohol kits in this review to alert health professionals to the potential difficulties of administering AUDIT to Indigenous patients and suggest alternative screening questions. [177] Not withstanding these potential difficulties, AUDIT is recommended in the *Alcohol Treatment Guidelines for Indigenous Australians*, with recommendations to adapt its administration to suit local conditions. [48] AUDIT-C, a three item validated screening tool to detect problem drinkers in health care settings, has the potential to overcome some of the problems encountered in previous attempts to implement alcohol

screening in Indigenous health care settings. AUDIT-C comprises the first three questions of AUDIT and has demonstrated effectiveness at detecting problem drinkers in mainstream primary health care settings. [181]

Content

Alcohol harm reduction strategies were generally consistent with evidence-based guidelines and recommendations. However, advice to reduce harms targeting alcohol consumption in pregnancy women was inconsistent. For example, among the three alcohol kits providing such advice, this advice ranged from: restrict alcohol consumption to one standard drink a day; or consider not drinking alcohol and never become intoxicated; or abstain from alcohol consumption when trying to conceive, pregnant and breastfeeding. These differences might reflect the level of uncertainty and debate as to what constitutes a safe level of alcohol consumption for pregnant women. For example, Australian alcohol guidelines recommend to pregnant women: do not become intoxicated, consume no more than two standard drinks a day (spread over two hours), and consume no more than six standard drinks in one week. [23] Alternatively, The Australian Medical Association (AMA)[144] have more recently promoted a 'zero alcohol' message for pregnant women on the basis of evidence that women who consume even small amounts of alcohol during pregnancy could inadvertently harm their unborn children. [182] Notably, NHMRC draft alcohol guidelines recommend pregnant women abstain from alcohol. [183]

Information on Fetal Alcohol Syndrome (FAS) [71] was not included in all alcohol intervention kits. Data indicates that children born to Indigenous women are at a considerably higher risk of FAS than those born to non-Indigenous women, [184] suggesting that Indigenous women are more likely to consume alcohol at high risk levels during pregnancy than non-Indigenous women. Educating Indigenous women on the risks of excessive alcohol consumption during pregnancy, as well as assisting those who are pregnant and consuming alcohol to excess levels to reduce their consumption to low risk levels or abstain from alcohol, is, therefore, critical. However, one survey conducted in Western Australia found that only one quarter of health professionals surveyed routinely provide information to pregnant women on the effects of alcohol use

in pregnancy, and that approximately one-fifth never provide this advice. [185] These health professionals identified the unacceptability and poor availability of resources as a major barrier to providing advice on FAS to pregnant Indigenous women. Two of the four intervention kits targeting alcohol in this review included information on FAS, but only one of these kits included this information in a patient education brochure.

For tobacco smoking, two kits recommended reducing the number of cigarettes smoked to reduce harm and as an alternative to quitting. Both recommendations are inconsistent with evidence-based guidelines. Evidence shows that reducing the number of cigarettes smoked simply results in compensatory smoking. [152] Therefore, this strategy is only recommended when the goal is to quit smoking within two weeks. [43] Two possible reasons for these tobacco smoking kits to recommend cutting back on the number of cigarettes to reduce harm are identified. Firstly, the intervention kit may have been developed without adequate referral to evidence-based guidelines. Secondly, the recommendation may constitute an attempt to establish more realistic goals in light of the circumstances that often circumscribe Indigenous individuals' efforts to quit smoking. Nationally, the percentage of Indigenous Australians reported to smoke tobacco is slightly more than 50%, [5] increasing to more than 80% in some remote Indigenous communities. [132] A culture of tobacco use (a legacy of colonisation) is embedded in many Indigenous communities, [186] surveys indicate that more than 50% of AHWs smoke, [187] and studies have identified an excess of tobacco smoking among Indigenous youth. [188] Nevertheless, a recommendation to cut back on the number of cigarettes smoked to reduce harm is inconsistent with evidence-based guidelines, so its inclusion is unwarranted.

Patient education materials

Three intervention kits did not include patient education brochures, reducing the likelihood that patients receiving a brief intervention by health professionals utilising these kits will receive written information. The Health Belief Model and the Theory of Reasoned Action both consider the provision of information as the first step towards behavioural change. [73] Although the provision of information alone is unlikely to result in behavioural change, written materials, especially when presented in a format

acceptable to patients can reinforce and supplement verbal advice. [189] Written materials might also provide health professionals with an alternative for patients who do not want to receive verbal advice or are not ready to modify their risk behaviour. Furthermore, illness and stress decrease both attention span and comprehension and it is known that patients remember only part of each consultation. [190] As such, patient education materials distributed during a consultation might provide reinforcement for the patient to digest at his/her own leisure. Patient education materials might also act as a reference for health professionals, and be distributed by health professionals to patients when there is insufficient time to deliver verbal advice. In reference to the latter, brief interventions are probably more likely to be effective when health professionals discuss with patients the possible health consequences of their risk behaviour/s and assist them to set goals and develop strategies to modify their behaviour/s. [179] However, health professionals often report not having enough time to deliver brief intervention in primary care. [191] Written information in the form of a well-designed brochure might reduce the amount of time it takes health professionals to deliver verbal advice, possibly increasing the likelihood that it will still be delivered under time constraints. Well-designed patient education materials can also promote patient compliance and self care. [192] For example, one study testing the effectiveness of a tailored educational brochure versus a standard hospital letter at enhancing follow-up compliance found that patients receiving the educational brochure showed greater awareness of the importance of follow-up and lower levels of general psychological distress than those receiving the standard hospital letter. [193]

Readability and presentation are two important components of patient education brochures. [194] The readability of patient education materials was assessed on the basis that there is strong evidence that a difference exists between reading levels of written health materials and reading skills of target populations. [171] Written information can also increase patient satisfaction. [193] Therefore increasing the likelihood that patients will read written information is important. Encouragingly, three sets of patient education brochures scored in the ‘Easy’ category as determined by the Flesch Reading Ease formula. The remaining two brochures scored in the ‘Fairly Easy’ (n=1) and ‘Standard’ (n=1) categories.

With regards to presentation, patient education materials with well-designed graphics, layout, size, colour and images can increase the likelihood of patients reading them. One study testing pamphlets with various groups found that patients consistently ranked and rated the pamphlet with the design only characteristics more highly than the pamphlet with the content only characteristics of the checklist. [195] There is also anecdotal evidence that patient health education materials easily identifiable as targeting Indigenous Australians are more likely to be acceptable to Indigenous Australians. [196] All of the intervention kits included in this review used colour, images and language identifiable with Indigenous Australia, potentially increasing their level of acceptability to Indigenous health professionals and Indigenous patients.

CONCLUSION

In conclusion, two smoking kits, Smoke Check NSW and the Tobacco Book, met all of the criteria developed by this review. In addition, three alcohol kits and one smoking kit were consistent with evidence-based guidelines, but they did not meet all of the review criteria, primarily due to their lack of a training package, patient education materials and evidence-based framework for delivery in primary health care.

With regards to the two smoking kits that met all review criteria, Smoke Check NSW was developed specifically for Aboriginal communities in NSW, has been pilot tested with Aboriginal patients and AHWs in NSW, and a strategy exists for its wide dissemination throughout NSW. Alternatively, The Tobacco Book was developed by and for Aboriginal communities in the Northern Territory. Therefore it is highly likely that Smoke Check NSW will prove more acceptable for implementation in ACCHSs in NSW than the Tobacco Book.

With regards to alcohol, Talking about alcohol with Aboriginal and Torres Strait Islander patients, [177] The Grog Kit, [134] and Alcohol and your health: Australian alcohol guidelines for Indigenous Australians [197] are the best evidence-based brief intervention kits for alcohol targeting Indigenous Australians. Of these kits, only the Grog Kit comprised all components included in review criteria. However, there is limited evidence for the effectiveness of brief intervention delivered by touch screen

computers in primary care. One study did demonstrate that patient-driven hand-held computers is a feasible method to collect information and health related behaviours in mainstream primary care, [198] but there have been no published studies of their use in Indigenous primary health care settings.

The other two evidence-based alcohol kits lacked important components, such as a training manual/program, patient education brochures or patient education materials with high readability. As such, their effective dissemination in Indigenous primary health care will probably require the development of these components. Although this is potentially possible, the development of new resources is likely to be a more time consuming, complex and costly method than tailoring existing resources. As such, tailoring comprehensive evidence-based kits developed for the general population to Indigenous health care settings should be considered. Aside from some anecdotal evidence that Indigenous Australians prefer patient education materials easily identifiable as Indigenous Australian, there is no evidence to suggest that evidence-based brief interventions developed for the general population, if tailored in collaboration with Indigenous communities, will not prove acceptable and feasible for implementation in Indigenous primary health care. In fact, the evidence for the acceptability and feasibility of Indigenous-specific brief interventions in primary care would appear to be equally as weak as that for mainstream brief interventions tailored for implementation in Indigenous primary health care.

Therefore, in the absence of comprehensive evidence-based brief intervention kits for alcohol targeting Indigenous Australians, it would seem reasonable to explore the possibility of tailoring comprehensive evidence-based kits for alcohol developed for the non-Indigenous population for implementation in Indigenous health care settings. The following chapter proposes one research approach for examining the process of implementing and adapting evidence-based SBI components for integration into ACCHSs.

Chapter Four

Action research: a collaborative approach for implementing change in Indigenous primary health care.

BACKGROUND

As outlined in Chapter One, the dissemination of brief intervention into primary health care continues to be problematic. Although factors that influence the dissemination of brief intervention in primary health care settings are extensively documented, they are poorly understood. As such, research methodology that illuminates the characteristics, processes and phenomena of health care settings are required. Over at least the last decade, there has been a growing recognition of the important role of collaborative/participatory research approaches (collaborative inquiry) [199] and qualitative research methods [200-202] to health services research. The contribution of qualitative research to health services research is perhaps best exemplified by the inclusion of qualitative methods in models and approaches for developing and evaluating interventions [61, 125] and their increased application to implement evidence in primary health care. [130, 203-205]

With regards to collaborative inquiry, there is now general agreement as to the importance of researchers working collaboratively with health professionals and health service managers to implement evidence in primary health care practice. [125, 206, 207] Action research represents one possible collaborative approach for getting evidence into practice. Action research involves working collaboratively with people to identify issues or problems, develop a plan of action, implement action, and/or evaluate the process and outcomes of action. [208] The nature of the research questions posed in this study is such that action research approach offers the best way to address these questions.

This chapter has three aims:

1. To discuss the types and process of action research and its role in health care research.
2. To describe and review methodological and contextual aspects of published action research studies targeting Indigenous Australians.
3. To describe the action research design of this thesis, including methods and strategies of data collection and analysis.

What is action research?

Action research is collaborative/participatory research oriented towards bringing about improvement of a practice, including improvement in understanding of a practice by its practitioners and improvement of the situation in which practice takes place. [209]

The more commonly accepted characteristics of action research are summarised below:

i) Inquiry aim: solve problems; improvement and involvement; determine practical consequences of action

ii) Nature of knowledge: reconstructed; provisional; problem-centered

iii) Knowledge generation: reconstruction through action, experimentation and interaction; derived from consequent phenomena

iv) Process: cyclical in which research, action and evaluation are interlinked

v) Use of theory: philosophical lens; explanatory; united with praxis

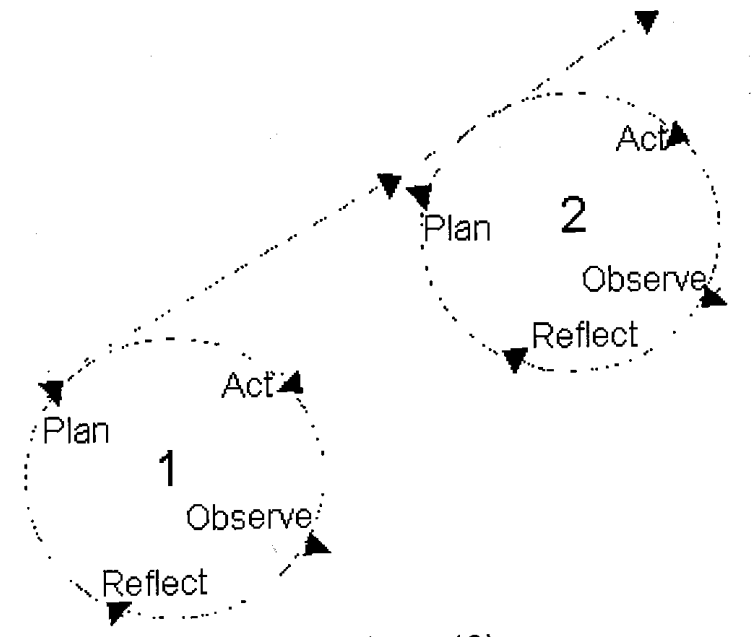
vi) Methods: mixed methods, with an emphasis on qualitative methods.

vii) Validity: workability; local relevance; theoretical transferability; logic and purpose of action. [210, 211, 212-214]

The cyclic process

In theory, the process of action research involves the systematic application of cycles of research activity incorporating four key stages: Plan, Act, Evaluate and Reflect. The completion of an action research cycle may lead to the identification of new problems, plans, action and evaluation. Movement between cycles of inquiry is iterative, as represented in Figure 4.1.

Figure 4.1: The action research cycle [215] p.13



The general aim of each stage within the action research cycle is as follows:

Plan: examine the general idea in relation to the means available (time, expertise, resources etc.) for researching the objective. This includes fact finding and the development of a plan to reach objectives. Part of this plan generally involves making a decision about the first action step or intervention.

Act: implement the first action step or intervention (change) in collaboration with participants. The level of participant involvement will depend on the nature of the change and type of action research applied.

Observe: apply multiple methods to monitor the change, and its impact upon the situation as understood by participants.

Reflect: recollect and critique what happened as a result of the change, in collaboration with participants, and decide what action step or intervention to implement next.

An action research study may consist of one or more cycles of inquiry [216] or comprise a series of smaller cycles of inquiry embedded in a larger project. [205] The cycle of action research inquiry is critical to the generation of knowledge not only when an intervention has been developed and/or implemented successfully, but also when the intervention has failed or an action has produced unintended outcomes, as it offers an opportunity to learn from experience by reflecting on the process and outcomes [217].

The stages of the action research cycle are analogous to steps proposed for getting evidence into practice, [64] iterative models for developing complex health interventions [61] and the continuous improvement process in quality improvement research. [218] Some qualitative researchers have proposed that what distinguishes action research from more conventional qualitative research approaches is in degree rather than kind. 219] For example, while different types of research approaches generally require some level of participant involvement, collaboration between researchers and participants is intrinsic to all types of action research inquiry. [214] With regards to health service research, the participatory element of action research has the potential to increase the likelihood of health professionals and managers having input into intervention design and implementation, and researchers documenting findings in a way that make explicit the practical and ethical implications of an intervention for health professionals and managers. At the very least, health service researchers might consider applying some of the collaborative ways of working with people in social settings pioneered by action research to increase the likelihood that their findings are more readily accessible to and usable by health professionals and managers. [219]

Theoretical perspectives

Several theoretical perspectives underpin action research. As such, action research practitioners typically do not draw exclusively on any one theoretical perspective to better understand a problem or issue, or to justify their approach to action research. [220] For example, in their systematic review of action research studies published in the healthcare field, Waterman et al. reported that several theoretical perspectives informed the action research studies included in their review. [221]

The multiple theoretical perspectives that inform action research are reflected in the numerous disciplines in which action research practices can be found. These include community development, education, medicine and healthcare, social work, business and management, psychology and the human and social sciences. [220] The emphasis on any one or a combination of theoretical perspectives is generally dependent on the intended process and outcomes of action research, as well as the type of knowledge being generated. [220] For example, if the primary research aim was to build the capacity of a group of people to take greater control over their current situation, a participative approach would be adopted. [222] Alternatively, if the aim was to transform structures within a social group's environment in order to improve their current situation, a critical perspective might be adopted. [223]

Types of action research

Despite general consensus as to the general purpose and process of action research, there are several variations of action research, each with different points of emphasis and interpretations. It is beyond the scope of this thesis to describe these variations, suffice to say, the different types of action research are typically differentiated by their application of quantitative and qualitative methods, relationship between the level of researcher control and community participation and collaboration, problem focus and orientation, and measures of improvement. [224] Several ways of conceptualising the different types of action research have been proposed by action researchers. [210, 220, 221, 225, 226] One of the more widely applied conceptual frameworks in the health care field is the action research typology developed by Hart and Bond. [227] Hart and Bond's action research typology identifies four basic types of action research: experimental, organisational, professionalising and empowering. Hart and Bond propose that these four types of action research represents a continuum of the interaction of seven criteria characterising action research: education; interaction with individuals as part of a social group; problem focused; context specific and future oriented; a change intervention; improvement and involvement in a cyclical process; and a research relationship founded on participation in change. [214] The typology is a useful tool for conceptualising action research, particularly given the numerous definitions, types and explanations arising from attempts to concisely and precisely

answer the question: What is action research? Importantly, Hart and Bond emphasise that their typology is "a guide to practice, not a prescriptive device" and acknowledge that, in simplifying the action research process, elements of its iterative process are inevitably compromised. [214] Likewise, Meyer highlights the limitations of Hart and Bond's typology, suggesting that its multidimensional nature makes it difficult to classify individual studies. [227] The limitations of Hart and Bond's typology of action research were further exemplified by Waterman et al., in their unsuccessful attempt to use it to categorise studies they identified in a systematic review of action research undertaken in the health care field. [221]

Despite its limitations, there appears to be some level of agreement that the typology is a useful tool for representing the spectrum of action research and distinguishing the characteristics of different action research approaches. [227] More specifically, the typology has been used by action researchers in the health care field to define their action research projects within the spectrum of action research approaches, [228] distinguish action research from other research approaches, [229] and examine the potential role of specific action research approaches in health service development. [230] As Meyer suggests, the value of Hart and Bond's typology is its potential to get action researchers thinking more explicitly about how their concepts and strategies will be operationalised, the unique characteristics of particular settings, and the potential contribution of individuals within those settings to solutions. [227] In practice, the four basic types of action research in Hart and Bond's typology are not distinct, but overlap. [225] Furthermore, the reflexive nature of action research means that inquiry typically and appropriately spirals from one approach to another in response to data and the needs of participants.

Action research in health care

In relation to improving health care practice, action research has typically been used to assess current situations in health care settings, develop and implement innovations and interventions, enhance knowledge and understanding among health care practitioners, promote greater participation by health care practitioners and patients, and conduct formative evaluations. [221] More specifically, in primary health care settings, action

research has been used to develop complex interventions targeting minority groups [231]; develop clinical guidelines [232]; introduce standardised health assessments in general practice [216]; promote greater involvement of clients in the evaluation of primary health care services [233], improve the provision of child health surveillance [228]; and develop roles within primary health care teams. [208]

Action research has been used to develop and implement strategies to improve organisational factors influencing preventive health care delivery, such as team work, communication and clinic systems and processes. [208] For example, one study used participatory action research to evaluate a pilot study of implementing a system for improving the screening of pregnant women in primary care. [234] The authors of this study reported that the application of this method revealed attitudinal and systemic barriers to health professionals using the new screening method that were not as easily identifiable by more conventional research methods, and recommended that future studies implementing complex interventions in primary care consider using action research methods. [234]

In relation to the dissemination of brief intervention in primary health care, Phase IV of the WHO collaborative project on identification and management of alcohol-related problems in primary health care used action research to establish a program of action across multiple countries to achieve widespread and routine SBI for alcohol in primary health care. [205] Another study reported using action research to develop a brief intervention model for alcohol that was acceptable to health professionals, as well as a strategy for its dissemination in primary health care. [235] Although implementation of the brief intervention model proved feasible, it did not result in significant improvements in health professionals' rates of SBI for alcohol at long-term follow-up, with the authors concluding that future dissemination research should aim to improve understanding of how to implement brief intervention for alcohol in such a way that facilitates and promotes uptake by health care professionals in primary health care. [235] Given its emphasis on solving problems and promoting the involvement of participants, it has been suggested that action research offers a potentially useful approach for dissemination interventions in health care settings. [236] Despite the potential of action research to facilitate the dissemination of interventions in primary

health care, there are suggestions that it is under utilised in this area of research, [202, 221] and that it is best suited to disseminating interventions when a high level of tailoring is required to accommodate the needs and interests of different groups within health care services. [237] That disseminating brief interventions in primary health care continue to encounter barriers at the level of the patient, health professional and organisation, [62, 86, 203] and that there is a diverse range of health professionals employed in ACCHS, suggests that research approaches promoting commitment, collective ownership and involvement of health and management staff working in these health services, and patients accessing these services, are required. Again, action research, with its emphasis on involving people in social settings in problem solving offers such an approach.

Action research in Indigenous health

A greater emphasis on collaborative research is one approach recommended to increase Indigenous community input into Indigenous health, with numerous calls for Indigenous Australians and their communities to have a more prominent role in health research. [80, 238] Participatory research in Indigenous health is particularly important given the exploitative and unproductive research that has characterised some Indigenous health research, [239] the economic, cultural and social differences that can exist between researchers and Indigenous communities,[238] and emerging evidence that collaborative research methods can improve the transfer of research into practice. [240] A number of Indigenous health research projects have used collaborative or participatory research approaches (and methods) to address Indigenous health inequalities in meaningful and effective ways. [107, 108, 110, 241]

Despite some evidence of the potential for collaborative research approaches to improve the process and outcomes of Indigenous health research, its principles have been debated, [239], and it can be exceedingly difficult to execute in practice. [242] For example, although community participation is recognised as a crucial element of collaborative research, its meaning, and how it might best be achieved within an Indigenous health context is relatively unclear. Kowal et al. suggest that health researchers need to move beyond good intentions and symbolic gestures to clearly

articulate the type of Indigenous participation characterising their research, and how this participation will contribute to the process and outcomes of their research. [243]

Tensions and difficulties can arise from research approaches that promote collaboration and participation just as easily as they can from experimental research approaches that restrict collaboration and participation, [242] although the nature of these difficulties is distinctly different. For example, participatory/collaborative research typically requires individuals, organisations and/or local communities to contribute time and resources, and in some cases take on additional responsibilities. Indigenous individuals, communities and organisations will not always have the interest, time or capacity to participate in research at levels that may be required or expected of them by researchers, but in these cases, of course, it is questionable as to whether or not true collaborative inquiry has been initiated. Other important issues for consideration when engaging in collaborative inquiry with Indigenous communities include internal power relations within communities and organisations; community consultation; communication; [242] collective decision making; ethical processes; [102] and mechanisms of feedback and research transfer. [244] As such, an issue that needs to be considered is the relationship between the primary researcher and those invited to collaborate, since trusting engagement is essential.

Review of action research in the Indigenous health field

Given increased calls for a greater emphasis on participatory/collaborative research in the Indigenous health field and the potential for this approach to improve the process and outcomes of Indigenous health research, a review of studies using participatory/collaborative research in Indigenous health settings was undertaken. To increase the review's relevance to the aims of this thesis, it focused on published Indigenous health studies labelled as participatory, collaborative or action research, and involving a health intervention. The following section reports the results of this review, and discusses its implication for future participatory/collaborative health research in the Indigenous health field.

Methods

Search 1: A simultaneous search of electronic databases, MEDLINE, EMBASE, CCTR, ACP Journal Club and DARE was conducted to locate articles relating to action research and Indigenous Australians.

Search 2: A separate search of the Indigenous Health*Info*Net Bibliography was also conducted.

Both searches were conducted using the terms "action research or participatory or collaborative."

Search 1 resulted in 128 publications, after electronic removal of duplicates. Search 2 resulted in 44 publications.

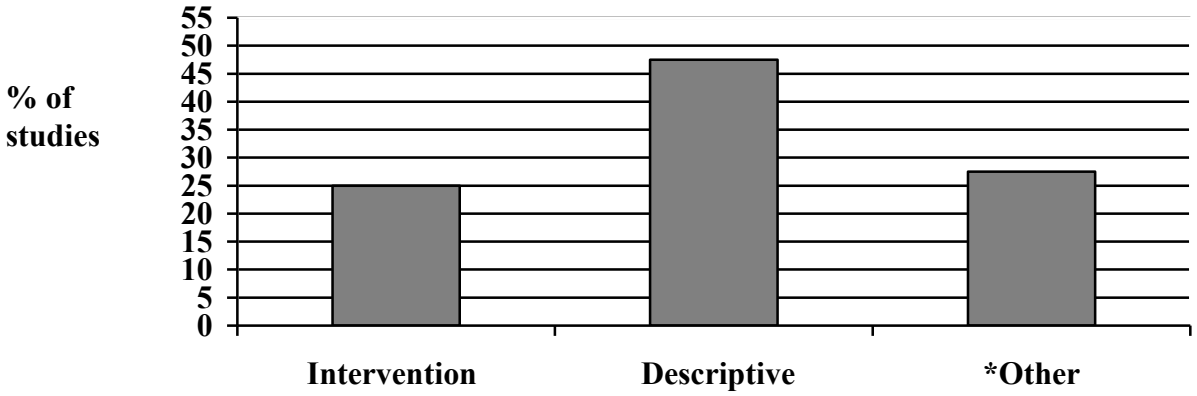
Searches 1 + 2 resulted in 172 publications.

Identification of action research studies

1. Articles were excluded if: (i) the study did not pertain to Indigenous Australians (n=95) (ii) the study was not related to action research (n=33) (ii) publications were duplicates (n=5). A total of 143 articles were excluded, leaving 40 articles.

The abstracts of the articles (n=40) identified were used to classify the studies into descriptive (n=19) or intervention (n=10) or other (n=11) (extracts of original articles, media articles, presentations, submissions to government agencies and theses). Intervention studies were defined as an evaluation or intervention [30]. In addition, studies reporting to use action research to develop a health innovation or intervention in Indigenous communities were included on the basis that action researchers typically adopt a broader definition of 'intervention' than researchers using more conventional research methods [214]. The outcome from this classification process is delineated in Figure 4.2.

Figure 4.2: Types of action research studies targeting Indigenous Australians



*Not primarily action research (n=17) and presentations (n=1).

Approximately 73% (n=30) of articles were descriptive (n=19) or intervention (n=10) action research studies in the Indigenous health field. Descriptive studies reported using action research approaches to identify needs, issues and priorities, develop better knowledge and understanding of issues, describe researchers' experiences using action research, or refine and develop theory. A summary of the key characteristics of action research studies classified as intervention were examined using criteria adapted from a systematic review of action research, [221] as presented in Table 4.1.

Table 4.1: Summary of action research intervention studies targeting Indigenous Australians

First author and year published	Targeted	Methods employed								Main outcome/s
		Action research type	Focus groups	Individual interviews	Observation	Survey	Record sheets	Audit health service records	Group meeting/ workshop	
Santhanam 2006	Health service delivery	PAR	×	×	✓	×	✓	×	×	Model of service delivery
Tsey 2004	Men's health	PAR	✓	×	✓	×	×	×	×	Empowerment
Viola 2006	Nutrition	NS	×	✓	×	×	✓	×	×	Not specified
Watson 2001	Diabetes	PAR	✓	×	×	×	×	×	✓	Innovation development
Hecker 1997	Workforce development	PAR	✓	✓	✓	×	×	×	✓	Empowerment
Whiteside 2006	Workforce development	NS	×	✓	✓	✓	×	×	×	Empowerment
Tsey 2002	Men's health	PAR	×	✓	✓	×	×	×	×	Empowerment
Salisbury 1998	Health service delivery	PAR	×	×	×	×	×	✓	×	Community engagement, health service usage
Smith 2002	Child health	PAR	✓	✓	✓	×	×	✓	×	Health improvement
Lovell 2003	Health & education	PAR	×	✓	✓	×	×	×	×	Community engagement

Targeted Issue

The primary issue targeted by action research studies identified as intervention (n=10) included health service delivery (n=2), Indigenous workforce development (n=2), men's health (n=2), child health (n=1), nutrition education (n=1), diabetes patient education resources (n=1), and the link between health and education (n=1).

Aim and/or objectives of action research

Eight studies (80%) identified aims and/or objectives. Capacity building or empowerment was the most commonly stated aim and/or objective (n=3), followed by developing knowledge (n=2), identifying problems (n=3), evaluating project outcomes (n=2), and developing an innovation or intervention (n=3).

Methods employed

Nine studies reported using qualitative methods, comprising individual interviews (n=6), observation (n=6), focus group interviews (n=4), group meeting/workshop (n=2), and informal discussions (n=1). Two studies reported using quantitative methods, comprising audit of health records (n=2) and survey (n=1). One study used one method, four studies used two methods and four studies used three to four methods.

Main outcomes

Empowerment (increasing the capacity of individual/s to improve their situation/s) was the main outcome for four studies. Community engagement was the main outcome for two studies. Main outcomes of remaining studies (n=4) included, health service utilisation (n=1), health improvement (n=1), innovation development (n=1), and development of a model of service delivery (n=1).

Implications of findings

This small-scale review has shown that the majority of action research studies published in the Indigenous health field are descriptive. Of the small number of action research studies classified as intervention (n=10) in this review, 80% reported using Participatory Action Research (PAR). PAR is compatible with community development [129], so it is not surprising that six of the eight studies reporting to use PAR also used a community

development approach. In general terms, PAR aims to facilitate the empowerment of individuals and their communities by producing knowledge and initiating action that is locally relevant and usable. [245] However, its intervention is not as clearly defined or as easily identifiable as in more experimental types of action research, [214] making it difficult to obtain accurate and reliable measures of improvement. As highlighted in Chapter two, the type and quality of intervention research implemented in Indigenous communities is less than optimal. The contribution of PAR to rectify this situation might involve application of its principles to facilitate the involvement of local Indigenous communities and community-controlled health services in the design, implementation and evaluation of intervention research to reduce potential conflict around study design and ownership of data, as well as the impact of factors that have reduced the validity of previous intervention research in Indigenous communities, such as poor recruitment and low attrition rates. The potential outcomes of such an approach were perhaps best exemplified in a clinical trial comparing the effectiveness of two types of antibiotics for treating otitis media in Indigenous children. [246]

Only two studies (20%) used action research to conduct an evaluation. This was less than the 46% of action research evaluation studies (n=52) reported in a systematic review of action research in the health care field [221], but consistent with the small quantity of intervention research being implemented in Indigenous communities more generally. [30]

All action research intervention studies conducted formative or process evaluations during intervention development or implementation using qualitative methods. Only two studies reported using quantitative methods to obtain objective outcome measures. Action research is synonymous with qualitative inquiry, so a preference for qualitative methods is to be expected. Indeed, the primary outcome measures of studies were more suited to measurement by qualitative, than quantitative methods. For example, four studies reported empowerment as the primary outcome measure. [241, 247, 248] Empowerment is an ambiguous concept, making it difficult to objectively measure. One study with empowerment as the primary outcome administered an ordinal scale to participants, pre and post, to measure changes in their self-awareness. However, the authors of this study concluded that observations of changes in participants' behaviours

provided them with stronger evidence of empowerment than the ordinal scale. [241] The difficulty measuring early changes of empowerment-based interventions using quantitative methods was highlighted in the findings of a critical review of community development interventions targeting Indigenous Australians. [129] The authors of this review concluded that the outcomes of community development interventions take a long time to manifest quantifiably, but that early changes could be measured by qualitative methods, the findings of which could signify the potential for future change. They recommended the development and application of more sensitive and robust measures to detect more accurately, early changes in the outcomes of empowerment interventions. [129] Likewise, Morrison and Lilford suggest that although action research effectively facilitates interventions through its flexible and creative approach to research, it could benefit by using more rigorous methods to evaluate the effectiveness of the interventions it develops. [219] They propose that the effectiveness of intervention action research be considered on two levels. First, what is the effectiveness of action research in facilitating interventions? Answering this question requires an assessment of action research as an approach to research and as a way of solving problems. This appeared to be the focus of all the action research studies included in this review. Secondly, what is the effectiveness of interventions developed and implemented using action research? Only two (20%) action research studies included in this review obtained a measure/s of the effectiveness of the intervention they developed or implemented; neither of which reported improvements. [249, 250]

The findings of this review demonstrated that there are few published action research studies in the Indigenous health field, and of the few that have been published, none involved the dissemination or implementation of evidence-based interventions in Indigenous primary health care. Given the growing contribution of action research to bridging the gap between research and practice in mainstream primary health care, and the potential for collaborative research to improve Indigenous health research processes and outcomes, this thesis employed an action research design to examine the process of implementing an intervention to enhance the implementation of evidence-based SBI for Smoking, poor Nutrition, Alcohol misuse, poor Nutrition and Physical inactivity (SNAP) in Aboriginal Community Controlled Health Services (ACCHSs),

demonstrating the level of tailoring required to optimise the likelihood of successful integration and sustainability into routine clinical care.

Action research design of thesis

The action research design of the research project reported in this thesis resembles an organisational approach to action research. This approach aims to identify problems and their possible causes within health services, and develop optimal ways of intervening to change them. [214] This is achieved through a more equal relationship between researcher and health professionals and managers than that which occurs in more conventional types of health services research, such as quality improvement research. [227]

Broadly, the action research study reported in Chapter five to Chapter eight of this thesis comprised five iterative and interrelated phases:

i) develop an understanding of the structure and activities of one rural and one regional ACCHS, as reported and perceived by health and management staff employed by these services;

ii) examine health and management staff, and client perceptions of factors influencing evidence-based SBI for SNAP risk factors in one rural and one regional ACCHS;

iii) collaborate with one regional and one rural ACCHS to develop an intervention to resolve barriers and reinforce enablers to evidence-based SBI for SNAP risk factors;

iv) examine the process and outcomes of implementing and adapting the intervention in one regional and one rural ACCHS; and

v) feedback the results of the implementation process to health and management staff in one regional and one rural ACCHS.

Researcher role and background

Background and research perspectives

For the past nine years I have worked in the field of Indigenous health, primarily as an educator in tertiary education. In this role I have taught primary health care and public health to AHWs; coordinated the development and delivery of Indigenous health curriculum to undergraduate medical students and GP Registrars; and provided academic and social support to Indigenous medical students. My main research interests have evolved over the past few years to include evidence-based prevention in Aboriginal health service and community settings, especially in the area of drug and alcohol prevention. My experiences as an educator, particularly my involvement in developing problem based approaches to learning for AHWs and medical students, has drawn me to collaborative and contexualised approaches for implementing evidence into primary health care.

Role in the action research study

My role in this action research design was to facilitate key aspects of the research process such as study design, data collection, analysis and interpretation, as well as the involvement of health professionals and managers. Health professionals and managers from each ACCHS participated in discussions and negotiations with me, and their involvement in the research process was integral to the development and implementation of intervention strategies to enhance the delivery of evidence-based SBI for SNAP risk factors. I initially defined improvement with specific outcomes in mind, but negotiated these with health professionals and managers to reach a consensual definition of improvement, and reassessed them in response to feedback from health professionals and managers throughout the research process. This process was undertaken to increase the likelihood that questions relevant to health professionals and managers were being asked, and that any action I undertook was contextual, research-based and practical, and thereby more likely to result in positive change, and improvement.

Methods

A variety of methods were used in an emergent and developmental manner. In keeping with the naturalistic and inductive nature of action research, specific details on the application of methods, sampling schemes, data sources and data analysis are provided in the data chapters of this thesis, prior to each set of findings. Broadly speaking, each phase of action research had different objectives and used different methods and data sources. Findings generated from one spiral of action research inquiry informed the objectives and methods of the subsequent spiral. A general overview of methods, data collection strategies and data analysis is provided below.

This study predominately used qualitative methods. In some instances, quantitative methods were used to supplement qualitative methods.

Qualitative methods

Qualitative methods seek to describe, understand and explain a particular phenomenon by seeking to address the "what, why and/or how."[209, 251, 252] As such, they typically study processes and how outcomes might best be achieved. Qualitative methods are typically employed in an emergent and developmental manner in natural settings and involve the study and participation of people in those settings. [253]

Qualitative methods employ approaches that are interactive and humanistic, and that typically involve the researcher as the primary instrument in data collection [253]. As a result, the application of qualitative methods generates data that provides contextualised accounts and thick descriptions, furnishes explanations of phenomena, and can contribute to a better understanding of social processes and how they might be modified to achieve desired outcomes [254]. Qualitative data has the potential to contribute to the development of explanatory frameworks or typologies which might prove relevant for understanding similar issues in comparable situations and contexts [209, 255]. The main qualitative methods employed in this thesis are identified below. Specific details on how methods were applied are reported in the data chapters of this thesis.

(i) *Focus group interview*

The main method employed in this action research study was the focus group interview. The focus group interview is a type of group interview in which the interviewer/moderator directs the interaction and inquiry on a specific topic among a small group of people. [256] The method is particularly useful for exploring peoples' knowledge and experiences and can be used to examine what people think, how they think, and why they think a particular way. [257] The focus group interview has become a popular method for exploring peoples' experiences of and preferences for health service delivery, and the needs, attitudes and experiences of health professionals in primary health care. [90, 203, 205, 236]

The group process of the focus group interview allows people to explore and clarify their views in ways that would be less easily accessible in an individual interview. Participants get to hear other participants' responses and consider their own views in the context of the views of others, providing them with the opportunity to make additional comments beyond their original responses. [258] Fontana et al. describe focus groups as "…stimulating for participants, recall aiding, cumulative and elaborative, over and above individual responses."[259]

Group discussion in focus group interviews generates data and helps the researcher access the different forms of communication that people use in their day to day interactions with others. The interviewer facilitates group discussion by asking open ended questions around a specific topic and encourages participants to explore issues of importance to them, in their own vocabulary and using their own questions. [256] It has also been suggested that group discussions generate more critical comments than interviews, [260] and in doing so, access parts that other research methods cannot, uncovering dimensions of understanding that otherwise would not have been revealed. [256, 258] That focus group interviews facilitate discussion, critique and the exploration of possible solutions to different problems, makes them a particularly useful method for health services research. There are a few limitations of focus group interviews, [257] the primary one being the risk of unbalanced discussion when the opinions of a vocal participant dominates discussion and limits input from less assertive members of the group. However, a skilful interviewer can take steps to lessen this imbalance. [261]

Focus group interviews in each ACCHS were composed of a mix of health professionals including, AHWs, general practitioners, registered nurses, enrolled nurses, Indigenous AOD workers, reception staff and allied health professionals. Although it was not essential to ensure that participants of focus groups were statistically representative of all health professionals in ACCHSs, all health professionals working at participating ACCHSs at the time of focus group interviews were invited to participate, so as to increase the range of perceptions and experiences explored. In addition, focus group interviews were conducted with patient groups, including potential recipients and recipients of SBI for SNAP risk factors, to obtain their perspectives on its delivery.

(ii) Individual semi-structured interviews

Information from focus groups with health professionals was supplemented by individual semi-structured interviews with management staff. Interview questions were framed around similar topics to those explored in focus group interviews with health professionals and the same open-ended discussion pursued. Where possible, managers were interviewed separately from health professionals on the basis of the potential for their participation in focus group interviews to moderate the responses of health professionals.

(iii) Focused ethnography

Focused ethnography is essentially a form of ethnography used to "evaluate or elicit information on a special topic or shared experience." [253] Ethnography is the study of social groups within social groups from the perspective of the researcher, or members of the cultural group involved. [252] Traditional ethnography has a broad focus and the researcher describes and examines the beliefs, knowledge, language, practices and social interactions of a social group in their specific setting as comprehensively as possible. [252, 253] There are also numerous definitions and sub-types of ethnography, increasing the need for researchers to make explicit the type of ethnography they intend to employ.

Focused ethnography identifies a specific topic for exploration before studying a social group in a specific setting. [262] For example, rather than study ACCHSs as a field, this study focuses on the process of implementing evidence-based SBI for SNAP risk factors in ACCHSs. As such, the use of ethnography in this thesis seeks only knowledge relevant to better inform and understand this process. First, I visited each ACCHS to develop a general understanding of their service characteristics and activities. Secondly, I visited each ACCHS to identify health professionals' perceptions of the factors influencing SBI for SNAP risk factors. Thirdly, I worked with each ACCHS to develop an intervention to reduce barriers and reinforce enablers to evidence-based SBI. Fourthly, I visited each ACCHS to examine and feedback the process and outcomes of intervention implementation.

Focused ethnography has also been referred to as a form of applied ethnography [262], of which the primary objective is to study cultural processes that occur in efforts to find solutions to problems. [263] As such it is a particularly relevant method to action research inquiry. Participant observation was the principle method by which I undertook focused ethnography. There are four main types of observation in participant observation research: participant, participant as observer, observer as participant and observer. [263] I was a researcher in each ACCHSs, so I did not have a participant only role. Instead, my role was primarily as an observer participant. There were occasions, however, when it was more appropriate for me to withdraw or avoid an interaction and become an observer only.

Quantitative methods

(i) Questionnaires

Structured questionnaires were used to supplement information from focus group interviews and evaluate the training component of the intervention. Details of the survey and its results are reported in Chapter seven.

(ii) Review of health service activity data

Preventive health care records at each ACCHS were examined in an attempt to determine the level of reporting and obtain estimates of the type and frequency of preventive health care delivery. The details of the audit and its results are reported in chapter five.

Data collection strategies

Data were collected across all phases of the research study and within each spiral of action research inquiry. Findings generated from data informed successive data collection strategies. To assist in the data collection phase and contribute to study validity, a field log providing a detailed account of data collection in the field and the process of data analysis was maintained.

Data verification

The following strategies were employed to enhance study validity [264]:

1. Triangulation of data— data was collected using different methods and different sources of information.
2. Member-checking— interview transcripts, emerging themes and a summary of major findings were presented to participants throughout the study to establish their internal credibility and the relevance and utility of knowledge to the group generating it.
3. Peer debriefing— case analysis meetings were regularly held with doctoral supervisors, a senior researcher in the drug and alcohol field and a general practitioner in Indigenous health to discuss the relevance and accuracy of emerging themes and major findings.
4. Participatory modes of research— nominated influential colleagues within each service contributed to the design and process of action research inquiry.
5. Clarification of researcher perspectives— the background and perspectives of the researcher are articulated in the introduction of this thesis, with their potential implications on findings discussed in the final chapter.

Setting

The two ACCHSs participating in this action research study were purposefully selected based on their: (1) service provision to a large urbanised Indigenous Australian population in NSW, and (2) expressed willingness to participate in this project following their review of the study proposal. Timeframes and funding also determined the number and geographical location of ACCHSs that were invited to participate in this study.

Ethical integrity

Ethical integrity was maintained in three key ways.

Ethical approval

The action research study described in Chapters five to seven of this thesis received ethics approval from the Aboriginal Health & Medical Research Council (AH&MRC) Ethics Committee, the management boards of the two participating ACCHSs, and the Human Research Ethics Committee (HREC), UNSW.

Informed consent

All study participants were informed in plain written language as to what the study was about and what would be required of study participants (Appendix II). All study participants were required to provide informed written consent before participating in the study (Appendix III), and were informed of their right to withdrawal from the study at any stage of the research process. Clients were informed that their right to seek health care from participating ACCHSs was not conditional upon their involvement in this study and that their future health care would not be affected as a result of their participation and/or withdrawal from this study. Similarly, health professionals were informed that their participation in this study was not a condition of employment and that their withdrawal from the study would not affect their employment at the health service.

Confidentiality and anonymity

Study participants were not required to provide identifying information. Any identifying information inadvertently collected from interviews was removed. NHMRC guidelines regarding the use and storage of personal data were followed.

Conclusion

Enhancing the delivery of preventive health care requires change. One of the primary aims of action research is to implement change. This chapter has highlighted how action research has been applied to improve clinical care and teamwork, and facilitate the transfer of evidence into practice. The following chapter reports on the first stage of action research inquiry of this thesis. The main purpose of this first stage was to examine the service characteristics and preventive health care activities of one rural and one regional ACCHS, as the first step to working collaboratively with health and management staff in these services to identify suitable intervention strategies to enhance the implementation of evidence-based brief intervention in routine clinical care.

Chapter Five

Aboriginal Community Controlled Health Service characteristics and service activities: contexts of preventive health care delivery

BACKGROUND

As identified in chapter one, a consistent finding in health services research is that factors influencing preventive health care delivery are complex, dynamic and arise at different levels. [64, 160, 265] Furthermore, health care providers deliver preventive health care in specific social, organisational and structural settings that may prevent or promote change. Therefore it is not surprising that researchers in health care improvement recommend acquiring a comprehensive understanding of the practice setting (including characteristics of health professionals and patients; team functioning; organisation of care processes; resources and capacity; and leadership styles) [125] for which change is proposed, to inform the selection and development of strategies to bring about this change. [67, 130] Quantitative and qualitative studies have shown that without an understanding of the practice setting, there is an increased likelihood that introduced changes will be unacceptable, infeasible and ineffective. [130]

The aims of this chapter are to:

1. Describe the service characteristics and preventive health care activities of ACCHSs participating in this study.
2. Describe the attitudes, practices and training and education preferences of health professionals employed in these ACCHSs.

METHODS

The primary methods of data collection included focused ethnography, examination of health service activity data and public documents, health professional survey, and audit of preventive health care activity.

1. Focused ethnography, supplemented with examination of public documents

Focused ethnography (as described in chapter four) and documentary review were used to develop an understanding of the service characteristics and activities of one regional and one rural ACCHS. I visited each ACCHS on three occasions over a three month period, collecting data through informal interviews with health professionals and managers and non-participant observation in staff meetings, supplemented where

appropriate by documentary review of annual reports, screening templates and practice protocols. During visits I formally introduced myself to health professionals in a staff meeting and provided them with written and verbal information about this project.

I informally spoke with health professionals about their role in the organisation and their level of involvement in preventive health care delivery for SNAP risk factors. Observations and informal interviews were recorded in field notes, and examined for content relating to two topics: organisational structures and processes, and processes of care, particularly for prevention. Content relating to these topics was selected on the basis of its potential to provide me with a greater awareness and understanding of the context in which health professionals in each ACCHSs typically worked, and those organisational factors most likely to exert an influence over the processes and outcomes of evidence-based SBI for SNAP risk factors.

In addition, I examined health service activity data recorded by each ACCHS to obtain an indication of the level and type of health service activity in each ACCHS. Consistent with the majority of ACCHSs, both ACCHSs participating in this study routinely collect two main types of data on health service activity—episodes of health care and client contacts. [112]

An episode of health care is "the contact between an individual client and a service by one or more staff to provide health care." [112] Episodes of care do not include client groups or transport.

A client contact is "the number of individual client contacts that were made by each type of worker involving the provision of health care." [112] The following scenario highlights the relationship between an episode of health care and a client contact:

Martin is picked up by the transport driver and driven to the ACCHS where he is seen by an AHW, a dietician and a doctor. This scenario represents one episode of health care (Martin's visit to the ACCHS) and four client contacts (Martin's contact with the transport driver, AHW, dietician and doctor).

Statistical comparisons of health data collected from each ACCHS were not appropriate due to differences in the methods of reporting and limitations in the availability and

quality of data. Therefore, health data obtained from each ACCHS is reported separately, with commonalities and differences between ACCHS in data quality and availability highlighted.

2. Survey of health professionals

Descriptive data can assist in the development of health service interventions by providing information on health professionals' knowledge, attitudes and practices, which can then be used to tailor strategies and goals to address their specific needs, [266, 267] yet few comprehensive and validated surveys to elicit such information exist. On this basis, a modified version of a survey used in studies of SNAP in divisions of general practice and community health settings in Australia was administered to health professionals employed in participating ACCHS (Appendix IV). [90] Specific questions were asked in a number of domains, covering health professionals' demographics, their current practices in SBI for SNAP, their perceptions of the effectiveness of SBI for SNAP; their previous training in SBI for SNAP; and their ongoing training and education preferences.

The survey was reviewed by experienced researchers in the fields of tobacco, alcohol, physical activity, nutrition and Aboriginal health for its suitability as an instrument to collect descriptive data on SBI for SNAP in Aboriginal health care settings. In addition, management staff at each ACCHS reviewed the survey to ensure that it was acceptable for their health staff to complete.

A written invitation to complete the survey was extended to health professionals working in each ACCHS one week prior to its distribution. Health professionals were instructed to place the completed survey in a sealable envelope for return to the clinical coordinator. The clinical coordinator returned completed surveys to me by mail from one week after their distribution. I checked identifying information on all surveys received and sent an email with an electronic version of the survey attached to health professionals who had not returned a completed survey. Two email reminders were sent in a two week period before survey data was examined.

Descriptive statistics were generated using SPSS for Windows. The two lowest (1 and

2) and the two highest (4 and 5) ends of Likert scales were combined to form the categories low and high. No analyses were undertaken to compare ACCHSs or different health professional groups, as this was not the aim of the survey.

3. Audit of SBI for SNAP activity

A manual audit of their SBI for SNAP risk factors was undertaken by some individual health professionals in the regional ACCHS. A paper-based audit form (Appendix V) was developed for health professionals to complete the audit. The audit form was personally distributed to health professionals, with verbal and written instructions for its completion provided. Health professionals were asked to complete one audit form immediately following a consultation with an adult patient (aged 18 years and over). The audit form was designed to take health professionals less than half a minute to complete, so as to reduce its impact on routine clinical care and increase the likelihood of them completing it.

The audit form collected data relating to the following variables: age and sex of the patient; patient's presenting condition; health professional's awareness of the patient's lifestyle risk factor/s; health professional's intention to discuss lifestyle risk factors; and health professional's perception of the appropriateness of discussing lifestyle risk factors. These variables were selected on the basis that they have been shown to influence health professionals asking patients about their lifestyle risk behaviours in previous studies. [268] In addition, health professionals were asked to record the action they took for each patient identified at risk of SNAP-related harm, to obtain an indication of the frequency and type of brief intervention delivery.

Service characteristics and activities— regional ACCHS

Summary of service characteristics and activities of regional ACCHS in 2005/2006 (one year)

Regional ACCHS

- 5,179 clients recorded on client database
- 23% (n=1191) of total number of clients presented for health care
- 14 241 non-transport client contacts
- 12 916 episodes of health care
- 55% (n=7064) of episodes of health care in the clinic
- 45% (n=4913) of episode of health care in the field
- 1.1 episodes of health care per client contacts
- 27 staff, 17 (63%) of whom are Indigenous
- Main Services— Clinical, Social and Emotional Well-being, Alcohol and other Drugs and Dental
- Patient Information Recall Systems— Project Ferret and Medical Director
- Preventive health care delivery— Adult Health Check, opportunistically in standard consultations, chronic disease clinics, and client groups
- Internal referral options for SNAP risk factors— exercise group, quit smoking support groups, drug and alcohol relapse prevention, dietary clinic
- Client groups—youth group, men's group and women's group,
- Visiting specialists— endocrinologist, paediatrician, orthodontist and ear, nose and throat
- Visiting allied health professionals— optometrist, podiatrist, speech pathologist and dietician

One common issue raised by health professionals in the regional ACCHS was the growth of the service in recent years, both in terms of staffing and the range of services and programs. Management spoke of the positive impact of this growth, including more options for referral and the greater range of services and programs available for clients to access. Health professionals who'd been at the service during this expansion felt that it had contributed to a breakdown in communication between health care teams, reduced the level of interaction between some health professional groups and made it difficult for them to remain up-to-date and informed.

"When we were smaller we had the health worker and the nurse who we'd be able to discuss with regularly about certain clients whereas it's not as common to do that now." (GP, male, regional ACCHS)

"We don't seem to interact as much as we did before and that's the nature of the fact that the clinic is getting bigger." (RN (1), regional ACCHS)

Alternatively, health professionals who had been employed at the regional ACCHS for less than two years felt the range of services and programs was one of the most positive aspects of the service.

When I asked health professionals in the regional ACCHS about their role in the organisation, two types of responses were forthcoming. GPs and RNs typically stated their professional role, only describing what they did in this role when prompted. Presumably, these health professionals felt their work activities were implicit in their professional role. Alternatively, AHWs and Indigenous AOD workers generally identified their professional role and then spontaneously described what they did in this role. Each of these Indigenous workers had specific responsibilities. Some examples of Indigenous health professionals' comments regarding their role are provided below.

"I work with youth. And I'm slowly getting trained up to work with drug and alcohol clients." (Indigenous AOD worker, youth, regional ACCHS)

"I am the male AHW. I engage in the community with Indigenous males. I give education on different health issues and what services we have to get them in." (Male AHW, regional ACCHS)

"I'm the Enhanced Primary Care AHW. I look after diabetic and asthma clients. I also do health checks and help with care plans." (EPC AHW, regional ACCHS)

Comments provided by Indigenous AOD Workers, in particular, provided me with insight into the characteristics of their clients. They told me that clients' substance misuse was commonly complicated with issues of crime and imprisonment, interpersonal violence, parenting difficulties, unemployment, socioeconomic disadvantages, poor mental and physical health, low education levels, low levels of literacy. *"I'll get the client with the alcohol problem. 99% of the time they'll have mental health issues."* (Indigenous AOD Worker, general, regional ACCHS) The main referral sources included probation and parole, Department of Community Services, lawyers acting on behalf of Aboriginal clients, family, and self. The head of the AOD team wrote down the process of treating clients with AOD problems.

"We do an initial assessment, we do an action recovery plan with the people, to work out what it is that they want as part of their treatment. We also encourage them to go and see a counselor for other broad issues. We also encourage them to do a full health check and then we look at rehab, or detox rehab and then any other types of services that the client needs. We look at some ongoing addiction management and relapse prevention. And if all else fails we put them back through the initial assessment and action recovery plan and do it all again." (AOD manager, regional ACCHS)

This process typically required the involvement of health professionals in addition to Indigenous AOD workers. For example, a GP, RN and/or AHW delivered the adult health check to clients referred to the AOD team by an external agency. Similarly, a

patient identified with an AOD problem by a GP, RN or AHW during an adult health check or standard consultation was generally offered referral to the AOD team for more intensive treatment. The involvement of a range of health professionals in patient care was somewhat reflected in health service data that reported the estimated percentages of non-transport client contacts with types of health professionals in the regional ACCHS for the most recent year to be distributed across AHW, (23%), GP (27%), RN (13%) and other types of health professionals (37%). However, the 1.1 client contact per episode of health care reported in health service activity data was somewhat of an anomaly. Two likely explanations for this were that clients typically only had contact with one type of health professional when presenting to the regional ACCHS or clients' contacts with multiple health professionals per episode of health care were underreported. Further discussions with health professionals and management revealed that the latter was the most likely scenario, the primary cause of which appeared to be less than optimal IT systems for reporting health service activities.

When I asked health professionals specifically about prevention, they typically talked about the Adult Health Check, which appeared to be the principle means by which preventive health care is organised and delivered by clinical staff. In addition, some GPs reported delivering prevention opportunistically in standard consultations, while AHWs and RN reported systematically delivering prevention in chronic disease clinics and client groups.

There were several internal referral options for clients identified at risk of SNAP related harm including, drug and alcohol relapse prevention program; quit smoking program; youth programs focusing on alcohol and drug issues; exercise and general well-being program for individuals with chronic disease; and diabetes and dietary clinics. In addition, a men's group and women's group provide gender specific social and emotional support and health related information to help individuals improve their overall health and well-being. *"We've got good brochures and good referral avenues in the organisation."* (RN 1, regional ACCHS)

The views of health professionals regarding the importance of an organised approach to prevention appeared to vary. For example, the RN (RN 1) with a designated role in delivering the adult health check invested considerable time liaising with other health professionals and attending training courses in an effort to improve its organisation and delivery.

Alternatively, the other RN (2) appeared reluctant to be more involved in preventive health care delivery, and perceived any expectation of her greater involvement to be a threat to her professional autonomy. Differences in these nurses' opinions regarding prevention appeared to be a contributing factor to one AHW feeling *"...uncertain about what is the right thing to do when it comes to prevention"* (Trainee AHW, regional ACCHS)

Despite the availability of adult health check data, obtaining accurate measures of its delivery was difficult, primarily due to health professionals using different methods to record its delivery. For example, according to data recorded on Ferret, there were 129 adult checks delivered during the 05/06 period. However, a manual count of paper-based records of the adult health check found that 325 adult health checks were delivered during this same period. The reason for this discrepancy was explained to me by a one GP in email correspondence.

"Patient data recorded on paper is meant to be entered into Ferret. However, health professionals' inconsistent use of Ferret reduces the likelihood of this routinely happening. Recording Adult Health Checks in Medical Director has been trialled, but as patient reminders for health professionals to do Adult Health Checks were located in Ferret, health professionals were essentially using two IT systems to document the one item. This process was considered too cumbersome so it was abandoned." (GP [2], regional ACCHS)

The current process for electronically documenting an Adult Health Check appears to involve recording patient information in an electronic form in Microsoft word and then importing it into Medical Director, although I received conflicting information when discussing this issue with health professionals. An examination of the adult health check

template revealed that screening questions for SNAP risk factors were not evidence-based and risk was poorly defined. For example, the screening question to assess patients' level of physical activity was based on redundant guidelines recommending three 20 minute sessions of moderate to rigorous physical activity per week. Client's alcohol consumption was assessed as either low risk or moderate to high risk using ambiguous criteria of two or less drinks a day for women and four or less drinks a day for men.

Preventive health care delivered outside of the adult health check was either unavailable or uninterpretable. Data reporting preventive health care delivered by GPs during standard patient consultations was located in Medical Director but could not be accessed due to patient confidentiality. Preventive health care data recorded in Ferret was accessible but uninterpretable. Even the GP who extracted preventive health care data from Ferret was unable to interpret its meaning. This GP explained that, *"patient recall in Ferret can only be used for a limited range of preventive health care services, such as immunisation, pap smears and antenatal care."* In addition, any changes to national recommendations regarding what tests/items need to be routinely performed by health professionals generally requires Ferret to be reprogrammed in order for electronic recalls, reminders and records of these tests/items to be properly generated.

Nurses and AHWs also expressed dissatisfaction with Ferret. They gave accounts of Ferret *"crashing"* or "*packing it in"* during data entry or retrieval. Ferret's instability worsened when specific items where entered. For example, one nurse reported that Ferret crashed whenever data for ear health was entered. GPs, in particular, expressed a strong preference for Medical Director over Ferret. *"I'm more familiar with Medical Director"* (GP 1, regional ACCHS) *"It's too hard to get into Ferret"* (GP 3, regional ACCHS) *and "Medical Director gives me all the information I need."* (GP registrar, regional ACCHS). Ferret and Medical Director are interfaced enabling doctors to use both programs simultaneously, but the two GPs I spoke with reported using Medical Director only.

Despite a considerable amount of human and physical resources invested into reprogramming Ferret to improve its efficiency and reliability, it continued to prove

problematic. Lengthy delays from the software provider to respond to requests for reprogramming compounded this problem. Despite its unreliability, management appeared satisfied with Ferret, *"From my point of view, Ferret gives me all the information and statistics I need for my reporting."*(CEO, regional ACCHS) This appeared to have influenced management's decision to keep Ferret in spite of health professionals' obvious dissatisfaction with it. *"...Ferret won't be replaced quite so easily."* (CEO, regional ACCHS)

Summary of regional ACCHS

The regional ACCHS is best described as a rapidly expanding primary health care service with a wide range of services and programs targeting primary, secondary and tertiary prevention. The delivery of SBI for SNAP risk factors is integrated into the Adult health check, which is typically delivered opportunistically by clinical health professionals to patients presenting for acute or chronic care. Three AHWs have key roles in clinical care and appear to be well-supported by management and other health staff to utilise and develop their clinical skills in a range of key areas. Internal referral pathways for patients identified with AOD problems are well established and appear to act as an enabler to AOD screening in the clinical setting. The AOD team operates somewhat independently but works collaboratively with other groups of health professionals to provide treatment and care to patients identified with AOD problems. Unreliable IT systems and the use of inappropriate measures to identify patients' level of risk of SNAP related harm appear to be two main barriers to the delivery of evidence-based SBI for SNAP in this setting. Encouragingly, health and management staff showed interest in updating their knowledge and skills in prevention and improving mechanisms of collecting and managing preventive health care data.

Service characteristics and activities— rural ACCHS

Summary of service characteristics and activities of the rural ACCHS for 2005/2006

Rural ACCHS

- 3878 clients recorded on database
- 53% (n=2060) of total number of clients presented for health care
- 20 444 non-transport client contacts
- 9726 episodes of health care
- 2.1 client contacts per episode of health care
- 82% (n=7495) of episodes of health care in the clinic
- 18% (n=1751) of episode of health care in the field
- 18 staff , 10 (56%) of whom are Indigenous Australian
- Main services— Clinical, Social and Emotional Well-Being and Dental
- Patient Information Recall System – Communicare
- Preventive health care delivery – opportunistically by GPs and nurses in standard consultations and patient education by AHWS in client groups and community settings.
- Client groups—diabetes group, men's group and women's group
- Visiting specialists – endocrinologist, paediatrician, orthodontist and ear, nose and throat
- Visiting allied health professionals – optometrist, podiatrist and psychologist

Health professionals' primary role in the rural ACCHS is either in the area of clinical care or social and emotional well-being. All of the health professionals with a social and emotional well-being role are AHWs, while those with a role in clinical care include a mix of health professionals, including GP, RN, and generalist and specialist AHW.

Health professionals working in the area of social and emotional well-being typically have a community-based outreach role. When I asked these health professionals what they do at work in a typical day, I received the following range of responses:

"welfare, counselling, health screening and assessments, hospital visits, home visits, prison visits, court support, grief and loss support, referral, transport, advocacy, clinical monitoring, making appointments, palliative care, shopping, liaising with the clinical team, health education and health promotion, men's health and outreach, family health, social and emotional-well-being for families, especially stolen generation."

All health professionals with a social and emotional well being role told me spontaneously in informal conversations that they adopt a team based approach to health care. One reason for this approach was identified by a senior AHW who told me that approximately 90% of clients that are case managed by health professionals with a social and emotional well-being role have complex social, physical and psychological needs. This comment was consistent with the most recent annual report which reported that, for clients case managed (N=228) in the previous recent year, inadequate family support (54%), housing (39%), finances (35%) and transport (29%) were the main issues. In addition, the percentages of clients with complex health issues was reported to be, mental health disorders (51%), chronic disease (50%) and substance misuse problems (22%).

Social and emotional well-being health professionals were reported to the primary case manager for 92% of cases either referred to, or referred by them. According to the Senior AHW, this was because referral and referring organisations generally don't want to take primary responsibility for case management of Aboriginal clients. "They place them in the too hard basket."(Senior AHW, regional ACCHS)

Health professionals with a social and emotional-well being role generally described their role in preventive health delivery in a way that suggested it was a reactive activity,

rather than a proactive one. Some health professionals with a social and emotional well-being role did mention giving clients identified with SNAP risk factors "encouragement", "information" and/or "support," but these actions were typically in response to the expressed needs of high-risk clients in crisis situations, or those openly seeking help.

"If we're out on a visit and someone says, I really want to give up grog. We're quick to whip out information and support you in your choice." (Senior AHW, rural ACCHS)

Although health professionals with a social and emotional-well being role are in a different health care team to those with a clinical role, working collaboratively with health professionals from the clinical team is considered to be critically important. Social and emotional well being health professionals meet weekly with a GP to discuss issues relating to patient treatment and care. One GP commented that these meetings were important to provide clinical health professionals with greater insight into the Aboriginal community. Perceptions among clinical health professionals were that greater insight into what was going on in the Aboriginal community and the lives of their patients enhanced doctor-patient interactions and contextualised patients' medical conditions. More specifically, a nurse explained how different types of health professionals work together to deliver patient treatment and care.

"The nurse or clinical AHW will screen clients for AOD problems and give them health information, then the doctors reinforce this and if they need to they'll refer the client on to an outside AOD services. It's then the job of the team [social and emotional well-being workers] *to help the client make the appointment, so they'll do things like transport."* (RN 1, rural ACCHS)

Clinical health professionals provide acute, chronic and preventive health care to clients who drop-in or schedule an appointment between 9am - 5 pm, Monday to Friday. Roles of clinical health professionals include GP, RN and AHW. One GP and one RN each

have a formal position in the management team, which also includes the CEO, Administration Officer and Senior AHW.

When I asked clinical health professionals to describe what they did a in a typical day's work, I received the following range of responses.

"home assessments to gather information about their health situation and health status; health assessments; adult health check, medical and mental health problems, lots of acute care, chronic disease management, a lot of acute children, immunisations, acute stuff, eye screening and ear health"

With the exception of the generalist AHW, all clinical health professionals provided concrete examples of their clinical responsibilities. The generalist AHW described their role as, *"Broad triage of patients and stuff like that. I'm also trying to set up Men's group, and provide better health awareness."* (Generalist AHW, rural ACCHS) The generalist AHW went on to explain how they had limited involvement in clinical activities because they lacked clinical training. Some of their comments also suggested a lack of opportunity for them to develop their clinical skills. *"…my hands are pretty much tied when it comes to clinical, there's not a lot that I'm allowed to do…"* (Generalist AHW, rural ACCHS)

The most common issue identified by clinical health professionals in relation to service delivery was client demand for acute care. Typically, clients dropped in to the clinic for acute care; few scheduled an appointment and prevention was not on their agenda.

"Our client's, avoid emergency like the plague, they literally drop dead on our doorstep" (RN 2, rural ACCHS) '

"A lot of clients aren't going to hospital. So we're seeing a lot of acute children and things like that." (RN 1, rural ACCHS)

These comments were reflected in service activity data that reported the estimated percentages of non-transport client contacts with types of health professionals in the

previous year to be GP (50%), Nurse (29%), AHW (11%) and other types of health professionals (10%).

To manage the high proportion of patients presenting for acute care, drop-in patients are triaged– sorted according to the urgency of the treatment required – by a nurse or AHW prior to seeing the doctor. Clinical health professionals explained that, in principle, the nurse or AHW delivers preventive health care to a patient while they wait to see the doctor, but in practice this is not always possible due to the high volume of acute patients, some patients' preferences too see a doctor only, and staff shortages.

"Some of them chose not to be seen by a health worker or RN. So we'll write that on their file. That's their choice and we have to be flexible." (RN 2, rural ACCHS)

"There continue to be challenges based on the number of GPs working as many clients present with non-urgent requests whilst others present with extremely complex/social/emotional issues." (GP, rural ACCHS*)*

Factors reported by clinical health professionals to be critical to the delivery of preventive health care include the number of clinical staff, the availability of clinical rooms to treat patients and patients' level of acceptance and understanding of the triage process. A drop-in clinic was currently being trialled in an effort to better meet community preferences and expectations. The results of a recent survey of clients of the rural ACCHS (undertaken by the service prior to this study) reinforced patient preferences for a drop-in clinic. Of the total number of people (n=158) completing the survey, 75% (n=118) reported they had used the drop-in clinic in the previous 12 months, of whom 44% (n=52) reported to have used the drop-in clinic for a non-urgent matter. Of patients reporting to use the drop-in clinic for a non-urgent matter (n=52), 81% (n=42) reported that they could have made an appointment but elected not to.

One negative outcome of the high proportion of patients presenting with acute conditions for prevention was a lack of time and resources to organise and deliver MBS preventive health assessment items *"…the adult health check started after much torture.*

And it's still being worked out how you can actually fit it in." (Project Officer, rural ACCHS)

Consistent with my observations of the recording of preventive health care more generally, documentation of the adult health check was reported to be inadequate. *"We're not documenting it well enough to claim the adult health check item number which would bring more money into the service."* (GP, rural ACCHS)

Approaches to SBI for SNAP risk factors among clinical health professionals varied. For example, the GP expressed reluctance to screen every new patient registration for alcohol, but admitted to having an *"obsession about smoking" and "every opportunity going for it."* (GP, rural ACCHS) One RN and the generalist AHW reported a preference for only screening new patient registrations, but the AHW was reluctant to deliver brief intervention on the basis that it was the role of the GP. The two AHWs with specialist roles in eye health and ear health reported delivering patient education to increase awareness among parents and carers of the effects of passive smoking on the health of children.

Internal referral options for clients identified at risk of SNAP related harm were limited, increasing health professionals' reliance on external referral agencies. For example, the AOD worker position had been vacant for five years and there was not one health professional with skills in AOD treatment and prevention. Despite these limited options for AOD referral, health professionals did report that health promotion programs and social support to clients with substance misuse problems were available, although the exact nature of these programs and support was difficult to determine. Client groups currently operating included a women's group and a diabetes group.

Preventive health care data was unavailable as the regional ACCHS was in the process of changing IT systems from Ferret to Communicare. Most features of Communicare were yet to be activated and/or customized and patient data from Ferret was still being transferred to Communicare. Additionally, the fact that health professionals did not

routinely document opportunistic preventive health care delivery meant that data was inaccurate. The only information made available to me was a set of screening items for SNAP risk factors that had been recently integrated into Communicare. As with the regional ACCHS, an examination of these screening items revealed them to be incomplete and not evidence-based. In addition, screening items were only accessible to GPs and RNs, with AHWs denied access to electronic screening templates.

Summary of rural ACCHS

The rural ACCHS had the hallmarks of an under-resourced ACCHS. Clinical health professionals struggled to meet the demands of acute care and social and emotional well-being health professionals were primarily involved in the crisis management of clients with complex social needs. Existing programs appeared to be focused on primary and tertiary prevention and referral pathways for clients at high-risk of SNAP-related harm were lacking. Few health professionals reported having enough time to deliver prevention, but most of the health professionals that I spoke to expressed a desire to improve this situation. The GP is enthusiastic about evidence-based brief intervention for smoking, but this enthusiasm was not as evident among other health professionals. The GP and RNs perceived the service's involvement in this project as an opportune time to integrate evidence-based items and prompts into the newly installed PIRS, while the project officer saw this project as an opportunity to put prevention higher on the service's agenda. At the very least, health professionals were interested in updating their knowledge and skills in prevention as a first step towards achieving an acceptable standard of preventive health care delivery, although their definition of this standard was unclear. On the one hand, I sensed they were looking to me to define this standard for them. On the other hand, management and medical hierarchies made it clear to me that a lack of staff and resources limited who could be involved and what could be achieved. I interpreted this as advice that I was to have realistic expectations and work closely with them to implement changes slowly.

Implications for next stage of data collection

In view of the limitations of preventive health care data available, I invited both ACCHSs to participate in a survey and audit of SBI for SNAP risk factors. The main purpose of the survey was to get an indication of health professionals' knowledge, attitudes and practices in SBI for SNAP risk factors. The main purpose of the audit was to obtain a more accurate indication of the level and type of SBI for SNAP risk factors delivered by health professionals in routine care. Although both ACCHS were willing to participate in the survey, only the regional ACCHS agreed to participate in the audit. The rural ACCHS was preoccupied with transferring patient data from Ferret into Communicare and were chronically understaffed. Understandably, health professionals were reluctant to audit their SBI for SNAP activity while the capacity of the service to deliver preventive health care was further reduced. Seven clinical health professionals from the regional ACCHS were available to participate in the audit. The general perception of health and management staff was that the audit was not entirely relevant to the activities of other types of health professionals. For example, it was felt that preventive health care delivered in the community setting was indefinable and could not be accurately captured.

Health professionals' attitudes, practices and training preferences

Survey results for each ACCHS were combined due to the small number of health professionals completing the survey.

Sample

The survey (Appendix IV) was completed by 21 out of 29 (72%) health professionals eligible to complete it at the time of its administration. Ten out of 12 health professionals from the rural ACCHS completed the survey, and 11 out of 17 health professionals from the regional ACCHS completed the survey.

Health worker demographics

Table 5.1 summarises the characteristics of health professionals who completed the survey.

Table 5.1: Characteristics of health professionals (n=21) who completed the survey

	AHW (n=10)	**Nurse (n=6)**	**GP (n=3)**	**Allied health worker (n=2)**	**Totals**
Gender					
Male	4	-	1	1	**6**
Female	6	6	2	1	**15**
Age					
18-24	4	-	-	-	**4**
25-34	4	-	-	-	**4**
35-44	2	2	2	2	**8**
45-54	-	2	1	-	**3**
55+	-	2	-	-	**2**
Years in profession					
< 1 year	4	1	-	-	**5**
1-5	5	-	-	-	**5**
6-10	1	-	-	2	**3**
11-15	-	-	1	-	**1**
16-20	-	-	1	-	**1**
> 20	-	5	1	-	**6**
Practice location					
regional	4	3	2	2	**11**
rural	6	3	1	-	**10**

Health professionals' screening practices

The percentages of health professionals reporting to screen greater than 75% of **new** clients for SNAP risk factors comprised 43% smoking, 38% nutrition, 33% alcohol, and 26% physical activity.

The percentages of health professionals reporting to screen greater than 75% of **current** clients for SNAP risk factors comprised 19% smoking, 19% nutrition, 19% alcohol, and 19% physical activity.

Table 5.2: Percentage of health professionals (n=21) screening, >75% of new clients, and >75% of current clients for SNAP risk factors

SNAP risk factor	% of health professionals screening >75% of new clients	% of health professionals screening >75% of current clients
Smoking	43% (9)	19% (4)
Nutrition	38% (8)	19% (4)
Alcohol	33% (7)	19% (4)
Physical activity	29% (6)	19% (4)

Health Professionals' reported brief intervention activity

Percentages of health professionals reporting to provide verbal advice for patients identified with SNAP risk factors were: smoking (43%), poor nutrition (38%), alcohol misuse (33%), and physical inactivity (24%).

Percentages of health professionals reporting to assess readiness to change in patients identified with SNAP risk factors were: smoking (24%), alcohol misuse (24%), poor nutrition (19%), and physical inactivity (19%).

Percentages of health professionals reporting to offer referral to patients identified with SNAP risk factors were: alcohol (38%), smoking (19%), nutrition (5%) and physical inactivity (1%). Percentages of health professionals reporting to provide follow-up for patients identified with SNAP risk factors were: physical inactivity (29%) poor nutrition (14%), alcohol misuse (14%) and smoking (5%).

Table 5.3: Health professionals' (n=21) current practices in brief intervention for each SNAP risk factor

SNAP risk factor	Verbal advice	Written advice	Assess readiness to change	Offer referral	Follow-up
Alcohol	33% (7)	10%(2) *	24% (5)	38% (8)	14% (4)
Smoking	43% (9)	10% (2) *	24% (5)	19% (4)	5% (1)
Nutrition	38% (8)	10% (2) *	19% (4)	5% (1)	14% (4)*
Physical activity	24% (5)	10% (2) *	19% (4)	5% (1)	29% (6)*

* Nil health professionals from rural ACCHS reported to undertake this brief intervention activity

Nil health professionals from regional ACCHS reported to undertake this brief intervention activity

Health professionals' perceptions of the effectiveness of SNAP advice

The majority of health professionals perceived their advice to have a low effect on encouraging at risk patients to increase physical activity levels (76%), give up smoking (67%), reduce alcohol consumption (57%) and improve nutrition (52%).

Table 5.4: Health professionals' (n=21) perceptions of the effectiveness of SNAP advice at achieving behavioural change in patients

Behavioural change	Low	Moderate	High
Give up smoking	67%	14%	19%
Improve nutrition/eating habits	52%	33%	15%
Reduce alcohol consumption	57%	38%	5%
Increase physical activity levels	76%	14%	10%

Health professionals' perceptions of their knowledge of specific preventive health care activities

A substantial percentage of health professionals reported **low** knowledge for assessing nicotine dependency (43%), smoking cessation guidelines (43%) and motivational interviewing (52%).

A substantial percentage of health professionals reported **moderate** knowledge for recommendations for safe alcohol consumption (38%) and physical activity (38%).

A substantial percentage of health professionals reported **high** knowledge for assessing nutrition (57%), physical activity recommendations (43%) and readiness to change (47%). The percentage of health professionals distributed across low, moderate and high rating levels of knowledge were most similar for patient education (33%, 33%, 33%), assessing physical activity levels (29%, 33%, 38%) and assessing for risky alcohol consumption (33%, 38%, 29%).

Table 5.5: Health professionals' (n=21) perceptions of their knowledge in SNAP risk factor prevention

Assessment	Low	Moderate	High
Assessing nicotine dependency	9	5	7
Smoking cessation recommendations	9	5	7
Assessing nutrition	3	7	12
Nutrition recommendations	8	5	8
Assessing for risk alcohol consumption	7	8	6
Recommendations for safe alcohol consumption	4	10	7
Assessing physical activity levels	6	7	8
Physical activity recommendations	4	8	9
Behaviour change			
Motivational interviewing	11	6	4
Readiness to change	6	5	10
Patient education	7	7	7

Health professionals' confidence in performing specific SNAP activities

Almost one-half of all health professionals (n=21) reported **low** confidence in assessing alcohol consumption (n=10), motivational interviewing (n=10), and assessing nicotine dependency (n=9).

More than one-third of all health professionals (n=21) reported **moderate** confidence for recommendations for safe alcohol consumption (n=8), assessing physical activity levels (n=8), and principles of adult education (n=8).

Almost one-half of all health professionals (n=21) reported **high** confidence for safe alcohol recommendations (n=10) and assessing a client's readiness to change.

Table 5.6: Health professionals' (n=21) prioritisation of their education and training needs

Assessment	% of health professionals rating high priority
Assessing nicotine dependency	38
Smoking cessation recommendations	52
Assessing nutrition	43
Nutrition recommendations	43
Assessing for risk alcohol consumption	67
Recommendations for safe alcohol consumption	52
Assessing physical activity levels	14
Physical activity recommendations	19
Motivational interviewing	43
Readiness to change	38
Patient education	19

Health professionals prioritisation of education and training needs

The majority of health professionals rated receiving education and training in the following as high priority: assessing for risk alcohol consumption (67%), smoking cessation recommendations (52%), and recommendations for safe alcohol consumption (52%).

A substantial percentage of health professionals rated receiving education and training in the following as high priority, assessing nutrition (43%), nutrition recommendations (43%), motivational interviewing (43%), readiness to change (38%) and assessing nicotine dependency (38%).

Patient education (19%), physical activity recommendations (19%) and assessing physical activity levels (14%) were rated as high priority by a relatively small percentage of health professionals.

Health professionals' preferences for format of education and training

The majority of health professionals reported a preference for education and training to be delivered in the form of workshops (76%), followed by small group discussions (48%), and case studies (43%). Only 10% of health professionals reported a preference for self-help study materials.

Audit of screening and brief intervention (SBI) for SNAP risk factors – regional ACCHS

Consultations

The audit (Appendix V) captured 128 of the 312 (41%) consultations conducted at the regional ACCHS over a six-working-day period. The 312 consultations included the total number of clinical consultation at the regional ACCHS for the audit period.

The 128 consultations recorded by health professionals at the regional ACCHS were conducted in the clinic and shared among seven health professionals: three AHWs, two RNs, and 2 GPs. Sixty audit sheets (47% of 128) were completed by GPS, 42 (33% of 128) by AHWs and 26 (20% of 128) by RNs. The total number of consultations per individual health professional during the audit period could not be calculated as the service did not record this data. It was also not possible to collect information on the 184 (59%) consultations that were not captured by the audit.

Intent to discuss lifestyle risk factors

Health professionals' intent to discuss lifestyle factors versus their discussion of lifestyle factors is displayed in Table 5.7.

Table 5.7: Health professionals' intent to discuss SNAP risk factor/s versus their discussion of SNAP risk factor/s

		Plan to discuss SNAP risk factor/s	
		Yes (n=52)	**No (n=76)**
Discussed SNAP risk factor/s	**Yes (n=64)**	41 (79%)	23 (30%)
	No (n=64)	11 (21%)	53 (70%)

Health professionals reported discussing lifestyle risk factors with clients for 64 (50%) of 128 consultations recorded. An intention to discuss lifestyle risk factors was reported by health professionals for 52 (42%) of 128 consultations recorded. Of the 52 consultations in which health professionals planned to discuss lifestyle risk factors, 79% (n= 41) included a discussion of lifestyle risk factors.

For those consultations in which health professionals did not plan to discuss lifestyle risk factors (n=76), 53 (70%) did not involve a discussion of lifestyle risk factors. For 28 of these consultations (53%), health professionals reported that it would have been appropriate to discuss lifestyle risk factors.

Table 5.8: Health professionals' self-report of patients' demographics across 128 consultations

	Male **n**	**Female** **n**	**Totals** **n (%)**
18-24	4	11	15 (12%)
25-34	5	15	20 (15%)
35-44	17	9	26 (20%)
45-54	13	15	28 (22%)
55-64	8	20	28 (22%)
65 +	4	4	8 (7%)
unspecified	-	-	3 (2%)
Totals	51	74	128

Patient demographics

Fifty-eight percent (n=74) of the 128 consultations reported by health professionals were with females. The greatest percentages of patients were in the 35-44 (22%) and 45-54 (22%) year age groups. Sex was not recorded for 2% (n=3) of patients.

Patient risk factors

Smoking

The smoking status of the patient was recorded on 93% (n=120) of audit forms. Sixty-one patients (51%) were identified as smokers, of which 54 (88%) were reported to be given some type of brief intervention. Verbal advice (50%) was the main type of intervention delivered, followed by referral (25%). No action was taken for 25% of patients identified as smokers.

Nutrition

Nutritional status of the patient was recorded on 85% (n=109) of audit forms. Fifty-nine patients (54%) were reported to have poor nutrition, of which 45 (76%) were reported to be given some type of brief intervention. Verbal advice (66%) was the main type of intervention delivered to clients with poor nutrition, followed by written advice (18%).

Alcohol

Alcohol consumption of the patient was recorded on 80% (102) of audit sheets. Twenty-eight patients (27%) were reported to be at-risk drinkers, of which 93% were reported to be given some form of intervention. Referral (53%) was the main type action taken by health professionals for at-risk drinkers, followed by verbal advice (50%).

Physical Activity

Physical activity status of the patient was reported on 75% (n=96) of audit sheets. Forty-six percent (n=44) were reported to be physically inactive, of which 18 (41%) were reported to be given some type of brief intervention. Verbal advice (59%) was the main type of action reported to be taken by health professionals for physically inactive patients. No action was taken for 41% of patients identified as physically inactive.

DISCUSSION

The discussion that follows focuses on key issues that emerged from data collected during this stage of the research project and discusses the implications of these issues for the next stage of data collection.

Information technology (IT) systems

Comments from health professionals regarding IT systems suggested their important roles in organising and delivering prevention, as well as some of the negative and positive aspects of their utilisation. Three broad means of utilising IT systems in primary health care have been proposed. These include administrative function; health care management tool; health service data collection. [9] With regards to Ferret, health professionals' comments regarding its unreliability, and the difficulties encountered retrieving and interpreting preventive health care data stored in this IT facility would suggest that it is effective for capturing broad health service activities, such as episodes of care and client contacts, but much less effective as a health care management tool, of which the main purpose is to support point-of-care decision making. In principle, Ferret is designed to be both a health care management tool and health service data collection tool. For example, according to Penn Computers, specific capabilities of Ferret include: storage and organisation of demographic and health data for the local patient population; prompting health professionals to deliver preventive healthcare and elements of care related to known health problems; generation of work-lists for specified groups of patients who are overdue for healthcare; and storage of data for audit and feedback. [269] Ferret has been used in some ACCHS since the late 1980s [270] and is currently used by more than one-third of commonwealth funded ACCHS. [112] However, there are indications that, like the rural ACCHS in this study, other ACCHS that use Ferret have decided to change to a different system. [271]

The percentage of government funded Aboriginal and Torres Strait Islander primary health care services using Communicare almost doubled between 1999/2000 and 2003/04, reflecting its increasing popularity in ACCHS. [112] Communicare is specifically developed for use by different types of health professionals working in primary health care settings, [272] with patient recall and reminder a main feature.

The preference of GPs in the regional ACCHS to use Medical Director over Ferret is not surprising. Medical Director was the first free-standing prescription writing software package released in Australia, and is currently used by more general practitioners than all other software products combined. [273] It is also reported to be used by almost 50% of Australian Government funded Aboriginal and Torres Strait Islander Primary Health Care Services. [112] The main issue of Medical Director in the regional ACCHS appears to be that patient data stored in it is more easily accessible to GPs than it is to other types of health professionals.

Health service activity

Both ACCHS reported similar percentages of contact with male and female clients. The higher percentage of contact with female clients reflects patterns of gender access in Indigenous primary health care more broadly. [112] However, the rural ACCHS reported a greater percentage of client contacts with doctors and nurses, 50% and 27%, versus 27% and 13% for the regional ACCHS. These percentages reflect the rural ACCHS' greater percentage of client contacts in the clinic, 82% versus 45% for the regional ACCHS.

The reported percentages of client contact with doctors (50%) and nurses (29%) at the rural ACCHS were more than double the averages reported by Aboriginal and Torres Strait Islander primary health care services in similar geographic regions. [112] The percentage of client contacts with doctors (27%) at the regional ACCHS was substantially higher than the average percentage reported by Aboriginal and Torres Strait Islander primary health care services in similar geographic regions (15%). Alternatively, the percentage of client contacts with nurses (13%) at the regional ACCHS was only slightly higher than that reported by other Aboriginal and Torres Strait Islander primary health care services. [112]

The percentages of client contacts with AHWs for both the rural (11%) and regional (23%) ACCHS were below the average percentages reported by Aboriginal and Torres Strait Islander primary health care services in similar geographic locations. [112] The

percentage of client contacts with AHWs in the clinic at the regional ACCHS (15%) was greater than that reported at the rural ACCHS (6%). Aside from the greater number of clinical AHWs at the regional ACCHS, other possible explanations for this might include differences in, AHWs' level of clinical training, the complexity of patients' presenting condition/s, and the role of AHWs in clinical care. For example, AHWs at the regional ACCHS appeared to be encouraged and supported by management to develop their clinical skills. Alternatively, comments made by the generalist clinical AHW at the rural ACCHS suggested a lack of opportunity for greater involvement in clinical activities.

Roles of AHWs

The diversity of clinical roles, skills and training found among AHWs reflected AHW practice more broadly. Accounts by clinical AHWs working in the regional ACCHSs of taking blood, performing health checks, chronic disease management, and interpreting and communicating the results of clinical tests have been reported by AHWs working in other ACCHSs. [274] There have been some reports of other health staff remaining ignorant of AHWs' skills and abilities, and patients preferring to see a doctor for certain health problems, [117] but generally, when AHWs have clinical skills and are well-supported to use them routinely, they become a highly valued member of the clinical team. For example, two studies of consultations in ACCHSs reported that most consultations involved the patient seeing an AHW before a doctor. [92, 93] In one of these studies, 43% of consultations involved an AHW only, indicating the degree to which AHWs can be involved in clinical care. [93] Two potential implications of differences in the level of clinical training and type of roles found among health professionals for efforts to increase their involvement in SBI for SNAP risk factors, is that they will have different levels of opportunities to deliver prevention and different perceptions of their role in prevention.

Reporting of preventive health care delivery

Reporting of preventive health care processes was less than optimal at both ACCHSs, making assessment of the rates of SBI for SNAP problematic. In order to effectively manage, and improve the quality of health care provision in primary health care,

information about the quality of health care should be accessible, valid and complete. [75] Barriers to the routine and accurate collection of data in primary health care, [275] and ACCHS more specifically, [9] are well documented. My examination of health service activity data in each ACCHS revealed a lack of evidence-based screening items; infrequent and inconsistent reporting of preventive health care delivery; and IT systems more suited to data collection than point-of-care electronic decision support. These factors combined to reduce the availability and quality of preventive health care data, making it difficult to accurately determine the frequency and quality of preventive health care delivery.

For example, for alcohol prevention, the number of at-risk drinkers identified was reported by each ACCHS, but the criterion used by health professionals to assess a client's drinking risk was poorly defined. Two potential negative implications of this is that a client's drinking risk is not properly quantified and there is an increased likelihood of health professionals using their own judgment to determine a drinker's level of risk. There is evidence of uncertainty among doctors regarding at what amount of alcohol drinking does becomes a problem or alcohol dependence. [28] This emphasises the importance of using validated screening instruments to quantify a patient's drinking risk. Another important implication is that health professionals are more likely to simply record the patient's response to questions about alcohol consumption, without having a clear understanding what this means in terms of the patient's level of risk. For example, it is common for people who drink occasionally and do not believe that they have an alcohol problem or alcohol dependence to label themselves a "social drinker". [28] Although this term provides health professionals with a frame of reference for identifying a patient's drinking behaviour, it does not tell them the amount of alcohol consumed by the patient, which is crucial information for determining the patient's level of risk. [181] In turn, a patient's level of risk is crucial information for determining what type of treatment is most likely to be effective. [168]

With regards to brief intervention, this was not routinely documented by either ACCHS. With the exception of Medical Director in the regional ACCHS, there were no brief intervention prompts in electronic or paper screening templates, reducing the likelihood of the documentation of brief intervention delivery. Studies of implementing prevention

in primary health care have demonstrated that screening tools with built-in prompts increase the likelihood of health professionals delivering and reporting preventive health care delivery. [9] As such, the inclusion of brief intervention prompts in screening templates in both these ACCHS has the potential to improve the accuracy and quality of preventive health care data, particularly if some of the barriers to health professionals routinely using these templates can be resolved. Obtaining reliable measures of preventive health delivery care is also important for evaluating the quality of a health service. For example, the rate at which physicians provide smoking cessation advice is a measure of the quality of care in health services in the USA. [276]

There is some evidence to suggest that the collection of health data in ACCHSs more generally has improved in recent years. [87, 270] One factor that appears to have contributed to this improvement is the increasing number of ACCHS with patient information and recall systems (PIRS). These systems have the capacity to prompt health professionals to deliver health care, record health care that is delivered, and generate lists of patients due for specific health treatment services. [112] However, as the experiences of health professionals in this study suggests, if these systems are inefficient, unreliable and/or do not configure with characteristics of the practice setting, they create additional barriers to the ones they seek to resolve.

The concerns of some health professionals that more frequent use of computers might reduce interaction time with patients have been reported elsewhere, [275] and will need to be borne in mind during any future efforts to integrate evidence-based screening items and prompts into electronic templates. Certainly, the effect of computers on health professionals' interactions with patients has the potential to be both positive and negative. One study of video taped consultations in primary care found that computers reduced the doctor's interaction with the patient for psychosocial matters, but increased their level of interaction with the patient for biomedical issues and health education. [277]

Potential factors influencing SBI for SNAP risk factors

The results of the audit conducted among the small group of health professionals at the regional ACCHS provided me with some insight into factors that might be influencing SBI for SNAP risk factors. For example, the fact that these health professionals reported discussing SNAP risk factors with patients for 79% (n=41) of those consultations in which they planned to (n=52), but only reported discussing SNAP risk factors with patients for 30% (n=23) of those consultations in which they did not plan to (n=76), suggested that a prior intent to discuss SNAP risk factors with patients increased the likelihood of them doing so. As such, determining precisely what these factors are will be important. Furthermore, that almost one-third of consultations in which health professionals did not intend to discuss SNAP risk factors included a discussion of SNAP risk factors is encouraging, and possibly suggests that opportunities for health professionals to discuss SNAP risk factors arise unexpectedly and that specific factors might increase their willingness and ability to respond to these opportunities. For example, these unplanned discussions of lifestyle risk factors might be in response to patient inquiries, prompted by other health professionals, or prompted by a patient's presenting condition.

Health professionals' reasons for not discussing SNAP risk factors with patients also indicated possible barriers preventing SBI for SNAP delivery. For the 11 consultations that health professionals planned to discuss SNAP risk factors but did not, a lack of time (either for patient or health professional) and the patients' presenting condition was identified as a barrier for seven of these. These barriers are consistent with those reported by health professionals elsewhere, [12, 86] so their prominence among the small group of health professionals in this study is not surprising.

The low percentages of consultations for which health professionals reported delivering written advice (on both audit and survey) suggested that they were not routinely using patient education materials to support brief intervention for SNAP risk factors. Indigenous specific health promotion resources for alcohol and tobacco were on display in the foyer at the regional ACCHS and in storage at the rural ACCHS. Health professionals' reasons for not using these materials were unclear and needed to be

explored. For example, it was unclear if health professionals found these resources unacceptable, lacked knowledge of how to use them effectively, or if patients found them to be unacceptable.

Health professionals' self-reported knowledge, attitudes and practices of SBI for SNAP

The potential to improve the provision of SBI for SNAP in both ACCHSs is clearly evidenced by the low proportion of health professionals reporting to screen more than 75% of new or current clients, and the high proportion of health professionals rating their knowledge as low for specific preventive activities. This apparent lack of knowledge and skills in preventive health care is consistent with perceptions of health professionals reported elsewhere. [90, 191, 278]

That a majority of health professionals rated receiving education and training in assessing alcohol consumption, smoking cessation recommendations and recommendations for safe alcohol consumption as high priority could be related to several factors. First, health professionals might have greater gaps in their knowledge and skills for the detection of at-risk drinkers (this is highly probable, given the lack of evidence-based screening tools used by ACCHSs) and evidence-based guidelines for smoking and alcohol than they do for other SBI for SNAP activities. A lack of knowledge and skills in detecting at-risk drinkers, and a lack of knowledge of evidence based guidelines for the prevention of substance misuse more generally would also be consistent with the findings of other studies of different types of health professionals in primary health care. [86, 279] Secondly, health professionals might have greater awareness of gaps in their knowledge and skills in SBI for alcohol and smoking than they do for nutrition or physical activity. This increased awareness might relate to a high prevalence of alcohol misuse and smoking among clients, which might highlight, for health professionals, their deficiencies in smoking and alcohol prevention, thereby increasing the priority they place on improving their knowledge and skills in these areas. Thirdly, health professionals might perceive education and training to be the most effective strategy to improve their practices in SBI for alcohol misuse and smoking.

Health professionals' awareness of their gaps in knowledge and skills in SBI for SNAP,

and the potential role of education and training to address these are particularly encouraging. For example, a substantial percentage of health professionals reported low knowledge for quit smoking-related activities (43%) and low confidence for assessing nicotine dependency (43%), with comparable percentages rating education and training in assessing nicotine dependency a high priority. The acceptability of, and potential for, interactive teaching strategies to improve health professionals' knowledge and skills was reflected by the majority indicating a preference for workshops (76%) and the high percentages indicating a preference for small group discussions (48%) and case studies (43%).

The fact that the majority of health professionals rated addressing SNAP risk factors as a high priority in the course of their daily work suggested they perceived prevention to have an important role in Indigenous primary health care. However, this was not reflected in their current practices, with few health professionals reporting to routinely deliver SBI for SNAP. This anomaly provided further indication that barriers were likely to be preventing health professionals from delivering SBI for SNAP. The results of the survey suggested that a lack of knowledge was one barrier. However, given that low rates of SBI for SNAP were reported by health professionals who rated their knowledge and skills as moderate to high, the influence of other factors was highly probable. One possible factor considered was health professionals' perceptions of the effectiveness of SBI for SNAP. For example, more than two thirds of health professionals completing the survey had low perceptions of advice targeting smokers or physically inactive patients. In addition, slightly more than half of all health professionals completing the survey reported low perceptions of advice for reducing alcohol consumption and improving nutrition in their patients. I felt that these low perceptions of the effectiveness of brief intervention for SNAP risk factors might explain health professionals' reported low rates of brief intervention delivery.

In a review of barriers to physician adherence to practice guidelines, Cabana et al. identified physicians' beliefs that they will not succeed as an important reason explaining their low adherence to guidelines, [278] a finding also supported by theories of behaviour change. [73] The relationship between a lack of knowledge and perceptions of the effectiveness of evidence-based guidelines is also worth considering.

Generally speaking, if health professionals lack sufficient knowledge of guidelines they will be less likely to follow them routinely, [278] thereby reducing their likelihood of observing the positive effects of guideline adherence. If health professionals do not perceive guidelines to be effective, they will be less likely to follow them. For example, the Smoking Cessation Guidelines for Australian General Practice recommend that health professionals offer every smoker presenting to primary care brief advice to quit. [43] Although most GPs are aware of and agree with the recommendation, [280] studies show that many smokers presenting to general practice are not given brief advice to quit. [281] One reason proposed for this low compliance is the belief among GPs that their advice will not be effective. [62]

Limitations

Health service data used to examine the level of preventive health care delivery was incomplete and inaccurate. Furthermore, the findings of the audit were limited in that the audit was self-reported, conducted over a short time period and completed by a small number of health professionals in one ACCHS. Sampling bias was also a key limitation, with comparisons between audited and non-audited consultations not possible due to limitations in data collection at the level of the health service. Nevertheless, the findings of the audit did lead to the identification of factors that appeared to be influencing SBI for SNAP risk factors among some of the health professionals participating in this study, and provided some information additional to the survey regarding health professionals' methods of brief intervention delivery. Likewise, examining preventive health care data led to me informally meeting with different types of health professionals. These meetings provided valuable insight into the reasons for the poor availability and quality of data, as well as health professionals' perceptions of barriers to using IT systems to organise and deliver preventive health care.

The generalisability of the survey administered to health professionals is limited for three main reasons. First, the number of health care providers surveyed (n=21) represents a very small proportion of health professionals working in ACCHSs. The distribution of the type of health care practitioners completing the survey, however, was reflective of the workforce composition found in ACCHSs more generally, with AHWs

comprising the majority of the study sample, followed by nurses and doctors. Furthermore, the main purpose of the survey was to collect information at the level of the health professionals working in participating ACCHS to inform the development of strategies and goals to address their specific needs, rather than to generalise to the characteristics and practices of health professionals working in other ACCHSs. Secondly, since only 72% of available health professionals completed the survey, it may be that those with an interest or a role in preventive health care were more likely to complete the survey. For example, at the regional ACCHS, there were indications that AHWs with a community-based role (n=2) and Indigenous AOD workers (n=3) did not complete the survey because they did not perceive the questions accurately reflected their role. This was reinforced by some sections of management who also felt that AOD professionals did not need to complete the survey. Staff turnover and restricted working hours also reduced the number of health professionals available to complete the survey; four AHWs had recently resigned and two part-time doctors were unavailable at the time of the survey's administration.

CONCLUSION

The findings of this chapter raised several propositions requiring more in-depth examination by other methods. First, health professionals who plan to discuss lifestyle issues with clients but do not, probably encountered barriers preventing them from doing so. There is now a substantial and generally accepted body of literature demonstrating that even if health professionals are willing to deliver brief intervention for lifestyle factors, and even if their patients are happy for them to do so, unless barriers to lifestyle delivery are removed and systems of work (screening processes, referral networks, training and support networks) modified, improvements in brief intervention delivery are unlikely to occur or be sustained. [282] Therefore, precisely what barriers exist other than health professionals' lack of knowledge in and attitudes to SBI for SNAP, and what systems of work might require enhancement or modification, needed to be identified. For example, lack of time and the patients presenting condition were the most commonly documented barriers by health professionals participating in audit, but under what conditions time was scarce, and how patients' presenting conditions was problematic for brief intervention delivery, required further investigation.

Secondly, results of the questionnaire suggested that when health professionals delivered brief intervention it was unlikely to be evidence-based. A substantial proportion of health professionals completing the survey reported low to moderate levels of knowledge for a wide range of SNAP preventive activities. As such, health professionals' primary sources of knowledge of evidence-based prevention needed to be identified.

Thirdly, health professionals who did not plan to discuss lifestyle issues with clients probably have low perceptions of the effectiveness of, or lack self-efficacy in their ability to deliver, SBI for SNAP. Both of these factors are commonly identified as influential factors at the level of the health professional [67]. The results of the survey suggested that both are influential factors among health professionals in this study, but the degree and nature of their influence was uncertain. For example, health professionals might lack self-efficacy in SBI for SNAP due to lack of knowledge and skills, or an inability to overcome barriers preventing their application of knowledge and skills.

Fourthly, several factors suggested a lack, or ineffective use of, systems and processes required to optimally enhance evidence-based preventive health care delivery. Determining the commitment and capacity of each ACCHS to be involved in improving these systems and processes is important for establishing realistic expectations of the type and level of change that is possible.

Finally, the findings of this chapter were a descriptive summary of factors at the level of the health professional, organisation, and, to a lesser degree, the patient, that appeared to be influencing the delivery of SBI for SNAP risk factors in each ACCHS. Despite the value of this information for identifying strategies to bring about change and improvement, a more critical and reflective examination of these factors (and those yet to be identified) was required for three main reasons. First, to obtain a more in-depth understanding health professionals' attitudes to and experiences in preventive health care delivery; secondly to offer a more suitable mechanism through which health

professionals could be involved in the change and improvement process; and thirdly to ensure that any proposed changes were acceptable and feasible. As identified in Chapter four, researchers in health care improvement generally agree that qualitative methods are well suited to identifying factors influencing health care delivery and the conditions under which they arise. [61, 67] Focus groups in particular have proven useful [203] because they facilitate open and critical reflection of problems and issues among health professionals. [256, 260] In addition, health professionals in this study were in general agreement that focus group were an efficient and constructive way for them to talk further about key issues and try to work out solutions to problems. Management were also keen for an inclusive group process. As such, the focus group interview was the most acceptable participatory, reflective and critical approach to gain insight into health professionals' perceptions of factors influencing SBI for SNAP risk factors.

Chapter Six

Factors influencing screening and brief intervention (SBI) in Aboriginal Community Controlled Health Services (ACCHSs): health professional and client perceptions

BACKGROUND

Chapter five described the service activities of ACCHSs participating in this study and the SBI for SNAP practices of health professionals employed by these services, highlighting some of the implications for the delivery of evidence-based SBI for SNAP. This chapter will explore health professionals' perceptions of factors influencing the delivery of SBI for SNAP.

Factors preventing (barriers) and promoting (enablers) the delivery of preventive health care are well documented. [62, 160, 191, 283] Barriers and enablers generally arise at multiple levels, including those at the patient, health professional, organisation, health care team and external environment levels and interact with characteristics of the healthcare setting in a complex and unpredictable manner. [64] Examination of empirical findings of studies measuring the effectiveness of strategies to improve the delivery of preventive health care is useful, but it should not form the sole basis upon which strategies are selected and interventions developed. The degree to which factors influencing the preventive health care practices of health professionals in one setting are generalisable to health professionals from another setting is limited. [125] Even if barriers and enablers to preventive health care are common across settings, the context in which they occur and the nature of their interaction with other factors is likely to differ. [283] Therefore, a critical and in-depth assessment of the setting in which change is proposed is needed to establish a local contextual basis for the selection of strategies to bring about this change.

The aims of this chapter are to:

1. Examine health professional and client perceptions of factors that influence evidence-based SBI for SNAP risk factors in ACCHS.

2. Identify strategies to enhance the delivery of evidence-based SBI for SNAP risk factors in two ACCHSs.

METHODS

1. Focus group interviews with health professionals, supplemented by interviews with management.

A series of ten focus group interviews and four individual interviews were conducted with 32 health professional and three management staff from one regional and one rural ACCHS. All health professionals were invited to participate in two focus groups. Managers were invited to participate in two individual interviews. Focus group interview and individual interview questions were semi-structured (Appendix VI).

Each focus group interview comprised six to seven participants. Group composition was maintained for follow-up focus groups wherever practicable and appropriate. Each focus group was approximately 1½ hours duration. Individual interviews were between 40 minutes to 1 hour. Both focus group and individual interviews were audio-taped and transcribed verbatim, with all participants given a copy of their interview transcript for checking prior to coding and analysis of data. Field notes from organisational visits were integrated with interview findings.

In addition, in response to themes emerging from focus group interviews with health professionals from the rural ACCHS, focus group interviews were conducted with two client groups: Men's group (n=12) and Women's group (n=10). Focus group interview questions (Appendix VII) were semi-structured. Each client group participated in one focus group interview between 1 to 1½ hours duration.

Process of focus group interviews

Health Professionals

In the first round of focus group interviews, health professionals were asked to describe their experiences delivering SBI for SNAP, including their experiences delivering the Aboriginal and Torres Strait Islander Health Check. Health professionals were then

asked to identify things that made it difficult for them to deliver evidence-based SBI for SNAP. Following analysis of data, a summary of emergent themes was tabled and presented to Health professionals in the second round of focus groups, for the purposes of confirmation and the identification of possible strategies to enhance the delivery of evidence-based SBI for SNAP.

Three criteria were established to facilitate the selection of strategies. First, the strategy had to be evidence based. This was achieved by generating a list of evidence-based strategies, as derived from the medical peer reviewed literature, for health professionals to choose from. Secondly, the strategy had to target a factor amenable to change using available resources. Thirdly, general agreement had to be reached among health professionals regarding the acceptability and feasibility of each strategy. A list of strategies based on the first criteria were generated and presented to health professionals for their consideration. In determining the feasibility and acceptability of each strategy, health professionals were advised to consider the changeability of the factor targeted by the strategy, the resource implications of implementing and sustaining the strategy, and its potential sustainability beyond the life of the project. Strategies were matched to factors and the type of change and action most likely to produce improvement in the delivery of SBI for SNAP discussed. As a result of this process, a decision was reached among health and management staff regarding the core components of the intervention.

Clients

Clients were asked to describe their experiences in receiving SBI for SNAP, including their experiences receiving the Aboriginal and Torres Strait Islander Health Check. Clients were then asked to identify their preferences for receiving SBI for SNAP, including type of professional, type of consultation, format of advice, and health promotion resources. Finally, clients were asked what things make it difficult for Aboriginal people in their community to cut back on drinking, stop smoking, exercise more often, and eat healthier foods. The results of client focus group interviews were integrated with Health professional focus group interviews at the stage of analysis, with commonalities and differences between Health professionals and clients for related themes highlighted.

Data analysis

Data was analysed using the Framework Approach. The Framework Approach was developed specifically for applied qualitative research. Objectives or themes are pre-set and strongly influenced by the information requirements of the researcher. [284] Data analysed using the Framework Approach reflects the original accounts and observations of participants, but begins deductively from pre-defined aims and objectives. According to Richards this results in analysis which is explicit and informed by a priori reasoning. [285] The researcher's interpretation of data is influenced by their original research objectives and themes that emerge from the data. [201]

A basic framework was initially developed by drawing on the findings of published studies examining barriers to evidence-based preventive health care and my observations from organisational visits. Data from focus group and individual interviews was indexed in NVivo 7, with the framework expanded in response to the data. The framework was further refined through meetings with doctoral supervisors, with disagreements resolved by debate and discussion. Data was then charted in NVivo 7, with each row coded for themes and the data source (e.g. AHW, GP). From this process emerged a conceptual matrix, which was examined for patterns and associations within and between data sources. According to Miles and Huberman, a conceptual matrix is a useful tool for "identifying causal pathways, developing personal theories and guiding further data collection and analysis." [251] By working back and forth between coded data, emergent themes, matrices of relationships between variables and field notes, prominent factors influencing SBI for SNAP delivery emerged. The emerging analysis was summarised in a basic table and shared with participants to ensure that multiple perspectives were included, and to trigger discussion of strategies to bring about change and improvement. This participatory and cognitive process led to the development of a conceptual framework— a diagram of the system of concepts, assumptions, expectations, beliefs and theories that support and inform research [286]— for development of the multi-component intervention.

The analysis presented in this chapter presents emergent themes and discusses them in relation to the literature, enabling a critical reflection of key factors influencing SBI for SNAP in the two ACCHSs participating in this study. Reference to behavioural and social theories is made where relevant and appropriate. Commonalities and differences between each ACCHS are highlighted and discussed.

RESULTS

Themes emerged at the level of the health professional, patient, health care team, organisation and broader environment following the framework analysis determined for this part of the study. Themes emerging at the level of the patient, health professional, health care team and broader environment were typically common to both ACCHS. Alternatively, themes emerging at the level of the organisation were different between ACCHS.

Table 6.1: Summary of key themes arising at different levels in each ACCHS

Level	Rural ACCS	Regional ACCHS
Patient	Doctor-centric Dependency Notions of risk and harm Patterns of service access Co-morbidity	
Health professional	Lifestyle practices of AHWs Low self-efficacy Role legitimacy Outcome expectancy	
Healthcare team	Peer influence in social networks	
Organisation	Reactive service delivery Low capacity, resources and systems	Responsive service delivery Adult health check
Broader environment	Funding Workforce sustainability	

Health professional

Self-efficacy

Health professionals either lacked confidence in their ability to deliver components of SBI for SNAP or to overcome barriers to SBI for SNAP delivery. Identifying and maximising opportunities to deliver SBI for SNAP could be difficult.

"…we might know one or two things know about it [guidelines], but there's ten other things that we really need to know that we don't… so you're not real confident that you're doing it right or making the most of things…" (RN 1, regional ACCHS)

"I don't know how to go about telling them to, let's say stop, if they're drinking too much. So I tell them to see the nurse or doctor." (Generalist AHW, rural ACCHS)

Related to lack of self-efficacy were lack of familiarity with evidence based guidelines; current guidelines for the delivery of SBI for SNAP risk factors were unfamiliar to most participants. To some extent this was due to work overload and fatigue, with administrative duties and the demands of acute care reducing available time to review and consider the relevance of guidelines. The format of guidelines and the method of their dissemination were considered less than ideal.

"As far as guidelines that come from the Commonwealth, for me to sit down and read that, it's like, no time, there just too dense. So I just pick it up as I go, I'm embarrassed to say." (RN 1, regional ACCHS)

Lack of training in evidence-based SBI for SNAP: few health professionals had undertaken specific education and training in SBI for SNAP. Some health professionals had been exposed to general principles of evidence-based SBI in training courses for chronic disease management, but they had not received specific training in how to accurately screen for risk factors or effectively deliver a brief intervention to at-risk clients. A lack of knowledge and training in evidence-based SBI for SNAP was

reflected in health professionals' uncertainty regarding evidence-based preventive health care delivery.

"I'm just going cold turkey here, I just don't know." (RN 1, regional ACCHS)

"I have no idea on what has been proven to be a good delivery of information…" (Generalist AHW, rural ACCHS)

Clinical staff stressed the importance of improving the efficiency, effectiveness and uniformity of lifestyle advice delivery.

"…it [training] *may help us maximise what little opportunity we have to talk to clients about these things, and possibly make it more effective…"* (GP, rural ACCHS)

"…we need to be consistent in the information that we give, so it doesn't matter who is giving the information out. We should all be giving the same information out." (RN 1, rural ACCHS)

Differences in the benefits health professionals from each ACCHS ascribed to training in SBI for SNAP risk factors were evident. For example, AHWs at the rural ACCHS primarily identified benefits relating to their community and professional credibility.

"I think it's essential to have the training so you know exactly what you're talking about and the best way to do it. As we touched on before they're going to try and jar you, they're going to try and bring you undone. And if you don't look like you know what you're talking about, they're not going to listen to you at all."

(AHW, youth, rural ACCHS)

An opportunity to better understand aspects of own lifestyle behaviours was also perceived to be a potential benefit of training by some AHWs, "*…as workers, what we got out of the diabetes project, was we noticed things in our own lifestyle that we needed to change…"* (AHW, ear health, rural ACCHS)

For the Senior AHW (rural ACCHS), training and resources were important so AHWs could, *"...so we all know how to give the right information in the right way when clients tells us they have an alcohol problem or ask for it."* Standardising the delivery of information was also acknowledged as a potential benefit of training by the GP (rural ACCHS), "*How I see training as being important is its potential to get us doing it more often and more standardised across the service"*

Preferences from management were for health professionals to receive training in SBI for SNAP, irrespective of their current role in SNAP activity.

"Training is always good. It doesn't matter what sort of training as long as it's centred round their position, like the lifestyle prevention stuff is I guess." (CEO, regional ACCHS)

"I like training. And cross training so they're not getting all one thing, so they can be diversified within the organisation." (CEO, rural ACCHS)

Despite a lack of training in SBI for SNAP, comments by doctors and nurses suggested they were intrinsically using elements of a brief intervention.

"*Every time you see them you just ask them how they're going and if they're thinking about giving up. Sort of keep that going - that's all you can do. If you force them into anything they won't bother coming back."* (RN 2, regional ACCHS)

"I try and work out whether there's some readiness for change and stress the importance of doing it and then I suggest that there are resources." (GP 3, regional ACCHS)

Role legitimacy

None of the health professionals rejected the idea of their involvement in SBI for SNAP, but individual's perceptions of the legitimacy of their role in these activities varied considerably, possibly explaining some of the variability in their practices.

AHWs who expressed concern that clients questioned their authority, generally did not believe they had a role in the provision of advice.

"I give them the information out, but it's not my role to give advice, that's the doctor's role." (Generalist AHW, rural ACCHS)

"If they get alcohol advice from an AOD worker they will take it on board, but if they get it from a general health worker a lot of them won't." (EPC AHW, regional ACCHS)

Perceptions among the AHWs in the rural ACCHS were that clients' preferences for doctors related to: perceptions of the role and authority of doctors and nurses: *"...they see doctors and nurses as being really important, they put them on a pedestal, because they can relieve symptoms and cure sickness"* (Senior AHW, rural ACCHS); their unique relationship with AHWs: "*They don't have the same cultural connection with doctors or nurses like they do with us Aboriginal Health Workers, so I guess it's easier for them to take advice from them."* (AHW, family support, rural ACCHS);*"* their illness conditions: *"they come into the clinic with infections from diabetes, heart problems and other complex stuff. We don't have the knowledge or skills to treat these things.* (AHW, ear health, rural ACCHS)*"*

Health professionals' perceptions were consistent with reasons underpinning clients' preferences:

"I don't feel they're [nurse or AHW] *qualified enough to tell me what the doctor tells me."* (Female client, rural ACCHS)

"Sometimes when the nurse takes my blood I ask the doctor for a second opinion." (Male client, rural ACCHS)

"The doctor gives me what I need. Cures me that day on the spot." (Male Client, rural ACCHS)

AHWs who did not express concerns regarding clients' perceptions of their role appeared to be more involved in preventive health care and were clear as to what their role involved.

"I give them advice in a way they can understand it, so when they go in to see the doctor they kind of know what they're in for, and they'll have it reinforced." (Male AHW, regional ACCHS)

The AOD service at the regional ACCHS appeared to influence health professionals' level of involvement with clients identified at-risk of alcohol misuse and smoking.

"If they're a smoker and they want help, I refer them to the AOD team where there's a quit group. If they don't want to quit there's not much I can do to help them. That's not my area." (Generalist AHW, regional ACCHS) This AHWs' perception of their limited role in AOD issues was reinforced by the manager of the AODS who remarked:

"What we try and do is keep within our roles and capabilities. It's very dangerous if you go outside of your role…. it's very dangerous for the AHW and the patient. And if something happened to that patient and you don't have the expertise in that area, you know, apart from being liable it can really affect yourself, both employment wise and your patient- relationship wise." (Manager, AODS, regional ACCHS)

Doctors and nurses all acknowledged they had an important role in SBI for SNAP within an ACCHS, but felt their efforts would be more effective if AHWs were more involved.

"*Aboriginal Health Workers, I feel could be a lot more involved in prevention stuff, I don't know quite know why some of them aren't, because I think their greater involvement would make a real difference.*" (GP 3, regional ACCHS)

"I actually firmly believe that this sort of advice in an ideal world would actually be given by peers and Health professionals. But in this service (rural ACCHS) it doesn't quite work." (GP, rural ACCHS)

AHWs intimate knowledge of the client and their community was a common reason reported by doctors and nurses for a preference for their greater involvement.

"…the Aboriginal Health Worker plays a key role in the information for smoking and alcohol in this service, because they know the patients more than us." (GP registrar 2, regional ACCHS)

However, these views were not entirely consistent with organisational protocols for addressing AOD issues or AHWs' perceptions of their role.

"For alcohol and smoking I offer referral to drug and alcohol, but sometimes they don't want drug and alcohol involved. They want to talk to me. And I've got to explain that drug and alcohol is not my area in this service." (Generalist AHW, regional ACCHS)

Outcome expectancy

Health professionals' expectations of the outcomes of SBI for SNAP were generally low. SBI for SNAP was considered an important component of comprehensive preventive health care, but there was a general sense of despair and frustration among Health professionals regarding the impact of their efforts in secondary prevention. One important barrier compromising their efforts was the low motivation of clients to accept referral or return for follow-up. Health professionals were unable to provide ongoing support to clients or observe behavioural change or improvement in the client's condition. Instead, health professionals only received feedback regarding their efforts when patients returned for acute care.

Awareness of a patient's social circumstances could also reduce health professionals' expectations of the outcome and create uncertainty regarding intervention.

"…if they're dealing with four sick kids at home or mental health problems, or we've just scheduled their other family members. Opportunistically that's obviously not a good time. But then they don't tend to come back for appointments. …they're not back again until somebody's sick." (RN 3, rural ACCHS)

Lifestyle practices

One noticeable difference between AHWs from each ACCHS was the reluctance of those from the rural ACCHS with SNAP risk factors identical to those of their patients to deliver SBI for SNAP. *"I don't feel qualified to tell them not to drink. I'm not qualified because I drink too much sometimes."* (Generalist AHW, rural ACCHS)

There was a common view in the rural ACCHS that it lacked credibility and smacked of hypocrisy for any type of health professional with risk factors identical to those of their

patients to deliver lifestyle advice. The social and cultural proximity of AHWs to patients meant that their own lifestyle practices were highly visible, and AHWs were acutely aware of how their own risk behaviours could potentially threaten their professional credibility. This potential threat was a motivating factor for some AHWs to try modifying their own risk behaviours, while for others it led to self-exclusion from lifestyle advice delivery.

"…telling them you can't eat this, and you can't eat that, when it's what you eat, makes you look foolish, so you try and change your own habits to give you a better chance of changing theirs…" (AHW, youth, rural ACCHS)

Patient

Factors at the level of the patient were not only identified by patients, but also by health professionals, who felt that there were particular patient characteristics that made it difficult for them to deliver SBI for SNAP

Patterns of service access

Patients primarily accessed the health service for acute care, and prevention was a low priority.

"I'm not there to be counseled whether I drink or smoke, I want to know what they're going to do for me in the short term." (Male client, rural ACCHS)

As such, new patient registrations, chronic disease monitoring and adult health checks were the most acceptable basis for preventive health care delivery, for both patient and health professional.

"Questions about alcohol, smoking and diet and exercise come up in the adult health check so it's all there to follow and clients know the questions are going to come up so they're generally okay about being asked. That's for new clients too, I tell them that I

need to get an idea of their general health and family history and they're okay with that also." (RN 2, rural ACCHS)

For acute care, none of the health professionals reported routinely inquiring about SNAP risk factors, but if the client's presenting condition was related to SNAP risk factor/s, they were generally comfortable making inquiries. Perceptions among health professionals were that smoking, poor nutrition and physical inactivity were closely related to common presenting conditions: high blood pressure, diabetes and respiratory problems. For alcohol consumption, however, general perceptions were that it was often more difficult to directly attribute it to the presenting condition, and that alcohol-related symptoms were more difficult to detect. Therefore, health professionals seldom asked about alcohol consumption in general consultations unless the presenting condition was easily identifiable as alcohol-related or it was known that the client was a heavy drinker.

"They all know that I drink a bit too much. So I guess they're obliged to tell me to stop drinking. And that's okay with me because they're just doing their job. But really, nothing they say is going to make me stop drinking. So I just smile and think, why do you keep wasting your time on me?" (Female client, rural ACCHS)

Health professionals reported reactions from patients ranging from uneasiness, embarrassment and ambivalence about their lifestyle behaviours, to requesting another Health professional. It was difficult to determine if these reactions were based on their experiences or if they reflected health professionals' own level of discomfort about discussing certain SNAP risk factors.

More specifically, attitudes and behaviours of clients commonly reported by health professionals as barriers to SBI for SNAP included help-seeking behaviour, notions of risk and harm, and dependency.

Help-seeking behaviour

Perceptions among health professionals were that clients were generally aware that their risk behaviour was causing them problems, but they only sought or accepted help after they suffered the harmful effects of this behaviour. For example, clients could be aware that they had a drinking problem and that this is causing problems, but they generally do not seek help until they suffered the social, psychological or physical concomitants of heavy drinking. "*…you sign up for projects that are about lifestyle prevention, but what you're doing is signing up for after, for after the person got drunk and fell down the stairs."* (RN 3, rural ACCHS)

However, comments made by some clients suggested a strong desire to change their risk behaviours but a lack of support and means to do so.

"What I want is someone to help me stop smoking, please. I'll do anything. But there's no programs for that. NRT, support groups, nothing." (Male client, rural ACCHS)

Notions of risk and harm

Health professionals expressed concern that what constituted risk or harm in the non-Aboriginal community was typically poorly-defined or defined differently in the Aboriginal community: *"…social drinking is getting drunk and falling down the steps of the night club every Saturday night. But binge drinking in their eyes is, oh those fellas on the grog everyday, every night they're having a drink after work."* (Senior AHW, rural ACCHS)

This was reflected in some clients' comments regarding their own levels of alcohol consumption.

"I used to be an alcoholic, but now I'm a social drinker, three long necks after work, that's all. Not at the pub anymore, either. At home." (Male client, rural ACCHS)

"I only drink socially. Three to four glasses of wine a night after dinner to relax. Smoking is my biggest problem." (Female Client, rural ACCHS)

Some health professionals' perceptions were that previously taboo health risk behaviours were becoming normalised.

"…in a lot of circles around here social cannabis is normal." (GP, rural ACCHS)

"A lot of people aren't frowning on cannabis smoking like they do if someone was using speed or heroin." (AHW, family support, rural ACCHS)

Encouragingly, AHWs at the rural ACCHS commented that the community's level of acceptance of some risk behaviours was declining. These subtle shifts in community attitudes were seen as *"…little windows of opportunity for education and promotion of healthy lifestyles."* (RN 1, rural ACCHS)

Some health professionals' perceptions were that the results of medical tests were useful tools to provide clients with proof of biological damage resulting from their risk behaviours. *"We've had cases where they'd had a result from their bloods and they'll say to me, Can you get me into a dietician. Their results from the GP have them worried, and they want to get that result back down to the average, normal level."* (RN 1, regional ACCHS)

Examples of patients responding positively to improvements in biological indicators of disease were provided. "*I actually did an BSL on a diabetic patient last week and she was going back to tell the people in her village that she's been looking after her glucose levels better than her neighbours."* (EPC, regional ACCHS)

Patient dependency

Community-based AHWs felt that levels of community and familial support were generally insufficient for Indigenous people to sustain lifestyle changes.

"…they don't have that support in their family or their community. We see it everyday. It's not just about them. They might be doing it, where as if they live at home and their mob all drinks, that's a lot of pressure." (AHW, family support, rural ACCHS)

In addition, clients' accounts of successfully reducing their level of alcohol consumption or stopping smoking suggested that family and community were important factors. Perceptions were that "cold turkey" was the most common quitting strategy among Aboriginal people, but that more support services might increase their chance of being successful. However, health professionals felt that clients' poor utilisation of services and programs, not the availability of services and programs was the main issue.

"…the concept of getting them to come back, well they're not going to come back because they've had their immediate needs answered…" (GP, rural ACCHS)

"If things are going well we don't see a lot of people. Its crisis intervention we're dealing with." (RN 2, rural ACCHS)

Health care team

Peer influence and social networks

Health professionals at the regional ACCHS gave accounts of learning about evidence-based prevention in a way that suggested it was an iterative process involving numerous interactions with trusted peers in social networks. Doctors acquired knowledge in evidence-based prevention through interactions with external trusted colleagues, and internal expert systems, such as Medical Director. Alternatively, AHWs relied on formal and informal interactions within health care teams to acquire knowledge in evidence-based prevention. For nurses, acquiring knowledge in evidence-based prevention was more a joint process, involving doctors within the ACCHS and trusted

colleagues external to the organisation. Nurses' roles in supervising AHWs also meant they were often a trusted source of information for AHWs. For example, when developing or updating a screening template and practice protocol for smoking cessation, Health professionals sought advice from a doctor with a special interest in the field. In turn, this doctor reported accessing a respected source from an external network of colleagues for assistance. *"Dr [name withheld]) has developed the screening form and I follow that."* (EPC AHW, regional ACCHS)

The knowledge and evidence acquired through social networks was sometimes refined in response to patients. *"You just kind of learn what works best for you and your patients, and adapt what you're meant to do."* (GP 1, regional ACCHS)

"I tend to do what works best for me and the patient." (RN 1, regional ACCHS)

For one nurse, knowledge and evidence was deeply entrenched in experience and perversely affected their consideration of newer influences. *"I've been doing this for 30 years and I've developed a system of what works. I don't need to be told how I should be doing these things."* (RN 2, regional ACCHS)

Alternatively, the process of acquiring knowledge in evidence-based prevention at the rural ACCHS was a more formal, linear process involving the transmission of knowledge from medical hierarchies to other health professionals in staff meetings and case management meetings.

Organisation

Lack of time

Lack of time was a commonly reported barrier to preventive health care delivery. The main activities for which there was a lack of time, included:

Training Health professionals: "*We have to spend a lot of time actually training the staff member because it's rare to find someone that's trained and with the qualifications."* (AODS, manager, regional ACCHS)

Delivering preventive health care items: *"Time, it takes a long time. We go through the whole checklist and it takes a good 40 minutes and there are many problems, many issues to address in that time."* (GP registrar, regional ACCHS)

"If you've got 20 people sitting in your waiting room, an adult health check takes a little bit of extra time. And quite frankly, they're more acute." (RN 2, rural ACCHS)

Follow-up: *"...they signed an agreement and the worker gave them the patch (nicotine), but I don't have the time to follow them up. I know that I probably should, but I just don't have the time."* (GP 2, regional ACCHS)

The impact of reduced time on health care delivery and decision making was also raised by some health professionals as a concern.

"...if you've got so many drop-ins and you've got a limited amount of time. You know you're cutting concerns. You know that so and so needs a pap smear, but can you really stop and do that?" [267]

Lack of capacity, systems and processes to organise prevention

Capacity, systems and processes to support and enhance preventive health care delivery at the rural ACCHS were sorely lacking, making it difficult for health professionals to maximise windows of opportunities for prevention.

"Our medical capacity fluctuates greatly. And the two that are currently working, work pretty strict hours. Which means that all these other things that take up time, they can't reasonably get done in their working hours, and that's really frustrating, but what can you do?" (GP, rural ACCHS)

A lack of staff in key areas of prevention increased reliance on external personnel and agencies. *"The D &A* [197] *position has been vacant for five years so we have to use the one at community health."* (AHW, family support, rural ACCHS)

Organising prevention was problematic

"Fitting in the adult health check is really hard. The organisation of it, and its delivery. We're still working on it, but we just can't seem to do it. And it's frustrating that we can't do it." (RN 1, rural ACCHS) An inability to deliver preventive health care reduced professional morale among some health professionals. "*It's a real wearing, demoralising, stressful thing to know that this is a comprehensive primary health care service but we can't do these things."* (Project Officer, rural ACCHS)

The overall effect of the lack of capacity, systems and processes to organise prevention was reactive service delivery. "*You're always running on the spot and doing things off the cuff as best you can. And a big part of that is because things just aren't as organised as they should be.*" (RN 2, rural ACCHS) Alternatively, capacity, systems and processes at the regional ACCHS were more adequate, enabling health professionals to be responsive rather than reactive.

DISCUSSION

Screening

Two influential and related factors influencing screening were the SNAP risk factor and the client's presenting condition. If a risk factor was not linked to the client's presenting condition, health professionals were less likely to screen for it. Health professionals' comments that diabetes, high blood pressure and respiratory problems were common presenting conditions were consistent with the results of the audit conducted in the regional ACCHS, and studies of clinical consultations in other ACCHSs. [92, 93]

Brief intervention

Even when screening for SNAP risk factors did occur, there were a number of constraints on health professionals' ability to deliver brief intervention to at-risk clients. Primary among these were lack of time, low self-efficacy and patient characteristics; barriers to brief intervention commonly reported by health professionals in primary care. [62, 287] Some of these barriers appeared to have a greater impact on specific types of health professionals and only pertained to certain types of preventive interventions. For example, low self-efficacy and role legitimacy were greater barriers to brief intervention for substance misuse than they were for physical activity and nutrition, and were more prominent among AHWs than doctors and nurses. These differences suggested to me that tailored interventions [288] might be required. Empirical evidence from the literature demonstrated the effectiveness of tailored interventions and conditions for their implementation. For example, one systematic review of the effectiveness of tailored interventions designed to improve preventive health care delivery found that strategies targeting organisational systems and individual health professionals simultaneously are more effective than those targeting organisational systems alone. [283] Although this review was based on a small number of studies, the finding is somewhat consistent with another review which found that targeting multiple barriers to preventive health care delivery is typically more effective than targeting one barrier. [160]

Barriers to SBI for alcohol

Barriers to delivering evidence-based SBI for alcohol were especially prominent. As identified above, main barriers included lack of time, lack of self-efficacy and role legitimacy, all of which have been reported by health professionals elsewhere. [62, 203, 204, 235, 279] In addition to these barriers, health professionals felt the complexity and severity of patients' presenting condition was often a barrier to raising alcohol as an additional issue. GPs, in one study of implementing brief intervention for alcohol in an Aboriginal Medical Service, made similar reports. [78]

Health professionals' preferences for opportunistic alcohol screening of new patients and those with alcohol-related symptoms is in line with studies of GPs and nurses, [236] but challenges original concepts promoting routine alcohol screening of all patients. [289] Furthermore, these preferences were inconsistent with the concerns of some health professionals regarding their poor ability to detect alcohol problems in patients without alcohol-related symptoms. More regular alcohol screening would potentially improve detection rates of alcohol problems in patients without alcohol-related symptoms, given that problem drinkers, the greatest proportion of alcohol consumers, are unlikely to have alcohol-related symptoms, but are most likely to benefit from brief intervention. [47, 290] Therefore, a significant proportion of problem drinkers might not be detected if individual health professionals define what is alcohol-related. As such, health professionals' knowledge and understanding of the components and the mechanism of brief intervention for alcohol, and the importance of identifying clients who drink harmfully at an early stage of their drinking career, needed to be enhanced if rates of opportunistic brief intervention for alcohol were to be improved.

Indigenous AOD workers

The challenges identified by Indigenous AODS workers in responding to substance misuse problems among their clients reflects the complex relationship between substance misuse, mental health disorders and the socio-economic determinants of health. Substance misuse among Indigenous Australians is a consequence of, and contributor to, a range of social problems, including poverty, unemployment,

dispossession, social isolation, criminal behaviour, substandard housing and violence. [291] High rates of co-morbidity between alcohol and mental health disorders have been reported in some Indigenous Australian communities. [57] Unfortunately, there is no evidence of a decline in the levels of alcohol misuse and tobacco use among Indigenous Australians, and there is some evidence that the use of illicit drugs is increasing. [292] Indigenous AOD workers are confronted with the realities and complexities of Indigenous substance misuse on a daily basis. Additionally, they are often required to respond to these issues with little or no formal training and within a sector that is chronically poorly funded and resourced. [58]

Workforce issues in the AOD field

The difficulties management face recruiting and retaining Indigenous AOD workers have been reported elsewhere, [293] as have the negative impact of these difficulties for service delivery. A review of evaluations of alcohol interventions targeting Indigenous Australians found that a lack of a trained Indigenous AOD workforce compromised the effectiveness of some interventions. [32] The AOD Manager's (regional ACCHS) discontent regarding the anomaly between the few Aboriginal identified positions in the AOD field requiring qualifications or experience, and the lack of funding available to train unskilled Indigenous AOD workers, was apparent.

"It tells me two things. First it tells me that they think Aboriginal people aren't capable of getting qualifications. And the other thing it tells me is that they think its okay for Aboriginal people to receive health care from someone who's not trained or qualified. And that's totally unacceptable." (Manager, AODS, regional ACCHS)

Without qualified AOD workers, it is also difficult to provide adequate support and supervision to other types of health professionals who are unqualified or inexperienced in AOD prevention and treatment, but who regularly encounter AOD problems in their daily work. [294] For example, the vacant AOD position at the rural ACCHS meant that AHWs in the family health team were increasingly required to respond to AOD related crises and forge and maintain links with tertiary AOD services, despite their lack of AOD training. The lack of funding for these AHWs to receive AOD training increased

their level of dependence on the workplace for skills development. Paradoxically, a lack of qualified AOD staff and the limited experience of other types of health professionals in AOD prevention meant that opportunities for organisational learning in AOD prevention were extremely limited. A lack of opportunities for professional development in AOD services has been identified as a major barrier to the recruitment, development and retention of a skilled Indigenous AOD workforce. [295] Given the lack of an AOD worker and limited expertise of staff in AOD prevention at the rural ACCHS, enhancing the knowledge, skills and confidence of all health professionals to identify and use windows of opportunity for AOD prevention is critical.

The influence of AOD workers on the practices of other health professionals

In the regional ACCHS, the effect of the AOD service on the preventive practices of other health professionals was somewhat paradoxical. On the one hand, it increased their willingness to screen for AOD problems as they had clear options for referral of at-risk clients. On the other hand, it reduced the inclination of some health professionals to deliver brief intervention because they conceptualised alcohol misuse and smoking as specialist problems requiring the expertise of AOD workers. AOD service protocols and procedures promoting the management and treatment of AOD problems by AOD workers appeared to reinforce health professionals' notions of their roles in SBI for alcohol and smoking. For some health professionals, offering smokers and at-risk drinkers referral in place of brief intervention is a valid and acceptable option, unlikely to be challenged. However, health professionals' reports of clients declining referral suggest there are missed opportunities for intervention when AOD problems are considered the sole province of AOD workers. For example, problem drinkers are unlikely to accept an offer of referral to an AOD agency, but will respond to advice delivered by Health professionals in primary care to reduce their alcohol consumption. [28]

Brady et al. also identified health professionals' perceptions that addressing alcohol problems requires specific expertise as a barrier to their greater involvement in brief intervention for alcohol. [86] Significantly, despite this study focusing on the role of the GP in brief intervention for alcohol, two main positive outcomes of AHWs'

participation in training in brief intervention for alcohol were their increased acceptance of their role in addressing AOD problems and their increased involvement in screening for alcohol problems. [86] Other studies have also observed improvements in health professionals' attitudes regarding their roles in SBI for alcohol following training, [296] suggesting that training health professionals in SBI for alcohol and smoking is probably a useful starting point for re-conceptualising their notions of their role in AOD prevention. In addition, the fact that health professionals completing the survey reported an overwhelming preference for training workshops (Chapter Five) increases the potential for this strategy to be acceptable and effective.

Health professionals' knowledge and attitudes

The relationship between health professionals' knowledge of, attitudes towards, and practices in, SBI for SNAP risk factors appeared consistent with the knowledge, attitudes and behaviour framework [278] identified in Chapter Five. According to this model, before a guideline can affect patient outcomes, it first must affect health professional knowledge, then attitudes and, finally, behaviour. Awareness of and familiarity with guidelines are prerequisites for knowledge of guideline recommendations. [278] Health professionals participating in focus group interviews typically had not been routinely exposed to evidence-based guidelines, or exposure had been brief and occurred some time ago. The rapidly expanding and evolving evidence base made it difficult for health professionals to remain aware of guidelines, hence their need to rely on social networks for such knowledge. Even for guidelines that had received recent exposure in the Indigenous health field, health professionals tended to remain unaware of their existence until they were exposed to them through trusted peers. Even for those health professionals who were aware of guidelines, this awareness did not always manifest in familiarity with guideline recommendations. Two key reasons for this appeared to be that health professionals did not always consider that the release of new guidelines might contain recommendations vastly different to those of previous guidelines, and sometimes trusted clinical 'instinct and judgement' in favour over guideline compliance. For example, with regard to physical activity, there was considerable discussion among health professionals about what to recommend to clients. Approximately half of health professionals said they recommended the

moderate sessions of physical activity a week to patients. While the other half said they generally based their advice on individual patient circumstances.

Health professionals' uncertainty of guidelines

Health workers' uncertainty regarding evidence-based guidelines is not surprising, nor is it unique to Indigenous health care settings. Even widely accepted evidence-based guidelines can create uncertainty and disagreement. [191] Moreover, the evidence-base in Indigenous health is limited and still emerging. [131] The applicability of evidence derived from the general population, and the degree to which Indigenous values, perspectives and experiences can contribute to the development of an Indigenous-specific evidence base, are some of the key issues being debated. [102, 238] As such, what is required are strategies that permit an exploration of health professionals' (particularly AHW) experiences applying evidence-based guidelines (particularly those perceived by health professionals or Indigenous patients to be problematic) in Indigenous health care settings, in order to establish appropriate mechanisms for their dissemination to health professionals in these settings, and the level of tailoring that is possible without compromising the integrity of their crucial elements.

Health professional self-efficacy

Health professionals' lack of confidence in their ability to perform and overcome barriers to SBI for SNAP risk factors, is consistent with evidence that low self-efficacy is a common barrier to health professionals following preventive health care guidelines. [278] It has even been proposed that self-efficacy is the most important requirement for behaviour change as it affects how much effort is invested in a task and the level of performance attained. [297] For training in SBI for SNAP risk factors to translate into improvements in self-efficacy, barriers preventing health professionals executing evidence-based SBI for SNAP will need to be modified or removed. [206, 298]

Support for Aboriginal health workers

The influence of workplace dynamics, politics, historical practices and resource issues has been identified as key factors impacting upon AHWs' opportunities to demonstrate, practise, and retain new skills. [295] Likewise, AHWs in the rural ACCHS emphasised the importance of being supported to transfer brief intervention skills acquired in

training into their daily work. Their concerns regarding their ability to routinely deliver brief intervention when this activity has not traditionally been an integral part of their role is significant. Roche, among others, emphasises the importance of supervision and support for the implementation of training and the identification of training needs, arguing that, without it, workers struggle to upkeep and maintain newly acquired skills. [299] It has also been suggested that a lack of support to deliver interventions for complex health issues, such as AOD problems, contributes to professional isolation. [62] Factors unique to AHWs that potentially increase their need for support and supervision include the lack of a professional body governing their practice; lower levels of education and training [114, 116]; role uncertainty; and the weight of community expectation. [117] Although a teamwork approach to health care appears to have created strong social networks in the regional ACCHS, whether or not these supportive linkages will enable AHWs to embed newly acquired skills into their routines and overcome the inertia of previous practice is unclear. In this context of uncertainty, identifying influential colleagues, such as team leaders and/or champions, and ensuring they have the knowledge and skills in SBI for SNAP risk factors to upkeep and maintain newly acquired skills among AHWs is critical. Equally, if not more critical, is ensuring that influential colleagues have the authority to consult with management and make decisions regarding the development of protocols and the implementation of systems and processes needed to support AHWs' greater involvement in SBI for SNAP.

Social networks

Accounts by health professionals in this study of how they learn about evidence-based guidelines would suggest that tacit knowledge, mediated by organisational factors, is the principle type of knowledge informing their practice. There is a growing body of literature that indicates tacit, rather than explicit research-based knowledge underpins health care practice. [300] Tacit knowledge is knowledge acquired through interactions with people. [301] For example, one ethnographic study of knowledge management in primary care found that clinicians relied on "collectively reinforced, internalized, tacit guidelines" (what the authors termed "mindlines"), [302] rather than evidence derived from research. Similarly, in the regional ACCHS, nurses' primary role in the training and supervision of AHWs in clinical processes and procedures has established them as

mentors and trusted sources for these AHWs, who acquire knowledge and evidence of prevention by observing the actions of nurses and the reinforcements (positive and negative) they receive for these actions. Social theories propose that this type of social relationship increases the intensity of social influence and behaviour reinforcement [297] thus, it is not surprising that knowledge and skills of evidence-based prevention is promulgated via this process. Furthermore, the fact that the practices of AHWs expressing the most uncertainty regarding evidence-based prevention appeared to be mostly subject to the influence and reinforcement of nurses, is consistent with constructs of social theories that propose an individual's attitudes and behaviours are most susceptible to influence in environments where objective information is not readily available. [72]

The strong and persistent influence of social networks in each ACCHS had important implications for the dissemination of evidence-based brief intervention. First, management and medical hierarchies within these ACCHSs have a professional and ethical responsibility to ensure that the preventive health care practices of health professionals are based on research evidence, rather than word of mouth. Secondly, health professionals in ACCHSs needed to be introduced to evidence-based guidelines consistent with how they acquire and share knowledge of evidence in the practice environment; the transmission of evidence-based knowledge through established internal networks offers great potential for evidence-based guidelines to be presented in a way that is acceptable and readily accessible to health professionals in this study. Furthermore, given the apparent lack of published studies on using a social network approach in Indigenous health care settings, trialing its implementation in ACCHSs participating in this study, offered the potential to provide information regarding the feasibility of introducing it more widely in these settings. Thirdly, organisational processes and systems needed to be improved so that they better supported the uptake of evidence-based knowledge by health professionals. I felt this was critical, especially given the potential for organisational factors to mediate the transfer of health professionals' knowledge of evidence into evidence-based practice. For example, staff turnover could result in the loss of an influential colleague. Without ongoing support and reinforcement from an influential colleague, health professionals might lose confidence to deliver evidence-based prevention. Organisational systems and processes

might therefore become the primary means of structural support and reinforcement when social support and reinforcement is lacking.

Outcome expectations

Health professionals' low expectations of brief intervention for alcohol and smoking were prominent, confirming the results of the survey reported in Chapter Five. Outcome expectations are antecedent determinants of behaviour. [297] If health professionals do not believe that a guideline will result in improved outcomes, they are less likely to follow its recommendations. Health professionals' expectations of the outcomes of preventive health care more generally appeared to be influenced by personal experience, and to a lesser extent, vicarious experience. Their observations of the low success rate of brief intervention among their group of patients appeared to engender and reinforce their beliefs that brief intervention is ineffective, and possibly a waste of their time. Without health professionals experiencing or observing the contrary, their beliefs became practical evidence that brief interventions do not work.

Given health professionals' low expectations of brief intervention for SNAP risk factors, simply exposing them to the evidence of what has worked in other settings was unlikely to alter their low expectations or lead to improvement in their practices. Health professionals' needed to experience firsthand the benefits of routinely applying the evidence base with their group of patients, in their practice settings, and under different working conditions. [267] Health professionals also needed to be encouraged to consider the impact of SBI for SNAP on measures other than patient health outcomes. Health care is but a small component of the social, behavioural, environmental and biological determinants of health. [4] Overlooking this, and population level success— the total potential effect of a large number of health professionals offering advice at every opportunity— can negatively influence outcome expectancy and lead to poor adherence to guidelines. [278] As such, process measures – processes of care that generally lead to better health outcomes if implemented – were likely to be important for providing feedback to health professionals regarding their performance, [75] encouraging health professionals to persist with evidence-based prevention in the face of non-success, and identifying obstacles preventing greater success. Simple process

measures that do not require sophisticated patient information systems might include the number of patients screened for SNAP; the number of at-risk patients receiving a brief intervention or accepting referral for more intensive intervention; and the number of adult health checks delivered. Using process measures to provide feedback to health professionals on their performance has shown to be a powerful stimulus for quality improvement [74] and has been used successfully to monitor and drive improvements in preventive health care in ACCHSs. [303]

It is also possible that health professionals who were pessimistic regarding the effectiveness of SBI for SNAP were less able to communicate a sense of self-efficacy to patients and assist them to set and revise goals for behaviour modification. It has been proposed that maintaining optimism about change is critical to bringing about change. [304] Undoubtedly, maintaining optimism in Indigenous health care is difficult. There have been only marginal improvements in Indigenous morbidity; Indigenous mortality has not changed due to high adult mortality rates, for which chronic disease is a major cause [305]; and Indigenous Australians face persistent social, economic and environmental barriers to making lifestyle changes to improve their health. [7] The small degree of change generally witnessed at the patient level by health professionals and the lack of evidence for the effectiveness of brief intervention in Indigenous health care settings, possibly also makes it difficult for health professionals to maintain optimism and enthusiasm for brief intervention. Nevertheless, there is some evidence for the effectiveness of brief intervention in disadvantaged population groups, [306, 307] and the persuasive influence of doctors in Indigenous health care settings is documented. [308] The fact that no health professional reported routinely delivering evidence-based SBI for SNAP risk factors should also be kept in mind. Poor adherence to evidence-based guidelines probably reduced the likelihood of SBI for SNAP risk factors proving effective.

No health professionals reported assessing a patient's readiness to change. Perhaps if readiness to change was assessed it might not only assist health professionals to better establish a patient's willingness to change their behaviour, but also show them that their efforts are having a positive impact, which might encourage them to persist with evidence-based SBI for SNAP risk factors in the face of low rates of behaviour

modification among patients. As identified in Chapter Four, the Stages of Change Model, from which the principle of assessing readiness to change is derived, [178] has demonstrated good utility and acceptability when applied to different health issues, in different settings, and among different population groups. [304] Although there is limited evidence that interventions using the Stages of Change Model are more effective in modifying behaviour than non-stage based interventions, [309] its dissemination in primary care appears to be relatively widespread, presumably because of its strong theoretical basis.

Roles of Aboriginal health workers

Aboriginal Health Workers' (AHWs) accounts of how client and community factors influence their professional practice revealed much about the reasons for their limited involvement in advice delivery. In particular, how their social and cultural proximity to clients makes it difficult for them to give advice in way that is both supportive and authoritative. Other studies have reported similar findings. [117, 274, 310] Unique factors making advice delivery difficult for AHWs include their identity as a member of the community, [274] similar health risks and social problems to those of their patients, [117, 187] and role and status in the community. [310] In some cases, these factors have negatively impacted upon AHWs' community or professional status to effectively discharge their duties. For example, where AHWs have lacked status and community support, they have been reluctant to implement health education and environmental health programs. [310] Similarly, the reluctance of AHWs in the rural ACCHS to deliver SBI for SNAP risk factors out of concerns that clients might interpret their efforts as a form of interference, suggests a lack of wider community support for their involvement in this activity, which is reinforced by organisational protocols that restrict AHWs' involvement in clinical care. Educating clients about lifestyle risk factors is a key competency of AHW practice, [115] so a lack of a prominent clinical role and patient preferences would not appear to be reasonable reasons for the apparent lack of organisational support available for community based AHWs to undertake these secondary preventive health care activities to the same level as clinical AHWs. [93, 274] Although it might be argued that patient preference is a legitimate reason when viewed in the context of Indigenous community control and empowerment, the degree to which patient preference influences the organisation of preventive health care or the

degree to which the organisation of preventive health care influences patient preferences, is relatively unclear.

Clients' perspectives on receiving SBI for SNAP revealed some of the reasons underlying their preferences. Primary among these were their beliefs regarding the knowledge and authority of doctors. Several other studies have found that Indigenous people prefer to receive lifestyle advice from doctors. [86, 308, 311] Behaviour modification in Indigenous people following lifestyle advice from doctors has also been observed. For example, Aboriginal people have reported that a doctor's medical advice was influential in encouraging them to reduce their alcohol consumption or give up drinking. [57] More specifically, some clients participating in focus group interviews felt that the doctors' advice combined with medical test results could make them think more seriously about changing their behaviour. Health professionals felt medical tests were useful intervention supplements to show clients the biological effects of their risk behaviours and to challenge their notions of risk and harm. Doctors and nurses were better positioned to use the results of medical tests as intervention supplements than AHWs, who were less likely to have sufficient knowledge to accurately interpret and communicate the meaning of test results to clients. Despite the potential for medical test results to encourage behaviour modification among clients, Health professionals using this strategy need to be careful because it might have an effect opposite to the one intended. For example, if problem drinkers return a normal blood test result this might reinforce their drinking patterns. [28]

The differences in the opinions of health professionals from each ACCHS regarding how Indigenous patients prefer to receive lifestyle advice might have reflected differences in local community perceptions of health professionals' roles, differences in the organisation and delivery of clinical care, and/or differences in the ways in which different types of health professionals responded to patient influences.

The Adult Health Check

As with most other ACCHSs, a package produced by the Commonwealth outlining the essential components of the Adult health check has been distributed to the regional and

rural ACCHS. The information and tools contained in this package, however, are rudimentary. In addition, minimal support is provided by the Commonwealth to assist ACCHSs to implement the Adult health check within an evidence-based framework. [83] As identified in Chapter One, the impact of guideline dissemination alone is limited. To their credit, both ACCHSs had attempted to incorporate elements of evidence based guidelines into tools and processes to support the delivery of the Adult health Check. Unfortunately, their efforts were compromised by the inadvertent inclusion of obsolete evidence, omission of current evidence, and reliance on tacit knowledge.

Strategies that have been used by other ACCHSs to implement the Adult health check include a designated worker to organise its delivery; increased involvement of AHWs; financial incentives; and opportunistic delivery. [312] Of these strategies, anecdotal reports suggest that the increased involvement of AHWs, a designated worker and opportunistic delivery are the most effective. The clinical team at the rural ACCHS had made several attempts to improve the organisation of preventive health care to facilitate delivery of the Adult health check, but less than optimal systems and processes, clinical staff shortages and the demands of acute care sabotaged their efforts. Alternatively, at the regional ACCHS, some evidence-based systems and processes for delivering prevention were in place, such as a designated worker with responsibility for organising the adult health check. More importantly, preventive health care appeared to be more of a priority for management at the regional ACCHS than it was for management at the rural ACCHS, primarily due to the latter's preoccupation with resolving staff shortages, the lack of physical space and IT issues. Furthermore, with regard to Adult health checks, the regional ACCHS was developing a reputation as a model service for other ACCHSs to follow; management remained keen to further enhance preventive health care delivery in this area.

LIMITATIONS

Qualitative interviews were conducted among a small group of health professionals from one rural and one regional ACCHS in NSW. While this influences the responses obtained and generalisability of findings, factors influencing SBI for SNAP were similar to those reported by health professionals in primary health care. [64, 191, 204] Furthermore, factors unique to AHWs were consistent with those identified by AHWs elsewhere. [12, 86, 117] More importantly, qualitative interviews revealed more about the context in which these factors arise for this group of health professionals.

A combination of respondent validation, ongoing review of interview transcripts, comparison with survey findings (Chapter five) and regular discussion of the findings from data analysis with participants and doctoral supervisors reduced the likelihood of misinterpretation. Respondent validation carried out by all participants did not result in significant changes to interpretation.

In the regional ACCHS, three health professionals (two GPs and one AHW) were unavailable to participate in the first round of focus group interviews. Therefore, their responses were not generated from the dynamics of a focus group interview. In addition, one AHW and one nurse were required to leave mid-way through one focus group interview to attend to clients. Both health professionals were followed-up with their additional responses included. The potential negative impact of these departures from the focus group method on data analysis and interpretation was minimised by the second round of focus groups and group meeting.

IMPLICATIONS

The findings of focus groups revealed much about health professionals' perceptions of preventive health care and barriers and enablers to evidence-based SBI for SNAP risk factors. The implications of these findings for the development of an intervention to facilitate evidence-based SBI for SNAP risk factors were relatively clear. The framework for an effective intervention to facilitate health professionals' greater involvement in evidence-based SBI for SNAP would need to be multifaceted and include steps that: *maximised promoting factors,* such as using established social

processes for knowledge acquisition and decision making to disseminate evidence and develop the skills of health professionals via workshops to enable them to more effectively apply this evidence and use evidence-based brief intervention materials; *supported implementation of evidence-based components*, such as evidence-based screening tools and materials in preventive care checklists and protocols to provide structural support for health professionals to deliver evidence-based SBI for SNAP risk factors and improve the reporting of preventive health care delivery; *minimised the effect of barriers* by working with ACCHS (especially influential colleagues) to identify and implement practical strategies to resolve barriers and enhance the existing abilities of health professionals to develop individual strategies to overcome barriers.

SELECTING INTERVENION STRATEGIES

The decision making process

During the second round of focus groups two different types of decision-making emerged in each ACCHS, authority-based and collective. Medical hierarchies in the rural ACCHS typically involved AHWs and non-clinical staff members only peripherally in decisions regarding modifications to IT systems, presumably because of their non-clinical role. Difference in the role adopted by GPs in group meetings was especially apparent. In the regional ACCHS, the two GPs attending the group meeting took a back seat while nurses and AHWs discussed the intervention proposal. GPs typically only become involved when group consensus was sought for a strategy. It was unclear if GPs' low levels of participation reflected their levels of professional autonomy, which has been shown to influence their decision to adopt or not to adopt a new strategy, or represented their efforts to facilitate the involvement of other health professionals in decision making. Alternatively, in the rural ACCHS, the GP and the RN took much more of a lead role and other staff would frequently defer to them for advice or opinion. It quickly became apparent that RNs and AHWs were central to intervention implementation in the regional ACCHS, while in the rural ACCHS, intervention implementation was going to be dependent upon the ongoing involvement of one GP and one RN. Community-based AHWs and allied health professionals were either absent or their participation in decision making was low, even in the regional

ACCHS where the collective decision making process would have been expected to facilitate their greater involvement.

Health professionals in the regional ACCHS elected to receive training in all four SNAP risk factors, while those in the rural ACCHS chose to receive training in smoking and alcohol only, on the basis that they had been exposed to evidence-based guidelines for nutrition and physical activity in their recent involvement in a diabetes research project. One main issue discussed among health professionals in relation to training was the disciplinary background of the presenter. For a minority of health professionals, a presenter with experience in Aboriginal health was most important, while for others it was more important to have a presenter with expertise in a specific risk factor. I agreed to try to find presenters matching both criteria, but conceded that it would be difficult as such individuals were few in number and in high demand.

The provision of evidence-based brief intervention kits appeared to be more of a priority for health professionals in the regional ACCHS, who felt the right materials would reinforce training. Alternatively, some health professionals in the rural ACCHS expressed concern that brief intervention kits might reduce the potential impact of training because some health professionals have a tendency to use health promotion resources as 'the intervention,' rather than as an intervention supplement. Their concerns were somewhat alleviated when I showed them a copy of the Drink less kit (brief intervention kit for alcohol). In the end, they did not oppose the provision of brief intervention kits as a strategy to reinforce and support evidence-based brief intervention, but maintained the view that health promotion resources are only as effective as the health professionals who use them.

Health professionals in both ACCHSs felt that identifying one or two influential people in the organisation to 'liaise' with me and support and reinforce changes within the organisation was important. Influential colleagues in both ACCHS were not so much as nominated by other staff as they were self-selected unopposed. In the rural ACCHS, one GP and one RN agreed to be influential colleagues, while in the regional ACCHS, management nominated the two RNs. Although this selection process was less than

ideal, the selection of these health professionals did make sense in terms of their role and influence within the organisation, and other health professionals were openly supportive of them taking on the role, making it unlikely that the outcome would have been different had they more actively participated in the nomination process. However, the fact that influential colleagues either had a supervisory or managerial role raised the possibility that some staff might have felt pressured to accept the nomination.

Both ACCHSs felt that it was vital for me to maintain phone, email and face to face contact during implementation of intervention strategies. It was decided that I would maintain weekly phone or email contact with influential colleagues for at least the first two months of intervention implementation, and fortnightly contact thereafter. Outreach visits were also considered a priority. Preferences were for monthly outreach visits to take place immediately after staff meetings so as to increase my likelihood of making contact with all health professionals. There was agreement at both ACCHSs that the purpose of outreach visits would be for me to provide ongoing reinforcement to health professionals, assist influential colleagues to make the necessary changes to systems and processes, and provide feedback on intervention progress.

With regards to feedback, the measurement of the rates of SBI for SNAP was not a priority for either ACCHS, nor was it possible at this stage. There were two main reasons for this. First, an accurate baseline measure of SBI for SNAP activity had not been established, primarily due to recurrent IT problems which resulted in gross inconsistencies in reporting. Therefore, health professionals in both ACCHSs were keen to focus on resolving IT problems and improving the collection and management of preventive health care data so that more reliable measures of preventive health care processes could be obtained. Secondly, having learned that some of the screening tools they used were not evidence-based, health professionals in both ACCHSs wanted to examine the possibilities regarding standardising the method by which evidence-based screening tools were administered by different types of health professionals and the feasibility of routinely administering these screening tools in clinical care.

The main outcome of the group meetings was a draft plan of a multi-component intervention for implementation and adaptation in each ACCHS. Chapter Seven reports on the process and outcomes of implementing and adapting the intervention in each ACCHS, and discusses their implications for the dissemination of brief intervention in ACCHSs more broadly.

Chapter Seven

Implementing evidence-based screening and brief intervention in Aboriginal Community Controlled Health Services: a qualitative analysis of process and outcomes

BACKGROUND

Chapter Five described the characteristics and service activities of each ACCHS, including the preventive health care practices of health professionals employed by these services. As such, it contributed to a better understanding of the context in which change was to be implemented. Chapter Six examined factors influencing evidence-based SBI for SNAP risk factors in each ACCHS from the perspectives of health professionals, and management, and to a lesser degree, clients. Specific factors requiring modification to bring about change and improvement in SBI for SNAP risk factors were identified.

There are several approaches to changing health professionals' practices and implementing evidence-based prevention. [67] These approaches are underpinned by a number of theoretical perspectives and offer a menu of strategies to choose from when trying to improve preventive health care delivery. [69] Ideally, the target setting, target group, barrier or problem, and empirical evidence should inform which strategy/ies are selected. [67, 69, 313] In order to improve the likelihood of strategies proving effective, they should be linked to a specific barrier or problem, suitable for the target setting, acceptable to the target group, and evidence-based.

Different strategies might also be more effective at different stages in the change process. [69] For example, it has been proposed that educational strategies are most likely to be effective at the dissemination stage because of their potential to improve health professionals' knowledge, skills and self-efficacy, and motivate them to change their practices. [70, 162] Therefore, the introduction of a strategy into the change process should be carefully planned in order to maximise its potential to be effective.

Typically, multiple strategies are needed to effectively target barriers arising at different levels [64] and to match the change process of organisations [314] and individuals. [304] Once the types of intervention strategies and their roles in the change process have been decided, the next logical step is to explore the process of implementing the multi-component intervention in the targeted setting to: further develop and refine its

components [315]; assess the feasibility of its implementation; and identify contextual factors that influence its implementation. [61]

A process evaluation can provide valuable information to assist in evaluations of an intervention's effectiveness by detailing how well specific components of the intervention can be implemented and the context in which effective implementation is most likely to occur. [170] If an intervention is not being implemented properly or is not reaching the right target group, it is less likely to be effective. [316] Therefore, the findings of a process evaluation can help to optimise the functioning of an intervention prior to full-scale implementation and evaluation of its effectiveness. [61, 317]

The aim of this chapter is to:

Examine the process of implementing a multi-component intervention to enhance the delivery of evidence-based SBI for SNAP risk factors in two ACCHS, demonstrating the level of tailoring required for integration into routine clinical care.

METHODS

Consistent with the overarching method of inquiry of this thesis, an action research design, primarily using a developmental approach (qualitative and inductive) was applied.

Phase 1: Designing and refining the intervention

Method: Group meetings

The draft plan of intervention strategies to be included in the multi-component intervention, as described in Chapter Six, was developed into a one-page plain language proposal. This proposal was distributed to health professionals and management staff in each ACCHS for their review and feedback one week prior to a group meeting. Timelines and milestones included in the proposal formed the basis for the discussion.

I worked collaboratively with health professional and management staff to tailor intervention components to the needs and unique circumstances of their organisation. For each ACCHS, I (1) presented a summary of changes; (2) assisted in setting goals; (3) organised specialists to deliver training; (4) assisted with the tailoring of systems necessary for evidence-based SBI; (5) organised meetings to discuss progress and modifications; and (6) provided tailored educational outreach to health professionals.

A checklist was adapted from a framework for describing key features of a quality improvement intervention [316] to facilitate a description of the intervention as performed, including participants' level of exposure to the intervention and their experiences in the implementation process. The checklist was completed during intervention implementation. The information recorded using this checklist is presented in Table 7.1.

Phase 2 Training of ACCHS staff

Method: Survey

Pre and post surveys (Appendix VIII) were distributed to participants in training sessions to evaluate the effectiveness of training. Surveys used a Likert scale to identify changes in participants' confidence in identifying clients at-risk of SNAP related harm, delivering brief intervention to at-risk clients, and helping the Indigenous community to address SNAP risk factors. I attended all training sessions and made notes of participants' discussions and interactions.

Phase 3: Intervention Implementation

Methods: Focused ethnography, individual interviews and group interviews

I used a real time analysis within an ethnographic framework—ongoing iterative process of reflecting on data as they were collected. Specific methods applied included participant observation of health and management staff during training and organisational visits; semi–structured formal and informal interviews with influential colleagues; and group interviews with health professionals. These methods were supplemented, where appropriate by documentary review of screening templates and/or

practice protocols.

Data from field notes recorded during organisational visits were recorded by hand and then later expanded and entered into NVivo 7. Questions about incidents and activities noted during field observations were posed to individuals in order to verify my interpretations. I made additional notes from these conversations, which I later expanded. Wherever possible, direct quotes were recorded, but paraphrasing was sometimes necessary due to the length and location of the conversations and the potential for verbatim note taking to disrupt the flow of conversation.

I summarised data from field notes in a monthly narrative report, which I then entered into NVivo 7 for coding and analysis. I coded data from each ACCHS separately, analysing segments to identify overarching themes that possibly explained which intervention components worked well, which did not, and what factors might explain variations in process outcomes and/or the lack of change. The three formal interviews with influential colleagues were recorded and transcribed.

Themes arising from field notes and interviews were reviewed iteratively in consultation with doctoral supervisors as they developed. Where appropriate, my analysis was informed by social and organisational theoretical frameworks and empirical evidence from previous studies to better understand and explain salient themes. In this sense, theory provided an explanatory framework by which to interpret, and establish the plausibility of findings. Findings atypical of theoretical models or empirical evidence were noted and used to further develop the analysis. I developed two working documents of analysed field notes which I used as data displays to facilitate the analysis of issues at each site, generate discussion among research team members and assist with planning.

Eight group interviews were conducted with a group of health professionals from the regional ACCHS as part of a Participatory Action Research (PAR) project that emerged during intervention implementation. The main purpose of these focus group interviews

was to explore health professionals' experiences delivering evidence-based SBI for alcohol. Alcohol prevention emerged as the focus of the exploration as this group of clinical health professionals wanted to pilot using the recently released *Alcohol Treatment Guidelines for Indigenous Australians* in routine care.

Group interview questions (Appendix IX) were semi-structured around specific questions relating to health professionals' experiences. Sessions were reflective, relatively informal and preceded more structured educational outreach. Interviews were audio-taped and transcribed verbatim, with all participants given a copy of their interview transcript for checking prior to coding and analysis of data. Participants in group interviews included four AHWs, one RN and one GP. Another full-time doctor in the clinical team did not participate in group interviews as she was involved in the initial development of this project and it was felt that her familiarity with the project would negatively impact upon the group dynamic. A phenomenological approach was used to analyse group interview data, with an emphasis on capturing health professionals' experiences of delivering evidence-based SBI for alcohol. As such, the analysis was descriptive rather than explanatory.

The Intervention as Implemented

Table 7.1 summarises the intervention as implemented in each ACCHS.

Table 7.1: The intervention as implemented in each ACCHS

Intervention Components		Regional ACCHS	Rural ACCHS
Resources	Guidelines	✓	✓
	Brief intervention kits	✓	✓
	Patient education materials	✓	✓
	Decision making tools	✓	✓
Training	SNAP risk factors targeted	alcohol, smoking, nutrition, physical activity	Alcohol and smoking
	Number of sessions	5	4
	Total hours	16	13
Outreach	Number	15	7
	Frequency (average)	every 20 days	every 37 days
	Total hours	39	33
Audit and Feedback	Number of sessions	2	1
	Type	Processes of care	Processes of care
Influential colleagues	Roles	Nurse, GP	AHW, Nurse, Project Officer, GP
	Contacts with researcher	phone (n=11), email (n=64) face-to-face meetings (n=10)	phone (n=6), email (n=58), face-to-face meetings (n=7)
Decision prompts	Electronic templates	X	✓
	Paper based templates	✓	x
Main Target group/participants			
Professional role		AHW (clinical), AOD Worker, GP, Nurse	AHW (community), GP, AOD Worker, Nurse, Admin
Average % of eligible staff exposed to designated training sessions.		72%	84%
Main type of staff accessed during educational outreach.		Clinical staff and middle management	Clinical staff, management and AOD worker
Implementers			
Research academics		✓	✓
Clinicians		✓	✓
NGO workers		✓	x
Govt dept workers		✓	x
Research student		✓	✓
Opinion Leaders		✓	✓

Intervention Components

1. Resources

Resources for alcohol and smoking were distributed to each ACCHS. For alcohol, resources distributed included, *The Alcohol Treatment Guidelines for Indigenous Australian* [48]; Drink-Less brief intervention material [176] (Appendix X); and *The Australian Alcohol Guidelines*. [318] For smoking, the Indigenous Smoke Check package, inclusive of patient education materials, clinical decision making tool and training video was distributed to ACCHSs following their participation in the Smoke Check Training Program. For nutrition and physical activity, evidence-based screening tools were tailored for integration into screening templates in the regional ACCHS. Health professionals at the regional ACCHS reported good access to nutrition and physical activity health promotion resources from the Aboriginal Vascular Health Program, NSW Health, so these did not need to be provided.

2. Training

Training in brief intervention for alcohol was delivered by clinical specialists in addiction medicine, one of whom has seven years' experience working with urban and remote Indigenous communities to address drug and alcohol problems. Training in brief intervention for smoking was delivered by the Senior Project Coordinator and Indigenous Project Officer of the NSW Indigenous Smoke Check Program. Training in brief intervention for nutrition was delivered by a nutritionist with experience implementing evidence-based lifestyle prevention in community health settings. A Project Officer from the National Heart Foundation delivered training sessions in brief intervention for physical activity.

A total of eight training sessions were delivered. Each ACCHS received two training sessions for alcohol and one for smoking. In addition, the regional ACCHS received one training session for physical activity and one for nutrition. The average duration of a training session was three hours and 15 minutes. Health professionals who were unable to attend training sessions were followed up and provided with the learning materials, with arrangements made for them to discuss learning materials with an in influential colleague who attended the training session. Established social processes for the

transmission and acquisition of knowledge within each ACCHS appeared to facilitate this process.

Alcohol

Two training sessions for alcohol were delivered to each ACCHS, the first session, a two-hour Drink-less training session developed for GPs, and the second session, delivered six months later, a modified and extended version of the first training session. Both training sessions were delivered by clinical specialists in addiction medicine from the Drink-Less training program, University of Sydney.

The content of training sessions for alcohol consisted of an introductory one-hour didactic session, 'Alcohol use disorders: update on assessment and management,' which included an overview on detection and diagnosis of alcohol use disorders, from hazardous use through to dependence, management of alcohol withdrawal, and pharmacotherapies for relapse prevention. In the second hour, health professionals were trained in scoring the AUDIT, using the Drink-less handy card to advise patients on drinking, arranging referral and ongoing treatment for dependent drinkers, and organising follow-up. The second training session was extended to five hours and included a problem based learning component comprising case studies and group activities. The learning expectations described by participants of both training sessions, as elicited by the pre-training survey, covered four broad areas: information, the identification and assessment of alcohol problems, intervention for alcohol problems, and strategies to address alcohol problems in the community.

Table 7.2: Examples of learning expectations identified by participants attending alcohol training

Information	Identification and assessment	Intervention	Community
"The effects of alcohol on the liver"	" The difference between an alcoholic and binger"	"How to talk to a person with alcohol problems without offending them"	"Learn how to link in with the community better"
"A better knowledge of alcohol guidelines"	" How to identify more underlying, not so obvious alcohol problems"	"How to cope with alcoholics…"	"Help the community stop alcohol wrecking lives"
		"The latest relapse medication"	

A total of 27 ACCHS staff (regional ACCHS n=17; rural ACCHS n=10) participated in the first training session for alcohol, of whom 100% (n=27) completed the evaluation survey. The professional role of participants completing evaluation surveys included: AHW (n=13), Indigenous AOD worker (n=3), reception staff (n=2), GP (n=3), RN (n=4), EN (n=1) and manager (n=1).

At pre-test, 45% (n=12) of participants felt not at all confident at identifying problem drinkers, 33% (n=9) were not at all confident in talking with at-risk drinkers to help them change their behaviour, 33% (n=9) were not at all confident carrying out a brief intervention and 19% (n=5) were not all confident helping people in the community to think about how to address alcohol in the community.

The 22% of participants who reported to be confident or very confident in giving a brief intervention for alcohol problems at baseline, increased to 48% post training. Increase in confidence was also reported by participants for their ability to talk with at-risk drinkers about their drinking, which increased from 33% at baseline to 48% post training. The

percentage of participants reporting to be unsure about talking with at risk clients about their drinking increased from 33% to 45%.

Figure 7.1 Health professionals' confidence in brief intervention for alcohol at alcohol training session 1

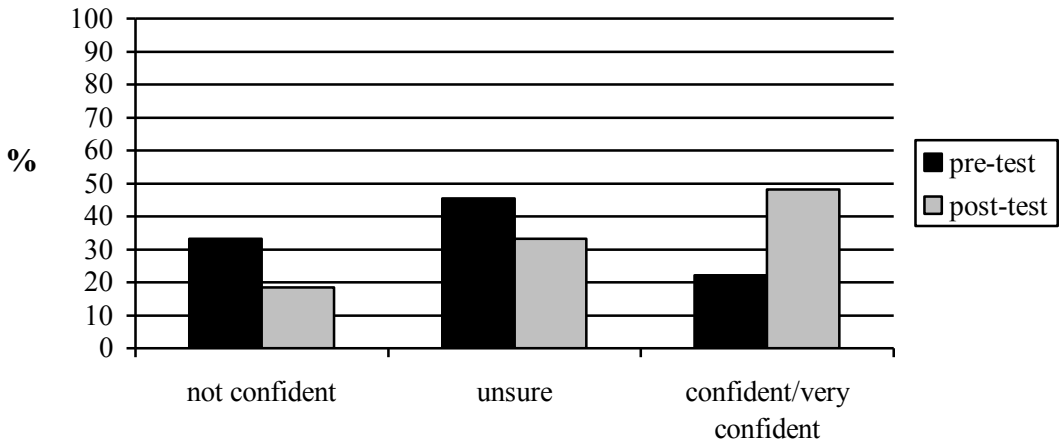
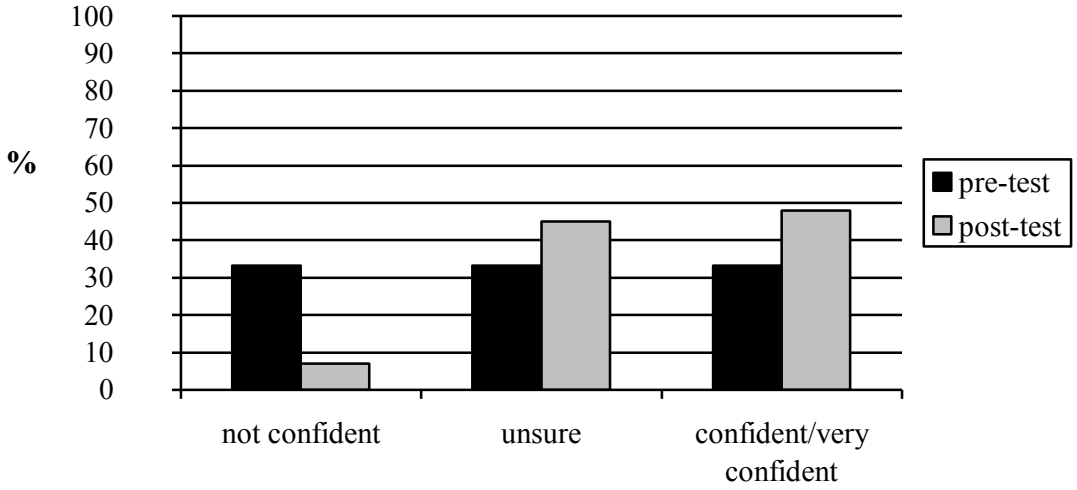


Figure 7.2 Health professionals' confidence in talking with at-risk drinkers at alcohol training session 1



A total of 32 ACCHS staff (regional ACCHS n=17; rural ACCHS n=15) participated in the second training session for alcohol, of whom 97% (n=31) completed the evaluation survey. The professional role of participants completing evaluation surveys included:

AHW (n=14), Indigenous AOD worker (n=4), reception staff (n=4), GP (n=3), RN (n=3), EN (n=1) and manager (n=1).

At pre-test, 3% (n=1) of participants felt not at all confident at identifying problem drinkers, 7% were not at all confident in talking with at-risk drinkers to help them change their behaviour, 19% were not at all confident carrying out a brief intervention and 13% were not all confident helping people in the community to think about how to address alcohol in the community.

While 32% of participants were confident or very confident in giving a brief intervention for alcohol problems at baseline, this percentage increased to 81% post training. Participants also reported increased confidence in other areas, including their ability to help key people in the community think about how to address alcohol problems, which increased from 39% at baseline to 67% post training and their ability to talk with at-risk drinkers about their drinking, which increased from 55% at baseline to 81% post training.

Figure 7.3 Health professionals' confidence in brief intervention for alcohol at alcohol training session 2

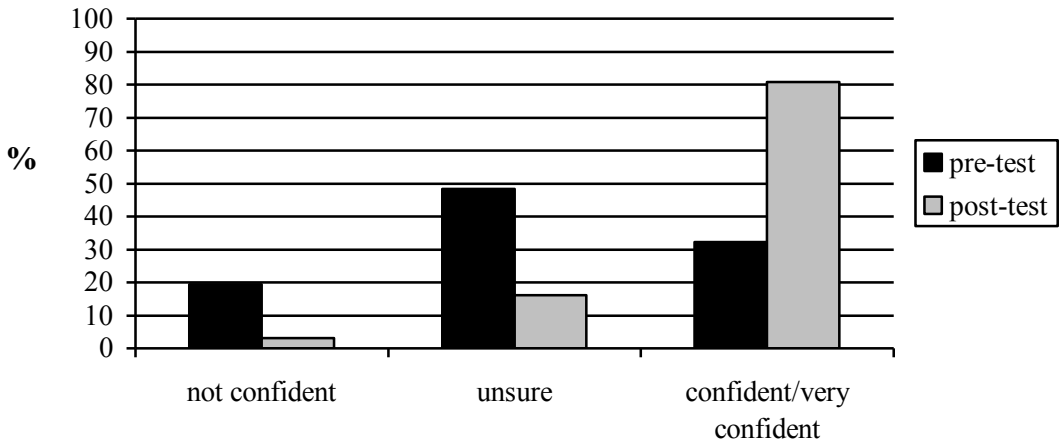
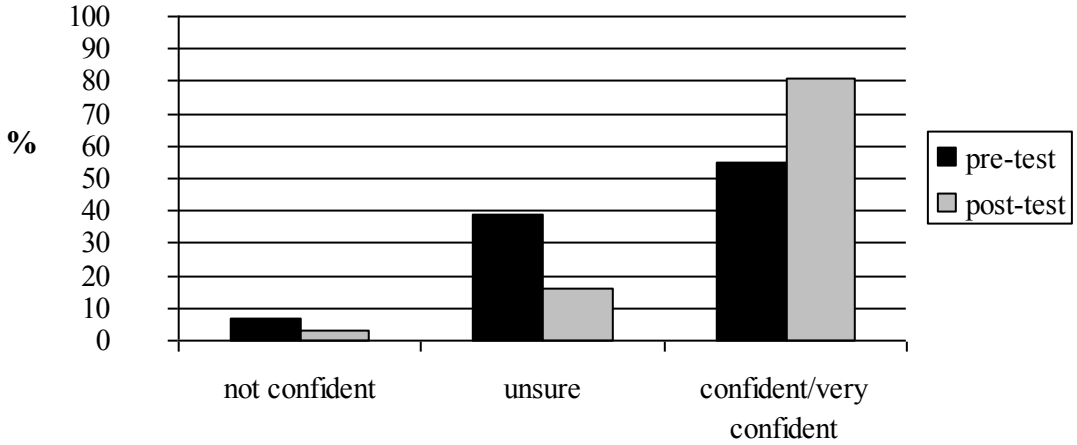


Figure 7.4 Health professionals' confidence in talking with at-risk drinkers at alcohol training session 2



Smoking

Data on the evaluation of the Smoke Check Program is the property of NSW Health and was not publicly available at the time of submitting this thesis.

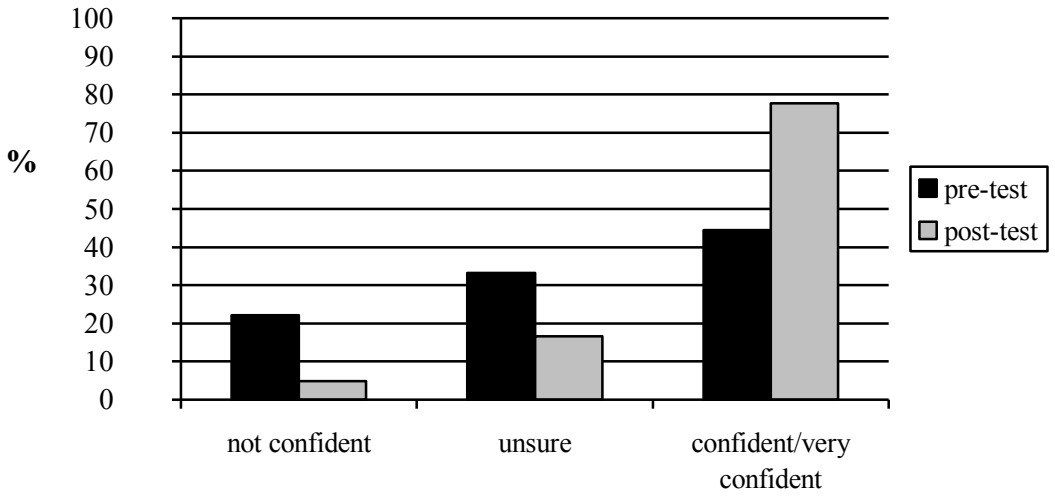
Nutrition and physical activity

One training session for nutrition and one training session for physical activity were delivered to the regional ACCHS. Training sessions were delivered concurrently and were each of two hours duration. The nutrition training session was delivered by a dietician with experience in implementing evidence-based SBI for SNAP risk factors in community health settings in NSW. The physical activity training session was delivered by a health promotion expert from the National Heart Foundation. Both training sessions consisted of a one-hour didactic session covering current evidence-based guidelines, clinical tools for risk factor assessment and management in primary care and health promotion resources. The second hour of each training session comprised practical activities such as, administering screening tools to assess risk levels, and strategies to help clients improve their eating habits and increase their physical activity levels.

Nineteen staff from the regional ACCHS attended the nutrition training session and 18 attended the physical activity training session. Evaluation surveys were completed by 95% (n= 18) of participants attending nutrition training and 88% (n=17) of those attending physical activity training. The health professional role of participants completing nutrition and physical activity evaluation surveys included: AHWs (n=7) Indigenous AOD workers (n=2), RNs (n=3), ENs (n=2), GPs (n=2), psychologist (n=1). One administration officer completed the nutrition evaluation survey only.

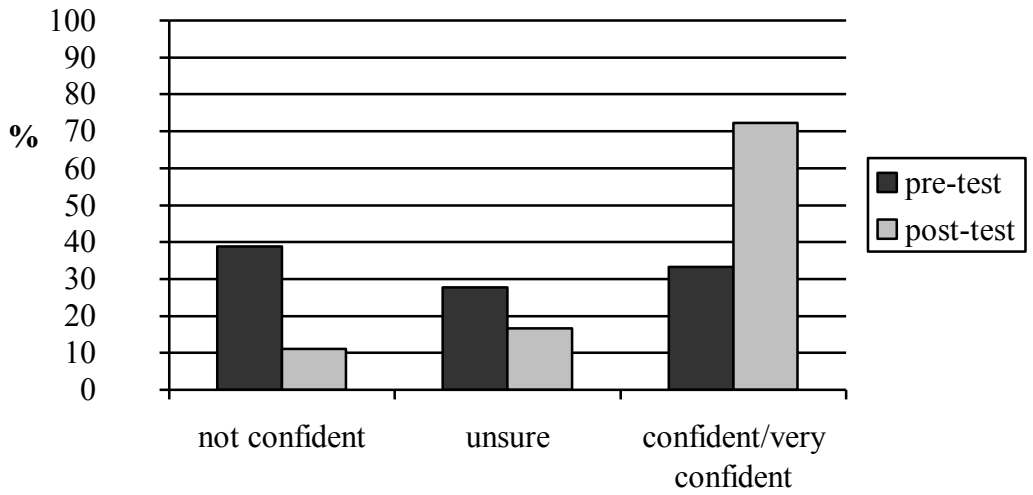
Before training, 11% (n=2) of participants felt not at all confident assessing clients' nutrition and 33% (n=6) felt not all confident assessing clients' physical activity levels. While 39% of participants were confident or very confident in giving a brief intervention for nutrition problems before training, this percentage increased to 78% post training.

Figure 7.5 Health professionals' confidence in brief intervention for nutrition



For physical activity, participants reporting to be confident or very confident giving a brief intervention increased from 33% at baseline to 72% post training.

Figure 7.6 Health professionals' confidence in brief intervention for physical activity



Learning that participants commonly reported they found particularly useful included:

- Reading food labels
- Health benefits of physical activity
- Physical activity guidelines
- Heart Moves (A physical activity program delivered by NHF)

Overall attendance at training sessions

Table 7.3 reports the percentages of the total number of eligible health professionals from each ACCHS attending training sessions. Percentages are based on the total number of full-time equivalent health professional staff reported by management at the time of training.

Table 7.3: Percentages of health professionals attending training sessions

Training session	% of FTE health professionals in attendance	
	Regional	Rural
Alcohol 1	80%	75%
Alcohol 2	75%	90%
Smoking	30%	87.5%
Nutrition	90%	NA
Physical Activity	85%	NA

High staff turnover resulted in considerable variation in the numbers of health professionals attending training sessions. Additionally, high staff turnover combined with the extended period of time between some training sessions contributed to reductions in the percentages of health professionals attending all training sessions. For example, for alcohol, only 64% (n=16) of participants attending the first training session were available to attend the second training session delivered six months later.

Unexpected benefits of training

Two main unexpected benefits of training sessions were also observed. These included: high levels of participation in some training sessions by reception staff and health professionals' increased awareness of their risk of harm from their lifestyle behaviour/s, particularly their level of drinking risk as a result of self-administering the AUDIT.

3. Outreach

I made 15 site visits to the regional ACCHS during the intervention period. The average length of time between visits was 20 days and the average duration of each visit was approximately 2.5 hours. Of the 39 hours of site visits, the number of hours I dedicated to specific activities included, meeting with influential colleagues (3h), group meetings (3h), training (16), systems tailoring, (2), educational outreach (12), and audit and feedback (2)

I made eight site visits to the rural ACCHS during the intervention period. The average length of time between site visits was 37 days and the average duration of each visit was four hours and 40 minutes. Of the 33 hours of site visits, the number of hours I dedicated to specific activities included, meeting with influential colleagues (2h), group meetings (6h), training (13h), systems tailoring (2h), educational outreach, client focus groups (2h), audit and feedback (1h) and informal talks with health professionals (6h).

4. Influential colleagues

Local consensus processes involved group/unit meetings facilitated by me to discuss how existing systems and processes could be modified to better support evidence based SBI. As discussed in Chapter Six, influential colleagues with the authority to implement changes and with the influence to convince health professionals to change their behaviours through role modelling best practice were selected from within each organisation. I maintained regular email and phone contact with influential colleagues during the intervention period.

5. Audit and feedback

An audit of preventive health care records was undertaken during the intervention period. Findings of the audit were fed back to health professionals during the intervention period. The main objectives of the audit were to: show health professionals how standards in reporting preventive health care data at the service level had improved as a result of them following evidence-based guidelines, identify how this information might be used to further improve the delivery of preventive health care, and to generate discussion among health professionals regarding their experiences in delivering evidence-based SBI.

6. Decision prompts

I worked with influential colleagues and health professionals in each ACCHS to tailor evidence-based screening items and prompts for integration into electronic and paper-based templates. Uncertainty among some health professionals regarding their roles and responsibilities in this process and staff turnover resulted in delays in the routine use of

evidence-based screening tools and prompts in clinical care. In the regional ACCHS, integrating evidence-based screening items and prompts into Ferret proved unfeasible due to the system's limited capacity to function as a health care management tool. Evidence-based screening tools and prompts were already a feature of Medical Director, the principle PIRS used by GPs, but an additional function was set-up within this system to flag clients with at-risk alcohol consumption.

Targeted health professional groups

The main health professional groups targeted by the intervention were AHWs, RNs, GPs and Indigenous AOD workers. At the regional ACCHS, AHWs and RNs were exposed to more intervention components than other health professional groups. Reception and allied health staff were exposed to less intervention components than were AHWs, RNs and doctors. At the rural ACCHS, GPs, RNs, Senior AHW and the Indigenous AOD worker were exposed to more intervention components than AHWs and reception staff.

Implementers of the intervention

I was involved in the implementation of all intervention components. The training component of the intervention was implemented using additional personnel including, clinicians in addiction medicine, health promotion expert, drug and alcohol researcher, nutritionist, and AHW educator. Preferences were to recruit personnel from the local area to deliver training sessions in order to develop linkages for client referral and capacity building, but this was only possible for physical activity.

The Process of Intervention Implementation

Six key themes emerged from the analysis of data from interviews, meetings and observations that took place in each ACCHS during intervention implementation.

Change – planned and cultural

Changes to systems and processes necessary to support delivery of SBI for SNAP were slow to be implemented by those with the authority and experience to do so. This delay in modifying systems and processes was more of an issue at the rural ACCHS than it was at the regional ACCHS. There were several reasons for this.

First, at the rural ACCHS most of the authority and experience to make changes resided with the management team, which consisted of one GP, senior AHW, one RN and the CEO. In planning meetings, the management team was supportive of proposed changes and agreed to undertake specific tasks, but they were sometimes too preoccupied with the day-to-day operations of the service to complete tasks promptly and were somewhat reluctant to delegate responsibility to junior staff.

Secondly, AHWs attended training sessions and meetings, but had low involvement in other components of the intervention. Reasons for this appeared to be the continued perceptions of community-based AHWs that secondary prevention was a clinical activity (which was reinforced by an organisational policy that had until recently not permitted them access to clients' preventive health care records on electronic patient records); high turnover of AHWs during the intervention period; and the lack of a suitably trained clinical AHW.

Thirdly, efforts to be more inclusive of AHWs at the rural ACCHS were hindered by logistical barriers; they did not have an external work email and their community-based role meant they were often in the field and difficult to reach by phone. All correspondence with AHWs had to go through management or reception staff. In some

cases, there was resistance from management staff when attempts were made to be more inclusive of AHWs or give them a more significant role in the change process. Moreover, the low status of AHWs within the organisation meant they often lacked the authority and confidence to participate assertively or mobilise other health professional groups to effect changes required. The change process at the rural ACCHS was, therefore, primarily directed by management and medical hierarchies and bounded by tacit rules governing decision-making within the organisation.

Alternatively, at the regional ACCHS, the change process was more participatory and democratic, with influential colleagues typically adopting a facilitative role. For example, once agreement was reached with influential colleagues regarding evidence-based screening items for SNAP risk factors, a GP incorporated these questions and prompts into screening templates which they distributed to other health professionals for their advice and feedback. AHWs and RNs then became the principle drivers for assessing the feasibility of using screening templates in routine care, with their experiences highly valued among other members of staff.

Influential colleagues and managers identified two main barriers to change, which suggested their awareness of the importance of cultural change. First, perceptions were that some managers and health professionals lacked necessary skills to bring about significant and lasting change. Thus, while routine preventive health care delivery was seen as an important attribute of an ACCHS, there was a general perception among influential colleagues that few within the service had the knowledge and skills to make it a reality. Secondly, the social and political environment within which ACCHSs operate was not considered conducive to change. Some managers and influential colleagues spoke about their attempts to create an organisation conducive to change *"I'm always trying to change the way things get done around here so we can do more and do it better"* (Middle management, regional ACCHS), but none reported successfully managing or changing culture. However, two important and related factors emerged – the pace of change and ownership of change. Managers, in particular, were fearful that the organisation would lose ownership of change if it was introduced too quickly. Introducing change slowly was considered necessary to give the organisation time to adjust and reconfigure itself so that it could own the changes.

The role of AHWs

There were significant differences in the role that community-based versus clinically-based AHWs played in the change process and in delivering SBI for SNAP during the intervention period, with the latter being much more involved. There were two main reasons for this. First, from the outset, clinical AHWs recognised they had a role in SBI for SNAP risk factors and were keen to be involved in a change process with the potential to embed processes within the ACCHS to better support their efforts to undertake this activity. Alternatively, community-based AHWs either remained unconvinced of their role in SBI for SNAP risk factors or felt inadequately supported to fulfil a role in SBI for SNAP risk factors.

Secondly, clinically-based AHWs were typically supervised by nurses with key roles in secondary prevention. This regularly exposed them to and involved them in clinical activities in which SBI for SNAP risk factors was mandatory or important (e.g. MBS preventive health assessment items, chronic care and new client registrations). Alternatively, community-based AHWs were typically supervised by senior AHWs without clinical skills or qualifications. Thirdly, community-based AHWs were primarily involved in delivering primary prevention (e.g. group education and community health promotion) and facilitating client access to tertiary prevention (e.g. transportation of clients to rehab or residential treatment). The practical and routine application of brief intervention techniques in these circumstances was difficult, and largely perceived to be inappropriate. Community-based AHWs did report that training sessions and outreach visits were helpful and did increase their confidence to talk about alcohol and smoking with clients more generally. None, however, with the exception of those with an AOD role, reported delivering a brief intervention.

There was general agreement among medical and management hierarchies at the rural ACCHS that the greater involvement of AHWs in SBI for SNAP risk factors was important. However, decision-making processes were not always inclusive of AHWs, and there appeared to be a misunderstanding regarding the importance of the type of

support structures required to increase AHWs' opportunities for organisational learning in secondary prevention. This was a critical issue given AHWs lower levels of education, qualifications, training and experience relative to other types of health professionals.

Tailoring intervention strategies

A considerable amount of my time was occupied with tailoring intervention strategies used to address barriers in such a way that did not compromise the integrity of their crucial components or require dramatic changes to organisational systems or processes within each ACCHS. Tailoring was a labour intensive process requiring both knowledge of the practice environment and specialised technical expertise (e.g. software developers). For example, in the rural ACCHS, integrating evidence-based screening items into electronic templates required a range of IT-related activities, including meetings with a computer programmer to discuss programming capabilities and functions, to discussions with management and medical hierarchies to determine the extent to which organisational protocols restricting AHW access to electronic patient records could be modified to allow them to enter SBI for SNAP risk factor data collected in the community setting. In some instances, tailoring intervention components to resolve one barrier produced another barrier. For example, providing community-based AHWs with access to the risk factor component in electronic patient records meant there was now a common method and centralised location for recording SBI for SNAP activity. However, this now required community-based AHWs to enter SBI for SNAP risk factor data collected using on paper-based templates in the community setting into the electronic template located in the clinical setting at the end of each day.

It was sometimes necessary to tailor intervention strategies to accommodate unanticipated practice needs. This unplanned tailoring resulted in increases to timelines for implementation of intervention strategies. Examples of some of the tailoring required included additional training sessions for health professionals and the customisation of brief intervention kits to improve their acceptability and practicality. With regards to the latter, clinical health professionals in both ACCHSs reported that

the Drink-Less package provided them with a structured framework for delivering SBI for alcohol, but that it was not practical to use in routine clinical care in its current format. There were two main reasons for this. First, the length of the AUDIT questionnaire was considered too unwieldy to use routinely in primary health care. On this basis, AUDIT-C was selected and incorporated into paper and electronic screening templates; health professionals worked with me to develop to a clinical decision making tool for AUIDT-C. Although this provided health professionals with an acceptable and feasible evidence-based screening model for alcohol, it required them to modify how they used the Drink-Less package, especially the handy card, which was designed to feedback a patient's drink risk score based on the full AUDIT. Although this only required a minor adjustment to the method of brief intervention delivery, it nonetheless highlighted that evidence-based brief intervention packages might have to be tailored to fit into primary care, and that health professionals will probably need some guidance on which components of a package can be tailored without reducing its potential effectiveness. Secondly, at the regional ACCHS, although some health professionals reported using the Drink-Less handy card with some clients, their preference was for Indigenous-specific patient education materials that targeted binge drinking, as this was a common pattern of drinking among their group of patients.

Finally, tailoring an evidence-based brief intervention strategy could promote its use without it being routinised, and visa versa. For example, tailored evidence-based screening templates could be moderately or frequently used but only tenuously routinised. Alternatively, they could be seldom used but highly routinised (e.g. the electronic screening template at the rural ACCHS).

Role definition

Consistent with views expressed in focus group interviews, health professionals continued to draw lines around their role and that of others in addressing AOD problems. For example, when an Indigenous AOD worker was employed by the rural ACCHS early in the intervention period, the senior AHW commented, *"We now have an AOD worker, so they will look after alcohol and smoking."* (senior AHW, rural ACCHS). When asked what role AHWs with a social and emotional well-being role

would have in smoking and alcohol prevention, the senior AHWs replied,

"We'll have a chat to a client if we see something happening in the home or if they ask us for help. Then we'll put them in touch with the AOD worker whose job it is to find out more about the problem and help the client fix it." (senior AHW, rural ACCHS)

The GP and RN in the rural ACCHS, however, presented an alternative view based on the limited capabilities and experience of the Indigenous AOD Worker. Both the GP and RN were unwilling to refer clients to the Indigenous AOD Worker until he had qualifications and more experience.

In the regional ACCHS, manager of the AOD team made the following comment when presented with reports from AHWs and nurses that all problem drinkers decline their offer of referral to the AOD service.

"I'm happy with them [AHW]) asking questions and monitoring people to a limited extent. I think they should consult with us even if the client doesn't see themselves as needing AOD assistance." (manager, AOD team)

Notably, this comment indicated a subtle shift in this manager's attitude regarding the legitimacy of non-AOD workers addressing AOD problems, when compared with the following comment made before the intervention:

"If they [AHW] come across a client with an alcohol problem they should be referring them on to us. They [AHW] *shouldn't be advising the client on AOD issues because that's not their role and it's outside their capabilities. We have staff in the service with special training in that area"* (manager, AOD team)

Influential colleagues

Influential colleagues were identified on the basis of their potential to role model and

reinforce best practice. In some instances, however, changing old habits and practices of influential colleagues proved more difficult than anticipated, even among those who were actively involved in the project and agreeable to changing their practice. In some cases, influential colleagues were promoting best practice by word of mouth, but their actions were incongruous with their words. The lack of AHWs with the authority, experience and social influence to act as influential colleagues was problematic, as this appeared to reinforce their lower professional and educational status relative to other health professionals within the organisation. The senior AHW, who was an influential colleague in the rural ACCHS, influenced community-based AHWs to be involved in training and meetings through her position of authority, but did not have the optimal level and mix of education, experience and skills to significantly influence their practices through role modelling. In many cases, additional contact with influential colleagues was required to assist them with problem-solving and to mobilise resources necessary to implement intervention components.

Implementation of a strategy to support evidence-based brief intervention could be facilitated by an influential colleague championing its value, but its successful implementation also depended on factors such as individuals' perceptions of its compatibility with existing systems. Even when an evidence-based strategy did prove to be compatible with existing systems, it was not always used by heath professionals, especially those who did not place a high importance on the problem or perceive a benefit in the solution.

Project management and research philosophy

The regional ACCHSs had a GP with experience in implementing research in Indigenous primary health care and a manager enrolled in postgraduate research studies, both of whom generated enthusiasm among other staff for participation in the project. Both ACCHSs were also participating in short-term research projects with other research institutions, which meant that at times there were vertical research programs within the service. Although there was no evidence of priority being given to one research project at the expense of others, some health professionals were key liaison people for several research projects and found it difficult at times to keep up to date

with how research projects were working at the ground level. There was some evidence that management had a project mentality to research, presumably as a result of their previous experiences in implementing health programs on short-term funding with finite endpoints for government agency reporting purposes. At times I felt as if this research project was perceived by some sections of management as a short term, linear activity with a clear beginning and end, as opposed to a long term, iterative process with the potential to lead to organisational change.

Health professionals' experiences using alcohol guidelines and resources

Key themes emerging from group discussions conducted with a group of clinical health professionals (n=6) from the regional ACCHS as part of the PAR project are reported below.

Theme 1: Utility of guidelines and resources

Health professionals felt the Alcohol Treatment Guidelines for Indigenous Australians was a valuable reference package, but some were not inclined to use the patient education resources. Photographs of body organs damaged by alcohol displayed on the patient flipchart were considered useful for engaging patients in discussions about the long term effects of alcohol misuse, but health professionals felt a larger flipchart that also addressed binge drinking was required. Similarly, health professionals felt the patient education card in the Drinkless kit could have been improved with the inclusion of information on the effects of binge drinking.

Health professionals felt the Alcohol Use Identification Test (AUDIT), a validated 10-question screening tool for alcohol misuse, that was an integral component of both the Alcohol Treatment Guidelines and Drinkless kit, was too long and unwieldy to use routinely and effectively integrate into screening templates. Health professionals' preferences were to use AUDIT-C.

All health professionals felt that patients screened with AUDIT-C showed greater interest in their level of drinking risk than those they had screened previously using a single question based on NHMRC guidelines for daily consumption. Health professionals said that patients were particularly interested in their drink risk score and felt that it was a useful trigger to engage them in discussions about their drinking, making it easier to tailor brief intervention advice. Some patients were curious to know why they were suddenly being asked specific questions about their drinking, but no health professionals reported patients displaying discomfort or resistance to answering these questions. Some health professionals reported that patients now made inquiries about safe drinking levels on behalf of their family and friends and requested written information when they learned of the risks related to excessive alcohol consumption.

Theme 2: Binge Drinking

Binge drinking was a common pattern of drinking among patients, but health professionals felt that the resources provided did not adequately target this pattern of drinking. Patients identified as binge drinkers generally declined offers of referral to the AOD team for specialist assistance to reduce their alcohol consumption, but health professionals persisted offering referral as this was organisational protocol. However, whereas before training AHWs reported doing little more than offering at-risk drinkers referral, they now advised at-risk drinkers of low-risk drinking guidelines and the harms associated with excess alcohol consumption, assessed their readiness to reduce their alcohol consumption, and provided them with strategies to reduce their alcohol consumption. Health professionals said that binge drinkers expressed genuine surprise and concern that infrequent excessive drinking was putting them at risk of harm and generally responded positively by agreeing to try and cut back on their drinking. Achieving reductions in alcohol consumption among youth and young adults was seen as more difficult and health professionals held the view that binge drinking was a phase of life young people go through but, that most, inevitably grow out of.

"There's not a lot you can say that will make them stop. I mean some of them are shocked to learn what binge drinking does to their body. But a lot of young people drink too much on Friday or Saturday night. I certainly did when I was at Uni. But most of us grow out of it." (RN 1, regional ACCHS)

Theme 3: Difficulties referring dependent drinkers

Even clients with an AUDIT-C score suggestive of alcohol dependence generally declined referral. Health professionals commented that these clients were generally aware of the serious health implications of their alcohol dependence and were willing to discuss the causes and potential consequences of this with them, but were resistant to accessing the AOD team to help them stop drinking. To achieve some consistency and clarity regarding the preferred action to be taken for clients with a specific AUDIT-C score, health professionals worked with me to develop a flowchart to guide their decision-making. Some health professionals believed this resistance was clear evidence that the client was not ready to stop drinking, while others felt there were barriers contributing to this resistance. One important issue that was identified included the location of AOD workers in a different building, which health professionals said some clients told them added to the stigma of seeking help for AOD problems. However, there was some disagreement regarding the degree to which this was a real issue, with some health professionals of the opinion that clients who declined referral simply weren't ready to stop drinking. Some health professionals did report that alcohol-dependent patients were often willing to discuss their drinking with a GP, suggesting that the stigma of receiving specialist AOD assistance might have been a legitimate barrier for at least some clients.

Theme 4: Follow-up

Health professionals did not actively follow-up at-risk drinkers, but some followed up high risk drinkers who declined referral, to check on their progress and to encourage them to accept referral. Once high risk drinkers were referred to the AOD service, health professionals generally remained unaware of their progress until they returned to primary care. Health professionals' reasons for not actively following up at-risk drinkers related to perceptions that the time and effort it took to contact these patients outweighed any likely benefits for the patient. However, one doctor did report tagging electronic patient files of at-risk drinkers to prompt inquiries about their alcohol consumption at subsequent visits. Other types of health professionals did not routinely access these electronic files, limiting their role in follow-up.

Theme 5: Patients' reactions to alcohol screening

AHWs and nurses said that most patients receiving an Adult health check responded positively to alcohol screening and showed genuine interest in the meaning of their risk scores. Some patients were curious to know the reasons why health professionals were now asking them specific questions about their alcohol consumption, but no health professionals reported patients displaying discomfort or resistance to answering these questions. As such, they had no reasons to believe that patients were not answering truthfully. Health professionals also described how some patients made inquiries about safe drinking levels on behalf of their family and friends and requested additional written information when they learned of the risks related to excessive alcohol consumption.

Theme 6: Practical Constraints

Two important and somewhat related barriers to AHWs applying knowledge and skills learned in training were staff shortages and their high turnover relative to other types of health professionals. Some AHWs did not get the opportunity to deliver SBI for alcohol until several months after training as they were still learning how to deliver an Adult health check and/or were required to fill other roles, such as work at reception to cover administrative staff shortages. In addition, the fact that AHWs primarily delivered SBI for alcohol when delivering the Adult Health Check meant that they did not get the same level of opportunity to apply their skills in SBI for alcohol as GPs who, potentially, had the opportunity to screen every presenting patient for alcohol misuse. However, the standard process of offering the Adult health check to every eligible patient presenting at the regional ACCHS meant that AHWs were involved in screening a greater proportion of patients for SNAP risk factors than they would have been otherwise. A preliminary analysis of a random sample of Adult health checks (n=50) delivered pre-educational outreach (n=50) and post-educational outreach (n=50) showed an increase from 12% to 50% in the percentage of adult health checks delivered by an AHW.

Health professionals' conclusions

Health professionals concluded that AUDIT-C and structured brief intervention for alcohol were feasible to use in primary care, but they could not recommend screening every patient for alcohol misuse, primarily on the basis of its potential to disrupt the normal flow of the consultation, conflict with the patient's needs and agenda, and increase their workload.

DISCUSSSION

Training

One main positive aspect of implementing the multi-component intervention was the relatively high percentages of health professionals participating in training sessions (with the exception of Smoke Check at the regional ACCHS), and of these participants, the high percentage reporting increased confidence in delivering brief intervention. That, following training, a greater proportion of health professionals reported an increased confidence in brief intervention for alcohol than for smoking, nutrition or physical activity, possibly reflects the greater proportion of health professionals who reported low levels of confidence in brief intervention for alcohol pre-test, and the effectiveness of training as a strategy to increase the confidence levels among health professionals with low levels of confidence. It also suggests that the Drink-Less training program, which is typically delivered to GPs working in primary care [162], can be successfully modified for delivery to other types of health professionals working in other types of settings.

AHWs had difficulty applying the principles of brief intervention for alcohol following the first Drink-Less training session, which was the version delivered to GPs, but were more easily able to apply these principles following the second Drink-Less training session. This underlined the importance and benefits of tailoring training sessions to the specific needs of different health professional groups working in ACCHSs, as well as having experts with experience in Indigenous health deliver training. I did provide a written and verbal summary to clinicians delivering the first Drink-Less training session, outlining health professionals' backgrounds, levels of experience and self-reported barriers to brief intervention for alcohol, but this proved insufficient, as evidenced by AHWs' feedback regarding their difficulties comprehending medical and epidemiological terminology and statistics presented in this training session. Indeed, some AHWs lacked professional qualifications and epidemiology and addiction medicine were foreign concepts. In this context, on the one hand, there is great potential for training to be used as a mechanism to introduce AHWs to important public health and biomedical concepts. On the other hand, however, there is the potential for training sessions to deliver this information in a way that reinforces AHWs' lower levels of education, qualifications and experience relative to other types of health professionals.

One possible negative outcome of this latter scenario is that AHWs are inadvertently made to feel intellectually and professionally inferior to other types of health professionals and there is little or no improvement in their level of confidence to deliver preventive health care. It is therefore essential that the content of training sessions in secondary prevention account for AHWs' diverse professional, community and educational backgrounds, so as to increase the likelihood that the information they receive is comprehendible, non-threatening and practically relevant.

Educational outreach

The less frequent and fewer number of outreach visits to the rural ACCHS versus the regional ACCHS during the intervention period had major implications for the implementation of intervention components. In hindsight, the rural ACCHS probably required additional outreach visits to more effectively engage community-based AHWs in the intervention, but funding constraints and health professionals' commitments meant this was not possible. Additionally, staff shortages and competing priorities reduced the productivity of outreach visits at the rural ACCHS. For example, I spent six of the 33 hours on-site at the rural ACCHS talking to or observing health professionals when more structured activities, such as planning meetings or educational outreach had been scheduled. These informal interactions with health professionals provided me with useful insight into their perceptions of the intervention, but they did not result in concrete outcomes to progress implementation of the intervention. Community-based AHWs were especially difficult to access due to their outreach roles and relocation to a different building.

That, at the regional ACCHS, it was possible to dedicate 13 of the 39 hours of outreach visits to educational outreach versus only three of the 33 hours at the rural ACCHS, was primarily due to management at the regional ACCHS agreeing to set aside protected time for learning, using influential colleagues to promote new ideas and problem solving, and for health professionals to complete set tasks. The effectiveness of educational outreach as a strategy to improve prescribing practice among clinicians is established, but its effectiveness at improving preventive health care practice is relatively unclear. [319] Findings of group discussions with health professionals at the regional ACCHS indicated that, for alcohol prevention, educational outreach is likely to

be effective at: supporting health professionals to integrate evidence-based prevention into their daily work; incrementally improving AHWs' level of confidence to ask clients specific questions about their alcohol consumption and challenge individual and community notions of risky drinking; and developing AHWs' ability to reflect critically on their role in alcohol prevention within the organisation. To examine the legitimacy of these subjective claims, the percentages of AHWs involved in the delivery of the Adult Health Check, pre and post educational outreach, were determined by examining clinical records. This preliminary analysis, albeit exploratory rather than conclusive, seemed to be supportive, that, a substantially greater percentage of Adult health checks were being delivered by AHWs. Indeed, two AHWs delivered an Adult health check for the first time during educational outreach. However, the potential influence of other initiatives, such as AH&MRC chronic disease workshops and Medicare Indigenous Access Program activities, on AHW practice should also be considered when interpreting such findings.

There was some evidence that AHWs increased engagement in alcohol prevention as a result of educational outreach triggered organisational change. For example, when presented with some of the findings from educational outreach sessions, the manager of the AOD service conceded that AHWs did have a role in alcohol prevention and appeared more open to their continued involvement in this activity. This finding is consistent with the results of other studies that have demonstrated that the mechanism by which group participation achieves positive outcomes is not principally through the acquisition of knowledge (although this is important), but by providing a forum in which participants can negotiate the meaning of knowledge and translate this knowledge into action. As discussed in Chapter One, education is important for the transmission of knowledge (from educator to learner), but alone, its effect on changing behaviour is limited. The main positive impact of group discussions during educational outreach was that knowledge acquired in training became much more meaningful for health professional and management staff after it was repeatedly discussed, reframed, contextualised, and challenged by the group. Indeed, the powerful link between sharing experiences in groups and subsequent action by individual participants has been documented, [320] as has the importance of dissemination strategies that duly consider health professionals' beliefs, practices and habits, and the numerous routes of influence

in their environment. [320]

Quality assurance approaches

The impact of quality assurance approaches, such as audit and feedback and reminder systems, as strategies to improve the delivery of preventive health care services in ACCHSs are likely to be limited until the reliability and use of IT systems designed to record preventive health care processes is improved. This is regrettable, given evidence that demonstrates computerised prompts [322] and clinical decision making algorithms [323] can enhance clinicians' performance in preventive health care delivery. Furthermore, the fact that quality assurance approaches, such as audit and feedback and recall systems, have been integral components of interventions resulting in moderate improvements in preventive health care delivery in some ACCHSs, [324, 325] indicates that, despite modest evidence of their potential, strategies to maximise this potential are not being widely implemented. The findings of this study point to some of the issues that need to be addressed, including a lack of specific IT training for staff; IT expertise within ACCHSs for system maintenance and troubleshooting; funding to upgrade old systems or convert to new systems; an effective interface between different IT systems. All of these barriers have been identified elsewhere. [9] The fact that some of these barriers were resolved or reduced in the regional ACCHS by using a combination of paper and electronic systems suggests that some ACCHS may not be able to rely solely on IT systems to prompt and record preventive health care delivery, especially when these systems lack the capacity and features to efficiently prompt key preventive health care activity. For example, one study found that paper and electronic systems captured more patient information than electronic or paper systems alone. [326]

Aboriginal health workers

Community-based AHWs appeared to be in greater need of support to deliver brief intervention for alcohol than clinically-based AHWs, but, ironically, were much less likely to participate in educational outreach. Factors contributing to their low levels of participation included a demanding outreach role which reduced their availability, low involvement in secondary prevention and perceptions among sections of management that secondary prevention was not an integral part of their role. Factors increasing community-based AHWs need for support included their lack of clinical training, non-

clinically trained supervisors and the unique challenges they face integrating screening SBI into interactions with clients that are typically informal, chaotic and triggered by a crisis. There appears to be limited research literature on brief intervention in community-based settings, and even less information on the effectiveness of brief intervention delivery by non-clinical workers, such as outreach or community workers. As such, there is little information on how brief intervention might be effectively integrated into the role of the community-based AHW to facilitate its delivery in non-clinical Indigenous-health care settings. It would appear to be no straight-forward task, as evidenced by the barriers to integrating brief intervention into the role of AHWs working in the clinical setting. [12, 86] Nevertheless, three related factors provide a rationale for the increased involvement of community-based AHWs in brief intervention.

First, as discussed in Chapter One of this thesis, there is a strong evidence base in the general population for the cost-effectiveness of secondary prevention at reducing SNAP related harm; however, community-based AHWs typically deliver primary prevention, [117] for which the evidence base is unclear. This is not to diminish the importance of primary prevention as a component of comprehensive primary health care, or the roles that community-based AHWs typically fulfil, but rather to suggest that their increased involvement in secondary prevention would further increase the potential for their community-based work to lead to improved health outcomes for Indigenous clients. Secondly, the challenges clinical health professionals in ACCHSs face delivering secondary prevention in the face of high staff turnover, staff shortages and high patient demand for acute care are well known, [270] as are the negative impacts of these factors on the delivery of secondary preventive services. [87, 303] Some of the negative impacts of these factors might be reduced if community-based AHWs were more involved in secondary prevention. The potential positive impact of the increased involvement of community-based AHWs in secondary prevention is perhaps best exemplified in one RCT of improving diabetes care processes in remote Aboriginal communities. This trial found that updating the clinical skills of AHWs to enable them to manage diabetes care plans and recall systems in a community-based setting could significantly reduce complications in diabetic patients in a short period of time, [324] and that some of these improvements were sustainable. [327] Thirdly, at the level of a

health service, reducing the disproportionately high number of Indigenous Australians with acute and chronic morbidity and co-morbidity requires greater investment in clinical activities that prevents the onset and progression of chronic disease, which is the primary goal of secondary prevention. [124]

One possible way to increase the involvement of community-based AHWs in secondary prevention might be to give them a more structured role in client follow-up. Few clients identified with SNAP related-harm are willing to return for follow-up visits, making it difficult for clinical health professionals to observe their progress and reinforce the importance of behaviour change (personal communication, manager of Indigenous AOD service). Clinical health professionals in ACCHSs also report a lack of time and resources to prompt clients with a phone call or a letter. Even when health professionals do contact clients for follow-up, a substantial percentage only return when they require acute care, or related social complications have reached crisis point. This usually means there is an extended period of time between advice to encourage behaviour change and follow-up to reinforce and support behaviour change. There is evidence suggesting that reinforcement increases the likelihood of behaviour change. [328] Additionally, Indigenous Australians face multiple socio-cultural and environmental barriers to behaviour change. [2] As such, providing community-based AHWs with the necessary knowledge and skills in secondary prevention to enable them to more effectively follow-up high risk clients identified through SBI might be one strategy to increase the likelihood of brief intervention proving effective in Indigenous health care settings. There is also some evidence that Indigenous clients at risk of harm want to receive health care from AHWs. For example, Indigenous illicit drug users (n=995) in the ACT reported that they would prefer Indigenous health professionals to be more involved in their care, [329] although the preferred nature of this involvement was relatively unclear. For community-based AHWs to effectively fulfil a role in secondary prevention, the findings of one study suggest that they will need ongoing opportunities for continuing education and training to develop knowledge and skills in secondary prevention, and management and medical and nursing hierarchies will need to agree on clear roles and responsibility for their greater involvement in this activity. [324]

An empowerment model is one approach that offers great potential to address more effectively the needs of AHWs that arise as a result of their low status and general lack

of education, training and experience relative to other health professionals groups. There is emerging evidence from the Indigenous health field that programs based on empowerment have the potential to support and build the capacity of Indigenous workers to address complex issues. [247, 330] The qualitative findings of one pilot study employing an empowerment model to increase the willingness and capacity of Indigenous workers to address workforce issues reported that the strategy engaged participants in a process of ongoing learning, developed their confidence to make changes in the workplace and developed their critical thinking and problem skills. Importantly, there was also some evidence of structural empowerment and organisational change, in the form of an increased willingness of management "to respond to the needs of a more assertive workforce."[247] The authors did report that structural constraints persisted in spite of organisational change, therefore highlighting the potential limitations of implementing empowerment interventions in environments that are not conducive to change. Nevertheless, overall findings strongly suggested that an empowerment model is an effective strategy for the personal and professional development of AHWs. Indeed, a key positive aspect of the empowerment model is its flexible design that enables it to be adapted to the unique needs and circumstances of individual, groups and communities, and provides opportunities for participants to undertake additional training to become empowerment facilitators, thereby increasing Indigenous control and ownership over objectives, processes and outcomes. [332] Future research, building on the findings of this thesis, and that of researchers involved in the implementation of empowerment interventions in Aboriginal communities, will examine the possibility of reducing alcohol-related harm in Aboriginal communities through the integration of evidence-based clinical care and empowerment.

Organisational change

The fact that there was some evidence of organisational change in the regional ACCHS, but not the rural ACCHS is possibly explained by: 1) Differences in the dose of intervention received by each ACCHS. The failure of all intervention components to reach all health professional groups equally was identified as a major challenge by the authors of a study implementing a multi-component intervention to improve compliance with diabetes-care guidelines in remote Aboriginal health services [303]; and 2) Differences in the culture of each ACCHS. Strategies proposed by the authors of the

aforementioned study to increase the involvement of all health professional groups in evidence-based diabetes care focused on improving aspects of organisational culture. [303] The first point implies that change is a linear process. The second point implies that change is cultural. Which of these might best contribute to an understanding of how evidence-based prevention is implemented in ACCHSs? Which is more crucial for organisational change: the right mix and dose of intervention components or the right complement of cultural characteristics in an organisation? Findings from studies of implementing strategies in health care services to improve the delivery of preventive health care suggest that although the selection and implementation of the right intervention strategy is important, sustained use of a strategy depends on a favourable organisational culture. [332]

According to one analysis of the organisational change literature, four theories commonly applied to organisational change in general practice settings include, Systems theory, Organisational development theory, Complexity theory and Social world theory. [333] These four theories represent the spectrum of organisational change theories which suggests that goal emphasis, people, evolution and conflict are triggers and mechanisms for change. As such, they provide useful conceptual frameworks for better understanding the process by which change might occur in health care services.

Systems theory and Organisational Development theory view change as a planned event and measure success by progression from point to another. [333] More specifically, Systems theory relies on valid and reliable measurement to assess change. Assessment typically involves external assessment, standards and feedback loops, such as quality improvement. Goal setting is the trigger for change. Goal attainment is a measure of change. Tools developed for quality improvement are well-developed. [334] As such, assessment of the performance of a health service using these tools can provide valuable information for health service-level quality improvement and comparisons across health services. [335] Quality improvement in ACCHSs has been, and continues to be, problematic, primarily due to the manner in which external assessments have been applied to ACCHSs. [336] Typically, external assessments have been conducted by government without properly consulting ACCHSs. Some main problems resulting from this approach has been the uncritical selection of performance indicators, burdensome

reporting demands being placed on ACCHSs and funding inappropriately linked to demonstrated improvements in health status. [336] Furthermore, enhancing the capacity of ACCHSs to develop locally based approaches and internal measures of quality improvement has generally not been a major priority, therefore reducing the likelihood of organisational change. For example, there are many intangibles in ACCHSs that are likely to be important measures of quality and improvement and triggers for organisational change, such as community ownership, communication, employment and training, advocacy, empowerment, and participation. [107, 108] So, although valid and reliable indicators of the quality of health care are vitally important, measurement of less tangible dimensions can also provide some evidence of change and the potential for change to be sustained.

One main limitation of Systems theory is its poor ability to detect changes in less tangible measures. Organisational Development theory offers one conceptual framework for measuring change in human processes shown to trigger, facilitate and sustain change. [334] Although tools to measure changes in human processes are less well developed than those designed to measure quality improvement, given evidence that human processes can trigger quality improvement, their measurement is important. [333] For example, the involvement of a small group of health professionals at the regional ACCHS in a PAR project to improve the delivery of brief intervention for alcohol provided them with the opportunity to share their practical experiences in undertaking this activity and led to their greater involvement in decision-making. In turn, this led to their greater use of ideas and strategies to facilitate the delivery of evidence based alcohol in their everyday work and in a range of situations. Alternatively, it appeared to be a failure to engage health professionals in the rural ACCHS in a similar process that made it difficult to sustain their interest in and enthusiasm for evidence based prevention.

Measuring changes in human processes in an organisation still assumes that change is a linear process. Were AHWs at the regional ACCHS more likely to use evidence-based ideas and strategies in their everyday work because they received a greater dose of collective group processes than health professionals at the rural ACCHS? Or were there cultural aspects conducive to the formation of collective group processes in the regional

ACCHS that were lacking or difficult to access in the rural ACCHS? Systems theory and Organisational Development theory provide useful conceptual frameworks for addressing the first question, but both frameworks have limited utility when applied to the second question.

While Systems theory and Organisational Development theory assume change to be a predictable process with a defined beginning and end, complexity theory assumes change to be constant, evolving, cumulative and unpredictable. [337] As such, its application can provide valuable insight into the cultural aspects of ACCHSs unlikely to be revealed by methods that assume change to be linear. Indeed, it has been proposed that change, at least in some health care organisations, is cultural. [338] Perhaps the changes observed in each ACCHS participating in this study indicated their evolutionary stage in the change process, their responses to change, and/or their capacity to adapt to strategies that were implemented to bring about change. [333] More specifically, perhaps the changes observed during intervention implementation were the products of multiple interactions, rather than the outcomes of a linear process. [339] Indeed, change in the rural ACCHS was primarily dependent on the nature of my interactions with medical and management hierarchies, which tended to be episodic and unpredictable. As such, there was always the potential for these interactions to produce change or stop progress. The greater involvement of AHWs in brief intervention for smoking was dependent upon my ability to shift the steadfast belief of one GP that health professionals who are smokers should not deliver quit smoking advice to patients. As the majority of AHWs were smokers and saw this GP as a trusted source of knowledge, they tended to believe that they did not have a legitimate role in brief intervention for smoking. Notably, this GP's exposure to the evidence base in training was insufficient to shift their attitude, despite the fact that the issue of brief intervention for smoking by health staff who smoke was explicitly addressed. Perhaps if a client had quit smoking or made a quit attempt as a result of advice they received from an AHW who smoked, this GP might have changed her attitude.

Finally, it is worth noting that widely applied frameworks for conceptualising organisational change in healthcare settings tend to downplay the more complex and unpredictable elements of change (as described above). For example, Roger's diffusion of innovation model [73] assumes that 1) individuals can make autonomous choices to adopt or reject an innovation 2) implementing an innovation does not impose heavy demands on its users, and 3) obtaining successful outcomes does not depend on collective use. As such, models from organisational change theories may prove to be more realistic for understanding the process of bringing about change in ACCHSs.

The importance of middle management structures for achieving organisational change became apparent when the regional ACCHS employed a clinical coordinator at the start of the intervention period. Although the appointment of the clinical coordinator was unrelated to this study, their appointment facilitated the implementation of key intervention components, such as the scheduling of educational training and outreach visits. In a health care service, middle managers are typically positioned between senior management and health professionals. There is some evidence that middle managers typically adopt a more facilitative approach to management than senior managers, who tend to be directive. [340] One reason proposed for differences in the management styles of middle management and senior managers is that senior managers exercise power and authority, while middle managers generally have to negotiate their aims to meet the competing needs and priorities of different groups (senior managers and health professionals). For example, in ACCHSs, senior management's prioritisation of funding and staffing ahead of service quality have been identified as potential barriers to engaging them in efforts to improve service delivery. [128] Funding shortages and the difficulties recruiting and retaining clinical staff remain persistent threats to the operations of ACCHSs. [91, 97] Alternatively, AHWs are often integral to improvements in service delivery within ACCHSs, [93, 327] but their recruitment and retention is dependent upon ongoing opportunities for training, organisational learning and career progression. Senior managers can be too removed from the coalface of clinical care to be directly and productively involved in addressing such issues. RNs, although often responsible for supervising AHWs, often lack the time, motivation and authority to ensure that there are continuing professional practice opportunities for AHWs. The clinical coordinator at the regional ACCHS had formalised roles and

responsibilities that required working closely with senior management and health professionals. As such, they acted as a buffer or a link between these two groups, depending on the issue or situation. One RCT of improving diabetes care in primary health care centres in remote Aboriginal communities found that implementing middle management structures provided transparency in clinical roles and responsibilities, which in turn contributed to improvements in a number of secondary preventive care processes for diabetes. [324]

ACCHS involvement in research

As ACCHSs become increasingly involved in research, health and management staff working in these services will need to reflect more critically on their research philosophies and their preferences for working collaboratively with external research organisations and personnel, and effectively managing the research process internally. Some research projects will be more conventional, with finite endpoints and short term outcomes, while others, such as action research, will be ongoing and may require the implementation and maintenance of systems to sustain processes and outcomes. Researchers working in the Indigenous health field should also be aware of how their own research philosophies, processes, and intended outcomes, have the potential to create misunderstandings, disagreements, or possibly conflict when applied within an Indigenous community controlled health care setting.

LIMITATIONS

Health professionals and influential colleagues in each ACCHS might have provided socially desirable or uncritical responses in an effort to please or not appear openly critical of those in positions of influence and authority. This potential bias was partly addressed by triangulation of methods and data sources, which confirmed interpretations and strengthened the conclusions that could be drawn. In addition, participants' responses in focus groups and interviews generally fit with my overall impressions of events. There is the possibility that my visits disrupted the natural routine, order and culture of each organisation. Another possibility is that participants improved their performance or behaviour in response to my presence, rather than to those strategies that were implemented, a phenomenon known as the Hawthorne effect.

Qualitative studies are well suited for studying implementation processes which tend to be nonlinear and context dependent. Although qualitative methods were useful for gaining insight into the complexities and dynamics of the change process in each ACCHS, they did not provide a solid basis for generalisation to other ACCHSs. Study designs involving statistical sampling strategies and larger sample sizes would be necessary to establish the range and limits within which the qualitative findings from this study apply.

The short time frame and modest amount of funding to support this project limited the manner in which intervention components could be implemented. Nevertheless, the project did succeed in examining the process of implementing and tailoring strategies to enhance SBI in two ACCHS, which was its primary objective. For myself, and health and management involved in this study, implementing the project and balancing competing demands was at times burdensome, resulting in implementation delays, modification to implementation protocols, and several requests for grant extensions to funding bodies.

Chapter Eight

Implications and future directions

The work contained in this thesis represents an attempt to examine the process of implementing evidence-based brief intervention in ACCHSs. As identified in Chapter One, integrating evidence into routine clinical practice has proven to be problematic in a range of health care settings. [62] Nevertheless, the cost-effectiveness of brief intervention in reducing behavioural risk factors in the non-Indigenous population offers great potential for it to contribute to reductions in SNAP related harm in the Indigenous population, particularly if its successful integration into Indigenous health care settings using established resources can be achieved. Despite this potential, the review reported in Chapter Two of this thesis highlighted the lack of studies published in the peer review literature evaluating the dissemination or the effectiveness of brief intervention in Indigenous health care settings

The findings of dissemination and intervention research have the potential to contribute to improvements in Indigenous health outcomes in a variety of ways [31]. For example, in this study, the delivery of evidence-based SBI for SNAP in the regional ACCHS as a component of the Adult Health Check now means that three activities with the potential to facilitate the evaluation of brief intervention in this setting are being undertaken. First, reliable measures of clients' risk of SNAP related harm are now being obtained. Secondly, brief intervention activity for at risk clients is now being more adequately documented. Thirdly, clinical AHWs are more involved in evidence based SBI for SNAP risk factors, offering greater potential to increase the rates of delivery. Undoubtedly, there is much more work to be done in this area; rates of delivering the Adult health check could be improved and suitable methods for accurately and routinely measuring rates of SBI for SNAP risk factors delivered outside of the adult health check are yet to be established. Nevertheless, there are a number of reasons why ACCHSs need not wait for the results of dissemination trials before implementing evidence-based SBI for SNAP risk factors. First, the period from the onset of dissemination trials to the widespread dissemination of results of these trials is likely to take several years. [149] Secondly, the lifestyle component of MBS preventive health assessment items, demand that, at the very least, ACCHSs provide evidence-based SBI for SNAP risk factors when delivering these items. Not to do so would be to deny Indigenous Australians receiving these items access to best-evidence preventive health care. Thirdly, ACCHSs' experiences implementing evidence-based SBI for SNAP risk factors can make a

valuable contribution to the evidence-base, particularly if these experiences are captured through the judicious application of qualitative methods and the collection of accurate descriptive data. Although there are some risks associated with implementing interventions before the evidence is clear, with regard to brief intervention in ACCHS, the risks would appear to be outweighed by the likely benefits. Perhaps the strongest indication that the risks of implementing brief intervention in ACCHS, before the evidence of their effectiveness is established, is outweighed by the benefits, is to be found in Indigenous health strategies and guidelines which explicitly recommend more widespread implementation of brief intervention in ACCHSs. [58, 292]

Accepting that brief intervention is likely to be an effective strategy for reducing SNAP related harm in the Indigenous population based on its effectiveness at reducing SNAP related harm in the general population, does not obviate the possibility that it might prove to be much less effective at reducing harm in the Indigenous population. That this study did not aim to evaluate the effectiveness of brief intervention in ACCHS was primarily related to the high level of uncertainty regarding the feasibility of implementing evidence-based SBI in these settings: the extent to which SBI is cost-effective specifically for Indigenous people is an important question to answer, but in practice is likely to be of limited relevance to ACCHSs, if SBI cannot be feasibly integrated into routine clinical care. Evidence from this study suggests that 1) evidence-based SBI can be implemented in clinical settings in ACCHS with adaptation of strategies and the organisation and 2) sustained use of evidence-based SBI by all health professional groups in ACCHSs is dependent on favourable organisational policies, procedures, and leadership.

Despite the importance of integrating evidence-based brief intervention into ACCHSs, it is unlikely that all treatment decisions should be (or can be) based on best evidence. Indeed, one accepted definition of evidence-based practice is that it attempts to integrate current best evidence into the decision making process in providing treatment for individuals. [341] On the one hand, it would seem difficult to object to the principle of utilising best evidence to augment clinical experience to maximise the potential effectiveness of interventions, particularly since the findings of trials from which this evidence is typically derived are not always relevant and applicable to the needs of all

population groups. [342] For example, in Indigenous health care settings, treatment decisions can be influenced by patient characteristics much less common in the non-Indigenous population, such as co-morbidity, and social and economic disadvantage. [93] On the other hand, there appears to be a high level of practice variation among health professionals in Indigenous health care settings. One key factor contributing to this variation might be the high level of uncertainty among health professionals regarding the types of interventions most effective likely to be effective. This raises the possibility of health professionals inadvertently contributing to Indigenous health disadvantage by not routinely offering evidence-based health care to those Indigenous people who have the most potential for health gain from its provision.

The widespread use of evidence-based brief intervention training packages is one potential method for reducing the level of uncertainty in ACCHSs regarding the types of interventions that are most likely to be effective, as well as helping to reduce variations in their method of delivery by health professionals. However, the findings of the audit and review of brief intervention kits reported in Chapter Four found that brief interventions packages developed specifically for Indigenous Australians to date, typically lack evidence-based components shown to be important at facilitating their uptake by health professionals. Furthermore, the information in some of these kits is inconsistent with evidence-based guidelines. One negative implication of this finding is that health professionals working in ACCHSs have limited access to evidence-based brief intervention resources, which presents an additional barrier for them to overcome to deliver evidence-based brief intervention in routine clinical care. For those kits that were judged to be evidence-based, their acceptability to Indigenous patients and the feasibility of their implementation in Indigenous health care settings are yet to be comprehensively examined.

The Grog Kit offers an opportunity to assess the feasibility and acceptability of touch screen computers as a method to collect alcohol data specific to Indigenous Australians and improve the delivery of SBI for alcohol in Aboriginal health care settings. The Grog Kit has been implemented in Aboriginal health care settings in north Queensland as an interactive free-standing kiosk, [343] although a formal evaluation of its effectiveness as a method for administering alcohol screening is yet to be undertaken. One main benefit

of this technology is that it provides personalised feedback tailored to the specific responses of individual clients. Clients are able to keep this feedback as a personal resource, and health professionals can use this feedback to initiate discussions with the client about their risk behaviour. Hand held computers are also likely to be a more effective form of the interactive touch screen computer than the free-standing kiosk, primarily due to the fact that: they allow multiple patients to be screened at the same time, more easily permit access to only those client groups eligible for alcohol screening, offer greater privacy to patients using them, and they can be easily used by health professionals in non-clinical settings. With regards to the suitability of hand held computers for data collection, studies have demonstrated that they are a useful mechanism for collecting relevant data in a useable form within a usable time frame. [198]

Well-designed evidence-based brief intervention kits can also provide a structured framework for health professionals to deliver evidence-based preventive health care. This is particularly important for AHWs, whose lower educational levels, professional status and level of clinical skills, in comparison to that of other types of health professionals, pose pedagogical and professional barriers to their greater involvement in clinical care. [116] As such, increasing AHWs' access to and utilisation of well-designed and practical evidence-based preventive health care kits has the potential to facilitate their greater involvement in evidence-based prevention, thereby increasing their ability to optimally integrate their clinical skills with evidence-based practice. Indeed, the small group of AHWs participating in educational outreach sessions in this study reported that the FLAGS framework [162] made it easier for them to initiate discussion with patients about alcohol and give advice to those identified at risk of alcohol-related harm. One current program with the potential to support AHWs to deliver evidence-based brief intervention for smoking, through the provision of training and a structured evidence-based package, is NSW Smoke Check. To date, the NSW Smoke Check program has trained more than 100 AHWs across NSW in how to use the evidence-based smoke check package to deliver brief intervention for smoking in primary health care. Anecdotal reports indicate AHWs participating in this training program have found having a structured framework for delivering brief intervention for smoking extremely beneficial, [344] with some reporting to have delivered brief

intervention for smoking for the first time as a result of their participation in the Smoke Check program. These anecdotal reports support the findings of studies that show introducing health professionals to well designed evidence-based brief intervention packages can increase their rates of brief intervention delivery. [162]

Addressing clients' range risk of factors, efficiently, depends essentially on the health services ability to collect, summarise and collate relevant data into a useable form, within a viable timeframe. Chapter Five identified two barriers to achieving this within ACCHSs: ineffective IT systems and inappropriate measures. The effective implementation and maintenance of IT systems in ACCHSs is dependent upon a number of critical factors, many of which were identified in Chapter Five. Health professionals' awareness of the negative impact of these factors on the quality of preventive health care data increased as a result of their participation in this study, as did their interest and involvement in developing strategies to optimise the utilisation of IT systems to improve the collection and management of preventive health care data.

That ACCHS do not use one common IT system is probably explained by several factors, such as, for example, differences in the cost of systems; variability in the availability of systems across Australia; and differences in the data collection and management needs of ACCHS. It is unclear as to which of the IT systems currently used by ACCHS is optimal, although recent evidence that Communicare is emerging as the preferred system in commonwealth funded Aboriginal health services suggests that it best meets the information management needs of ACCHSs. Indeed, the experiences of those health professionals who used Project Ferret and Communicare would suggest that health care prompts, guidelines and electronic patient notes are more easily integrated in and accessed from Communicare than Project Ferret. Although the degree to which these experiences reflected differences in the level of IT knowledge and expertise between ACCHSs, the level of support offered by the software provider, or the utility of each IT system, is unclear. The ideal situation might be for ACCHS located in the same state or region to use one common IT system. This would facilitate information exchange between ACCHSs, increase the likelihood that health professionals transferring from one ACCHS to another had relevant IT knowledge and skills, and enable one centralised point of help when IT problems arise. At the very

least, ACCHSs should be better supported to optimise their use of their current IT system/s, particularly given evidence of the range of benefits for both health professionals and patients to be derived from the use of information technology in primary care.[87]

With regards to measures, ACCHSs should ideally use validated measures which are most appropriate and acceptable to Indigenous Australians. For example, studies show that there are disproportionately higher rates of poly drug use among Indigenous Australians compared with non-Indigenous Australians. [345] As such, AOD services are likely to have an increased population of Indigenous clients with poly-drug use. The Indigenous Risk Impact Screen (IRIS) is one recently validated instrument designed to screen for alcohol and drug and mental health issues in Indigenous Australians. [81] If implementation of the IRIS in Indigenous AOD services proves to be feasible, it could result in better detection of alcohol and drug misuse and mental health risks in Indigenous clients, enabling AOD workers to better address the needs of clients.

Alternatively, in Indigenous primary care settings, it would appear reasonable to recommend AUDIT-C or AUDIT. As identified throughout this thesis, both have demonstrated reliability and validity for use with a range of populations [168, 181] and are recommended in the Alcohol Treatment Guidelines for Indigenous Australians. [48] Health professionals' experiences using these screening tools (AUDIT or AUDIT-C), revealed some of the factors likely to influence the feasibility of their implementation in Indigenous primary health care settings. For example, that health professionals expressed a preference for AUDIT-C was primarily related to: 1) its shorter item length, which was easier to integrate into screening templates for the Adult health check than the AUDIT, and 2) its questions, which did not cover dependence and alcohol problems, two topics that some health professionals felt uncomfortable talking to clients about without evidence of alcohol problems or dependence, and that clients felt were only appropriate for health professionals in general primary health care to raise if they were specifically seeking treatment for alcohol problems.

One strategy to improve the use of appropriate measures in ACCHSs might be to integrate validated measures into MBS preventive health care items. Presently, the minimum level of reporting required by ACCHSs to claim the Medicare rebate for these items does not require the use of validated measures to assess a client's level of risk. For example, for the alcohol component of the Adult health check, health professionals are only required to document that they screened a client for alcohol and if they identified the client at risk, but there are no requirements to collect this information using validated screening tools, such as for example AUDIT or AUDIT-C. Beyond simply getting such information and tools to ACCHSs in a more timely and efficient manner, explicit guidance and recommendations should be provided to facilitate the implementation process. Integrating evidence-based screening tools into MBS preventive health assessment items offers several potential benefits. First, it would increase the likelihood that Indigenous clients receiving MBS preventive health assessment items have access to evidence-based prevention. Secondly, it would provide a large pool of comparable data not specific to one particular service or region that could be used to inform health programs and policy. Thirdly, it would facilitate comparisons of client issues and treatment effect between services. Fourthly, that MBS preventive health assessment items can be delivered incrementally—as part of a series of standard consultations with clients—raises the possibility that the integration of evidence-based components of SBI for SNAP into these items will facilitate improved rates of delivery in standard consultations.

Nevertheless, increasing the reporting requirements of ACCHSs to claim MBS preventive health assessment items is not without controversy. As identified in Chapter Seven, externally imposed indicators have negatively impacted upon some ACCHSs, particularly where there has been a lack of clarity regarding their purpose and benefits. [336] Close collaboration between the Aboriginal community controlled health sector and government is vital to ensure that the enhancement of preventive health care delivery at the service level is the main priority. Initiatives such as the Healthy for Life Program, which aims to improve the capacity of over 80 ACCHSs to deliver quality child and maternal health services and chronic disease care, would appear to be a step in the right direction, [346] with the potential to result in the development of an acceptable

set of performance indicators to measure preventive health care delivery in Indigenous primary health care.

Factors influencing the uptake of evidence-based SBI for SNAP risk factors, as reported in Chapter Six, were similar to those reported by other groups of health professionals in primary health care. This suggested that strategies proving effective at improving evidence-based preventive health care delivery in primary health care would be acceptable and feasible for implementation in Aboriginal health services participating in this study. However, as reported in Chapter Seven, not all of the intervention strategies effectively reached all types of health professional groups. Furthermore, the response to these strategies in the form of participation and positive action from health and management staff was strongly influenced by organisational factors. Generally, ACCHSs tended to focus on actions and strategies related to specific priorities for evidence-based SBI for SNAP risk factors. For example, the regional ACCHS primarily focused on strategies and actions for integrating evidence-based SBI for SNAP risk factors in the Adult health check, and the rural ACCHS focused on strategies and actions to improve the delivery of tobacco and alcohol prevention in routine clinical care. As such, the response by each ACCHS to strategies designed to enhance the delivery of evidence-base SBI for SNAP more generally (which was the overall objective of this study), was hindered by a narrow focus on SBI for SNAP priorities.

Organisational factors such as staff turnover, staff shortages, unskilled AHWs and the high burden of acute care are inexorably linked to the complex political and social context in which ACCHS typically operate. [91] In this study these factors were persistent threats to the viability of intervention components. In some instances this resulted in inadequate implementation of intervention strategies. One possible explanation for the persistent negative influence of organisational factors is a failure to adequately identify them from the outset and factor their potential impact into the development and implementation of intervention components. Undoubtedly, my limited level of experience and that of health and management staff in undertaking quality improvement research in health services was an impediment to overcoming organisational barriers and achieving greater progress. Indeed, more experienced researchers have achieved greater success facilitating improvements in evidence-based

prevention in Indigenous health care settings [303]. Nevertheless, both ACCHSs continue to take small steps towards evidence-based SBI, which now appears to be a more salient issue among health professionals as a result of their involvement in this study.

With regards to potential enablers at the organisational level, MBS preventive health assessment items would appear to be one useful strategy for introducing health professionals to evidence-based prevention and involving them in the development of strategies to facilitate its delivery. There appear to be three principal reasons for this. First, screening for SNAP risk factors is a mandatory component of MBS preventive health assessment items. As such, health professionals perceive it to be a legitimate activity in this context. Secondly, AHWs are typically more confident to deliver SBI for SNAP risk factors as part of an Adult health check than as part of a standard consultation; they have a defined clinical role within a structured framework and the requirement that the Adult health check is signed off by a doctor provides them with a safety net should they encounter difficulties. Thirdly, ACCHS are remunerated for MBS preventive health care items, potentially increasing their motivation to implement strategies that might improve their capacity to deliver these items routinely. Although SBI for SNAP is only a small component of mandatory items in the Adult Health Check, improving its delivery in this context inevitably required the development of intervention strategies to improve the delivery of the Adult health check more generally. Fourthly, disseminating evidence into primary health care is an incremental and developmental process. [67] Introducing health professionals to evidence-based brief intervention in a way that is practically relevant, non-threatening and inclusive would appear to be an important first step in this process.

In this study, aligning the lifestyle component of the Adult health check with evidence-based guidelines provided health professionals with a workable 'evidence-based model' which could be adapted for use in standard primary care consultations, although it did not directly address health professionals' rates of delivery of SBI for SNAP in standard consultations. This latter point is important, particularly given evidence that only a small proportion of clients attending an ACCHS are likely to receive an Adult health check in a standard primary care consultation. [88] Therefore, although it can be

reasonably argued that improving uptake of evidence-based SBI for SNAP risk factors in MBS preventive health assessment items is one potential strategy for disseminating evidence-based SBI in ACCHSs, it is unlikely to result in significant improvements in the rates of SBI delivery to all patients, which is crucial for maximising the potential effectiveness of brief intervention to reduce harm at the population level and for obtaining adequate data to inform decisions regarding the widespread adoption of this type of intervention in ACCHSs more generally. Achieving both outcomes will require improved rates of evidence-based SBI by all types of health professionals across a range of clinical services in a large number of ACCHSs. Broader support for the implementation of an evidence-based, collaborative and adaptable process, similar to that used in this thesis, involving policy makers, health professionals, researchers and Indigenous communities is therefore required.

Overall, it is hoped that this study has contributed to a better knowledge and understanding of an optimal process for getting evidence into ACCHSs, which is important for the development of strategies offering the greatest potential to increase rates of evidence-based SBI to levels sufficient to enable rigorous evaluations of the effectiveness of brief intervention at reducing harm among Indigenous Australians.

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APPENDICES

Appendix I: List of organisations contacted to locate brief intervention kits

1. Aboriginal Health & Medical Research Council NSW
2. Victorian Aboriginal Community Controlled health Organisations
3. Queensland Aboriginal & Islander Health Council
4. Western Australian Aboriginal Community Controlled Health Organisation
5. Aboriginal Health Council of South Australia
6. Aboriginal Community Controlled Health Services in NSW
7. Armidale Aboriginal Medical Service
8. Bourke Aboriginal Health Service
9. South Coast Medical Service Aboriginal Corporation
10. Biripi Aboriginal Medical Service
11. Illawarra Aboriginal Medical Service
12. Tharawal Corporation Aboriginal Medical Service
13. Riverina Medical and Dental Aboriginal Corporation
14. Walgett Aboriginal Medical Services Co-operative Limited
15. Maari Ma Health Aboriginal Corporation
16. Weimija Aboriginal Corporation
17. Aboriginal Medical Service Co-operative Limited
18. Condobolin Aboriginal Health Service Incorporated
19. Coomealla Health Aboriginal Corporation
20. Daruk Aboriginal Community Controlled Medical Service Co-operative Limited
21. Katungul Aboriginal Corporation Community & Medical Services
22. Maari Ma Health Aboriginal Corporation
23. Pius X Aboriginal Corporation
24. Thubbo Aboriginal Medical Service
25. Walhallow Aboriginal Corporation
26. Waminda South Coast Womens Health and Welfare Aboriginal Corporation
27. Weimija Aboriginal Corporation
28. Wellington Aboriginal Corporation Health Service

29. Durri Aboriginal Medical Service
30. Baryulgil & Malabugilmah Health Outpost(Bulgarr Ngaru Medical Aborignal Corp)
31. Tamworth AMS
32. Central Coast Area Health Service
33. Central Sydney Area Health Service
34. Commonwealth Department of Youth and Family Services
35. Department of Health and Ageing (alcohol, nutrition & physical activity, tobacco)
36. Department of Health Western Australia
37. Department of Health & Human Services, Tasmania
38. NSW Health
39. OATSIH
40. Qld Health Department
41. South Australian Department of Health
42. Territory Health Services
43. Vic Health
44. Western Australian Health Department
45. Cancer Council
46. Diabetes Australia
47. Diabetes NSW
48. National Centre for excellence in Indigenous Tobacco Control
49. National Heart Foundation Foundation
50. NSW Faculty of the RACGP
51. NSW Office of the AMA
52. South Australia Drug
53. Australia Drug Information Network

Appendix II: Study information brochures

Health professional

If you have any questions or complaints, you can contact:

Dr Lisa Jackson Pulver

Muru Marri Indigenous Health Unit

School of Public Health & Community Medicine, Faculty of Medicine

UNSW, NSW 2052

PH 029 385 1769, FAX 02 9385 0222

AND

The Ethics Secretariat

PH 029 385 4234 FAX 9385 6648

UNSW, NSW 2052

email ethics.sec@unsw.edu.au

AND

The AHMRC Ethics Committee

PO Box 1565, Strawberry Hills NSW 2012

PH 029 698 1099

The Healthy Lifestyle Project

THE UNIVERSITY OF NEW SOUTH WALES

MURU MARRI INDIGENOUS HEALTH UNIT
SCHOOL OF PUBLIC HEALTH AND COMMUNITY MEDICINE

[ACCHS Logo]

THE HEALTHY LIFESTYLE PROJECT

WHAT IS THE HEALTHY LIFESTYLE PROJECT?

Sickness, and heart attacks, injuries, lung cancer, liver problems and diabetes are caused by lifestyle risk factors. Lifestyle risk factors are things like:

1. Drinking too much alcohol
2. Smoking or using other drugs.
3. Being too overweight
4. Not exercising enough.

Aboriginal health workers, Nurses, Doctors and other health professionals often help people to change their lifestyle to improve their health.

We are doing a research project which looks at how we can make it easier for health professionals to give Aboriginal & Torres Strait Islander people advice about lifestyle risk factors.

WHAT DOES BEING PART OF THE PROJECT MEAN?

We will be sitting down and talking to health professionals in small groups to find out:

- What advice and information health professionals give to Aboriginal people for lifestyle risk factors?
- What factors influence health professionals giving lifestyle advice and information to Aboriginal people?
- What could be done to make it easier for health professionals to give lifestyle advice and information to Aboriginal people?

We will use this information to work with **[Name of ACCHS]** to develop strategies to make it easier for health professionals to give lifestyle advice and information to Aboriginal people. These strategies will be put in place for at least six months.

During the six months we will be talking with health professionals and management to find out:

- What advice and information health professionals gave to Aboriginal people for lifestyle risk factors?
- If the strategies make it easier for health professionals to give lifestyle advice and information to Aboriginal people.
- What is needed for long term change?

WHAT HAPPENS TO THE INFORMATION I GIVE?

All of the information you provide is private information and will not be used for any other purpose without your permission. Any report will not show your name or any other information that may identify you.

WHAT HAPPENS TO THE RESULTS OF THE PROJECT?

Once we have written the report for the project we will be letting all those who were in the study know what we found out. We will publish the results of the project in a community report.

Aboriginal community member

If you have any questions or complaints, you can contact:

Dr Lisa Jackson Pulver

Muru Marri Indigenous Health Unit

School of Public Health & Community Medicine, Faculty of Medicine

UNSW, NSW 2052

PH O29 385 1769, FAX 02 9385 0222

AND

The Ethics Secretariat

PH 029 385 4234 FAX 9385 6648

UNSW, NSW 2052

email ethics.sec@unsw.edu.au

AND

The AHMRC Ethics Committee

PO Box 1565, Strawberry Hills NSW 2012

PH 029 698 1099

The Healthy Lifestyle Project

THE UNIVERSITY OF NEW SOUTH WALES

MURU MARRI INDIGENOUS HEALTH UNIT
SCHOOL OF PUBLIC HEALTH AND COMMUNITY MEDICINE

[ACCHS Logo]

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1. Drinking too much alcohol
2. Smoking or using other drugs.
3. Being too overweight
4. Not exercising enough.

Aboriginal Health Workers, Nurses Doctors and other health professionals can help people to change their lifestyle to improve their health.

We are doing a research project which looks at what advice Aboriginal people are given about lifestyle risk factors by health professionals.

WHAT DOES BEING PART OF THE PROJECT MEAN?

We will be sitting down and talking in small groups with Aboriginal people who attend **[Name of ACCHS]** Corporation to find out:

- What they were asked about lifestyle risk factors by health professionals.
- How they would like to be given advice or information about lifestyle risk factors by health professionals.
- What things they think health professionals can do to help Aboriginal people change their lifestyle to improve their health.

We will use this information to help us put to together a plan to make it easier for health professionals at **[Name of ACCHS]** to give advice about lifestyle risk factors to Aboriginal people. We will then use this plan to see if it works.

DO I HAVE TO BE A PART OF THIS PROJECT?

It is up to you to decide whether you want to be a part of this project. You can decide not to be a part of it.

WHAT IF I WANT TO BE A PART OF THE PROJECT?

If you want to be a part of this project you will need to read and sign the consent form. Everyone who is part of the project will be paid $40 to cover their travel expenses.

CAN I DROP OUT OF THE PROJECT?

You can drop out of this project at any time by telling a member of the research team or a health professional at **[Name of ACCHS]**

WHAT HAPPENS TO THE INFORMATION I GIVE?

All of the information you provide is private information and will not be used for any other purpose without your permission. Any report will not show your name or any other information that may identify you.

WHAT HAPPENS TO THE RESULTS OF THE PROJECT?

Once we have written the report for the project we will be letting all those who took part in the project what we found out. We also hope to publish the results of the project in a community report.

Appendix III: Informed written consent forms

Health professional

Ethics approval number: 04092
Health professional consent

THE UNIVERSITY OF NEW SOUTH WALES

MURU MARRI INDIGENOUS HEALTH UNIT
SCHOOL OF PUBLIC HEALTH AND COMMUNITY MEDICINE

[ACCHS Logo]

The Healthy Lifestyle Project

Health Professional Consent Form

Ethics approval number: 04092

Name of research project	Healthy Lifestyle Project
Brochure on the project addressing: • Purpose of the project • Why the information is being collected Any necessary definition of terms	Is the brief of the research attached? Yes Brief attached as plain language brochure.
Name, address and telephone number of principal researcher, for the purposes of this document, unless otherwise stated, also called the Data Custodian	Dr Lisa Jackson-Pulver Muru Marri Indigenous Health Unit School of Public Health & Community Medicine Faculty of Medicine University of NSW NSW 2052 Ph 029 385 1769 or 0438894810 Email l.pulver@unsw.edu.au
Name, address and telephone number of institution, for the purposes of this document, unless otherwise stated, also called the Data Repository.	Muru Marri Indigenous Health Unit School of Public Health & Community Medicine Faculty of Medicine University of NSW NSW 2052 Ph 02 9385 1765 Fax 02 9385 0222

What the research is about.	I understand what the Healthy Lifestyle project is about as written in the information booklet and explained to me by a member of the research team.
What it means to be a part of the healthy lifestyle project?	I understand that I will be asked to talk about and answer questions on what I know about lifestyle issues, and how I currently deliver advice on lifestyle issues to Aboriginal health consumers.
	I understand that I will be asked to return in a few months to talk about the healthy lifestyle package and undertake training in its usage.
	I understand that I might be asked to deliver the healthy lifestyle package to Aboriginal health consumers during a six month period, and then be asked questions relating to issues in its delivery.
Right to withdrawal	I understand that I have the right to choose not to be a part of the healthy lifestyle project at any time and may ask for the information that I have given not to be used, without penalty, either personal or financial.
	I can be certain that taking part in the healthy lifestyle project is not a condition of my employment.
Confidentiality and privacy	I can be certain that any information I give will be private and confidential and will not be used in a way that will identify me.
Community consultation	I can be certain that the Aboriginal community, through the representative members of [Name of ACCHS] has been consulted and agreed to be a part of the healthy lifestyle project.
Ethical provision	I can be certain that the healthy lifestyle project abides by ethical conduct relating to health research in Aboriginal communities as stated in National Aboriginal Community Controlled Health Organisation (NACCHO), Aboriginal Health & Medical Research Council (AH&MRC), National Health & Medical Research Council (NHMRC) and UNSW ethics publications and that, where required, ethics approval has been granted by these organisations.
Free and informed consent	I agree to be a part of the healthy lifestyle project.
Contacts	I understand that if I have any complaints or questions about the healthy lifestyle project I can contact the The AHMRC Ethics Committee as follows: The Chairperson AHMRC Ethics Committee PO Box 1565 Strawberry Hills NSW 2012 Ph 029 698 1099 AND The Ethics Secretariat, The University of New South Wales, SYDNEY 2052 AUSTRALIA (phone 9385 4234, fax 9385 6648, email ethics.sec@unsw.edu.au).

THE UNIVERSITY OF NEW SOUTH WALES

MURU MARRI
INDIGENOUS HEALTH UNIT
SCHOOL OF PUBLIC HEALTH AND COMMUNITY MEDICINE

[ACCHS Logo]

The Healthy Lifestyle Project

Health Professional Consent Form

I, ...
(Name)

employed at .....,
(Name of Aboriginal Medical Service)

agree to be part of the Healthy Lifestyle Project.

Signed: _____ Date: _____

Witnessed by:

_____ Date: _____

Name_____ Position:_____

Aboriginal community member

Ethics approval number: 04092

THE UNIVERSITY OF NEW SOUTH WALES

MURU MARRI INDIGENOUS HEALTH UNIT

ACCHS LOGO

Consent Form: Aboriginal community member

Ethics approval number: 04092

Name of research project	Healthy Lifestyle Project
Brochure attached addressing: • What the project is about. • What being part of the project means. • Why information is being collected. • What happens to project results.	Brochure attached outlining the project. More detailed document available upon request.
Name, address and telephone number of principal researcher, for the purposes of this document, unless otherwise stated, also called the Data Custodian	Dr Lisa Jackson Pulver Muru Marri Indigenous Health Unit School of Public Health & Community Medicine Faculty of Medicine University of NSW NSW 2052 Ph 029 385 1769 Email l.pulver@unsw.edu.au
Name, address and telephone number of institution, for the purposes of this document, unless otherwise stated, also called the Data Repository	Muru Marri Indigenous Health Unit School of Public Health & Community Medicine Faculty of Medicine University of NSW NSW 2052 Ph 029 385 1769 Fax 02 9313 6185

Ethics approval number: 04092

Consent Form: Aboriginal community member

What the research is about.	I understand what the Healthy Lifestyle project is about as written in the information booklet and explained to me by a member of the research team.
What it means to be a part of the healthy lifestyle project?	I understand that I will be asked to talk about what I know about lifestyle disease and risk factors issues and how I would like to be told about lifestyle disease and risk factors.
	I understand that I will be asked to return in a few months to talk about the healthy lifestyle package that has been developed for my community.
Travel Costs	I understand that I will be paid $40.00 to cover travel costs to and from focus group interviews.
Right to withdrawal	I understand that I have the right to choose not to be a part of the healthy lifestyle project at any time and may ask for the information that I have given not to be used, without penalty, either personal or financial.
Confidentiality and privacy	I can be certain that any information I give will be private and confidential and will not be used in a way that will identify me or my Aboriginal Community, or given to people other than the researchers, except as required by law. By signing this form I am agreeing to let the researchers talk/write about the results in [**Name of ACCHS**] reports for distribution to the broader community. I can be certain that in any publication of results information will be provided in such a way that I cannot be identified.
Community consultation	I can be certain that the Aboriginal community, through the representative members of [**Name of ACCHS**] have been consulted and agreed to be a part of the healthy lifestyle project.
Ethical provision	I can be certain that the healthy lifestyle project complies with ethical conduct relating to health research in Aboriginal communities as stated in National Aboriginal Community Controlled Health Organisation (NACCHO), Aboriginal Health & Medical Research Council (AH&MRC), National Health & Medical Research Council (NHMRC) and UNSW ethics publications and that, where required, ethics approval has been granted by these organisations.
Contacts	I understand that if I have any complaints or questions about the healthy lifestyle project I can contact the principal researcher listed on page 1 AND The Ethics Secretariat, The University of New South Wales, SYDNEY 2052 AUSTRALIA Ph 9385 4234, fax 9385 6648 Email- ethics.sec@unsw.edu.au). AND The AHMRC Ethics Committee as follows: The Chairperson AHMRC Ethics Committee PH 029 2124777, FAX 02 29212 7211 Email ahmrc@ahmrc.org.au

Ethics approval number: 04092

THE UNIVERSITY OF NEW SOUTH WALES

MURU MARRI INDIGENOUS HEALTH UNIT

ACCHS LOGO

Aboriginal community member consent form

I, ... am aged 18 and over and agree to be part of the Healthy Lifestyle Project.

c/o- **[Name of ACCHS]**

Signed:

Date:

Witnessed by:

Date:

Appendix IV: Health professional survey

THE UNIVERSITY OF NEW SOUTH WALES

MURU MARRI INDIGENOUS HEALTH UNIT
SCHOOL OF PUBLIC HEALTH AND COMMUNITY MEDICINE

[**ACCHS Logo**]

UNSW Ethics Approval number: 04092

Healthy Lifestyle Project

Health Professional Survey

Completing this survey is voluntary, and all answers you provide are confidential. The questionnaire should take no longer than 10 minutes to complete.

The survey will be analysed only by researchers working directly on the Healthy Lifestyle Project.

If you agree to complete the survey, please provide your signed consent in the relevant section below.

Please place the survey (including this page with your signed consent) in the envelope provided for collection by the [clinical coordinator]

If you have any questions or concerns regarding this survey, please contact Anton Clifford, UNSW. Ph: 02 93852167 or email: a.clifford@unsw.edu.au

Health Worker Consent

I, ...
(Name)

employed at .....,
(Name of ACCHS)

agree to complete the Health professional survey as part of the Healthy Lifestyle Project.

Signed: Date:

Healthy Lifestyle Project – Health professional survey

Thank you for agreeing to participate in the Healthy Lifestyle Project.

For each item, please tick the box or circle the number that corresponds to your answer, or write your answer in the space provided.

Health Professional Details

1. Are you female or male?

☐ Female ☐ Male

2. What is your age in whole years?

☐ 18-24 years ☐ 25-34 years ☐ 35-44 years

☐ 45-54 years ☐ 55-64 years ☐ 65+ years

3. Are you employed full-time or part-time?

☐ Full-time ☐ Part-time, If part-time, how many hours do you work per week _____

4. How many years have you worked in your profession? _____

5. How many years have you worked for an Aboriginal Medical Service? _____

6. How many years have you worked for [Name of ACCHS]? _____

7. What is your health worker role in [Name of ACCHS]?

☐ Aboriginal Health Worker,

If you are a specialist Aboriginal Health Worker, what is your specialist role? _____

☐ AOD Worker

☐ Nurse, please specify type (e.g. RN or EN) _____

☐ GP

☐ Allied health, If allied health, what is your role e.g. dietician_____

Management of risk factors

8. Thinking of **new clients** *(clients seen for the first time)* that you have seen over the **past 2 weeks**, what percentage of these clients did you **ask** about the following risk factors :

Smoking	☐ None	☐ 1- 25%	☐ 26-50%	☐ 51-75%	☐ >75%
Nutrition	☐ None	☐ 1- 25%	☐ 26-50%	☐ 51-75%	☐ >75%
Alcohol	☐ None	☐ 1- 25%	☐ 26-50%	☐ 51-75%	☐ >75%
Physical activity	☐ None	☐ 1- 25%	☐ 26-50%	☐ 51-75%	☐ >75%

9. Thinking of **current clients** *(clients seen previously)* that you have seen over the **past 2 weeks**, what percentage of these clients did you **ask** about the following risk factors :

Smoking	☐ None	☐ 1- 25%	☐ 26-50%	☐ 51-75%	☐ >75%
Nutrition	☐ None	☐ 1- 25%	☐ 26-50%	☐ 51-75%	☐ >75%
Alcohol	☐ None	☐ 1- 25%	☐ 26-50%	☐ 51-75%	☐ >75%
Physical activity	☐ None	☐ 1- 25%	☐ 26-50%	☐ 51-75%	☐ >75%

10. Of the clients that you identified as having a lifestyle risk factor in the **past 2 weeks**, what percentage of these clients did you **assess their readiness to change** their behaviour (stage of change).

Smokers ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any smokers

Clients with poor nutrition ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients with poor nutrition

Clients with at risk drinking ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients with at risk drinking

Physically inactive clients ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients who were physically inactive

11. Of the clients that you identified as having a lifestyle risk factor in the **past 2 weeks**, what percentage of these clients did you provide **verbal advice** to:

Smokers ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any smokers

Clients with poor nutrition ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients with poor nutrition

Clients with at risk drinking ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients with at risk drinking

Physically inactive clients ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients who were physically inactive

12. Of the clients that you identified as having a lifestyle risk factor in the **past 2 weeks**, what percentage of these clients did you provide **written advice (eg pamphlet)** to:

Smokers ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any smokers

Clients with poor nutrition ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients with poor nutrition

Clients with at risk drinking ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients with at risk-drinking

Physically inactive clients ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients who were physically inactive

13. Of the clients that you identified as having a lifestyle risk factor in the **past 2 weeks**, what percentage of these clients did you **refer to other service providers/agencies or support groups (e.g. substance misuse team, dietician)** for help in managing their risk factor:

Smokers ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any smokers

Clients with poor nutrition ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients with poor nutrition

Clients with at risk drinking ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients with at risk-drinking

Physically inactive clients ☐ None ☐ 1- 25% ☐ 26- 50% ☐ 51 - 75% ☐ > 75%
☐ did not identify any clients who were physically inactive

14. When you provide advice about lifestyle risk factors, **how much time do you estimate that you spend** on average addressing each of the following:

Smoking	☐ 1-2 mins	☐ 3-5 mins	☐ 6-10 mins	☐ 11-15 mins
	☐ more than 15 mins	☐ do not provide advice		
Nutrition	☐ 1-2 mins	☐ 3-5 mins	☐ 6-10 mins	☐ 11-15 mins
	☐ more than 15 mins	☐ do not provide advice		
Alcohol	☐ 1-2 mins	☐ 3-5 mins	☐ 6-10 mins	☐ 11-15 mins
	☐ more than 15 mins	☐ do not provide advice		
Physical Activity	☐ 1-2 mins	☐ 3-5 mins	☐ 6-10 mins	☐ 11-15 mins
	☐ more than 15 mins	☐ do not provide advice		

15. For clients that you have given advice to about their lifestyle, what percentage of these clients do you **check their progress** in subsequent visits (on average)?

Smokers	☐ None	☐ 1- 25%	☐ 26- 50%	☐ 51 - 75%	☐ > 75%
	☐ did not identify any smokers				
Clients with poor nutrition	☐ None	☐ 1- 25%	☐ 26- 50%	☐ 51 - 75%	☐ > 75%
	☐ did not identify any clients with poor nutrition				
Clients with at risk drinking	☐ None	☐ 1- 25%	☐ 26- 50%	☐ 51 - 75%	☐ > 75%
	☐ did not identify any clients with at risk drinking				
Physically inactive clients	☐ None	☐ 1- 25%	☐ 26- 50%	☐ 51 - 75%	☐ > 75%
	☐ did not identify any clients who were physically inactive				

16. How easy is it to find **accessible services /agencies or support programs to refer** your clients to for the following? (1= very difficult, 5= very easy)

	Very difficult				**Very easy**	
Smoking cessation	1	2	3	4	5	☐ don't know
Nutrition counselling	1	2	3	4	5	☐ don't know
Alcohol counselling	1	2	3	4	5	☐ don't know
Physical Activity	1	2	3	4	5	☐ don't know

17. Please rate your **knowledge** in relation to each of the following (1= very poor, 5= excellent):

	Very Poor				**Excellent**
Assessing nicotine dependency	1	2	3	4	5
Smoking cessation recommendations	1	2	3	4	5
Assessing nutrition	1	2	3	4	5
Nutrition recommendations	1	2	3	4	5
Assessing for risk alcohol consumption	1	2	3	4	5
Recommendations for safe alcohol consumption	1	2	3	4	5
Assessing physical activity levels	1	2	3	4	5
Physical activity recommendations	1	2	3	4	5
Motivational interviewing	1	2	3	4	5
Assessing a client's readiness to change	1	2	3	4	5
Principles of adult education	1	2	3	4	5

18. Please rate how **confident** you are in undertaking the following activities with clients: (1=not at all confident, 5 =very confident)

	Not at all confident				**Very confident**
Assessing nicotine dependency	1	2	3	4	5
Smoking cessation recommendations	1	2	3	4	5
Assessing nutrition	1	2	3	4	5
Nutrition recommendations	1	2	3	4	5
Assessing for risk alcohol consumption	1	2	3	4	5
Recommendations for safe alcohol consumption	1	2	3	4	5
Assessing physical activity levels	1	2	3	4	5
Physical activity recommendations	1	2	3	4	5
Motivational interviewing	1	2	3	4	5
Assessing a client's readiness to change	1	2	3	4	5
Principles of adult education	1	2	3	4	5

19. Please rate how **effective** you think your advice is in helping clients to: (1= not at all effective, 5= very effective)

	Not at all effective				**Very effective**
Give up smoking	1	2	3	4	5
☐ do not provide advice					
Improve nutrition / eating habits	1	2	3	4	5
☐ do not provide advice					
Reduce alcohol consumption	1	2	3	4	5
☐ do not provide advice					
Become more physically active	1	2	3	4	5
☐ do not provide advice					

20. Clients I see find it acceptable for me to raise the following lifestyle issues routinely as part of the consultation (1= strongly disagree, 5= strongly agree):

	Strongly Disagree				**Strongly Agree**
Smoking	1	2	3	4	5
☐ do not discuss smoking					
Nutrition	1	2	3	4	5
☐ do not discuss nutrition					
Alcohol	1	2	3	4	5
☐ do not discuss alcohol consumption					
Physical Activity	1	2	3	4	5
☐ do not discuss physical activity					

21. Please rate **how important** you think the following lifestyle changes are for **improving health** (1= not at all important, 5= very important)

	Not at all important				**Very important**
Giving up smoking	1	2	3	4	5
Improving nutrition / eating habits	1	2	3	4	5
Reducing alcohol consumption	1	2	3	4	5
Becoming more physically active	1	2	3	4	5

22. Please rate **how important** you think it is to address these lifestyle risk factors with **the clients you see** (1= not at all important, 5 = very important):

	Not at all important				**Very important**
Giving up smoking	1	2	3	4	5
Improving nutrition / eating habits	1	2	3	4	5
Reducing alcohol consumption	1	2	3	4	5
Becoming more physically active	1	2	3	4	5

23. How much of a **work priority** is it for your team/service to address lifestyle risk factors with clients **as part of your normal clinical work** (1= very low priority, 5 = very high priority):

	Very low priority				**Very high priority**
Smoking cessation	1	2	3	4	5
Poor Nutrition	1	2	3	4	5
At risk alcohol consumption	1	2	3	4	5
Inadequate physical activity	1	2	3	4	5

Education and training for risk factors

24. In the past 12 months have you had education or training in the management of these risk factors or strategies for helping clients change their behaviour?

Smoking	☐ Yes	☐ No
Nutrition	☐ Yes	☐ No
Alcohol	☐ Yes	☐ No
Physical Activity	☐ Yes	☐ No
Motivational interviewing	☐ Yes	☐ No
Assessing Clients readiness to change	☐ Yes	☐ No
Client education	☐ Yes	☐ No

If YES, please describe the type of education/ training you have received

_____

26. Would you like additional education or training in these areas:

Assessing nicotine dependency

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Smoking cessation recommendations

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Assessing nutrition

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Nutrition recommendations

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Assessing for risk alcohol consumption

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Recommendations for safe alcohol consumption

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Assessing physical activity levels

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Physical activity recommendations

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Motivational interviewing

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Assessing a client's readiness to change

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

Principles of adult education

☐ Yes, high priority ☐ Yes, but not high priority ☐ No

If you would like training, in what format would you like to receive it? (tick all that apply)

☐ workshop
☐ clinical supervision/ mentoring
☐ self-study materials
☐ case studies
☐ small group discussions
☐ Other:_____

27. Any other comments: _____

Thank you for completing this survey

Please place the completed survey in the envelope provided

Appendix V: Form for audit of lifestyle risk factor management

Lifestyle Risk Factor Management for Adults – Record Sheet

Please complete immediately following each consultation/visit

Health Worker: _____

Date: _____

Client	**Please fill out for all consultations**		**If risk factor present, please tick what action was taken?**			
Age ☐ 18-24 ☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ 55-64 ☐ 65 + **Gender** ☐ Female ☐ Male Primary reason for consultation: _____ _____	**Tick the issue raised.**	**Was risk factor present?**	**Verbal advice**	**Written advice eg pamphlet**	**Referral**	**No action taken**
	☐ Smoking	☐ Yes ☐ No ☐ Don't know	☐	☐	☐	☐
	☐ Nutrition issue	☐ Yes ☐ No ☐ Don't know	☐	☐	☐	☐
	☐ Alcohol issue	☐ Yes ☐ No ☐ Don't know	☐	☐	☐	☐
	☐ Physical inactivity	☐ Yes ☐ No ☐ Don't know	☐	☐	☐	☐

Were you planning to discuss any of these lifestyle risk factors with this client? ☐ Yes ☐ No

Was it/would it have been appropriate to address lifestyle risk factors with this client? ☐ Yes ☐ No

If NO, why not: _____

Appendix VI: Interview guide for focus group interviews with health professionals

Round One

1. What are peoples' positions and role at this Aboriginal Medical Service?

2. What questions do health professionals at this service ask clients about:

- Smoking
- Nutrition
- Alcohol
- Physical Activity

Prompts:

How do people feel about asking clients these questions?

In what situation/s are clients asked these questions?

What types of health professionals normally ask these questions?

3. What things make it difficult to ask clients these questions?

Prompts:

What things would help to make it easier to ask clients these questions?

How do clients respond to these questions?

4. What do health professionals at this service do if a client:

- smokes or uses other drugs
- drinks too much alcohol
- is overweight or obese
- is not eating healthy foods
- doesn't get enough exercise

Prompts:

Which health professionals are normally involved?

What services/organisations are used for referral?

How does client follow-up occur?

5. What patient resources/materials are used to give clients information and advice for:

- Smoking
- Alcohol
- Nutrition
- Physical Activity

Prompts:

What resources/guidelines are followed?

What do people think about these resources/guidelines?

How could these resources/guidelines be improved?

6. What things make it difficult to give advice and information to clients for:

- Smoking
- Alcohol
- Nutrition
- Physical Activity

Prompts:

What could be done to make it easier to give clients advice and information for these things?

Round two

1. Here is a summary of the barriers to delivering prevention for smoking, alcohol, nutrition and physical activity that people talked about in the first round of focus groups. Which of these barrier/s do people think is/are the most important to address?

Prompts:

Which of these barriers should we address to help make it easier to deliver prevention for smoking, alcohol, nutrition and physical activity?

2. Here are some strategies that have been shown to reduce the impact of these barrier/s and make it easier for health professionals to deliver prevention. What do people think about using these strategies to target these barriers?

Prompts:

How should we go about putting these strategies in place?

Who are the key people that should be involved?

What resources are in the service that might help with this process?

What should my role be in this process?

Appendix VII: Interview guide for focus group interviews with clients

1. What kind of questions do health professionals at [name of ACCHS] usually ask Aboriginal people about alcohol (grog), smoking, nutrition (your diet, the foods you eat), and exercise?

Prompts:

When do they ask these questions?

How do people feel about being asked these questions?

2. What do you think about health professionals giving advice to Aboriginal people who smoke, drink too much alcohol, don't exercise enough or are overweight?

Prompts:

Who should give this advice?

When should they give this advice?

How would people feel about receiving this advice?

3. What things make it difficult for Aboriginal people with lifestyle risk factors to change their lifestyle to improve their health?

4. How can health professionals at [name of ACCHS] help Aboriginal people with lifestyle risk factors change their lifestyle to improve their health?

5. What things are happening in the community to help Aboriginal people with lifestyle risk factors to change their lifestyle to improve their health?

Prompts:

Is it working?

Who is benefiting and who is losing out?

What else needs to happen for things to change?

What will happen if things don't change?

Appendix VIII: Training evaluation surveys

Before teaching questionnaire for alcohol

This survey is to test the presenters, not to test you. It's to show us whether our teaching meets your needs. We will use this information to help us make the course better for next time.

Please do NOT write your name on the form.
But to help us compare each person's answers before and after the teaching, we will ask you to create your own "secret code" using the instructions below.

To make your secret code, please write

☐	☐	☐☐
The first letter of your favourite TV show	The first letter of your favourite sports star's first name	The day of the month that you were born on (e.g. if you were born on March 15, 1976, then you write 15)

Now, can you please tell us:

1. What is your work position:

Aboriginal drug and alcohol worker ☐ Aboriginal health worker ☐

GP ☐ Nurse ☐

Other (please write job title): ……..

Please mark your response to the following questions with an **X** on the line underneath the question. For example if you feel confident in a task, you can mark above the word confident.

		X	
Not at all confident	unsure	confident	very confident

How confident do you feel that you could:

1. identify at-risk drinkers (i.e. those who are drinking more than is good for them but who are not dependent on alcohol / not alcoholic)

Not at all confident	unsure	confident	very confident

2. talk with at-risk drinkers (those who are not dependent) in a way that might help them change their drinking, or get them thinking about changing?

Not at all confident	unsure	confident	very confident

Please turn over…..

3. provide a brief intervention for alcohol problems, when the drinker hasn't come to you for help about alcohol.

Not at all confident	unsure	confident	very confident

4. help key people in your community to start thinking about how to address alcohol in the community?

Not at all confident	unsure	confident	very confident

5. What do you hope to learn from this workshop?

……..

……..

……..

……..

……..

Thank you for helping us evaluate this course. Please hand the completed form to the co-coordinator.

After teaching questionnaire for alcohol

As we said before, that his survey is to test the presenters, not to test you. It's to show us whether our teaching meets your needs. We will use this information to help us make the course better for next time.

Please do NOT write your name on the form.
But to help us compare each person's answers before and after the teaching, we will ask you to once again write down your "secret code" using the instructions below.

To make your secret code again, please write

☐	☐	☐☐
The first letter of your favourite TV show	The first letter of your favourite sports star's first name	The day of the month that you were born on (e.g. if you were born on March 15, 1976, then you write 15)

Now, can you please mark your response to the following questions on the line underneath the question:

How confident do you feel that you could:

1. identify at-risk drinkers (those who are drinking more than is good for them but who are not dependent on alcohol (not alcoholic)

Not at all confident	unsure	confident	very confident

2. talk with at-risk drinkers (those who are not dependent) in a way that might help them change their drinking, or get them thinking about changing?

Not at all confident	unsure	confident	very confident

3. provide a brief intervention for alcohol problems, when the drinker hasn't come to you for help about alcohol.

Not at all confident	unsure	confident	very confident

Please turn over…..

4. help key people in your community to start thinking about how to address alcohol in the community?

Not at all confident	unsure	confident	very confident

5. Can you list up to 3 things you learnt from this workshop, that might be useful to you?

……

……

6. If we run a workshop like this again, is there something we could leave out?

……

……

7. Are there other things we could have covered instead or as well?

……

……

8. How else could we make the course better? Any suggestions are welcome.

……
……..

……
……..

Before teaching questionnaire for nutrition and physical activity

This survey is to test the presenters, not to test you. It's to show us whether our teaching meets your needs. We will use this information to help us make the course better for next time.

Please do NOT write your name on the form.
But to help us compare each person's answers before and after the teaching, we will ask you to create your own "secret code" using the instructions below.

To make your secret code, please write

☐	☐	☐☐
The first letter of your favourite TV show	The first letter of your favourite sports star's first name	The day of the month that you were born on (e.g. if you were born on March 15, 1976, then you write 15)

Now, can you please tell us:

1. What is your work position:

Aboriginal health worker ☐

GP ☐

Nurse ☐

Other (please write job title): ……..

Please mark your response to the following questions with an **X** on the line underneath the question. For example if you feel confident in a task, you can mark above the word confident.

		X	
Not at all confident	unsure	confident	very confident

How confident do you feel that you could:

2. assess a client's nutrition (i.e. the quality of their diet and the type of foods they eat)

Not at all confident	unsure	confident	very confident

3. give a brief intervention to clients with poor nutrition to help them change their eating habits, or get them to think about changing their eating habits?

Not at all confident	unsure	confident	very confident

4. assess a client's physical activity levels (i.e. frequency and type of exercise)

Not at all confident	unsure	confident	very confident

5. give a brief intervention to clients who are physically inactive to help them become more physically active, or get them to think about becoming more physically active?

Not at all confident	unsure	confident	very confident

6. What do you hope to learn from this workshop?

……..

……..

……..

……..

……..

Thank you for helping us evaluate this course. Please hand the completed form to the co-coordinator.

After teaching questionnaire for nutrition and physical activity

As we said before, that his survey is to test the presenters, not to test you. It's to show us whether our teaching meets your needs. We will use this information to help us make the course better for next time.

Please do NOT write your name on the form.
But to help us compare each person's answers before and after the teaching, we will ask you to once again write down your "secret code" using the instructions below.

To make your secret code again, please write

☐	☐	☐☐
The first letter of your favourite TV show	The first letter of your favourite sports star's first name	The day of the month that you were born on (e.g. if you were born on March 15, 1976, then you write 15)

Now, can you please mark your response to the following questions on the line underneath the question:

How confident do you feel that you could:

1. assess a client's nutrition (i.e. the quality of their diet and the type of foods they eat)

Not at all confident	unsure	confident	very confident

2. give a brief intervention to clients with poor nutrition to help them change their eating habits, or get them to think about changing their eating habits?

Not at all confident	unsure	confident	very confident

3. assess a client's physical activity levels (i.e. frequency and type of exercise)

Not at all confident	unsure	confident	very confident

4. give a brief intervention to clients who are physically inactive to help them become more physically active, or get them to think about becoming more physically active?

Not at all confident	unsure	confident	very confident

5. Can you list up to 3 things you learnt from this workshop, that might be useful to you?

……

……

6. If we run a workshop like this again, is there something we could leave out?

……

……

……

……

7. Are there other things we could have covered instead or as well?

……

……

8. How else could we make the course better? Any suggestions are welcome.

……

……

Thank you for helping us evaluate this course. Please hand the completed form to the co-coordinator.

Appendix IX: Group discussion questions for alcohol

Trigger question:

What are your most recent experiences in screening and brief intervention for alcohol?

Focused questions:

1. How did patients respond to you asking them questions about alcohol?
2. What things made it difficult to ask patients about alcohol using the AUDIT-C and giving advice to at-risk clients using motivational interviewing?
3. What did you do for patients who drank too much alcohol?
4. What did you do for patients who were likely to be alcohol dependent drinkers?
5. What do you think about your role in delivering advice for alcohol?

Appendix X: Drink-Less brief intervention materials [176]

Questionnaire

drink less

Dear Patient

As part of my service I am examining lifestyle issues likely to affect the health of my patients. This will assist me in giving the best treatment possible. To help me do this, could you please complete this questionnaire in the waiting room before your appointment. When you have finished, please hand it back to the receptionist. I will explain the results to you during your consultation. Your answers to these questions will be treated in strict confidence.

1 standard drink =

OR

OR

middy of beer (285mls) | small glass of wine (100 mls) | nip of spirits (30 mls)

1.5 standard drinks =

OR

OR

1 schooner (425 mls) | 1 can (375 mls) | 1 stubby (375 mls)

Name _____

Age _____ Sex Male ☐ Female ☐

1. How often do you have a drink containing alcohol?
Never ○ Monthly or less ○ 2-4 times a month ○ 2 to 3 times a week ○ 4 times a week or more ○

2. How many standard drinks do you have on a day when you are drinking?
1 or 2 ○ 3 or 4 ○ 5 or 6 ○ 7-9 ○ 10 or more ○

3. How often do you have 6 or more standard drinks on one occasion?
Never ○ Less than monthly ○ Monthly ○ Weekly ○ Daily or almost daily ○

4. How often during the last year have you found that you were not able to stop drinking once you had started?
Never ○ Less than monthly ○ Monthly ○ Weekly ○ Daily or almost daily ○

5. How often during the last year have you failed to do what was normally expected of you because of your drinking?
Never ○ Less than monthly ○ Monthly ○ Weekly ○ Daily or almost daily ○

6. How often during the last year have you needed a drink in the morning to get you going after a heavy drinking session?
Never ○ Less than monthly ○ Monthly ○ Weekly ○ Daily or almost daily ○

7. How often during the last year have you had a feeling of guilt or regret after drinking?
Never ○ Less than monthly ○ Monthly ○ Weekly ○ Daily or almost daily ○

8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
Never ○ Less than monthly ○ Monthly ○ Weekly ○ Daily or almost daily ○

9. Have you or someone else been injured as a result of your drinking?
No ○ Yes, but not in the last year ○ Yes, during the last year ○

10. Has a friend, relative, doctor or other health worker been concerned about your drinking or suggested you cut down?
No ○ Yes, but not in the last year ○ Yes, during the last year ○

RESET FORM

Office use only
Advised ☐ Booklet ☐

drink less

Scoring Template

0-7 = LOW RISK

- Review any responses of concern e.g. episodic heavy drinking

Phone the NSW Drug & Alcohol Specialist Advisory Service (DASAS) on **(02) 9361 8006** or **1800 023 687** to refer your patient to an appropriate agency if you would like support.

8-12 = AT RISK DRINKER

Your patient is drinking too much or has had problems e.g. binge drinking (check Item 3)

- Review any responses of concern
- Using the Handycard provide brief intervention:
  - **F**eedback
  - **L**isten
  - **A**dvise your patient to cut down on drinking
  - **G**oals
  - **S**trategies
- Hand out booklet

13+ = HIGH RISK of dependence

Your patient is likely to be physically dependent on alcohol

- Review any responses of concern
- Assess dependence & withdrawal symptoms
- Physical exam & blood tests
- Feedback and Listen
- Advise: Goal of abstinence for one month or permanently
- Strategies

  Management of withdrawals may be required

  Pharmacotherapy for relapse prevention
- Hand out booklet
- Arrange followup

drink less

Scoring Template

0-7 = LOW RISK	8-12 = AT RISK DRINKER	13+ = HIGH RISK of dependence
	Your patient is drinking too much or has had problems e.g. binge drinking (check Item 3)	Your patient is likely to be physically dependent on alcohol
• Review any responses of concern e.g. episodic heavy drinking	• Review any responses of concern • Using the Handycard provide brief intervention: • **F**eedback • **L**isten • **A**dvise your patient to cut down on drinking • **G**oals • **S**trategies • Hand out booklet	• Review any responses of concern • Assess dependence & withdrawal symptoms • Physical exam & blood tests • Feedback and Listen • Advise: Goal of abstinence for one month or permanently • Strategies Management of withdrawals may be required Pharmacotherapy for relapse prevention • Hand out booklet • Arrange followup

Phone the NSW Drug & Alcohol Specialist Advisory Service (DASAS) on (02) 9361 8006 or 1800 023 687 to refer your patient to an appropriate agency if you would like support.

0	1	2	3	4
0	1	2	3	4
0	1	2	3	4
0	1	2	3	4
0	1	2	3	4
0	1	2	3	4
0	1	2	3	4
0	1	2	3	4
0		2		4
0		2		4

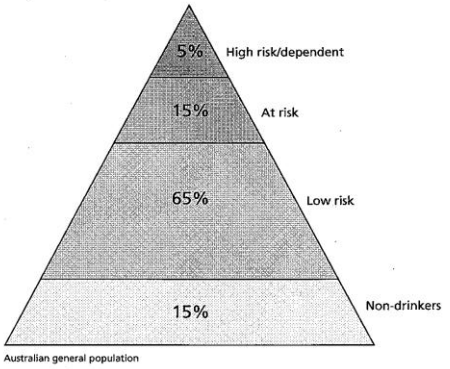
Handycard

drink less

1 Feedback – Are **YOU** at risk from drinking alcohol?

Score	Common Effects	
0-7 low risk	• Increased relaxation • Reduced risk of heart disease • In some situations even moderate drinking can pose a risk (e.g. driving, pregnancy, some medical conditions) • Even occasional heavy drinking can put you at risk of injury	
8-12 at risk	• Less energy • Insomnia • Poor co-ordination • Less ability to think clearly • High blood pressure	• Depression/stress • Impotence • Risk of injury • Danger in driving & operating machinery
13+ High risk of dependence	• The above risks plus: • Damage to liver, brain, memory • Physical dependence (addiction)	

What is everyone else like?



2 Have **YOU** thought about changing your drinking?

3 What benefits will you get from cutting down?

- sleep better
- more energy
- lose weight
- no hangovers
- better memory
- better physical shape
- improved mood
- less family hassles
- more money

Reduced risk of

- high blood pressure
- liver damage
- brain damage
- cancer
- drink driving
- injury (to you and others)

4 Goals

Who	How many drinks per day?	Alcohol-free days
• Men	• No more than 4 standard drinks	• 2 per week
• Women	• No more than 2 standard drinks	• 2 per week
• Pregnant women	• No more than 1 standard drink 2 days per week	• 4 to 5 per week (avoid alcohol on most days)
• Special conditions e.g. driving, some medical conditions or medications	• Lower limits will apply	
• Everyone with physical damage from alcohol or dependence	• No drinks are safe	• Every day

• 7+ drinks (for men) or 5+ (for women) on any one occasion puts you at risk of harm

1 standard drink =

OR

middy of beer (285mls)

OR

small glass of wine (100 mls)

nip of spirits (30 mls)

5 Strategies

How do I cut down?

- Drink only with food
- Have a glass of water to quench thirst and between drinks
- Switch from schooners to middies
- Switch to low-alcohol beer
- Avoid going to the pub after work
- Avoid or limit time spent with 'heavy drinking' friends
- If under pressure to drink, say "my doctor has told me to cut down"

Alternatives

- Plan other activities or tasks at a time when you usually have a drink
- When stressed, take a walk or exercise instead of drinking
- Explore new interests

Tips for keeping on track

Questions to ask yourself

- What are the most difficult times?
  Plan to avoid these situations or plan activities to help you cope.
- How am I doing?
  Occasionally, try writing down how much you have to drink over a week.
- Am I losing motivation?
  Remind yourself of your reasons for cutting down.
- Do I need more help?
  Don't feel embarrassed to come back for help. Specialist services are also available.

Appendix XI: Alcohol training session 1 [176]

Slide 1

Alcohol use disorders
assessment and management

Dr Gilbert Whitton
MBBS BComm FAChAM
Staff Specialist, Drug Health
Sydney South West Area Health
& Justice Health

Slide 2

The Drink-less project team 2004-05

- A/Prof Kate Conigrave
- A/Prof Paul Haber
- Dr Elizabeth Proude
- Prof John Saunders
- Dr Hester Wilce

- Collaboration between the University of Sydney, Central Sydney Area Health Service and University of Queensland

- Funded by the Roads and Traffic Authority, NSW

Slide 3

Overview

- Assessment of drinking
  - History
  - Examination
  - Blood tests
- Management
  - Hazardous and harmful drinkers
  - Dependent drinkers

Slide 4

Alcohol

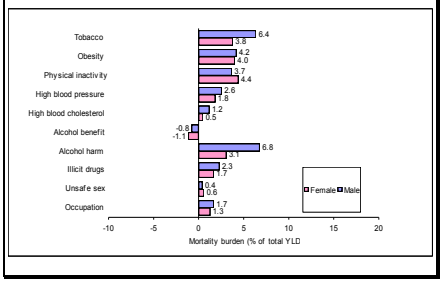
the fourth leading cause of "years lived with disability" in the world in 1990

WHO, Global burden of disease

Also: 3rd most important risk factor (behind malnutrition, poor water supply/sanitation/hygiene, and equal with unsafe sex; ahead of tobacco): 1990 figures, WHO global status report on alcohol, 1999

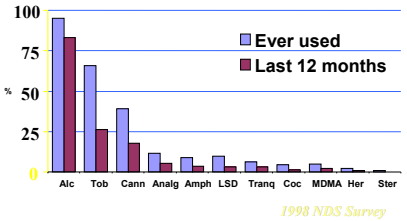
Slide 5

How it compares with other risks

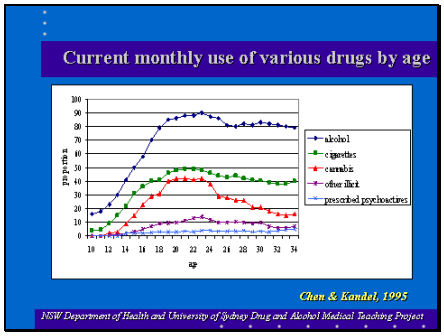


Slide 6

Prevalence of drug use in Australia



Slide 7



Slide 8

Alcohol in Young Offenders

(2003 NSW Young People in Custody Health Survey)

- 80% reported being drunk before the age of 16 years
- 21% males and 56% females drank at hazardous or harmful levels
- 46% males and 71% females had engaged in binge drinking on a weekly basis prior to custody
- 59% indicated that they had been under the influence of alcohol (38%) &/or drugs (47%) at the time of offending
- 62% reported committing crime to get drugs or alcohol

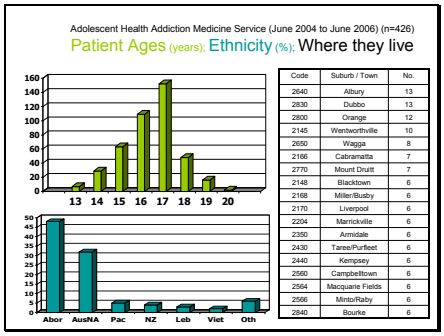
Slide 9

Justice Health Adolescent Health Addiction Medicine Service

- from June 2004 to June 2006:
  - 273 clinics
  - 735 patient consultations
  - 170 clinical calls
  - 426 patients on database
    - 359 males (84%)
    - 67 females

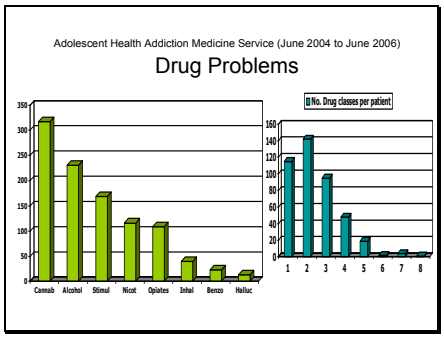
Centre / Programme	D&A Clinics
Cobham JJC - remand	**86**
Yasmar / Juniperina JJC - females	**48 / 36**
Youth D&A Court Program	**39**
Frank Baxter JJC (Central Coast)	**22**
Kariong CC– higher security	**12**
Orana JJC (Dubbo)	**11**
Reiby JJC (Campbelltown)	**6**
Riverina JJC (Wagga)	**5**
Keelong JJC (Wollongong)	**5**
Acmena JJC (Grafton)	**3**
Total	273

Slide 10



Code	Suburb / Town	No.
2640	Albury	13
2830	Dubbo	13
2800	Orange	12
2145	Wentworthville	10
2650	Wagga	8
2166	Cabramatta	7
2770	Mount Druitt	7
2148	Blacktown	6
2168	Miller/Busby	6
2170	Liverpool	6
2204	Marrickville	6
2350	Armidale	6
2430	Taree/Purfleet	6
2440	Kempsey	6
2560	Campbelltown	6
2564	Macquarie Fields	6
2566	Minto/Raby	6
2840	Bourke	6

Slide 11



Slide 12

Alcohol problems in the health care system

- Alcohol problems present in:
  - up to 40% of Emergency Department presentations, often complications of acute intoxication
  - 20-30% of ward patients
  - one in six GP patients
- Major cause of morbidity and of mortality
- Complicates other diagnoses

Slide 13

Assessment

Slide 14

Alcohol Consumption

- Every patient needs a *quantified* drinking history
- Episodic drinking is common

Slide 15

What is a standard drink?

Slide 16

Non-standard drinks

1.5 standard drinks =

Slide 17

What should people drink?

NHMRC 2002

- Women:
  - On average, no more than 2 drinks/day
    - No more than 4 per occasion
- Men
  - On average, no more than 4 drinks/day
    - No more than 6 per occasion
- Less in certain situations
- 2 alcohol free days per week

Slide 18

Some definitions

- Hazardous use: eg > NHMRC limits no problems yet
- Harmful use: already experiencing physical or psychological harm from drinking
- Dependence

[WHO]

Slide 19

Dependence

- Three or more criteria present:
  - Compulsion to drink
  - Loss of control
  - Alcohol takes priority over all other activities
  - Persistent drinking despite harm
  - Tolerance
  - Withdrawal symptoms

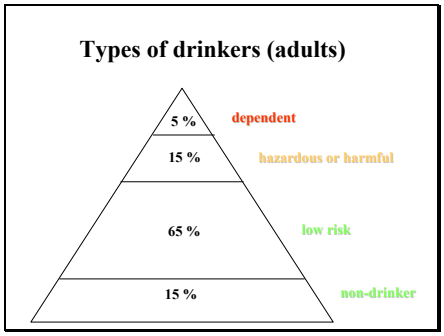
[WHO]

Slide 20

Why the definitions are important

- Dependent drinkers usually need to completely stop drinking, and *may* experience a withdrawal syndrome
- Non-dependent drinkers can usually cut down

Slide 21



[Teesson, ANZ J Pysch 2000 (nsmhwb); www.aic.gov.au 2000]

Men, higher rate of dependence than women 4% versus approx 2%

Teesson: 3% harmful
4% dependent

Rates for hazardous and harmful based on NDHS : those who drink at risk of acute harms monthly or more often.

Slide 22

Assessment of drinking (cont)

- Consumption level
- Presence of dependence
- Desire to change drinking, past attempts
- Complications/ comorbidity
  - Physical and psychiatric problems
    - e.g. hep C, obesity
  - Other substance use

Slide 23

Risk factors for alcohol use disorders

These indicate that drinking problems are not just a "moral weakness"

- Genetic
  - Polygenic
  - 4x risk of dependence if dependent father, even if reared apart
  - Males > females
- Environmental/social
  - Availability, occupation, peer/family behaviour
  - Psychological trauma (eg childhood abuse), unemployment
- Psychiatric illness

Slide 24

Early symptoms and signs

- Hypertension
- Insomnia
- Indigestion/diarrhoea
- Anxiety
- Depression
- Sick days

Slide 25

Physical examination

- Intoxication or withdrawal
- Tolerance: **mild observable impairment despite high consumption or BAC**
- Complications:
  - **Remember blood pressure**
- Intoxicated people can also be sick
  - **e.g. head injury**

Respiratory: most heavy drinkers are heavy smokers

Show scale
--objective, useful, Nonspecific
Guide to Rx

Slide 26

Blood tests for alcohol use

- For recent consumption
  - Blood alcohol
- For "chronic" consumption
  - GGT
  - AST, ALT
  - MCV

Slide 27

GGT

- The most sensitive blood test that is widely available
- BUT only positive in 30% heavy drinkers
  - Less likely to be elevated in young people, episodic drinkers, women
- Alcohol is commonest cause of elevation
  - Up to 50% GGT elevation is for other reasons inc obesity, medications
- Half life of abnormal levels is 2 weeks
- Prognostic value, tool in monitoring

Slide 28

Other conventional markers

- Aminotransferases
  AST:ALT >1.5 suggests alcohol
- MCV: slow return to normal
  - $t_{1/2}$ 60 days
  - Non-specific
    e.g. nutritional, drugs, liver disease
  - Increased even when folate/B12 normal

Slide 29

Assessment: putting it all together

- Is your patient drinking above recommended healthy levels?

  If so is he or she:
  - Dependent ?
  - Willing to attempt change ?
- If dependent:
  - Is a withdrawal syndrome likely?

Slide 30

Management

Slide 31

Overview of Management

- Screening
- Early intervention for hazardous or harmful drinking
- Treatment of dependence
  - Withdrawal management
  - Relapse Prevention
  - Monitoring
- Harm reduction

Slide 32

What is early &/or brief intervention?

- Proactive, often opportunistic identification
- Brief advice or counseling at point of detection
- Targets non dependent drinkers

Slide 33

Screening

- in primary care settings screening of all patients is recommended to identify hazardous drinkers.
- this may lead to early identification of problem drinkers
- the Alcohol Use Disorders Identification Test (AUDIT) - 10-item questionnaire developed by the World Health Organization

Slide 34

AUDIT C

- part of the 10-item AUDIT questionnaire developed by the World Health Organization
- trialled and validated as a three item questionnaire
- asks about the quantity and frequency of usual drinking, as well as the frequency of binge drinking.

Slide 35

AUDIT C

- 1. How often do you have a drink containing alcohol?
  - Never ☐ 0
  - Less than monthly ☐ 1
  - 2 to 4 times a month ☐ 2
  - 2 to 3 times a week ☐ 3
  - 4 or more times a week ☐ 4
- 2. How many standard drinks do you have on a typical day when you are drinking?
  - 1 or 2 ☐ 0
  - 3 or 4 ☐ 1
  - 5 or 6 ☐ 2
  - 7 to 9 ☐ 3
  - 10 or more ☐ 4
- 3. How often do you have 8 or more drinks on one occasion?
  - Never ☐ 0
  - less than monthly ☐ 1
  - Monthly ☐ 2
  - Weekly ☐ 3
  - Daily or almost daily ☐ 4

Slide 36

AUDIT C

- *Drink Risk: Sum score for Q1-3*
- *Women:*
  - *0-3 = low-risk drinking*
  - *4-5 = risk depends on other factors*
  - *>=6 = risky or high-risk drinking*
- *Men:*
  - *0-3 = low-risk drinking*
  - *4-6 = risk depends on other factors*
  - >=7 = risky or high-risk drinking

Slide 37

Aims of brief intervention

- If the drinker is not ready to change, aims to develop their motivation
- If the drinker is willing to change:
  - Enhances motivation
  - Advice on appropriate goals & strategies
  - Support

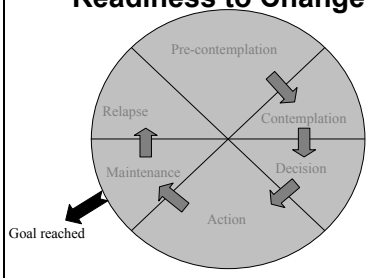
Slide 38

Components of brief intervention

- Feedback
- Listen
- Advice
- Goals
- Strategies

Slide 39

Readiness to Change



Based on Prochaska and Di Clemente, Psychotherapy --- Practice, 19:276, 1982

Slide 40

Interventions

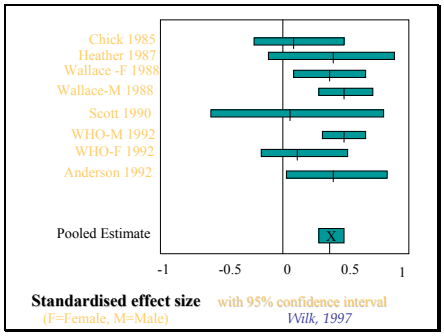
Pre-contemplation	Limited information Indicate willingness to help
Contemplation	Aid in decision making – benefits and disadvantages of change
Action	Discussing choices and methods Support and planning
Maintenance	Reinforcement and support, building on success and moving on

Slide 41

AUDIT C - suggested additional question

- Readiness to reduce alcohol intake (for at risk drinkers)
- Are you interested in reducing your alcohol intake?
  - **no (pre-contemplator)**
  - **yes, considering reducing (contemplator)**
  - **yes, attempting to reduce now (action)**

Slide 42



Typically a 30% reduction in mean daily drinking.
This does not mean that the drinker will necessarily return to within recommended limits, but as harm is proportional to level of drinking, this represents a very real gain.

Slide 43

Brief intervention

- If the drinker is not ready to change, aims to develop their motivation
- If the drinker is willing to change:
  - Enhances motivation
  - Advice on appropriate goals & strategies
  - Support

Slide 44

Alcohol withdrawal

- Withdrawal ranges from insomnia and morning tension, through to (far less commonly) delirium tremens

Slide 45

Progress of untreated withdrawal

[NSW Clinical Detox Guidelines, from Pead]

Seizure: peak risk at 24 hours
severe withdrawal (DT's (severe withdrawal): peak risk later (day 4), and longer duration withdrawal

Withdrawals finish within a week, longer duration suggests other diagnosis
Benzos should be finished within the week

Figure and further information available via NSW clinical detox guidelines (see reference list)

Slide 46

Planning for withdrawal

- Fear of withdrawal may prevent a person trying to stop drinking
- Predicted severity determines best location for undertaking withdrawal

Slide 47

Outpatient withdrawal management

- Diazepam regime e.g.:
  - Day 1 & 2: 10mg qid (+ 10mg prn x 2)
  - Day 3: 10mg qid
  - Day 4: 5mg bd
    ± 5mg nocte dose days 5 & 6

NSW Health Clinical Detox Guidelines

- can be modified according to response
- daily review ideal
  - Alcohol withdrawal scale score should stay below 5

regimes in NSW Health Clinical Detox guidelines

Slide 48

Withdrawal rating scale

- E.g. items scored 0-4
  - Perspiration
  - Tremor
  - Anxiety
  - Agitation
  - Hallucinations
  - Axillary temperature
  - Orientation

Slide 49

Example of Alcohol Withdrawal Chart

Slide 50

Note: withdrawal management

- Check diagnosis is correct
  - DDx hypoxia, infection
- Remember risks of diazepam
  - e.g. airways disease, elderly
  - Advice on driving
  - Daily dispensing of diazepam ideal
  - Diazepam finished within one week
- Thiamine 100mg daily

Slide 51

When withdrawal may need to be managed as an inpatient

- Severe withdrawal likely:
  - Past severe withdrawal or seizures
  - Severe, longstanding dependence
  - Sickness/medical and surgical events
  - Older age
- Unsuitable home environment:
  - e.g. surrounded by heavy drinkers, violence
- Chaotic, other substance use
- Daily review indicated but not possible

Slide 52

Relapse Prevention

- Medical role
  - Pharmacotherapy
  - Monitoring, feedback, support
  - Rapport/trust
  - Management of complications
- Mutual support groups, e.g. AA
- Counsellor

Slide 53

Alcohol and neuroadaptation

- Acute heavy drinking leads to sedation
- Chronic, regular drinking results in neuronal adaptation
  - Tolerance to acute effects of alcohol
    - (enhanced activity at NMDA receptor, inhibited activity at GABA A etc)
- Stopping drinking leads to excitatory state
  - Acute withdrawal
  - +/- mild residual insomnia/tension for 3-12 months

Slide 54

Other acute effects of alcohol

- Other acute effects of alcohol on:
  - μ opiate receptors
  - Other neurotransmitters:
    - E.g. serotonin, vasopressin, dopamine

Slide 55

Relapse prevention medications

- Aim to reduce craving
- and to :
  - address the neurobiological imbalance which occurs when alcohol is removed (acamprosate)

    or
  - reduce the reward of alcohol (naltrexone)

Slide 56

Pharmacotherapy for relapse prevention:

- Acamprosate &/or
- Naltrexone

- Can try one or both

Slide 57

Acamprosate *(Campral)*

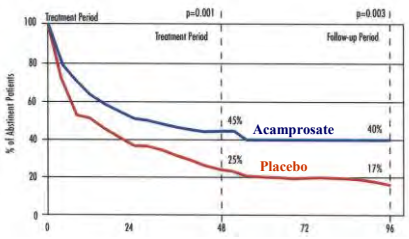
- 333 mg ii tds (reduced if < 60kg)
- Reduces NMDA activity
  - reduces craving & chronic withdrawal symptoms
  - 12 months treatment
- Start after withdrawal complete
- SE: Usually few (diarrhoea, pruritus, rash)
- CI: renal failure, decompensated cirrhosis
- Authority: "part of comprehensive treatment"

Excreted unchanged, so not clear why containdicated in liver failure

Started after withdrawal so that symptoms of withdrawal can be readily distinguished from medication side effects

Slide 58

Acamprosate & abstinence



Sass et al, Arch Gen Psych, 1996

Slide 59

Naltrexone *(Revia)*

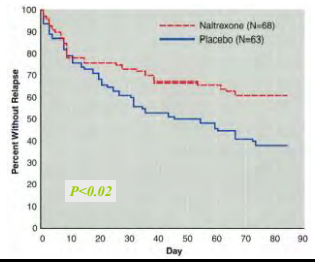
- 50mg mane
- μ opiate antagonist
  - reduces craving and reward of drinking
  - ?role in episodic heavy drinkers
- SE: Nausea common, can start with half dose
- CI: liver failure
- Precautions: warn re opiate blocking effects, severe depression, monitor LFTs
- Authority: "part of comprehensive treatment"

Hepatic metabolism :hepatic impairment may lead to accumulation

Occasionally increased leads to ALT at normal doses

Slide 60

Naltrexone & relapse



Anton, 1999

Slide 61

Others

- Disulfiram "Antabuse"
  - Severe aversive reaction after any alcohol
    - flushing, palpitations, hypotension, vomiting, headache
  - Risky if older patient, cardiovascular disease
- Antidepressants:
  - Helpful for comorbidity but doesn't help maintain abstinence per se
  - Severe depression may need SSRI
    - e.g. citalopram, sertraline
  - Depression often resolves with abstinence
  - Avoid antidepressants with greater SE of anxiety

Slide 62

Harm Reduction

- If a heavy drinker can't or doesn't want to change drinking
- Thiamine 100mg daily oral
- Consider duty of care issues
  - Driving e.g. if cognitive impairment, intoxication with no interlock
  - Occupation (e.g. train driver)
  - Child protection
  - Physical safety while intoxicated

In the alcohol interlock program, don't have to worry about drink driving risk, as the interlock will prevent this

Slide 63

Summary

- Outcome improves with treatment
- Early pro-active detection and intervention best
- Outpatient management of withdrawal is more convenient for many patients
- Pharmacotherapies can prolong remissions

Slide 64

Case studies

Slide 65

Case 1: Robert

- 32 year old director of sales company
- Comes for cholesterol check as positive family history
- Shares a bottle of wine with a customer over lunch and has 2 stubbies of beer when he gets home at the end of the day
- No trouble avoiding drinking if he has to
- Normal LFTs; fasting cholesterol 5.4

Can use drinkless handycard as example of the issues the doctor can raise when discussing potential benefits of reducing

Slide 66

- How many standard drinks?
- Is any action needed?

Slide 67

Brief intervention

- Feedback
- Listen
- Advice
- Goals
- Strategies

Slide 68

Case 2: Sally

- 36 year old author who also works part time as a proof reader
- Married with 3 children aged 10, 8, 6
- Complains of feeling down and poor sleep past 3 months
- Appetite mildly reduced, still enjoys some daily activities
- Occasional suicidal ideation, nil plans
- No past hospitalisations, OC pill only

Slide 69

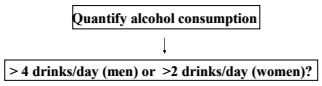
Sally (cont.)

- Drinks 2 bottles of wine per day
- First drink 12md with lunch, then tends to sip while she works, then full glasses with lunch and dinner
- Feels she is not performing as a mother or in her work as well as she could
- Has tried to cut down a couple of times

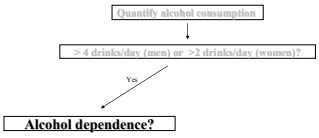
Slide 70

What do you need to know to decide on a treatment plan?

Slide 71



Slide 72



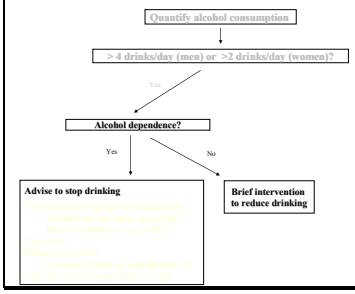
Slide 73

Dependence

- Three or more criteria present:
  - Compulsion to drink
  - Loss of control
  - Tolerance
  - Alcohol takes priority over all other activities
  - Withdrawal symptoms
  - Persistent drinking despite harm

[WHO]

Slide 74



Slide 75

What happens each morning..?

- Sally tends to wake feeling "uptight" (she puts this down to poor sleep). She tries hard not to snap at the kids.
- She feels better in the afternoon
- Never any tremor or seizures when stops drinking, but longest abstinence 3 weeks
- Drinking pattern same for last 3 years; in her 20's weekend drinking only, this became more regular then increased

Slide 76

Will Sally need withdrawal management?

Slide 77

Physical examination

- 11am. Last drink 10pm last night
- BP 125/95; Pulse 92, temp 37.5^{o}
- Slightly anxious, slightly damp palms

Slide 78

Withdrawal rating scale

- E.g. items scored 0-4
  - Perspiration
  - Tremor
  - Anxiety
  - Agitation
  - Hallucinations
  - Axillary temperature
  - Orientation

Slide 79

Outpatient withdrawal management

- Diazepam regime e.g.:
  - Day 1 & 2: 10mg qid (+ 10mg prn x 2)
  - Day 3: 10mg qid
  - Day 4: 5mg bd
    ± 5mg nocte dose days 5 & 6

NSW Health Clinical Detox Guidelines

  - daily review ideal, modify according to response
    - Alcohol withdrawal scale score should stay below 5
- Thiamine 100mg daily oral

Slide 80

Sally: 1 week follow-up

- Last drink 1 week ago
- Finished diazepam
- Still poor sleep
- Feels tense, and still feels down (no suicidal plans)
- Requests another script of diazepam for sleep and anxiety as it helped
- Bloods normal: GGT 35, AST 30, ALT 25, Alb, FBC & Coags normal

Slide 81

Depression in setting of alcohol dependence

- Wherever possible defer antidepressants for 3 weeks
- Education, encouragement
- IF anti-depressant essential:
  - Citalopram 10mg or sertraline low dose
  - Warn re 1st week side effects, esp anxiety

Slide 82

Residual sleep disorders

- Tend to improve with time, esp over the first 3 months
- Behavioural treatments
- Avoid benzos

Slide 83

Does Sally need relapse prevention?

- Discuss alternatives
  - Medications:
    - Acamprosate
    - Naltrexone
    - Disulfiram
  - Non pharmacological measures: inc AA, structured psychotherapy
  - Monitoring and support

Slide 84

Sally: 12 months on

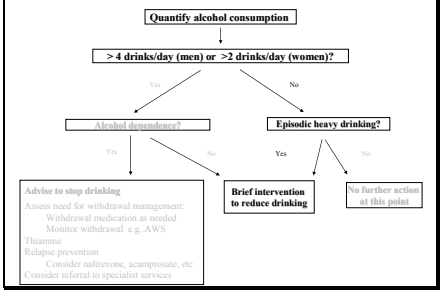
- Sally has 11 months abstinence; has continued to take acamprosate; unsure if it has helped
- She has recently recommenced drinking. Initially just a glass of wine with dinner (1 week); then increased to 6 standard drinks per day for the last 3 weeks
- LFT's, MCV normal

Slide 85

Managing the relapse

- Supporting Sally as she copes with “failure”; encouraging her to have another try
- Withdrawal management again
- Discuss pharmacological and other strategies
- How long to use pharmacotherapies for alcohol dependence?
- When to use counselling, advise AA, when to refer?

Slide 86



Slide 87

Case: Alexander

- 57 year old male, self employed
- 10 glasses of wine per day
- Longest abstinence 2 months
- Feels he uses the alcohol to control his blood pressure
- Doesn’t want to stop, as likes the effect of alcohol

Slide 88

Further information

- Drink-less materials can be freely downloaded from:
  http://www.cs.nsw.gov.au/drugahol/drinkless
- NSW Health clinical detoxification guidelines
  http://www.health.nsw.gov.au/public-health/dpb/publications/pdf/detoxification_clinicalpractice_guidelines.pdf
- Specialist Advisory Service:
  1800 023 687 or 9361 8006
- Brief intervention: the Drink-less package:
  Email: katec@med.usyd.edu.au ; Ph: 02 9515 8650
- Management of alcohol and drug problems:
  Hulse et al. , Oxford uni.press, 2002
- The RTA Alcohol Interlock Program:
  www.rta.nsw.gov.au/roadsafety/drinkdriving/alcoholinterlock.htm
  www.rta.nsw.gov.au/roadsafety/downloads/alcohol_interlock_information.pdf

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Email:

gilbert.whitton@sswahs.nsw.gov.au

Appendix XII: Alcohol training session 2 [176]

Slide 1

Brief intervention for alcohol problems

Slide 2

Brief intervention

- Why brief intervention?
- Does it work?
- Using the Drink-less kit

Slide 3

What is brief intervention?

Slide 4

Brief intervention

- Less than 20 minutes
- Structured advice or counseling
- Delivered at point of detection
- (Active detection)
- Used to *treat* non-dependent drinkers or to *engage* dependent drinkers

Slide 5

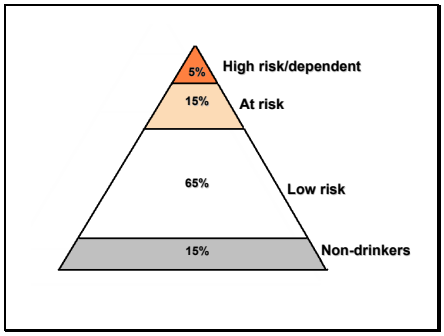
Components of brief intervention

- Feedback
- Listen
- Advice
- Goals
- Strategies

Slide 6

Why brief intervention?

Slide 7



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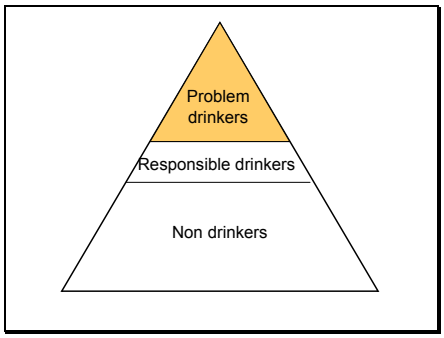

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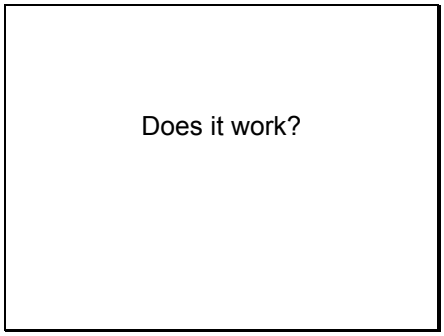

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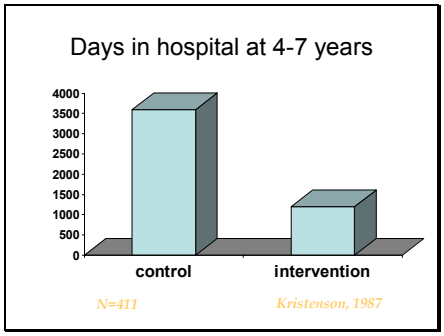

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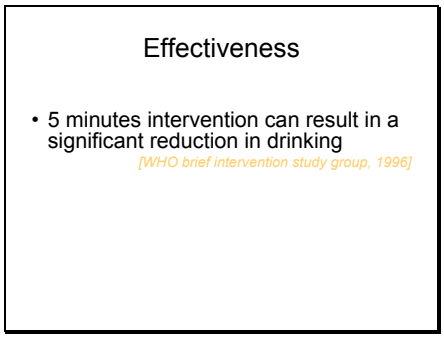

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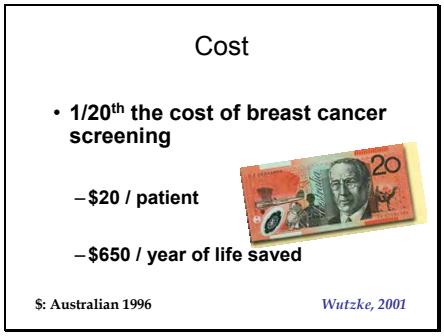
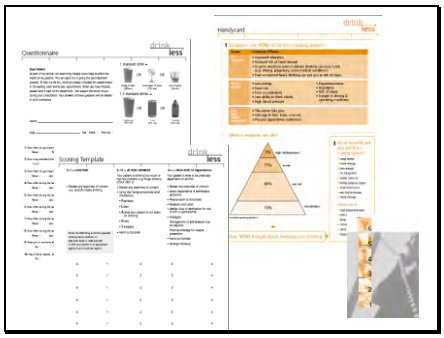


Slide 13

The drink-less package

University of Sydney

Slide 14



Slide 15

What is the Drink-less package?

- Based on World Health Organization validated techniques [WHO, Am J Pub Hlth, 1996]
- Screening questionnaire - WHO AUDIT [Saunders, Addiction, 1993]
- Handycard for a 5-10 minute intervention
- Self help booklet based on the above
- In use 10 years, revised 2004

Slide 16

Demonstration of screening:

- Complete AUDIT now, using information from a remembered patient, friend or yourself!
- Score AUDIT using the template

Slide 17

Demonstration of handycard

- Brian is a 34 year old man who is in a rehab, trying to stop his cannabis use
- On intake assessment you note that he is also drinking 4 schooners of beer most days of the week
- He drinks with his cousins
- No physical withdrawal signs
- Not aware of any adverse effects of his drinking and not concerned about it

Slide 18

Slide 19

Non-standard drinks

Slide 20

Case Study: Mark

- 29 year old male
- In hospital after he broke his leg in football
- You note that his usual alcohol consumption is 9 cans of beer once a week when he goes out
- He considers himself fit and well

Slide 21

Issues: Mark

- What points of feedback & what benefits of change are likely to be of interest to a young, fit 29 year old man?

Slide 22

Discussion points: Mark

- Episodic heavy drinking common pattern among young people
- Discussion of acute risks of intoxication may be useful, & potential gains to fitness and finances in cutting down

Slide 23

Case 2: Jane

- 39 year old; not in paid employment
- 2 children aged 8 & 10 years
- 2 years ago reduced off serepax
- You note that she drinks a small cask (500mls) of wine daily
- Has tried to cut down without success:
  - Is driven back by the agitation, insomnia

Slide 24

What is her AUDIT score?

Slide 25

Do you think she's dependent on alcohol?

Slide 26

Jane (cont.)

- When admitted for hysterectomy 6 months ago, had tremor post operatively, and needed valium for sleep
- Doesn't like the way she is cranky with the kids, especially in the mornings
- Gets more cranky if she doesn't drink
- Partner at work during the day, and out most evenings with his friends

Slide 27

- Alcohol is the one thing she enjoys
- Feels unhappy, but not suicidal
- Eating OK but not sleeping very well

Slide 28

Dependence criteria

- Three or more criteria :
  - Compulsion to drink
  - Loss of control
  - Tolerance
  - Alcohol takes priority over all other activities
  - Withdrawal symptoms
  - Persistent drinking despite harm

[WHO – ICD-10]

Slide 29

Health education

- Her experience that alcohol leads to short term relief of bad feelings
  - She may be unaware of how much it is also making things worse
  - Esp worsening insomnia, depression and any anxiety
- She may be unaware the 5 drinks a day can do a lot of harm to a woman

Slide 30

As Jane is dependent on alcohol, she will need more than 5 minutes

Either rebook or refer if no time now

Slide 31

If you have more time, to enter into brief counselling

What issues might you tackle, to help Jane to tackle alcohol

Slide 32

Jane enjoys alcohol

And not much else

Slide 33

Motivational interviewing

- Helping Jane weigh up the good and the bad, and decide what she wants to do

What I like about drinking	What I don't like about drinking

Slide 34

Cognitive behavioural therapy

- Helping identify and reshape her thinking that leads to drinking
- E.g.
  - Her reasons for drinking
  - Other ways of dealing with boredom or loneliness, or low self esteem
  - Looking at what parts of her life she can control, and what she can't

Slide 35

Jane: Issues (1)

- Children in her care
- Where is the best place for any withdrawal to be managed?
- What relapse prevention will be best
  - E.g. support groups, counselling, pharmacotherapies

Slide 36

Jane (issues 2)

- What should be done for Jane's depressed mood?

Slide 37

- Depression improves when drinking stops
- If depression is severe, it may need treatment in the meantime

Slide 38

Summary

- Opportunistic and brief intervention has been shown to be effective in reducing consumption in non dependent drinkers
- It can be also be used to help engage dependent drinkers for more comprehensive treatment

Slide 39

Case based learning: Case 1: harmful drinker
Graduate Diploma of Indigenous Health (SU)
Pilot Draft: April 2, 2007

Case summary: *John is a 32 year old man who lives in Dubbo in central Western NSW. While drinking at the pub after work, he was attacked by another man. In the ensuing fight he put his hand through the glass window. He came to the hospital with multiple cuts to the face and right hand that will require plastic surgery.*

The case provides the focus for study of:

- *The range of alcohol problems from hazardous & harmful drinking through to alcohol dependence.*
- *The acute harms of alcohol on the individual and in the community*
- *assessment of alcohol problems, including assessing presence of dependence*
- *brief intervention skills*
- *Community responses to reduce the acute harms from alcohol*

THE CASE OF JOHN

Trigger 1:
John, is a 32 year old man from Dubbo, in Central Western NSW. While drinking at the pub after work, he was attacked by a man. In the ensuing fight he put his hand through a glass window. He came to the hospital by ambulance with multiple cuts to the face and right hand that will require plastic surgery

John has the surgery, and 2 days after leaving hospital he presents with a wound infection at the AMS. When you talk with John, you learn that he had been drinking at the pub with his friends after work. He'd had "a few beers" but was not drunk. Another man had come up to John and made a racist comment. John responded by swearing at him. The stranger then punched John. In the fight that followed, John put his hand through the glass window of the pub.

Break out to 3 groups, facilitated by Anton, Anthony and Kate

Discussion point 1:
1. What was the role of alcohol in this injury?

Likely response:
John may have been better able to ignore the remark and avoid the argument, if he had not been mildly intoxicated

2. What would you like to know about John's drinking?

Likely response:

- *The actual number of drinks he had on that occasion*
- *His usual drinking pattern, most days, and on heavy drinking days*
- *Is he dependent on alcohol?*
- *Has he ever tried to change his drinking before, or had treatment for it?*

Trigger 2 *(read out to your group)*

You ask John more about his drinking.

John normally drinks at the pub on a Thursday afternoon after he finishes work for the council. It's payday and most people from the office go there to share a few drinks. He's not sure how much he drank the night of the fight - probably around 8 schooners.

He says he's never had an alcohol problem - he never gets drunk.

He has got into a couple of fights at the pub, but never been in trouble with the law. He doesn't ever hit his wife, but they argue more after he's "had a few". He's new to town 3 months ago and still doesn't know a lot of people in the community well.

He hasn't ever been caught drinking and driving, though if there's no mate around to give him a lift to the pub and home again, he'll sometimes drive.

On payday he'd usually have around 6-10 schooners. Most other days, he'd only have 4 or five cans at home.

He's fit and well. Before this accident he's never been to hospital. His doctor says his blood pressure is up a bit.

Discussion point 2:
1. How many standard drinks is John drinking?

2. What harms is John experiencing because of his drinking and what harms might he experience in the future?

Likely responses:
1. Current harms:
Fights at the pub
Arguments with wife
Cost of beer, time away from home
High blood pressure is often associated with heavy drinking

2. Potential harms:
Drink driving: being caught, getting hurt or hurting someone
?any children at home: risk of neglect or harm?

Discussion point 3:
Many people believe that if they don't get drunk they don't have an alcohol problem. What do you think?

Likely responses

- *When you drink regularly you become tolerant to the effects of alcohol. So the same amount of alcohol affects you less.*
- *Tolerance to the effects of alcohol (e.g. to 8 schooners) is a sign of John's regular drinking. If he'd drunk that amount as a teenager on the first time he ever drank alcohol, it would have knocked him out.*
- *your own judgement of how intoxicated you are is impaired when you've been drinking.*

Discussion point 4:

- Why do you get tolerant to alcohol?
- Have you come across young people who, the first time they drink, can "put away" more alcohol than others? Are they more or less likely to develop an alcohol problem?

Likely responses:
You adapt to alcohol (probe, how this occurs)
Natural tolerance to alcohol (to be followed up with lecture on the genetics and neurobiology of drinking)

Discussion point 5:

- Does the high blood pressure matter?
- What should be done about it?

Likely responses:
High blood pressure is a risk factor for stroke or heart disease
If john smokes, he's already more at risk of heart disease

He should have it checked by a doctor, and may need medications to lower the blood pressure.
If he cuts down on alcohol then his blood pressure may improve (he may or may not still need medication; he still needs to get it checked by his GP)

Discussion point 6:

- What is a safe level for John to drink?
- How were these recommended limits worked out?

Likely responses:
NHMRC guidelines:

- *Regular drinking: maximum of 4 standard drinks, and 2-3 days with no alcohol*
- *On any one occasions, no more than 6 standard drinks (to avoid risk of injury etc)*
- *No drinking while driving*

Resources: *Indigenous alcohol guidelines*
NHMRC safe drinking guidelines

Discussion point 7:
How are you going to discuss John's drinking with him?

Likely response:
Non judgemental
Feedback evidence of harm
Discuss possible further risks
Respect his own right and responsibility to choose

Discuss benefits from cutting down: more money, less fights or arguments, less likely to lose licence
Advise
Discuss/negotiate goals

Discussion point 8:
How might John's situation be improved?

U*se the problem solving framework of looking separately at each of:*

- Physical harms/risks
- psychological harms/risks
- social harms/risks

Discussion point 9:
What are some ways in which John might be able to limit his drinking, if all his friends are drinking?

Likely responses
Start with a non-alcoholic drink
?less time at the pub
?say "I'm getting fit for the footy season"
Bring less money along

Appendix XIII: Nutrition training session

Slide 1

Slide 2

Slide 3

Slide 4

Brief Intervention Model - 5As

Ask
Assess
Advice
Assist
Arrange

Slide 5

Nutritional Balance

Nutrition through lifespan

Disease Specific

Nutrition is Complex

Quality

Quantity

Slide 6

Nutritional Assessment

- Nutritional assessment is complex!
- Lack of simple tools for nutritional assessment suitable for primary care
- What can we ask about that would screen for key nutritional issues?

Slide 7

ASK – What and Why?

- Weight Status
- Recent weight gain
- Fruit & vegetable intake
- Hydration
- Malnutrition screening
- Other factors influencing nutrition intake

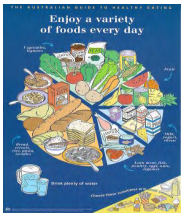
Slide 8

Overview

- Healthy Eating & Weight management
- Fruit & vegetable intake
- Hydration
- At risk of malnutrition and poor appetite

Slide 9

Healthy Eating & Weight Management



Slide 10

Assess – Healthy eating & weight management

Weight Status
- Weight, height, BMI
- Waist circumference

High risk:
- BMI > 25
- WC > 80 cm women, > 94 cm in men

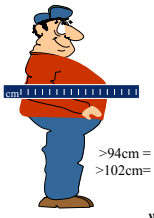
Recent weight gain
- Have you gained 4 or more kg (1/2 stone) without trying to in the last 12 months?
- Those with rapid recent weight gain most likely to benefit from intervention.

Slide 11

Waist Circumference – Adults

Women

>80 cm =Increased risk
>88cm = substantial risk



Over half of all Australians are abdominally overweight

Men

>94cm = increased risk
>102cm= increased risk

WHO 2000

Slide 12

WHO classification of obesity - Adults

Classification	BMI	Risk of Co-morbidity
Underweight	<18.5	Low, other clinical problems
Normal Range	18.5-24.9	Average
Overweight	25-29.9	Increased
Obese class I	30-34.9	Moderate
Obese class II	35-39.9	Severe
Obese class III	>40	Very Severe

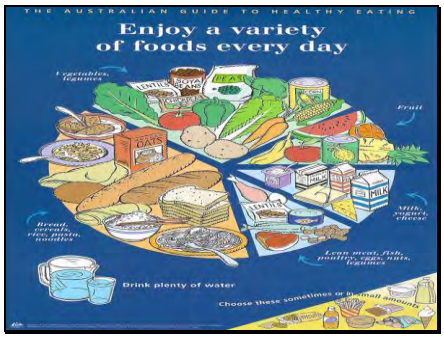
WHO, 2000

Slide 13

Quick Quiz

How much do you know about healthy eating & weight management?

Slide 14



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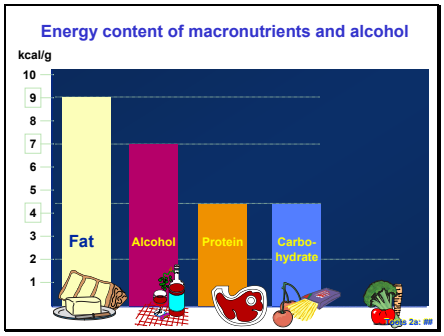

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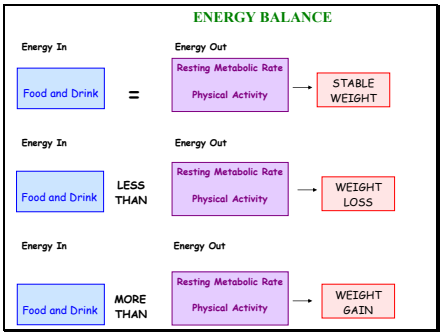

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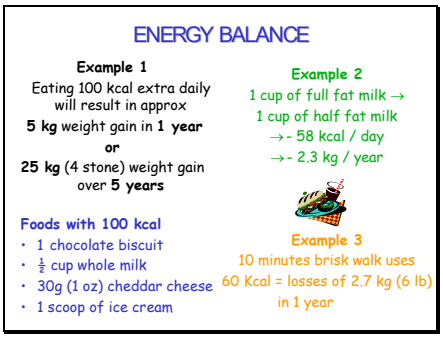

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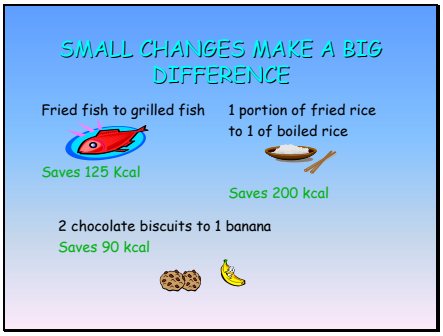

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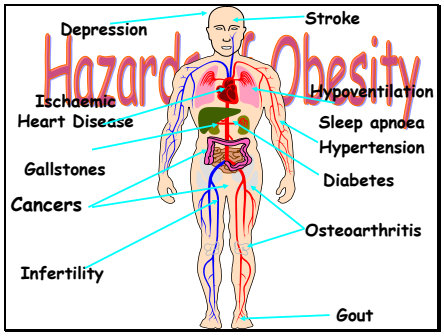

Slide 20

Benefits of 10% Weight Loss

↓ 10 mmHg systolic BP
↓ 20 mmHg diastolic BP

↓ 50% in fasting blood glucose in newly diagnosed DM

↓ 10% total cholesterol
- ↓ 15% LDL cholesterol
- ↓ 30% triglycerides
- ↑ 8% HDL cholesterol

↓ >20% total mortality
- ↓ >30% diabetes-related deaths
- ↓ >40% obesity related cancer deaths

Slide 21

Practical Strategies

- Eat smaller servings (use smaller plate) but eat regularly
- Distinguish between occasional versus everyday foods
- Occasional foods
  - high fat snacks (cakes, biscuits, chips, nuts, chocolate)
  - Takeaway foods
- Use low fat dairy products and lean meats
- Drink water instead of soft drink, juice, cordial

Slide 22

Practical Strategies

- Aim for 2 serves fruit & 5 serves vegetables
- Limit your alcohol intake
- Increase physical activity, starting with as little as 5-10 minutes a day
- Limit time snacking while watching TV
- Listen to your appetite, be aware of comfort eating
- Small achievable goals, avoid black and white thinking.

Slide 23

Fruit & Vegetables

Slide 24

Assess Fruit & Vegetable Intake

- How many serves of fruits do you usually eat each day?
- How many serves of vegetables do you usually eat each day?

Slide 25

What's a Serve?

Fruit

- 1 medium size piece of fruit
- 2-3 small pieces of fruit (apricot, plums)
- 1/2 cup fruit juice
- (125 ml)
- 1 cup canned fruit

Vegetables

- 1/2 cup cooked vegetables (75g)
- 1 medium potato
- 1 cup salad vegetables
- Rice and pasta do not count

Go for 2&5

Slide 26

Fruit & Vegetable Intake Practical Strategies

Go for 2&5

- Aim for ½ plate vegetables with main meal
- Add extra vegies to stews, casseroles, stir fry and pasta dishes
- Add fruit to breakfast cereal, yoghurt
- Eat vegetables at breakfast (baked beans, tomatoes, mushrooms on toast)
- Fruit as a snack (try smoothies, dried fruit)
- Frozen or canned a good substitute for fresh

Slide 27

Why 2&5 | Tips to get 2&5 | Easy 2&5 Recipes | Cookbook | The Go for 2&5 Campaign | News | Links

Welcome to the 'Go for 2&5' website

Eating plenty of fruit and vegies not only contributes to good health, but also protects against a number of diseases and helps maintain a healthy weight.

Most Australians eat only half the amount of fruit and vegies recommended for good health. Adults need to eat at least 2 serves of fruit and 5 serves of vegies each day. The amount children need depends on their age.

Here you can find out about the benefits of fruit and vegies, nifty ways to get more fruit and vegies into your day, plus some super simple tasty recipes. If you'd like more information, please email us.

2&5 Tip #11 Fruit tempters

Always have a bowl of colourful fresh fruit within handy reach.

Slide 28

Slide 29

Assessing Hydration

- 'Do you regularly drink at least 8 cups of fluid every day?'

If NO, ask

- 'Have you recently decreased your fluid intake?'
- If fluid intake is low or recently decreased, may be at risk of dehydration

Slide 30

Assessing Hydration

- Does tea/ coffee count as fluids?
- Yes, fluid is any type of beverage

BUT

Caffeine containing fluids have diuretic Effect, Water is the preferred fluid

Slide 31

Dehydration Risk

- Older people, especially those dependent or semi-dependent
- Febrile illness, vomiting, diarrhoea

Consider other factors:

- environmental temperature
- medication effects
- Any fluid restrictions for existing conditions (eg renal disease, heart failure)

Slide 32

Hydration – Practical Strategies

Aim for

- 1 glass of fluid with each meal
- 1-2 glasses between meals
- Encourage fluid intake with medications
- Increase fluid intake on warm days and with physical activity

Slide 33

Malnutrition Screening

Who?

- Individuals over 65 years
- Those with recent illness, discharge from hospital
- Chronic illness (eg cancer, renal disease)
- Conditions affecting swallowing, appetite

Slide 34

Malnutrition Screening Questions

Malnutrition Screening Tool (3 Qs):

1) Have you lost weight recently without trying?
Note: 'recently' means last 6 months. If unsure, ask if clothes are looser etc.

If 'yes', complete next items.
No = 0
Unsure = 2

2) If yes, how much weight have you lost? (in kilograms)

1-5kg = 1
6-10kg = 2
11-15kg = 3
> 15kg = 4
Unsure = 2

Slide 35

Malnutrition Screening Questions

3) Have you been eating poorly because of decreased appetite?

Note: decreased appetite means eating less than ¾ of usual food intake. "eating poorly' may be due to problems with swallowing and chewing. If so, score yes.

Yes = 1
No = 0

Total score of 2 or more indicates client at risk of malnutrition

Slide 36

Management of Clients "At risk" of malnutrition

If weight loss unintentional and unexplained – refer to GP for further investigation

If reason for weight loss known

- Case discussion/referral to dietitian
- Strategies to boost intake / food fortification

Slide 37

Practical Strategies

- Eating small frequent meals
- Make every mouthful count
  - milk, fruit juice instead of tea, coffee
  - cheese biscuits instead of plain biscuit
- Include protein food with each meal
- Have ready to eat high energy snacks handy
- Enrich the foods you eat

Slide 38

Written Information

Healthy Eating & Weight Management

- Lifestyle action plan for Nutrition
- Nutrition Good tucker – ATSI
- Heart Foundation – healthy eating & activity guide

Fruit & Vegetables

- "It's easy to find a way to get some extra fruit and vegies in your day"

Malnutrition risk, poor eating

Dietitians Association Australia

- Convenient Meal Suggestions'
- 'Handy Hints for Nourishing Meals, Enriching with protein & energy'

Slide 39

Arrange

Dietetic Referral

- Multiple dietary issues
- First line advice not effective
- Where available and appropriate

Self referral to:

- Heartline 1300 362787
- Commercial weight loss programs

Appendix XIV: Physical activity training session

Slide 1

PHYSICAL ACTIVITY
knowledge update

Andy Mark, NHF
Michelle Kershaw, SESIHP

Slide 2

Today's presentation

- PA recommendations & intensity
- Benefits of PA
- Steps of PA clinical guideline
- Local PA opportunities
- Heartmoves

Slide 3

PA Recommendations

- It is recommended that every adult should accumulate 30 minutes of moderate intensity activity on most days, preferably all days of the week.
- This can be accumulated with no less than 10 minutes at a time

(US Surgeon General & National Heart Foundation of Australia)

Slide 4

PA Intensity

- *Low:* No noticeable increase in breathing and heart rate with constant movement
  eg slow walking, stretching, bowls
- *Moderate:* Slight but noticeable increase in breathing and heart rate and may cause light sweating
  eg brisk walking, slow swimming.
- *Vigorous*: Hard breathing (puffing)
  eg singles tennis, faster swimming, jogging

Slide 5

Benefits of PA

- Physical benefits
  - decreases resting heart rate & blood pressure
  - improves exercise tolerance
  - improves respiratory fitness
  - improves muscle strength, flexibility and coordination…. improves mobility
  - decrease risk of falls
- Risk factor reduction
  - helps with management of blood pressure, weight, HDL, triglycerides and diabetes

Slide 6

Benefits of PA (cont'd)

- Psychological benefits
  - increases feeling of well-being
  - improves memory & concentration
  - decreases stress levels
  - social benefits
- Survival benefits
  - 25% reduction in mortality following comprehensive Cardiac Rehabilitation at 3 yrs
  - 15% reduction in mortality in exercise only program

Slide 7

SNAP PA Clinical Guideline

Steps involved:

1. Ask
2. Assess
3. Advise
4. Assist
5. Arrange

Slide 8

Step 1: ASK

- Does the client meet recommendations?
  - 30min on most days
- Determine current activity level?
  - Is the current level moderate?
  - How many days of the week?
- Any Physical impairments?
  - E.g. chronic conditions, prosthesis, etc..
  - Discuss alternative options.

Slide 9

Clients not recommended to exercise at any level

- Unstable angina
- Resting blood pressure >200mm Hg systolic or >110mm Hg diastolic
- Severe aortic stenosis
- Acute infection or fever
- Uncontrolled diabetes

Slide 10

Step 2: ASSESS

- How interested is the client in becoming more physically active?
  - From none to some PA
  - From low level to moderate level PA

Slide 11

Step 3: ADVISE

- Give feedback on current levels
- Discuss recommendations in relation to their current level of PA
  - Intensity level, frequency, type

Slide 12

Step 4: ASSIST

- Action to take – depends on clients stage of change…
  - Ready to be active – refer to options
  - Unsure – pros & cons, review readiness
  - Not ready – discuss benefits, review at later visit

** Barriers & Solutions activity

Slide 13

Step 5: ARRANGE

- Inform clients of PA options available, based on type of activity that would be suitable.
- Discuss contraindications to PA
- Is a GP referral / clearance needed?
- Ongoing follow up?

Slide 14

Local PA Opportunities

- Refer to resource pack
- Referral directory (paper version)

NB: Comprehensive Older People's PA Directory – will be available on intranet, early 2007. Being developed by SESI HPS.

Slide 15

Local PA Opportunities (cont'd)

- Walking – Just walk it, walking the dog, bush
- Dancing – ballroom, line dancing, folk
- Swimming - laps, swim club, aquaerobics
- Gentle exercise - Heartmoves, WWW, yoga
- Tai Chi
- Sports – Lifeball, bowls
- Informal PA - gardening, housework, lifestyle changes

Slide 16

HEARTMOVES

- Community based group exercise program.
  - Non medically supervised
  - Low – moderate intensity
  - Low cost
  - Accessible
  - Appropriate
  - Quality assurance model

Heart Foundation

Slide 17

HEARTMOVES & Risk Mgmt

- **Low to moderate intensity** (can talk or sing while exercising, clients taught to use intensity scale <5)
- **Seated version** of all exercises
- **Monitoring** of exercise intensity and client condition
- **Supervision** of movement, tailoring for limitations
- **Rest and water breaks** assist intensity regulation
- **Warm up and cool down** compulsory (10 min each)
- **Communication with GPs** (Feedback Forms; EPC)
- **Screening and medical clearance**
- **Flexible programming** - can include: aqua, floor, circuit, weights (resistance) seated, or elements of Tai Chi, yoga
- **Trained & Accredited fitness leaders**

Slide 18

WHAT IS THE EXERCISE INTENSITY?

Score	Intensity	Face
10	very very hard	
9		
8	very hard	
7		
6	hard	
5		
4	moderate	
3		
2	light	
1		
0	doing nothing	

EXERCISE HERE

Slide 19

Slide 20

Slide 21

Slide 22

Slide 23

Eligibility to participate in HEARTMOVES

Clients who are –

- 2 months following uncomplicated acute myocardial infarction
- if they have stable angina
- 2 months following coronary artery bypass surgery or heart valve surgery
- 2 weeks following coronary angioplasty or stenting
- with controlled diabetes, hypertension or high cholesterol, overweight

Slide 24

Clients recommended to commence with low intensity exercise

- Any of the former who were previously sedentary
- Clients with heart failure or cardiomyopathy
- Clients who are obese (BMI>30)

Slide 25

Clients not eligible..

- Recent complicated AMI
- Heart failure or cardiomyopathy with symptoms on mild exertion
- Any client with heart disease or risk factors for heart disease experiencing symptoms
- Resting heart rate >100bpm
- Orthopaedic problems that would prohibit exercise

Slide 26

Referring to HEARTMOVES

- Pre Exercise Assessment & Referral Form (PEARF)
  - Multiple copies – need to press hard
  - Client and/or GP clearance
  - Option for GP / referrer feedback

** Role Play activity using PEARFs

Slide 27

Contacts..

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