

DEMENTIA RISK REDUCTION COMMUNITY EDUCATION STRATEGIES SCOPING PROJECT

REPORT PREPARED BY

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FOR

ALZHEIMER'S AUSTRALIA VIC

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Alzheimer's
Australia Vic
Living with dementia

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Executive Summary

Background

In 2005, the Australian Government identified dementia as a 'national health priority'. There is an estimated 200,000 people diagnosed with dementia in Australia today, and by 2050 this number is projected to grow to 730,000. To address the impact of this burden of disease Alzheimer's Australia has established a risk reduction program. In the coming years, Alzheimer's Australia will be making significant decisions on the next stage of its dementia risk reduction program. It is important that these decisions are informed by research, as they will set the direction for a significant program rollout. The aim of this report was to identify and evaluate strategies that have the potential to reduce the risk of dementia in Australia. The objectives were to:

- Identify and document community education strategies used in the prevention of chronic conditions such as heart disease and diabetes, and to identify those approaches that have been proven or perceived to have high effectiveness
- Identify and document current dementia risk reduction community education strategies, resources (programs, media, educational materials etc) and organisational arrangements, particularly focusing on the United States and British experience
- document and recommend community education risk reduction strategies that have the highest utility for the Australian community and for Alzheimer's Australia in developing future programs

Methods

The research team comprehensively searched a series of electronic databases using a tailored search strategy. Two independent reviewers, using critiquing schedules appropriate to the level of evidence concerned, reviewed the retrieved articles. Consensus was reached on the allocated scores.

Search strategies were used with the following groups:

- Whole of population
- Lower socio-economic groups
- Culturally and linguistically diverse (CALD) communities, with a focus on the Greek, the Italian and either the Vietnamese or Chinese communities
- Family members/carers of people with the condition

Interventions directed solely at individuals e.g. patients, were excluded. The search strategies and assessment frameworks used are provided in Appendices 1-4.

Findings and Recommendations

Most of the evidence was obtained from research using comparative or case study designs, which do not have the same degree of scientific credibility as randomised controlled trials (RCTs). Randomised controlled trials are not always feasible in the community education domain. Where available, reference was made to systematic reviews of the relevant literature. The report summarises the prevailing messages across the evidence base, both the scientific and grey literature, and provides illustrative examples. The information sources accessed confirmed agreed common steps to be employed in implementing community education programs. Recommendations concerning the assessment, planning, implementation and evaluation of programs are given below. General principles for the conduct of the community education programs are supported by specific key considerations for Alzheimer's Australia.

Assessment: The need to involve the target group/community in the development of community education programs was emphasised throughout the scientific literature. This is particularly important given the cultural and linguistic diversity of Australian communities.

Recommendation: Needs assessments that reflect the complexity of behaviour change and consider both individual and community level approaches should be conducted so that appropriate change strategies can be used. (Section 6.3)

Recommendation: The existing **Mind your Mind** materials should be focus group tested with representatives from the target audience to assess their current applicability. (Section 6.1)

Recommendation: Culturally and linguistically diverse (CALD) groups should be involved in the development and pilot testing of materials for social marketing in their respective communities. (Section 8.2)

Recommendation: The current **Mind your Mind** materials should be focus group tested with representatives from CALD communities and modified where appropriate. (Section 6.1)

Planning: The key role of not only consumer, but also other stakeholder partnerships, was highlighted. Partnerships enable planning to be coordinated across a community. Human and economic resource contributions can add value to the efforts of any one agency's activities. It was demonstrated that expert stakeholders often went on to play a role in program delivery, either at the individual level, or via media advocacy.

Recommendation: The current **Mind your Mind** program should be discussed with other parties who are working to promote healthy lifestyle behaviour changes. There may be scope for joint marketing to occur. (Section 5.1)

Recommendation: Alzheimer's Australia should seek to work within the current Australian context of community engagement, adding value to their specific campaign goals by using existing supportive infrastructure and policies. (Section 5.2)

Recommendation: Alzheimer's Australia should seek to engage peak bodies, community groups and volunteer lay people in the development of community education strategies. (Section 5.2)

Implementation: The use of multi-faceted strategies to promote healthy lifestyle behaviour changes is endorsed by evidence from systematic reviews. There is supportive evidence for all social marketing and community based intervention approaches. Those employing behaviour change methods have been more successful. Campaigns must be of sufficient duration, reach and quality to compete successfully with other paid advertising and to produce maintained behaviour change.

In a systematic review of the evidence about the effects of mass media upon health service usage, all but one study concluded that mass media was effective (Grilli et al., 2002). However, mass media was used in conjunction with other strategies and so its independent impact could not be assessed. This is a prevailing limitation of the existing evidence base. It is generally not possible to compare the relative effectiveness of different strategies, as they tend to be evaluated collectively. Nevertheless, there is level III evidence that supports the use of a simple message in any campaign, one that can be used across the component strategies. Again, the target audience needs to be borne in mind: level III evidence from several interventions with CALD communities indicated a preference for visual rather than written messages. The Internet offers scope in this regard, but remains to be empirically tested.

Recommendation: Community-based interventions should target *specific* communities or settings. (Section 6.3)

Recommendation: All media campaigns need to provide repeated, sustained exposure to maximize their impact. (Section 6.3)

Recommendation: Media campaigns should be supported by legislation and policy change as appropriate. (Section 6.3)

Recommendation: As proposed by the previous reviewers (Grilli et al., 2002), further research should determine how best to develop media messages for differing sectors of the population and assess their targeted impact. (Section 6.3)

Recommendation: The Internet is a potentially useful means of providing information to consumers, but its use should be fully developed and resourced to adequately address people's information needs. (Section 6.1)

Recommendation: Media for non-English speaking groups should use culturally appropriate, everyday language. (Note that this can be problematic where there is a diverse range of colloquial dialects). (Section 8.2)

Recommendation: People from non-English speaking groups should be provided with literature in English and their own language so that they can learn English words for key terms. (Section 8.2)

Recommendation: Alzheimer's Australia should seek to engage volunteer lay people in the implementation of community education strategies. (Section 7)

Overall, the evidence would suggest that interventions are required at an individual, community and environmental level, with the impact of programs at one level complementing the impact of those operating at others. For example, advice given to individuals by their healthcare provider is likely to be more effective when the person is exposed to similar messages via the mass media (including entertainment education) and to the influence of incentives that assist healthy behaviour, such as food labelling.

There is scope to build upon existing initiatives to add value to the **Mind your Mind** program. For example, at a State level, dementia risk reduction could be highlighted as part of the Victorian Government's 'Go For Your Life' physical activity promotion program. Nationally, Divisions of General Practice and GPs are being funded to implement the Lifestyle Prescription program ('Lifescrpts'), to encourage behaviour change in physical activity, eating, smoking and alcohol use. Working in collaboration with these partners to achieve common objectives could extend the reach of the **Mind your Mind** program. In addition to partnerships across the health sector, the sports and leisure sector also offers scope for exposing a mass audience to the dementia risk reduction message as part of a move to encourage active participation and social engagement.

Recommendation: Alzheimer's Australia should seek to advocate for activities operating outside of its remit that will assist the uptake of the messages carried by the current **Mind your Mind** program. (Section 5.1)

Recommendation: Alzheimer's Australia should seek to work with the Australian Divisions of General Practice to promote the **Mind your Mind** message under the auspices of the general practice Lifescrpts initiative. (Section 5.1)

Optimising the reach and adoption of the **Mind your Mind** message across individuals and agencies is crucial. Strategies such as education sessions and information lines will reach those who choose to access them. Broader communication strategies will be needed to raise awareness and knowledge across the whole community.

Evaluation: The majority of scientific research programs have reported global population health outcomes. The risk reduction outcomes have largely been modest and tend to diminish over time, highlighting the importance of sustained intervention and monitoring. The evidence from the UK's anti-smoking campaign (McVey & Stapleton, 2000) and Australia's SunSmart campaign (Dobbinson, 2004) emphasizes the need to conduct a long-term, dynamic, campaign, in order to address the complex interplay of societal and personal influences upon sustained behaviour change (Rimer and Gierisch, 2005; Giles Corti et al., 2001). We need to know how long people maintain knowledge and more importantly, the probability of their acting upon information to alter their behaviour or to access key health services. In the interim, the evidence we have demonstrates that the message needs to be repeated for population behaviour change to be sustained.

Monitoring alone is insufficient. Both the short- and long-term impacts of interventions also need to be evaluated. Many programs have been conducted with no, or limited, evaluations of their effectiveness, or the agencies concerned have not reported on program effectiveness in the public domain. Interpretation of the findings is restricted by methodological weaknesses and by the traditional tendency to report on the outcomes of multi-faceted programs without analysing or commenting upon the relative impact of specific components. For example, one study reported benefits from a brief but intensive social marketing program about heart attacks (Wright et al., 2001). This is encouraging, but the study contained no comparison to any alternative strategy, thus limiting the interpretation of its findings. A limited number of programs have been designed to compare strategies e.g. differing degrees of exposure to the intervention, but the findings are mixed. Further information about strategies' relative effectiveness is provided by process evaluation reports: the findings tend to be specific to the community concerned and the prevailing contextual factors, limiting their generalisability to dementia risk reduction. A small number of studies report the cost effectiveness of the interventions employed. This information, corrected for current exchange rates, can be used to assess whether successful interventions can feasibly be employed in the reduction of dementia risk.

Recommendation: Alzheimer's Australia should ensure that a robust evaluation of the **Mind your Mind** program occurs. We recommend that Alzheimer's Australia collaborate with relevant stakeholders to incorporate questions into a planned omnibus survey, thereby making cost savings in obtaining relevant data for the planning of future activities. (Section 11)

Conclusion

The report's findings are based upon the highest level of evidence available and the document presents the predominant messages arising consistently across the evidence base.

The evidence calls for interventions to be implemented at multiple levels, from individual one-on-one activities, through to those directed at whole populations. The degree to which findings from interventions in other health areas are transferable to the promotion of lifestyle change within the context of dementia prevention remains to be empirically tested. Nevertheless there are consistent trends in the evidence base that can be applied with confidence to community education in the current domain.

The recommendations have not been prioritised. Their adoption will need to be considered within the context of Alzheimer's Australia's current resource capabilities. The challenge will be to review Alzheimer's Australia's current activities, to build upon those that are working using the evidence provided in this report and to ensure that process, impact and outcome evaluation are integrated within the planning cycle.

1. Introduction

In 2005, the Australian Government identified dementia as a 'national health priority'. There is an estimated 200,000 people diagnosed with dementia in Australia today, and by 2050 this number is projected to grow to 730,000 (Access Economics, 2005). Delaying the onset by 5 years would halve the number of people with dementia. Apart from the significant human impact of this condition, there is an associated economic dimension. The real cost of Alzheimer's disease alone to the health system, families and carers was estimated in 2004 to be \$3.6 billion per annum (and \$6 billion annually for all dementias). If the average onset of Alzheimer's disease was reduced by 5 months from 2005, then by 2020 cumulative savings of \$1.3 billion would be realised and by 2040 \$6.6 billion. If the average onset were reduced by 5 years then the equivalent savings would be \$13.5 billion and 67.5 billion by the respective years. Alzheimer's disease accounts for approximately 60% of all dementias; if the onset or progression of other dementias could also be delayed, economic savings would increase further, and human suffering would be reduced even more.

An accelerating body of clinical and social research has emerged in recent years to demonstrate support for a range of lifestyle and health management strategies aimed at lowering the community's dementia risk. Research indicates that the brain changes related to Alzheimer's disease and other dementias may commence years, or even decades, prior to symptoms becoming apparent; lifestyles and health management from mid-life are therefore thought to be critical to reducing dementia risk in older age (Woodward et al., 2005). Major community education programs, particularly in the United States, are being targeted at the baby boomer generation where there is particular concern about memory and loss of function as the population ages because of the economic impact of the increasing prevalence of dementia. Many of the lifestyle and health management strategies recommended for dementia risk reduction are common to preventative strategies relating to heart disease, stroke and diabetes.

In 2005, Alzheimer's Australia identified the need to extend its agenda to include the 'at risk' population, whilst maintaining strong support for preventative and curative research plus service development and delivery. Alzheimer's Australia has developed a significant community education program called **Mind your Mind**. The roll-out of community education material and events commenced in September 2005. The current report aims to provide evidence and recommendations to support the future development of this program.

2. Definitions

Community: Nutbeam (1986) defines a community as 'a specific group of people usually living in defined a geographic area who share a common culture, are arranged in a social structure, and exhibit some awareness of their identity as a group'. He goes on to note that in contemporary society people usually belong to several 'communities', based on geography, occupation, social contact and leisure interests.

Health Education: refers to education of the general public and individuals in the community. It includes patient education and community health education. Green and Keuter define it as 'the combination of educational and environmental supports for actions and conditions of living conducive to health' (cited in Rimer and Gierisch, 2005 pg 286).

Health Promotion: the narrow definition refers to encouraging consumer behaviour likely to optimise psychological and physical health potentials, through health information, preventive programs and access to care. It is used in the MEDLINE search engine to refer to health campaigns, wellness programs, the promotion of health and promotional items. The broader definition is that of the Ottawa Charter (World Health Organization, 1986), endorsed by the 2006 Bangkok Charter:

Health promotion works through concrete and effective community action in setting priorities, making decisions, planning strategies and implementing them to achieve better health. At the heart of the process is the empowerment of communities, their ownership and control of their own endeavours and destinies.

Community organisation: entails mobilisation of the community in line with needs deemed appropriate by external agencies, such as health authorities.

Community development: is the process of involving communities from the 'ground up' in their own decision making about factors related to health.

The terms community organisation and community development are used interchangeably in the literature and indeed there can be some overlap, depending upon the extent of community control. The term **Community engagement** will be used to reflect both approaches.

Social marketing: is 'the application of marketing concepts and techniques to the marketing of various socially beneficial ideas and causes instead of products and services in the commercial sense' (Fox & Knotler, cited by Egger et al., 1990 pg 66).

Mass media: includes use of audiovisual, printed and electronic resources for conveying messages to the public.

Contemporary health promotion practice focuses on community action. Community focused health promotion activities change the traditional biomedical emphasis upon high-risk individuals in order to influence the whole community, impacting on societal norms and values to lower the average or population level risk. Change can occur at community level via a range of methods, referred to by Ross and Mico (1980) as 'low through high resistance modes', ordered as follows:

1. Diffusion and adoption – communication and opinion leadership
2. Consensus organising – establishing shared interests
3. Social planning- citizen/consumer participation
4. Political action – legislation, lobbying, campaigning
5. Confrontive negotiation – threat of reactive action
6. Non-violent disruption - strikes, boycotts, protests
7. Violent disruption – revolution, riots

We will consider modes 1-3 under social marketing and mass media. The fourth will be considered under community engagement. The others are not relevant to the current report.

3. *Project Methods*

The methodology for the Community Education Strategies Scoping Project was broken into three main components: a literature review; liaison with international dementia agencies; and formulating recommendations.

An extensive and systematic search of the literature using a selection of approved guidelines was conducted to identify the evidence relating to preventative community education strategies employed amongst the adult population. The community education strategies that were explored focused on the National Health Priority areas, with programs aiming to prevent dementia, heart disease, diabetes, cancer, asthma, and injury and to promote mental health.

Fourteen English language electronic databases, websites and published sources were searched from January 1996 to March 2006 (including CINAHL, Cochrane Library, MEDLINE, and PsychINFO). The primary researcher initially screened over 300 abstracts of studies and 130 full text articles were retrieved. Of these, 125 studies were double-blind rated and 79 were included in this review. Evidence used in the final review was sourced from ten of the fourteen databases. Search strategies previously used successfully by others, and by the research team were employed. The search strategy was devised and refined in consultation with the expert advisory group. The key search terms included: health education; health promotion; preventive medicine; public health; and health intervention. In addition, the reference lists of existing reviews and randomized controlled trials were searched. Articles published in languages other than English were excluded, plus articles based on personal, expert opinion and commentary literature reviews – and also those that predominantly focused on individual factors and behaviour. (See Appendix 1 for a more detailed description of the project methods).

The grey literature was also searched, focusing upon the Internet and resources provided by Alzheimer's Australia. In addition to searching the more formal electronic databases, the websites of a number of key organisations were targeted to identify reports that were unlikely to be published elsewhere. As all the websites varied in comprehensiveness and structure, no standard strategy was employed to obtain the evidence. However, often the evidence would be found in the 'publications' section of each website. (See Appendix 5 for a list of the organisations and websites searched).

Interviews were held with representatives from the US Alzheimer's Association, the National Heart Foundation, Diabetes Australia (Victoria) and the National Stroke Foundation. Representatives of the Australian organizations also acted as members of the project Expert Advisory Committee. The Expert Advisory Committee provided valuable feedback on a draft version of this report.

The focus of this discussion paper is on the scientific literature, which was used to formulate the proposed recommendations for preventative community education strategies that have the potential to reduce the risk of dementia in Australia.

3.1 *Research Evaluation Strategies*

The titles and abstracts of identified references were assessed for relevance, and the full-text articles of those deemed relevant by the primary researcher were obtained. Each article was then independently assessed by two highly experienced reviewers and critically appraised in terms of transparency, systematicity and relevance. The reviewers initially rated the level of evidence of each article according to the National Health and Medical Research Council (NHMRC) criteria listed below, which is based on the design of the study:

<i>Level I</i>	A systematic review of all relevant Randomised Controlled Trials (RCT)
<i>Level II</i>	At least one properly designed RCT
<i>Level III-1</i>	Well-designed pseudo-RCTs

<i>Level III</i>	Comparative studies with concurrent controls and allocation not randomised, case-control studies or interrupted time series with a control group
<i>Level III-3</i>	Comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel control group
<i>Level IV</i>	Case series, either post-test or pre-test and post-test

Dependent on the level of evidence of each article, the reviewer then selected one of three sets of criteria to critically appraise the articles; for Level I evidence, the National Health and Medical Research Council (NHMRC) criteria were used (Hoving, Gross et al., 2001 adapted from Oxman et al., 1991, see Appendix 2); for Level II evidence, the Verhagen et al., (1998), template was used (see Appendix 3); and for Level III/IV, the items used were adapted from the RE-AIM Dimensions and Template Questions for Evaluating Health Education and Health Behavior Research (see Appendix 4). Due to the diverse nature of the research studies reviewed, the corresponding criteria were not always adequate to assess the quality of the study, and at this point the reviewers used their discretion as to which criteria were the most appropriate.

Each reviewer completed a rating form and a joint decision was made as to which articles were of sufficient quality to be included for review. Disagreements were resolved through discussion or by recourse to a third reviewer. Any conflicting evidence was identified, and reviewers noted any gaps in the evidence base. While this was primarily a review of meta-analyses and systematic reviews, it was supplemented by lower level evidence from single studies, as required, to describe the current state of this level of evidence and critique its strength.

3.2 Basis for Recommendations

The following key principles have guided the formulation of the recommendations made in this document:

- A focus on improved health outcomes for the whole population and identified sub-groups
- Use of the best available evidence
- Inclusion of statements about the strength of recommendations
- Consideration of the perspectives of all relevant stakeholder groups

Particular attention was given to:

- a) Individual: the needs of lower socio-economic status groups, culturally and linguistically diverse communities and families and carers of people with dementia
- b) Societal: whole of population strategies to compliment existing public education programs
- c) Structural: current strategies, resources and organizational arrangements used in international community education programs aimed at dementia risk reduction

The report's findings were based upon the highest level of evidence available and this document presents the predominant messages arising consistently across the evidence base. Where a contrasting finding was reported, this is noted. The specific studies discussed are illustrative of the body of evidence. The recommendations are not prioritised. Their adoption will need to be considered within the context of Alzheimer's Australia's current resource capabilities.

4. Structure of the Report

The report focuses upon two main areas of evidence:

- Social marketing; and
- Community-based interventions.

The following section, Section 5, provides a brief overview of two key mediating factors that need to be incorporated within the assessment, planning, implementation and evaluation of social marketing and community based intervention strategies, namely partnerships and community engagement. Section 6 discusses social marketing and reviews the role of mass media. Section 7 discusses health promotion settings, drawing attention to some innovative approaches for consideration in future program development. Section 8 assesses the evidence for the effectiveness of community-based interventions across the National Health Priority areas. Methodological issues arising from the existing evidence base are discussed in Section 9. Summaries of the interviews with the stakeholder organisations are provided in Section 10. Section 11 makes recommendations for future research and evaluation activities.

Whilst social marketing and community-based interventions receive separate attention, the report illustrates that their underlying strategies are commonly used in an integrated manner in health promotion programs.

Overall, the burden of disease tends to be greater amongst members of CALD communities. The CALD community also contains ‘hard to reach’ groups, making it imperative that community education strategies not only target mainstream populations, but also engage CALD groups. For that reason, interventions targeting CALD communities receive particular attention throughout this report.

5. Context

Researchers have reported success using a range of community based health promotion initiatives, but we need to be mindful of the context within which they have been implemented. Factors such as the socio-political environment and economic climate can influence the planning, conduct and outcome of programs. This perspective is accurately encompassed by the Social Ecological Model (see Figure 1), which reflects the complexity of health. The model highlights that health behaviour is the result of multiple influences at the individual, interpersonal and societal level.

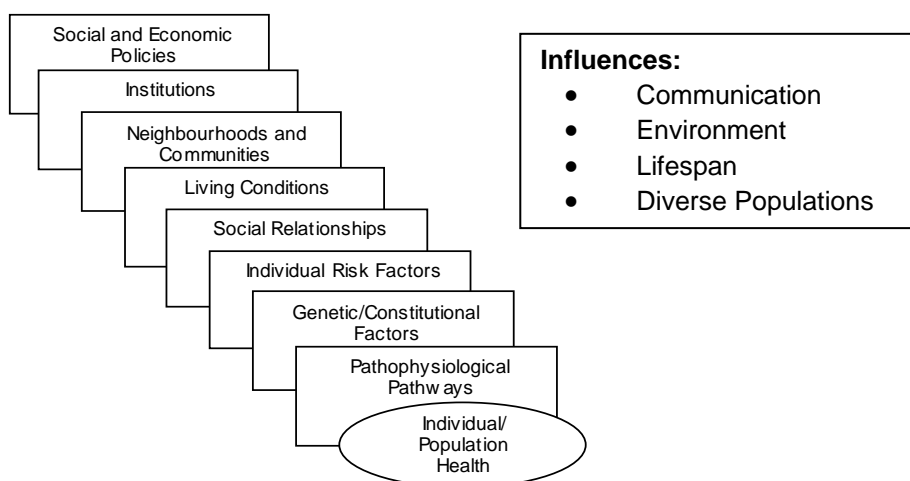


Figure 1: *Individual/population health across the lifespan: Levels of influence in the Social Ecological Model (adapted from Rimer & Gierisch, 2005)*

The interplay between the individual, community and societal levels will be illustrated by a brief discussion of two contextual features that are key to the planning and implementation of community based health promotion programs: partnerships and community engagement.

5.1 *The Role of Partnerships*

Both empirical studies that include formal evaluations of interventions and policy level reports argue the need for collaborative partnerships to support any community-based program. These partnerships need to include both stakeholders from relevant agencies and the consumers themselves.

For over two decades international and national policy initiatives e.g. WHO Ottawa Charter (1986) have emphasised the importance of consumer partnerships. However, programs often include little or no resources to encourage consumer participation.

The need to ensure community participation in the planning and conduct of population health promotion activities is increasingly recognised as a prerequisite for success at the population health level. Syme's (1997) analysis of over 20 years of public health interventions in the USA noted that community participation in both planning and delivery is fundamental to the success of any public health program. A useful example is provided by the Heart Health Nova Scotia program (MacLean et al., 2003), which in addition to partnerships established a resource clearinghouse, ran workshops, introduced policy changes, fund reallocation and organizational changes that enhanced knowledge and practices. Figure 2 illustrates the different levels at which partnerships can operate, both within and between agencies, to enable successful health program operation.

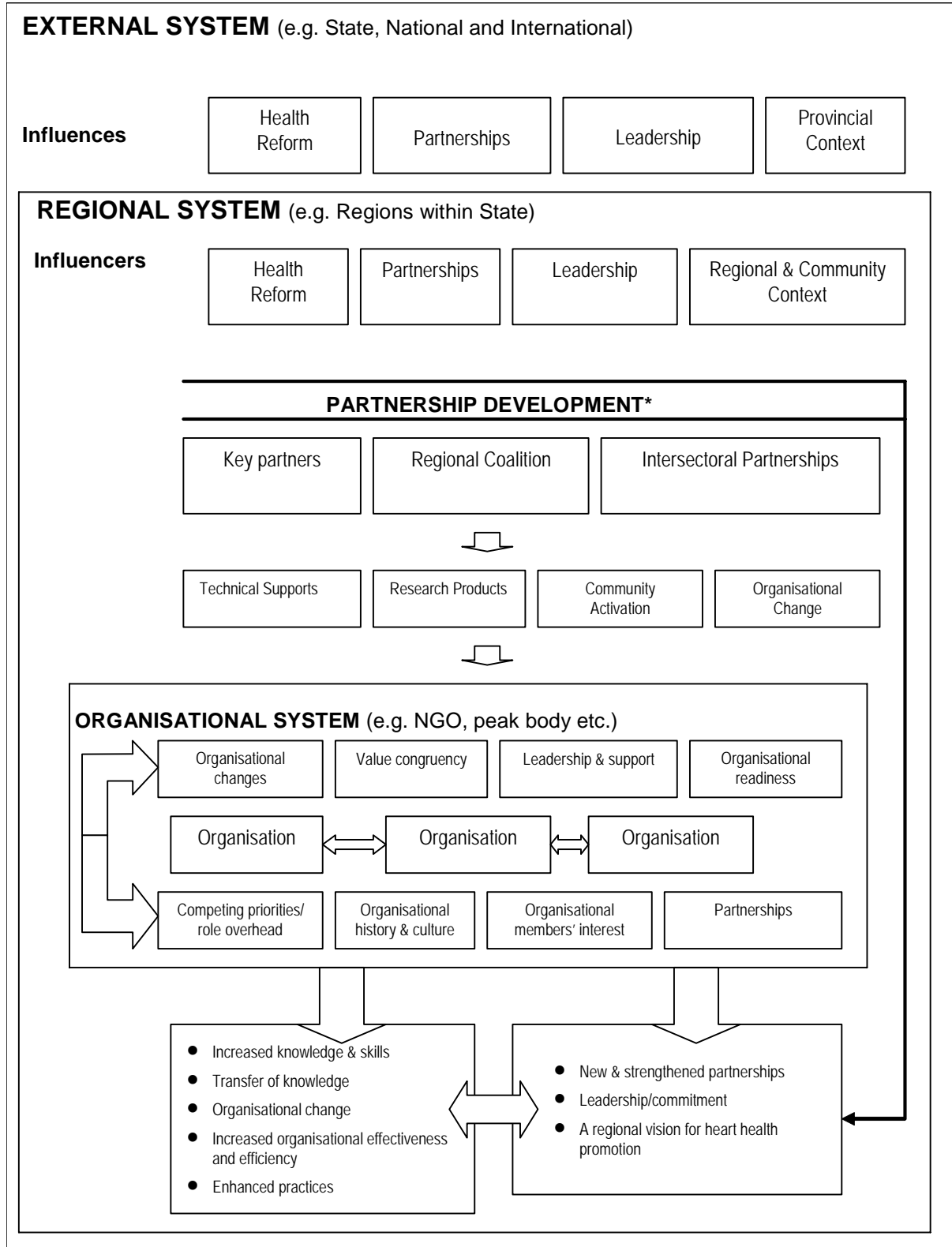


Figure 2: *The Capacity-Building Model (adapted from MacLean et al., 2003)*
**e.g. Partnerships between Commonwealth, State, Local Government and NGO's etc*

Beaglehole and Bonita (1997) posited that public participation is the key to a vigorous population health movement and to effective primary health care: population health practices/strategies can only be effective if there is an active partnership based on a mutual respect and understanding between the healthcare provider and the consumer/patient. Others suggest that there needs to be two-way consultation and joint ownership of programs to achieve participation and effectiveness (Scally, 1996).

Several recent British Medical Journal (BMJ) editorials emphasise the use of community development approaches to develop community partnerships. The resultant decision making processes enable real user involvement and acknowledge the social, economic and environmental causes of ill health, linking user involvement and conditions to improve health and reduce inequalities (Fischer & Neve, 1999).

There are various models that support community collaborative activities, however caution is needed as many of the models are from overseas: their relevance and appropriateness to the Australian context needs to be considered. Unfortunately there is limited information about conditions and structures needed to support the various models. Furler (1998) has discussed use of the community liaison model in Australian primary care. Four key aspects of community liaison that Furler outlines are: **effectiveness** (by working collaboratively with community organisations to address the multiple determinants of health and allowing those most affected to look for their own solutions thereby enhancing the impact of efforts and providing greater credibility to the community liaison person/agency's role); **efficiency** (working with community groups to enable continuity and reduce duplication of effort, making best use of resources); **equity** (collaborative effort enables the determinants of health inequalities to be tackled); and **sustainability** (building links with community groups may enable the community to continue on the work).

Although the discussion has largely focused upon the role of organisations in the promotion of population health, the consumer is obviously a key stakeholder. The following section gives a brief overview of individual empowerment and proffers some key recommendations. Empowerment is a fundamental principle of health promotion, as espoused in the Ottawa Charter (1986). Principles of empowerment are of practical importance in the context of self-management and lifestyle behavioural change. A person's control over information and decision-making are vital components of effective self-management of chronic conditions such as asthma and diabetes, and in sustained lifestyle change associated with disease risk factors. The 'partnership' approach to population health reflects not simply partnerships between health care providers, but partnerships between provider and client/patient. Here, the notion of partnership is compatible with the notion of patient empowerment (Labonte, 1997).

Recommendation: The current **Mind your Mind** program should be discussed with other parties who are working to promote healthy lifestyle behaviour changes. There may be scope for joint marketing to occur.

Recommendation: Alzheimer's Australia should seek to advocate for activities operating outside of its remit that will assist the uptake of the messages forwarded by the current **Mind your Mind** program.

Recommendation: Alzheimer's Australia should seek to work with the Australian Divisions of General Practice to promote the **Mind your Mind** message under the auspices of the general practice Lifestyle Prescriptions initiative.

5.2 *Community Development and Engagement*

Rothman (2001) defines community development as 'a neighbourhood based strategy to engage a broad range of stakeholders in developing goals and taking civic action, in order to build the capacity of community residents to solve problems and become socially integrated' (pg 38). The problem-solving component is often referred to as social planning, which ideally uses social action to address local needs by advocating for changes and resources for the community. Community development is currently a key policy area in Australia's States and Territories: an example is the Victorian government's neighbourhood renewal program, details of which can be found at <http://www.neighbourhoodrenewal.vic.gov.au>.

A systematic review of the community engagement intervention literature was recently conducted by Ohmer and Korr (2006). They highlight the paucity of a robust evidence base in this area, but discuss factors that need to be clearly determined in future research, such as the impact of contextual sociopolitical factors. Particular emphasis is placed on the importance of involving the target community in the development and testing of community education programs (Ohmer & Korr, 2006). However, there needs to be a balance between what laypeople suggest and what the evidence base has shown 'to work' (Ho et al., 2006). In choosing from a range of strategies, the expertise of a health educator will be helpful in determining (based on the available theory, scientific evidence and community knowledge) what approaches can feasibly be adopted (Holden et al., 1998).

Recommendation: Alzheimer's Australia should seek to work within the current Australian context of community engagement, adding value to their specific campaign goals by using existing supportive infrastructure and policies.

Recommendation: Alzheimer's Australia should seek to engage peak bodies, community groups and volunteer lay people in the development of community education strategies.

6. *Social Marketing*

Social marketing has been defined as 'the application of marketing concepts and techniques to the marketing of various socially beneficial ideas and causes instead of products and services in the commercial sense' (Fox & Knotler, cited by Egger et al., 1990 pg 66). There are obviously some key distinctions between marketing healthy lifestyles and selling commercial products. Thus whilst some common principles can be adopted, an understanding of the costs, the need to work towards intermediate outcomes and the time taken to achieve change is critical when planning, implementing and evaluating social marketing strategies.

Media advocacy is an established health promotion strategy and Australia is a world leader in its successful usage, particularly in the areas of anti-smoking, sun exposure, drink-driving and seat belt usage. Media advocacy has traditionally employed people with a particular condition (including celebrities such as Olivia Newton John) and specialist health professionals to convey messages, with the media organizations acting as gatekeepers for the dissemination of health messages. Health promoters are increasingly seeking to engage mass media agencies as more 'active advocate' partners in communicating health information to members of the public, from preventive health through to risk reduction.

Social marketing involves the following steps:

- Define the target audience
- Develop a concept for intervention
- Develop a message based on the concept
- Test the message
- Run the message
- Evaluate the process
- Evaluate the outcome

This approach was implemented—to varying degrees—in the reviewed literature with regard to addressing awareness, knowledge, attitudes and behaviour in the prevention or management of a range of health issues. Examples are provided related to heart conditions, cancer, asthma, healthy eating, smoking cessation, health service usage and health information in general.

6.1 Mass Media

This methodology focuses upon a range of mass visual and auditory communication channels, such as radio, television, newspapers, magazines, leaflets, posters and pamphlets. The first four types are referred to as 'mass reach' media, whereas the latter have limited reach (Egger et al., 1990). Figure 3 shows the key roles of mass media, whether by advertising or publicity. Level 1 evidence was provided about the effects of mass media upon health service usage (Grilli et al., 2002). Grilli and colleagues (2002) found 20 studies that had objective outcome measures (rather than self report, subjective outcome measures). Five studies evaluated diffuse, non-systematic media coverage of health issues. The remainder evaluated systematic mass media campaigns, where the media was disseminated as part of a planned intervention campaign. All but one study concluded that mass media was effective. The reviewers conducted a pooled analysis of the study data from seven studies amenable to this process and reached the same conclusion. Mass media, was however, used in conjunction with other strategies and so its independent impact could not be assessed in this review. Although unusual, one cardiovascular disease (CVD) study in South Africa has reported that mass media alone was more effective than in conjunction with individual level programs with high-risk participants (Steyn et al., 1997). The town that received only mass media exposure had a much better risk factor profile at 12 year follow up than the town that received both strategies, where the profile was similar to the control town. The reasons for this pattern could not be readily explained.

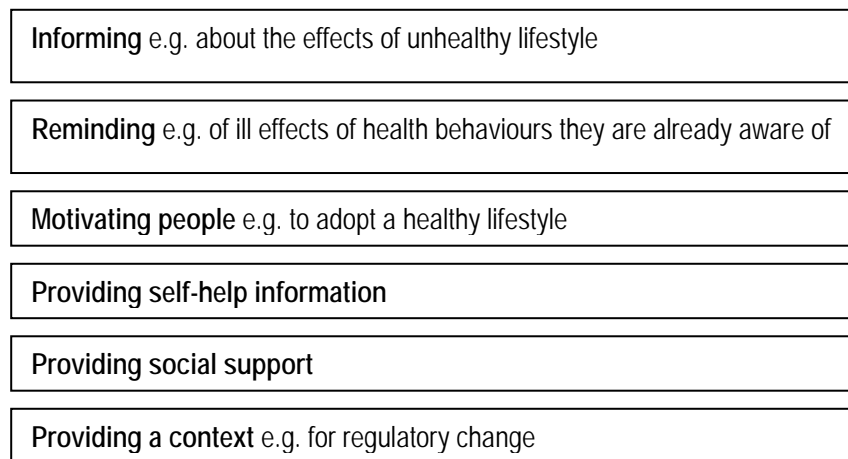


Figure 3: *Roles of Mass Media (adapted from Egger, Spark, & Lawson, 1990)*

In any mass media campaign, using an appropriate message for the target audience is key. This calls for adequate planning and development stages. The work of Bushley and colleagues (2005) illustrates this point in their level III.3 research. Although they were primarily aiming to recruit people to a study, their findings are pertinent. The aim was to recruit young women, aged between 18 and 35 years who were positive for human papillomavirus (HPV) in order to determine which factors are involved in the persistence of the virus. HPV is a sexually transmitted disease and is the major cause of cervical cancer. The team found a poor response to a campaign that focused on cancer. They ran focus groups to try and discover how to attract the target audience. The women suggested that they would be more likely to respond if the message was about sexual health than cancer. Sexual health, namely the issue of sexually transmitted disease, was of more immediate, direct relevance to them. The subsequent campaign, run using print materials, TV, radio and cinema advertisements, a website and email messages, increased the number of women recruited. The researchers report that, for this group, email and newspaper articles created the greatest response. Both routes were cost and time effective at \$14 and \$21 per participant respectively. Radio and TV adverts were the least cost-effective, at \$160 and \$86 per participant respectively. Whilst the mass media approach was less effective than the strategy of personal invitation during clinic visits, it had a broader reach and had some impact once a suitable campaign message was used.

Recommendation: The existing **Mind your Mind** materials should be focus group tested with representatives from the target audience to assess their current acceptability.

Recommendation: The current **Mind your Mind** materials should be focus group tested with representatives from culturally and linguistically diverse (CALD) communities and modified where appropriate.

6.1.1 Does Mass Media Work?

Mass media is commonly used in conjunction with other strategies and so its independent impact is difficult to assess. Some evidence for the *unique* contribution of mass media was obtained by a healthy eating campaign in one area of the United States (Reger et al., 1999) (Level III.1). The researchers used a simple message disseminated using paid media, that is, advertisements, and a public relations campaign, to encourage media advocacy. The '1% or less' message aimed to increase the number of people buying and drinking low fat milk. The study found increased sales of low fat milk in the intervention area and greater prevalence of reported switching to low fat milk amongst those surveyed in the intervention area compared to the control area. Making dietary changes is a complex area: the success of this stand-alone campaign was attributed to the simple message disseminated. The authors report a cost of \$US 43,000 (\$26, 000 for the advertising) to implement and evaluate the campaign, a per capita cost of around \$US 1.00. The paper does not provide details of the extent of the campaign, for example, how many iterations of the advertisement there were and the estimated degree of exposure of the target population to these iterations.

By contrast, a Level IV evaluation of the Australian National Asthma campaign provides some details about the exposure of the target audience to the mass media campaign (Comino et al., 1997). The mass media campaign was only one facet of a multi-strategy approach used between 1991 and 1993. In 1991, 22 iterations of the campaign message occurred on national television. An undisclosed number occurred on cable TV and domestic airline systems. In 1992, 185 iterations occurred on national TV, plus additional advertisements on cable TV, national billboards and via a one-month McDonald's tray mat promotion. In 1993, 24 occurred on national TV, plus additional advertisements via car bumper stickers, leaflets, media articles, radio public service announcements and ethnic radio channels. Structured telephone interviews were conducted in four Australian cities, using stratified population samples, as part of an omnibus survey. Awareness and knowledge was assessed in all respondents and knowledge of appropriate asthma management practices in those with asthma. Four post campaign surveys were conducted during the evaluation. Improved awareness and knowledge was reported. The evaluators noted that the campaign's impact was tempered by contextual factors concurrent with the campaign. For example, the first advertisements may have had reduced impact due to the Christmas period, whilst the third adverts were screened as an election was called. The second advertisements were screened during an international sporting series, when exposure was expected to be high, plus the advertisements featured a popular sporting figure. The cost of the media campaign was not reported, so its cost effectiveness cannot be determined.

The Health Education Authority for England's (1992-1994) anti-smoking TV campaign cost £12.4 million. In a level III.1 study, its impact was evaluated across 5 regions (McVey & Stapleton, 2000). Self-reports of smoking behaviour during the 18-month period from samples of smokers and ex-smokers across the study regions reflected changes that, extrapolated to the population, equated to a reduction in smoking prevalence of 1.2%. The evaluators emphasized the importance of a long-term campaign, given the difficulties of making and maintaining smoking behaviour changes. Interestingly, the lower intensity exposure arms of the campaign were more effective than a high intensity arm (where TV advertisements and coverage were supported by local community-based work). It is beyond the scope of this report to comment on the relative effectiveness of mass media in the reduction of smoking prevalence. Commentators such as Rimer and Gierisch (2005) note the role that legislation has played in the anti-smoking area. This strategy is not immediately transferable to other lifestyle behaviours.

Piotrow and de Fossard (2004) provide an overview of the effectiveness of entertainment education as a medium for health promotion messages. Although they discuss effective methods for the development and production of messages within serialized drama series, their findings are based upon work conducted largely in developing countries. Whilst the method has been used in Australia, further information is needed about its cultural appropriateness and effectiveness in our setting before it can be recommended as a suitable intervention strategy to change behaviour.

Telehealth is a growing area for providing individual healthcare. Although this topic is beyond the scope of this report, the use of interactive Internet communications for distance learning purposes is relevant. The Internet can act as an educational conduit, enabling large audiences to be reached, particularly in rural and remote areas. One study included in our literature review focused on a US distance learning program (Bynum et al., 2000). The usability and knowledge gains were positive amongst the largely middle aged, high school educated white Americans in the sample. Such programs have the potential for promoting behaviour change.

The Internet is increasingly being used to provide information to consumers and health professionals. Marshall et al (2005) explored using the Internet and email as a means of disseminating physical activity information. Their sample of Internet users reflected previous findings that GP advice and group activity were the most popular sources of support. However, a third listed Internet and email as desirable sources. Interestingly, 8% of these respondents were 65 years or over. With increasing access to the Web, electronic resources may be an additional option for some.

Where the Internet is to be used as a communication vehicle for health promotion messages, standards must be met. A number of national and international standards have been developed, including Health on the Net (HON). Croft and Peterson (2002) evaluated the quality and accuracy of the contents of asthma education sites on the Internet. They reviewed 90 sites for

- a) accessibility: readability, language, download time
- b) quality: educational concepts, HON principles, accuracy, use of innovative technology

There were only nine sites providing multilingual material and the remainder tended to be at a reading level beyond the grasp of many consumers. The time to download material was sub-optimal: the mean was 33 seconds. One site took 4 minutes. On average, only half of the core educational concepts were presented and information was often out of date, or at least infrequently updated. No site met all the HON principles (see Appendix 6). All types of site provider were culpable: there was no difference in quality between commercial and academic providers. Very few sites used innovative technology to convey information, such as interactive or tailored information options. Many simply conveyed materials previously available in print form.

Recommendation: The Internet is a potentially useful means of providing information to consumers, but its use should be fully developed and resourced to adequately address people's information needs.

6.1.2 Limited Reach Approaches

The previous sections have addressed mass reach approaches, but there is also a range of limited reach approaches, such as newspapers and brochures, that target a relatively smaller audience. Newspapers were used to promote breast cancer topics in a level III.1 design study in MidWest USA (Martinson & Hindman, 2005). The strategies included both paid advertising and media advocacy from volunteers in the community. With regard to the latter, community action team members were active in forwarding local breast cancer stories to their newspapers for consideration. Using an analysis of column inches and number of local stories reported, the evaluators found a significant effect of these strategies in the intervention area compared to a demographically similar area. The effect was only significant with regard to weekly newspapers, that is, the strategy was only effective in altering the reporting agenda of weekly, as opposed to daily newspapers, probably due to the greater editorial freedom of the former. The cost of implementing the strategies was not reported. The long-term impact of the increased reporting on people's knowledge of breast cancer or uptake of mammography was not tested.

Breast Cancer Screening Campaign (BCSC) (Martinson & Hindman, 2005)

Funded by the National Cancer Institute, the BCSC ran a community-based health promotion campaign as part of a research program. The BCSC is a community action group operating from grass roots level.

Aim:

To promote mammography screening in 26 Mid West counties via awareness raising and media advocacy. Focus on reminding women of their personal vulnerability for breast cancer.

Messages:

Recommend national mammography screening guidelines, encourage women to access screening services.

Intervention components:

- 12 week paid newspaper advertising
- 12 week paid radio advertising
- Use of local spokespeople (breast cancer survivors, physicians, health professionals) in advertisements to appeal to specific communities
- Two year community action by volunteers working in teams to implement action plans
 - o Supported by existing systems e.g. American Cancer Society Units
 - o Established relationships with local media gatekeepers
 - o Used educational materials from a central clearinghouse to act as credible sources of health information

Evaluation:

One year pre and post assessment comparing intervention and control communities.

Outcomes:

Coverage of breast cancer and mammography screening content by newspapers.

Some benefits have been obtained from even limited social marketing using a brief but intensive exposure package. The Wabasha Heart Attack Team (WHAT) program used news releases (6), print advertisements (6), public service announcements (2), plus cable TV announcements, presentations and informational displays over a one-month period (Wright et al., 2001). The aim was to improve awareness of signs and symptoms of acute myocardial infarction and encourage earlier presentation at hospital. In this level III.3 study, the community education campaign increased presentations and increased use of emergency services. Benefits for mortality and morbidity can only be extrapolated, as the study did not report on the outcomes of the earlier presentations.

Many agencies have used brochures to promote health messages and services. The evidence base suggests that brochures can be helpful as part of a multifaceted strategy but that informational leaflets alone cannot produce sustained behavioural change (Paul et al., 2003). Unfortunately, few agencies have assessed the impact of the brochures and leaflets produced. For example, Paul et al. (1998) explored a sample of health educational materials. The content, design and use of behavioral and social marketing strategies were assessed for 183 materials from 21 agencies in New South Wales, with 4.8 million items being disseminated by the sampled agencies in one year. The researchers also asked the agencies concerned whether they had any evidence of the materials' effectiveness, or cost effectiveness. The agencies largely failed to use behavioral and social marketing strategies in developing and producing the materials. A third had conducted some evaluation of the materials' impact, but very few could accurately assess the development costs, so the cost effectiveness of the products could not be determined. As the authors state: 'while it may be argued that a pamphlet does not warrant evaluation, if 4.8 million are distributed every year, there is a need for monitoring of their effectiveness' (pp 147, 148).

6.1.3 How Long Does the Impact Last?

We do need to consider the sustainability of changes produced by media strategies. Many studies only assess impact immediately post intervention. For example, one study found that knowledge of cancer issues was improved post viewing a video, compared to those who had not viewed the video (Wilson & Stein, 1997). Another reported on the usability of touch screen information kiosks in a range of community sites within deprived areas of the UK with large ethnic communities (Peters & Jackson, 2005). The kiosks provided a range of health information, which was mostly accessed by younger adults who had previous experience with computer use. The study did not have the capacity to determine whether the information was retained nor whether it altered behaviour. The authors refer to issues regarding maintenance of the kiosks, the need for staff in the areas to be supportive of them and to promote them and the potential for their 'novelty value' to wear off over time. We need to know how long people maintain knowledge and more importantly, the probability of their acting upon information to alter their behaviour or to access key health services.

6.2 Mass Media and Promotion of Lifestyle Behaviour Change: A Case Study

Table 1 illustrates a hierarchy of effects in a mass media campaign for lifestyle behaviour change, based upon a 'rule of halves' hypothesis posited by McGuire (1984). This illustration gives a cautionary reminder of the likely impact of programs on individual behaviour. Nevertheless, small shifts can contribute significantly to population health. In the lifestyle domain, behavioural change can potentially create multiple health benefits by reducing the risk of a range of health conditions, from heart disease and cancer through to dementia.

Table 1. A Hierarchy of the Effects of Mass Media for Lifestyle Behaviour Change (adapted from McGuire, 1984)

Exposure	recall of message	50%
Attention	specific message recall	25%
Understanding (knowledge)	understanding message/Knowledge change	12.5%
Acceptance (attitude)	attitude change	6.25%
Intention	intermediate changes	3.12%
Trial	initial behaviour change	1.56%
Success	maintenance	0.78%

6.3 Summary

Mass media is the leading outlet for informing the public about health issues and has been successfully used in campaigns to reduce the prevalence of chronic conditions, notably heart disease and cancers. Mass media has also had a positive impact on the uptake of health services and healthy behaviours. Mass media is likely to be most effective when complemented by efforts to reduce barriers to behaviour change, such as access to healthy foods, physical activity options and health services. Campaigns must be of sufficient duration, reach and quality to compete successfully with other paid advertising and produce maintained behaviour change.

Recommendation: Community-based interventions should target *specific* communities or settings.

Recommendation: Needs assessments that reflect the complexity of behaviour change and consider both individual and community level approaches should be conducted so that appropriate change strategies can be used.

Recommendation: As proposed by the previous reviewers (Grilli et al., 2002), further research should determine how best to develop media messages for differing sectors of the population and assess their targeted impact.

Recommendation: All media campaigns need to provide repeated, sustained exposure to maximize their impact.

Recommendation: Media campaigns should be supported by legislation and policy change as appropriate.

7. Health Promotion Settings

In this section, attention is drawn to the fact that a variety of settings can be used for community education, beyond traditional health care settings. For instance, primary care has been a useful setting for health promotion (Flocke et al., 2006), but much of the focus has been on individual patient care, which is outside the scope of the current report. Interventions at the individual level can be complemented by interventions with specific groups or communities, reaching target populations by engaging with them in places they regularly visit, such as workplaces, shops, banks, sporting venues and churches. There is even scope for integrating individual and whole community strategies within these settings.

Churches have been successfully used as outlets for health promotion information, particularly in the USA. The box below illustrates one means of reaching an at-risk, disadvantaged group via the church community (Ammerman, 2002). There is also some evidence that clergy, with training, can provide health support to their congregations. Sadler et al. (2001) trained clergy and lay church leaders to provide information about cancer and cancer care to people in their congregations and the local community. The published research reports on the reported short-term competency and usage of the acquired skills by participants, but does not give any information about consumer/recipient feedback.

Recommendation: Alzheimer's Australia should seek to engage volunteer lay people in the implementation of community education strategies.

The Praise! Project (Partnership to Reach African Americans to Increase Smart Eating) (Ammerman, 2002)

The Praise! Project used a community partnership approach to plan, implement and evaluate a flexible five year program that could be tailored for use across a range of churches servicing the African American community in eight counties of North Carolina.

Aim:

To reach a high risk population using culturally sensitive intervention strategies to reduce cancer risk through dietary change.

Messages:

Increased fruit, vegetable and fibre intake and decreased fat consumption

Intervention components:

- Volunteer Health Action Team (HAT) leaders trained (leader/change agent)
- Pastor Health Promotion workshops (leader/change agent)
- Biblically based nutrition information (pastors)
- Communication centres at churches
 - o Displays of materials, information about Praise! Events
 - o Fruit and vegetables
- Kits of ideas, resources, games, certificates (HAT leaders)
- Tailored information for intervention group
- Educational package for church members
- Inspirational booklets
 - o Testimonials
 - o Bible verses for inspiration
- Congregation skills and treasures
 - o Directory of food related skills e.g. growing tomatoes
- Food events
 - o Shared recipes
 - o Project cookbooks
 - o Shared meals
- Food festival
 - o Taste testing
 - o Label reading
 - o Cook-offs
 - o Health screening

Evaluation:

Baseline, during and one year (post intervention). The project operated as a randomised controlled trial, with a delayed intervention group.

Outcomes:

Individual dietary change, institutionalisation*, sustainability* and diffusion*.

* These terms will be discussed further in Section 11.

Some would say that in Australia that sport is the prevailing religion. The sporting arena offers scope for attracting a mass audience for health promotion messages and activities. Examples of this approach are given in other sections of the report. A team of researchers recently set out to test the extent to which the role of sporting organizations in promoting healthy behaviour change had been evaluated internationally. Two reviews were conducted, funded by VicHealth. One explored interventions conducted via sports organizations to increase (active) sport participation (Jackson et al., 2005). The other explored sports organizations' policy interventions to promote healthy behaviour change (Jackson et al., 2006). A comprehensive search was conducted for both questions, but the reviewers found no studies meeting the search criteria (Jackson et al., 2005, 2006). Several case reports were obtained, suggesting anecdotal benefits. There is certainly scope for extending the use of this setting for health promotion activities. The reviews give some information about barriers to be considered, factors that have hampered efforts to progress in this potentially useful area.

8. Community-based Interventions

The term community-based interventions refers to approaches that target local populations or groups (rather than individuals), which are geographically, socially or culturally defined; attempt to influence the social, cultural and environmental determinants of health; and employ the expertise of professionals, but involve communities in decisions affecting their health (Naccarella, 1999). In this section, a general assessment of the evidence for the effectiveness of community-based interventions is followed by an outline of the evidence across the National Health Priority areas.

8.1 Evidence of Effectiveness of Community-based Interventions

Table 2 gives an overview of the literature providing evidence of the enablers for and effectiveness of community-based interventions. Where study findings are similar they have been clustered together.

Table 2. Evidence of Effectiveness of Community Based Interventions

Reference Level of evidence	Review methodology	Results
US Task Force on Community Preventive Care, 2000 Level I Evidence	The US Task Force on Community Preventive Care has developed a Guide to Community Preventive Services: Systematic Reviews and Evidence-based Recommendations	The guide covers 15 topic areas in three main domains: Changing Risk behaviours (eg tobacco, physical inactivity, etc); Reducing Specific Diseases, Injuries & Impairments (eg vaccine preventable diseases, cancer, diabetes etc) and addressing environmental and ecosystems challenges (eg, sociocultural environment).
Sorensen et al., 1998 Level II Evidence	Review of community-based interventions in entire communities, worksites and schools	<ul style="list-style-type: none"> Community-based interventions in entire communities have failed to produce population-wide behaviour change There have been significant health behaviour changes in worksite (particularly in smoking cessation, decrease in kilocalories as fat, and reduced blood cholesterol levels) and school-based interventions (particularly in smoking prevalence, dietary changes, and alcohol use) This review provides evidence that setting specific community-based interventions need to be pursued
Goodman et al., 1993 Level III Evidence	Critique of two contemporary community health promotion approaches: the Planned Approach to Community Health (PATCH) and the Chronic Disease Prevention program (CCDPP)	<p>Key findings included:</p> <ul style="list-style-type: none"> do a community capacity assessment prior to initiating a community needs assessment do not overly rely on Behavioural Risk Factor Surveys analyse needs assessment data rapidly for community consumption allow flexibility and community input in determining priority health objectives provide technical assistance throughout project emphasise multiple interventions around one condition at a time fund at least one full-time local coordinator and extensive capacity building develop and encourage local leadership emphasise program institutionalization
Mittelmark et al., 1993 Level III Evidence	Documented the key elements that characterise community based cardiovascular disease (CVD) health promotion programs	<p>Exemplar programs:</p> <ul style="list-style-type: none"> used the community organisation process as the centre piece used a community settings approach included health providers (nurse, GPs, dietitians) playing a vital role by providing endorsement of the program and stimulating participation by other community leaders emphasised school-based programs for children and adolescents used mass media in conjunction with complementary messages delivered through other channels such as school programs, adult education programs, and self help programs, and were designed to influence the community as a whole, to favourably alter population levels of risk factors, mortality and morbidity
Milne et al., 1994 Naccarella, 1999 Level IV Evidence	Descriptive studies	<ul style="list-style-type: none"> note that GPs have become involved in a wide spectrum of community-based health promotion initiatives including: community health education; school-based health promotion; media-based health promotion; resource development and community development

Overall, the evidence suggests that community-based interventions are worthwhile, if they target *specific* communities or settings. Key conditions associated with successful community-based interventions are also known and are summarised in Table 2.

Within the Australian context, in addition to the traditional community health professionals, the level of involvement of general practice in community-based population health promotion initiatives has been increasing since the establishment of the Divisions of General Practice in 1992. However, there remains a paucity of robustly evaluated initiatives and a lack of clarity regarding whether acknowledged, effective strategies are being systematically replicated. Limited process evaluation has resulted in lack of understanding about what strategies are most cost effective and what strategies are best under particular circumstances. Similarly there is limited evidence about the strategies required to sustain initiatives.

Summary

Community-based interventions are a viable approach to improving population health. Effective community-based interventions are associated with the presence of key conditions, which should be addressed in the development, implementation, and evaluation of any community-based program.

8.2 Evidence of Effectiveness of Community-based Interventions: Heart Disease

The greatest amount of information about community education strategies comes from the cardiovascular health promotion literature. Community based interventions have largely incorporated strategies to address both 'midstream' and 'upstream' risk factors in their programs (Giampaoli et al., 1997; Steyn et al., 1997; Fang et al., 1999; Weinehall et al., 2001; Wright et al., 2001; MacLean et al., 2003; Riley, 2003). The term 'midstream risk factors' refer to the behavioural and psychosocial factors that can cause biological reactions that create disease. Clusters of midstream risk factors (such as smoking, physical activity, nutrition) as well as 'downstream' biological factors (such as high blood cholesterol, high blood pressure) are associated with chronic diseases and are modifiable. In understanding the cause of disease, attention must also be given to the things that contribute to the midstream risk factors. These so called 'upstream' determinants include a range of social, physical, economic and environmental factors that are the precursors of the midstream risk factors, which, in turn, are the precursors of the downstream factors that ultimately cause disease.

The first wave of cardiovascular health programs included the North Karelia study, where mass media and environmental changes were introduced. The second wave included the Stanford Heart Disease Prevention Program and the Minnesota Heart Health Program (Luepker et al., 1996), which incorporated community development strategies. The third wave includes programs like the Canadian Heart Health program, which aim to target hard to reach sectors of the community, the socially disadvantaged, such as people from CALD backgrounds. Overall, the aim has been to improve awareness and knowledge of cardiovascular risk factors, to bring about lifestyle behaviour change and to provide early detection and management programs to support 'at risk' individuals.

A large Chinese study successfully used both individual and population level approaches to reduce the prevalence of CVD and stroke over a decade (Fang et al., 1999). In contrast, no significant improvements were found after a decade in a rural Italian program (Giampaoli et al., 1997). The authors noted the influence of health practitioners in the control areas, who strove to reduce the risk in their patients, clouding between group effects. Whilst the North Karelia study demonstrated gains after 5 years, subsequent studies have largely had somewhat modest impact and the changes to health and behaviour have not necessarily been maintained over a decade of follow up. Reasons for these findings include:

- Secular trends: there has been an increasing amount of awareness raising at national level internationally, making it difficult to compare between intervention and control communities
- A 'ceiling effect' due to the above secular trends
- Insufficient exposure within intervention populations to the strategies employed
- Decline in activity within communities for socio, political and economic reasons
- Dilution and contamination effects, as people move into and out of intervention areas
- Methodological limitations in comparing communities for features that have lag times to their presentation and where large numbers are needed to see significant changes

These barriers to determining the sustainability of the impact of community based interventions are discussed further in Luepker et al.'s (1996) report on the Minnesota Heart Health Program.

Health promotion professionals have emphasised the importance of using multifaceted strategies. This means that in many studies it is not possible to determine the relative impact of the individual strategies upon the reported outcomes. This information can be gleaned where process evaluation has been conducted.

Even where a program has been successful and its effectiveness maintained over time, the impact upon the target population's health will be limited if the intervention has limited reach. A UK workplace screening intervention, available to volunteers from the car manufacturing workforce, improved CVD risk compared to UK population figures (Chatterjee, 1997). The response to the screening survey was 40%. It was thus not possible to discern the full reach and impact of the program's availability across the target workforce.

Further, the most appropriate strategies need to be chosen. For example, a Canadian heart health program that aimed to influence adult's dietary behaviours conducted one intervention component via primary schools (Huot, 2004). This indirect exposure of parents to the healthy eating messages diluted the intervention's overall effect. As all evaluation data was obtained from the parents of primary school children, the broader program's impact on the general community could not be generalised from the findings. The authors also noted the need for 'upstream' environmental strategies, such as food labelling, to support changes at the individual level.

Targeting CALD Groups

A ten-year evaluation of a Swedish community intervention sought to determine the relative impact of the program upon socially deprived groups living in rural areas (Weinehall et al., 2001). The overall program benefits included significant improvements in total cholesterol and systolic blood pressure levels and a 36% reduction in coronary heart disease (CHD) mortality in the intervention area. The socioeconomically disadvantaged community members, having started with greater baseline risk, benefited most from the program. The key role of healthcare providers in the individual targeted elements was noted.

A US study (level III.3) used mass media and community volunteer activities to engage the Latino population in metropolitan Washington (Alcalay et al., 1999-2000). The program was developed following consultation with focus groups (Moreno et al., 1997). Focus group members wanted to know more about cause and effect, to receive (and discern) accurate information, recommended visual formats for media and endorsed use of TV and radio. Awareness and knowledge were improved, particularly amongst the younger respondents and the more acculturated group (where baseline scores were actually lower). There were improvements in awareness and knowledge across age and gender groups, but no differences in reported or intended behaviour. Some details of the amount of exposure to the different components are provided. Crucially, the authors report that messages were more frequently recalled from TV (44%) compared to from doctors (26%) or radio (16%).

Salud para su Corazon (Health for Your Heart) (Alcalay et al., 1999-2000)

This program used social marketing and community engagement strategies in a culturally specific, community based intervention. The National Heart, Lung and Blood Institute (NHLBI) worked with Latino community members to plan the heart disease prevention program.

Intervention components:

Bilingual communication via multiple mass media outlets and one-on-one approaches (outreach and interpersonal connections).

- Community events
- Community Alliance
- Television shows
- Telenovela public service announcements
- Radio programs
- Newspaper articles
- Brochures
- Recipe booklets
- Small group discussion
- Motivational videos

Aims:

To raise awareness of heart disease risk factors, knowledge of heart disease prevention and promote healthy lifestyles in recent Latino immigrant adults between 18 and 54 years old, with limited access to healthcare/capability to use English language materials.

Messages:

Smoking cessation, healthy weight, physical activity, checking for and treatment of high blood pressure and cholesterol.

Evaluation:

Before, during and six months after the intervention, using street intercept methods in churches and grocery stores

Outcomes:

Improved awareness and knowledge, but no behaviour change in the short term

Focus groups were also used with a range of low income, culturally diverse women in California (Gettleman & Winkleby, 2000). There were common experiences and barriers to preventing cardiovascular disease (CVD). The women said that they didn't want to be told to improve for the sake of their children: they wanted to change behaviour for their own benefit. They didn't want change to be 'obligatory', rather, they were more likely to respond to a range of options. They favoured visual rather than written messages, featuring 'people like me', rather than celebrities. Environmental supports, such as financial or social incentives to motivate them were noted, but there were individual differences in their relative importance.

Recommendation: CALD groups should be involved in the development and pilot testing of materials for social marketing in their respective communities.

Recommendation: Media for non-English speaking groups should use culturally appropriate, everyday language. (Note that this can be problematic where there is a diverse range of colloquial dialects)

Recommendation: People from non-English speaking groups should be provided with literature in English and their own language so that they can learn English words for key terms.

8.3 Evidence of Effectiveness of Community-based Interventions: Diabetes

Similar strategies to those outlined for CVD have been used in diabetes prevention. Most of the papers obtained in the search process focused upon one-on-one interventions, such as the Diabetes Prevention Program (Rubin et al., 2002) and so will not be discussed here. This section will summarise research conducted on the development of programs suitable for different CALD communities. There is a disproportionate burden from diabetes amongst certain CALD groups, such as the African American population and the Aboriginal and Torres Strait Islander peoples. It is thus vital that health promotion measures are targeted at these groups, to improve diabetes prevalence at the population and individual level.

The 'Thunder and Lightning and Rain' media awareness campaign targeted people of Latino and Hispanic backgrounds living in Washington State, USA (Almandarez et al., 2004). The campaign was developed using focus groups to create and pilot test a socio-culturally appropriate message, 'Control your diabetes. For Life'. The aim was to increase awareness amongst at risk community members: 40-65 year old adults who had not seen a healthcare provider in the past 3 months or had blood glucose levels at or above 200 mg/daily. The campaign was brief (4 months) but intensive. The main components were radio advertisements, interviews and call-in shows, printed advertisements in local newspapers, posters in community outlets and a toll-free information line. A population based telephone survey 2 weeks post campaign determined the community's exposure to the campaign and its impact on awareness. Overall, 29% recalled the message (although there were some methodological weaknesses in the interviewing techniques used). Interestingly, although TV was not directly used, 27% recalled diabetes coverage via this medium. A third recalled messages on the radio and in print and a third recalled all three formats. The information line was a key component of the campaign, yet it received little usage. The authors do not report any longer term impact of the campaign, nor its cost.

The recent demonstration project 'DIRECT' used screening and disease management plus community awareness raising to improve diabetes morbidity in African Americans in North Carolina, USA (Engelgau et al., 1998). Outcomes are participation rates and estimated media coverage - findings specific to the impact of community education strategies employed have not yet been published. The findings from the disease management aspect of the program demonstrate the importance of a multifaceted approach. The researchers found improvements in care quality indicators, such as increased blood testing, amongst those who *continued* to participate in a four year healthcare provider quality care education program (Din-Dzietham et al., 2004). These performance measures did not translate into improved glycaemic control in their patients. The authors noted that a patient focused strategy would be necessary to reinforce the provider- and the community based- interventions.

Another study targeting this population group focused on improving eating habits in African American women (Williams et al., 2006). Using a community participation approach, the intervention trained peer educators who then ran education sessions with culturally specific food preparation and eating messages. The program was well received by attendees and some short-term changes in dietary fat consumption have been reported, but we need to obtain evidence for its reach and its impact upon eating habits over time.

Finally, a diabetes prevention program for First Nation communities in Canada was recently conducted (Ho et al., 2006), using strategies similar to those that have been used with remote Aboriginal communities in Australia. The formative needs assessment work supported working towards the following goals: changing social norms by intervening in multiple institutions; addressing consumers' salient concerns; balancing community learning preferences with proven strategies; encouraging active community participation; and tailoring programs to individual communities. The box below outlines the data gathering techniques used and the proposed strategies arising from the consultations. The study is underway, so there is no published information about whether the program has achieved its desired outcomes, but previous programs have reported success (Saksvig et al., 2005).

Diabetes Prevention amongst First Nations in Canada (Ho et al., 2006)

The programs to be delivered in Northern Ontario were based on previous approaches used with First Nation Communities, tailored following extensive community consultation using observation (schools), in-depth interviews, risk factor and attitude survey, demonstration and feedback sessions (e.g. cooking sessions, talkback radio), group activities and meetings with key stakeholders. This approach enhances the acceptability and sustainability of the programs introduced.

Aims:

To develop a feasible, integrated, multi-institutional diabetes program for three semi-remote/remote communities that addresses the communities' needs and perceptions

Messages:

Improve diet and increase physical activity

Proposed strategies:

Recognising and building on communities' needs and resources:-

- school prevention program
- weekly radio show e.g. drama on renal education
- community events
- food store program to increase sales of low sugar, low fat foods (shelf labelling)

Outcomes:

Improved dietary knowledge, self-efficacy and intention, decreased dietary fat, increased dietary fibre, reduced TV watching and more physical activity

8.4 Evidence of Effectiveness of Community-based Interventions: Cancer Prevention

We know that screening programs can assist in the detection and management of several types of cancer, such as breast, cervical and prostate cancers (Forbes et al., 1999; Shepherd et al., 1999; Bonfill et al., 2006). There has been much work to encourage people to attend for screening. One of the most effective means is using personal invitation, but this is not always practicable. The reasons for suboptimal screening rates need to be considered. The barriers to access vary across time, population groups and countries. For example, there can be screening under utilisation by both healthcare providers and consumers. Cost is one common reason in countries where the screening is not free. There is also fear and uncertainty amongst the public. Health education campaigns to advise people of the procedures and the benefits have had some success.

The rates of screening for breast and cervical cancers have increased dramatically in Westernised countries over the last decade. It would appear that most success has occurred by targeting eligible women via primary care practices, using invitations (Forbes et al., 1999). In their systematic review of interventions to improve cervical screening uptake rates, Forbes and colleagues pooled data from three studies using printed educational materials but only found a trend favouring their use. An Australian trial reported that a GP letter plus a mass media campaign was more effective than the campaign alone, but the effect varied by community (Byles et al., 1994). As issues of privacy and informed consent become increasingly important, Forbes and colleagues note that there is insufficient detail in the literature to determine whether women simply undertook screening as paternalistically directed or were appropriately informed before attending.

Bonfill and colleagues (2006) conducted a systematic review of strategies for increasing women's participation in community breast cancer screening. They identified 16 trials (RCTs and controlled trials). A range of strategies was employed, but there were no studies that compared strategies. Only one study (Lerman et al. 1992) used educational material only: the remainder used a range of approaches, e.g. personal invitations, recall and reminder systems. The use of educational material only did increase screening rates. However, the results have limited generalisability as the target sample was an identified high-risk group, those who had previously had an abnormal mammogram. The reviewers highlighted the need for more evidence about how to target 'hard to reach' population subgroups.

For instance, although rates have improved overall, people from disadvantaged backgrounds require particular targeting to improve their uptake rates. One US study used one to one clinic based strategies for 'inreach' and community outreach strategies to promote screening attendance amongst low income African American women aged 40 and above (Paskett et al., 1999). The latter included educational sessions, brochure dissemination, community events, church programs and media. The respective influence of the strategies was not evaluated. Increased uptake of mammography (18%) and cervical screening (21%) were achieved at 3-year follow-up, whereas rates were static or decreased in the control cities. One reason for the improvement could be the reduction in barriers to breast and cervical screening reported by respondents from the intervention cities. There were no group differences with regard to beliefs or knowledge. Two thirds of the intervention women reported having seen advertised or attended at least one activity; 43% had attended at least one education class; 28% attended one or more 'Women's Fest'; 20% recalled seeing a newspaper advertisement; 17% recalled hearing a radio advertisement and 12% had seen a church bulletin including the topic. In summary, whilst passive exposure was less often recalled, it may still have had some impact. A review of programs to improve sexual health and prevent cervical cancer found some benefits from combining educational materials with behavioural skills learning in CALD and low socioeconomic status (SES) groups (Forbes et al., 1999).

The largely group-based approaches used restrict the relevance of the above studies' findings for the current report. Tatum and colleagues (1997) used both individual level and population level strategies to promote breast and cervical cancer preventive measures amongst African American women. The box below illustrates the range of strategies employed. Attendance at education classes indicated a 10% population reach, whilst 61% of the eligible population received one on one classes. The community events were also well attended.

Forsyth County Cancer Screening Project (FoCaS) (Tatum et al, 1997)

The project worked with disadvantaged women aged 40 years and above who were living in public housing in two counties in North Carolina. The women were at increased risk, but were less likely to use screening services due to access problems, not least service cost. The interventions were tailored by the Community Advisory Board following discussions with members of the target communities as part of a planning 'community analysis' exercise.

Aims:

To reduce breast and cervical cancer prevalence by improving knowledge, attitudes and participation in screening.

Messages:

Importance of breast and cervical cancer screening, raised awareness of facilities available.

Intervention components:

In addition to a clinic based program, outreach via

- 176 educational classes on women's issues (group) and one on one (homes)
- media campaigns
 - 10 radio public service announcements
 - 5 newspaper articles
 - 18 local newspaper articles
 - 3 month city bus advertisements
 - Coverage of community activities publicised on local TV (3 occasions)
- use of religion in classes and community outreach
 - church liaison
 - bulletin inserts
- 16 information centres to disseminate resources (clinics, hairdressers, beauty parlours, banks, shops)
- community cancer awareness event
 - health screenings
 - gift bags
 - fashion show
 - food
 - prizes

Evaluation:

Pre and post, with long term follow up after 4 years.

Outcomes:

Knowledge, service usage and strategies for transferring successful components to control communities.

The findings from the screening literature have limited relevance to the current report. Whilst the process evaluation information gives us an indication of productive marketing modes to achieve awareness and knowledge gains, the desired outcome differs and so there may be little generalisation with regards to effect. Compared to lifestyle behaviour changes, screening is not only a simple activity: attending for screening is an intermittent activity that requires no long-term behaviour change.

Prevention of skin cancers requires a more complex set of behaviour changes and is perhaps more representative of the changes promoted by the **Mind your Mind** program. The Australian SunSmart campaign (Dobbinson, 2004) has produced a move in the behaviours of the population, yet illustrates that the message needs to be repeated for behaviour change to be sustained. The following study reported on one of the more recent strategies to be implemented as part of the ongoing campaign, the use of scoreboard advertising at sporting events. The strategy has great potential given the large audiences involved and their concurrent exposure to the risk factor in question (at outdoor events). The audiences are also more likely to contain those who engage in negative health behaviours (Giles Corti et al., 2001). The advertisements were shown on average six times per day during a cricket series. A systematic sample of spectators was surveyed to determine their recall of the advert and their current sunscreen usage. The response rate was 97%. The interviewers also scored participants on observed protective behaviour (headgear, sunglasses, body cover and sunscreen). The advertisements were recalled by 15% of respondents: women were more likely to recall them, as were those with higher protection scores. The nature of the study precluded testing for the influence of previous exposure to aspects of the campaign upon behaviour, but demonstrates that such advertising has some impact. Further research is needed to determine its relative benefits.

The **Mind your Mind** program seeks to raise awareness of risk reduction strategies for dementia. In contrast to the area of cancer, the current level of awareness amongst the public is generally low (Alzheimer's Australia, 2004), indicating there is much scope for strategies operating at the level of improving knowledge. This situation has parallels with testicular cancer. McCullagh and colleagues (2005) conducted a pre-post study (level III.1) that aimed to raise awareness and promote testicular self-examination and reported some success in the short term. Whilst the methods employed are not directly relevant, they perhaps offer food for thought in adapting the strategies to promote dementia reduction awareness in leisure sector, such as in libraries or gyms. The box below illustrates the study components.

'Check 'Em Out': Prostate cancer awareness and testicular self examination (TSE) (McCullagh et al., 2005)

Testicular self examination can alert men to symptoms of testicular cancer. Early detection can improve cure and survival rates. Strategies are needed to reach men with the relevant messages. Given that men under-use health services, they need to be targeted at sites they routinely visit. Local residents were involved in the development of the intervention.

Aims:

To evaluate the efficacy of a health promotion initiative on men's knowledge of testicular cancer and self-examination rates.

Messages:

Prevalence of testicular cancer, warning signs, survival rates associated with early detection, how to self examine.

Intervention:

- waterproof signs in changing rooms and showers at worksites, health clubs and leisure facilities
- free shower gel sachets* with TSE instructions.

Evaluation:

Questionnaire to site users two weeks before and four weeks after intervention.

Outcomes:

Modest knowledge gains, increased intention to perform TSE and actual practice of TSE.

*The authors noted that few respondents actually received the shower gel sachets, indicating that: a) some men may have taken excessive numbers away with them b) facility staff may not have regularly distributed them. The cost benefits of this dissemination method need to be considered.

8.5 Evidence of Effectiveness of Community-based Interventions: Asthma

The papers retrieved concerning asthma prevention and management focused on individual and group-based activities, thus are not relevant within the context of this report (Resto et al., 2001; Mahaffey et al., 2003; Bryant-Stephens, 2004; Charrois et al., 2004; Schaffer & Tian, 2004; Summers et al., 2005). One paper explored the quality and accuracy of websites containing asthma information (Croft & Peterson, 2002). This study is referred to in Section 6.1.

8.6 Evidence of Effectiveness of Community-based Interventions: Injury Prevention

Two systematic reviews of population-based interventions were identified (McClure et al., 2005; Spinks et al., 2005). McClure et al. (2005) report consistent decreases in injury from the level III studies included in their review, but highlight the need for more information about the processes that are the most effective. The Australian 'Stay on Your Feet' campaign is a good example. This program resulted in a significant (20%) decrease in fall-related hospitalisations in the intervention area compared to the control area, after adjusting for baseline fall-related injury rates (rate ratio 0.8, 95% CI 0.76, 0.64). The researchers estimated that around 77% of the target population had been exposed to at least one element of the intervention over the program's duration. The model may have additional benefits, since the strategies can be used to address older people's functional status in general as well as falls prevention.

The reviewers confirmed previous evidence from other areas by demonstrating that 'a population approach to injury prevention can mobilise changes on a large scale, producing a normative effect and achieving a more permanent diffusion process' (McClure et al., 2005 pg 7).

Spinks et al. (2005) reviewed the WHO Safe Communities model in the countries where it has been evaluated. The model is based on partnership and community capacity building. Objective outcome measures were assessed. The reviewers concluded that the program appeared to achieve its desired outcomes at the global level (at least in Westernised countries), but again pointed to the lack of process evaluation detail to determine which components may be the most effective. The authors also discussed the methodological problems of longitudinal follow-up studies, where data may not be available over time and participants move in and out of the intervention areas, diluting impact effects.

8.7 Evidence of Effectiveness of Community-based Interventions: Physical Activity

Kahn et al. (2002) conducted a systematic review of the effectiveness of interventions to promote physical activity. They included environmental and policy approaches, as well as the more traditional information and behavioural strategies. With regard to environmental approaches, they endorsed the use of point of decision prompts, such as signs to promote stair usage. There is also strong evidence for community-wide education campaigns. Such campaigns have incorporated mass media, environmental changes (such as walking trails) and social support activities (such as walking partners). For example, Reger and colleagues (2002) used media advertisements, public relations campaigns and workplace programs to promote daily walking amongst older Americans. They also sought to build community capacity via the involvement of the community in a local advisory committee that advised the project. The authors reported a 20% increase in walking and a significant increase in the proportion of participants doing 30 minutes of activity per day in the intervention area, compared to the control area.

With the increasing prevalence of obesity, combined interventions that aim to encourage healthy eating and physical activity have begun to be trialled. Katz et al.'s (2003) systematic review of dietary interventions endorsed the use of multi-component interventions for adult weight loss in community settings.

Although diet and physical activity are more complex behaviours to alter than smoking or alcohol misuse, they are pertinent to a broader target population. Further, multipurpose interventions have the benefit of potentially influencing a range of health conditions via one or two behaviour changes.

8.8 Evidence of Effectiveness of Community-based Interventions: Dementia

The disease areas considered above have a well-established aetiology, which has enabled the development and evaluation of programs to encourage risk factor reduction. Studies of the public's knowledge base over time and across communities indicates that, whilst lay knowledge has progressed as scientific knowledge has expanded, there remains some uncertainty and confusion about some aspects of the evidence base, in part due to the dissemination of information by 'experts' into the public domain. The impact of a sound evidence base can be dissipated by poor social marketing techniques.

We have the opportunity to avoid disinformation in planning the dissemination about Alzheimer's disease amelioration into the community by learning from the available evidence. In addition, there is a small but significant amount of information about previous community education programs about Alzheimer's disease and dementia that can guide the development of future programs.

Although there is a paucity of evidence concerning Alzheimer's disease education programs, the literature points to a strong need for information amongst members of the public. For example, a public education program in the Netherlands that aimed to meet information needs attracted 450 attendees (Commissaris et al., 1994). In one month, a toll-free number attracted almost 200 calls from residents of a rural US county (Mundt et al., 2001). The respondents were not solely carers or those with potentially affected family and friends: the Dutch education program was targeted at those who were concerned about forgetfulness and the information line users included 25% who were concerned about their own risk status.

Commissaris and colleagues (1995) developed a brochure to educate people about normal forgetfulness and dementia. The brochure's availability was advertised via regional radio stations and newspapers. Notably, over 600 people requested a copy in the first two weeks and within 2 years 25,000 people had ordered a copy (the authors do not provide any breakdown of the requests: it is possible that some were ordered by health professionals). Two thirds had anxiety dissipated after reading the brochure. Only 3% became more worried. The authors assessed whether this change in affect was justified by examining the cognitive status of a sample of respondents. Both 'false positives' and 'false negatives' were discovered, amounting to a third of the sample. Although this analysis is insufficient to account for other reasons for affect, the findings led the researchers to modify the brochures' content to temper the messages it contained.

Strategies such as education sessions and information lines reach those who choose to access them. Broader communication strategies are needed to raise awareness and knowledge across the community. As Commissaris' research demonstrates, any materials to be disseminated need to be fully evaluated to ensure that they produce the desired effects and (so far as is reasonably practicable) do not have any unintended negative consequences.

9. Methodological Considerations

Although the field of health promotion has made substantial progress, advances have been limited by the evaluation methods used, with a limited amount of formative, process and impact evaluation occurring. Sorensen et al. (1998) argues the need for research methods that are designed to evaluate the public health significance of interventions, and that the efficacy-based research paradigm (e.g. RCTs) that has dominated notions of 'evidence' has limited health promotion research and is not always appropriate. Although RCTs have significantly advanced our knowledge of medico-surgical interventions, they have limitations when applied to behavioural issues and especially to collaborative and community-based interventions (Sorensen et al., 1998; Glasgow, 1999; Roussos & Fawcett, 2000). RCTs emphasise efficacy at the exclusion of factors such as reach, adoption, implementation, and maintenance (Glasgow, 1999).

We also need to acknowledge that despite the existence of theories of community-based initiatives, evidence linking theory, practice and outcome has been limited by the challenges involved in evaluating community-based interventions (i.e. large scale designs; interventions do not operate in a vacuum; what is the unit of analysis; and interventions have the capacity to impact on multiple levels).

There is a need to develop evaluation frameworks, indicators and data collection tools that are appropriate to the Australian context.

Further discussion of methodological challenges is beyond the scope of this report. Further details can be found in an overview by Atienza and King (2002).

10. Case Studies

Interviews were held with representatives from the US Alzheimer's Association, the National Heart Foundation, Diabetes Australia (Victoria) and the National Stroke Foundation. The interviewees were provided a-priori with a copy of the RE-AIM framework questions to assist in preparing for the discussion (Appendix 5). A summary of the findings is given in the boxes below. The organizations highlighted the importance of the four program stages: assessment, planning, implementation and evaluation. They also concurred that programs require comprehensive resources for their operation; where resources are not available, programs and/or the underpinning objectives required revision in order to roll out a feasible initiative. The challenges of evaluating behaviour change outcome were reiterated; interviewees noted that process and impact evaluation were just as important.

National Heart Foundation

Most of what the National Heart Foundation (NHF) does can be classified as 'information provision' for primary through tertiary prevention purposes, rather than community education per se.

Examples of its resources include:

- Heartline (operated by dietitians and nurses);
- website;
- brochures.

There have been a variety of media campaigns e.g. what to do if you have chest pain, but measuring any behaviour change is challenging, not least given multifactorial risk profile of cardiovascular disease.

The 'tick' branding on selected products, has been a useful adjunct to the more individual based strategies, but again its impact is difficult to ascertain.



Diabetes Australia (DA)

Diabetes Australia (DA) provides support for those with diabetes and their formal and informal carers. They have two community health promotion approaches: social marketing and community action. The social marketing focuses upon raising diabetes awareness in the population. Commencing in 2005, Diabetes Australia Victoria and Western Australia are co-sponsoring a three year National Program of Action campaign. The campaign's topic changes each year. In 2006 it will focus on diabetes complications. The campaign includes paid media such as and TV interviews and advertisements, unpaid media with community services announcements and printed media, with information sheets in six languages. The latter are available for State distribution to relevant stakeholders, such as Divisions of General Practice, Community Health Services, local government, community pharmacies. The community action approach entails advocacy on behalf of those with, or at risk of developing diabetes, on topics such as workplace discrimination and schools policies. Diabetes Australia supports volunteer run community-based support groups via their DA coordinators, an email network, resources and an annual state conference. The organisation promotes environmental change, such as via endorsement of a position statement on physical activity.

There was a pre-post survey evaluation of the 2005 national awareness campaign by an independent consultancy. Feedback about the unintended consequences of the scary images upon children has led to an alteration of the approach to be used in 2006. Surveys are completed following community events.

The 2006 campaign will target those from CALD and Aboriginal and Torres Strait Islander backgrounds, aged 45 and over. The 'diabetes is too serious to ignore' message is intended as a call to action for the community.

As a federated organisation, DA has discovered that there needs to be cross state partnership for their strategies to operate optimally. It is too early to look at the impact of the current program, but there will be close evaluation of the paid media campaign to assess its effectiveness.

Alzheimers Association (USA)

Prior to 2004, the Association had primarily worked in conjunction with health professionals, people with Alzheimer's disease and their carers. With the emerging evidence base around risk reduction, the organization decided to extend their role by establishing a more preventive approach to aspects of their work. They recognized there was a new target audience for their message, the 'at risk baby boomers'. In Feb 2004 they launched a new campaign with the message- **Maintain your Brain™**. The campaign has four pillars: physical activity, diet, brain health and social health.

The following strategies have been implemented as part of this campaign

- 1) There was a major initial publicity drive to announce the campaign and to launch its underpinning research evidence. A paid advertising campaign (\$US1.3m) was rolled out in New York, Los Angeles, Washington and Chicago. Use was made of newspapers, national radio networks and public broadcast radio announcements. Thus reach was both targeted at particular regions and disseminated to a national audience.
- 2) Information materials and resources, such as a video, were made available on line, on the Association's website and via other relevant sites, such as health sites and those for older people.
- 3) To raise awareness of the campaign's four messages, a series of 1 hr workshops were implemented at chapter level¹.
- 4) The central agency provided training for chapter staff to sell the **Maintain your Brain™** program locally². For example, fundraising events were branded with the campaign's logo. This training was incorporated into a 'train the trainer' model, extending the training's reach within the organization. The training was not provided to external agencies however, to maintain organizational standards.
- 5) **Maintain your Brain™** was legally registered as a trademark.
- 6) To widen the reach of the campaign's message, chapter staff engaged with occupational health officers at worksites, encouraging a wellness approach to their work.
- 7) Promotional items, such as playing cards, pedometers and tip-sheets were produced for sale.
- 8) A national conference has been hosted, highlighting risk reduction.

Impact to date: comments and summary

The campaign's chief strength is that there is a robust evidence base behind the **Maintain your Brain™** messages. Rather than using negative or victim blaming messages, the Association has used a social engagement approach, such as promoting playing games for mental stimulation. The campaign is health based rather than illness focused.

In spite of its limited funding, the campaign has achieved good coverage, which implies that it has had some impact, since many people have potentially been exposed to the strategies and will recognize the logo. For example, a large number of website hits have been recorded (around 6 million hits). To assess the campaign's effectiveness, there has been some tracking evaluation conducted. The local workshops have attracted between 3000-4000 participants, who have reported being satisfied in an immediately post-workshop evaluation survey. However, the Association noted that these attendees have mainly been older caregivers, so to date this strategy has had limited reach within the targeted audience. The challenge will be to sustain the activity, broaden the audience and to highlight the distinction between the **Maintain your Brain™** messages and those from other chronic disease organizations.

¹ The Association has a central national office and operates across the States via an 80-chapter organizational structure. The latter has some degree of autonomy from the central body.

² The Association operates on a more commercially based model than Alzheimer's Australia.

The National Stroke Foundation (NSF)

The National Stroke Foundation (NSF) aims to save 110,000 lives over the next decade that would otherwise be lost to death and disability due to stroke.

Early consultations with consumers highlighted their limited understanding of stroke and, in particular, how it differs from heart disease problems, such as heart attacks. A survey in 2003 found that people were ignorant about stroke and its signs. The NSF planned the **Strokesafe™** education campaign to address these knowledge gaps. The campaign targets both the general public and those at greater risk of stroke. The campaign was developed using the principles of the successful Australian 'Quit' and 'SunSmart' campaigns and has an integrated evaluation component.

The campaign uses a range of strategies operating at different levels, from mass media and PR, through community based activities, such as **Strokesafe™** seminars and National Stroke Week, through to GP-focused activities. A range of mass media approaches have been used to convey positive-focused information about the signs of stroke: TV advertising, radio (including CSA announcements) and print.

The key objective of the first years of **Strokesafe™** has been to educate the public to recognise the signs of stroke and to lay the foundations on which future prevention messages can be built. The theme of the campaign for the first two years encourages Australians to 'look out for the signs of stroke and live' and thereby reduce the population prevalence of strokes. The exposure has been greater in Queensland, where the campaign has received additional support from Queensland Health.

The community education initiatives are supported by publications, a website and an 1800 number, plus activities to engage health professionals. For example, during National Stroke Week, the NSF hosts **Strokesafe™** breakfast sessions to further upskill health professionals and GPs about stroke prevention in the community and to engage further in the '**Strokesafe™** for life' message. (**Strokesafe™** has been trademarked).

There has also been a national pilot of a public education program, including a seminar kit for health professionals and information packs for health professionals to distribute to consumers. The information was designed to ensure consistent information was being delivered about stroke prevention and to further promote the **Strokesafe™** message. Seminars were conducted in an initial pilot phase in 2005 (January – June 2005). About 100 sites have registered to conduct a stroke prevention seminar. In 2004, about 20,000 health professionals received consumer packs as part of National Stroke Week.

Impact: comments and summary

There has been an annual stroke awareness telephone survey each year (2003-2005), with a random sample of 2000 people aged 40+ from across all States and Territories interviewed.

The **Strokesafe™** seminars have included pre-post evaluation surveys for participants. According to preliminary evaluation, the seminars appear to be a very effective means of getting the messages across. Participants' knowledge, signs and risk factors for stroke were assessed pre and post seminar session and then during three month post session follow up. Results have indicated an increase in participant knowledge in the three month post seminar follow up. It was also reported a high proportion of people indicated that they intended to modify their behaviour as a result of attending a **Strokesafe™** seminar and the impact evaluation questionnaires indicated that they actually did modify their behaviour.

Although uptake of resources has not been scrutinised, they have been requested by a range of health professionals including community health nurses, allied health professionals (particularly physiotherapists), stroke and rehabilitation units. Uptake in general practice has not been as great: a different strategy may be needed there.

Feedback from the seminars suggests they have been conducted as intended. Health professionals have requested more resources, as they have attracted more participants than expected, with 20-25 consumers on average per event

11. *Future Research and Development*

The report has highlighted a range of gaps in the evidence base. Whilst Alzheimer's Australia is not in a position to address these personally, the organization can work with other Australian stakeholders to advocate for, and support efforts to, answer questions that will assist them in achieving their specific goals.

Future research studies should be used to determine whether:

- (and which) Interventions are more successful with particular participants, characterized by gender, age, ethnicity, socioeconomic status or geographical location
- A particular intervention's success is dependent upon particular process indicators, which describe how and why a particular intervention has worked
- A particular intervention's success is dependent upon particular contextual factors, such as concurrent media campaigns at the time of intervention
- Multiple intervention strategies are always more effective than a single intervention (given financial constraints)
- Certain types of intervention are more cost effective than others for producing health behaviour change
- short-term changes in individual awareness, knowledge or behaviour are maintained at 12 months and beyond without additional community-level intervention

It is important to monitor the transferability and sustainability of successful interventions. The health promotion discipline describes three factors to be considered in the dynamic monitoring of programs: institutionalization, sustainability and diffusion. These are briefly defined below.

Institutionalisation relates to the ability to integrate an intervention into the day to day routine of a person, an agency or a community.

Sustainability relates to the ability for the intervention to be perpetuated, for instance, once the original funding and other resources are no longer available, or when the 'research project' is finished.

Diffusion relates to the potential for the intervention components to be feasibly used (or tailored for use) by other agencies. In some instances, diffusion will be assisted by agencies where the original intervention was successfully implemented.

Program planning should allow for the intervention(s) to be designed to enable institutionalization and sustainability. Detailed discussion of diffusion theory is beyond the scope of this report. Zaltman and Duncan (1977) identified several determinants of the speed and extent of diffusion. These are listed in Table 3 and can be used to guide the planning of future programs.

Table 3. Determinants of the Speed and Extent of Diffusion
(adapted from Zaltman and Duncan, 1977)

Key determinant	Determining Question
Relative advantage	Better than what it will replace?
Compatibility	Fit the intended audience?
Trialability	Can the innovation be subjected to trial?
Observability	Can the innovation be subjected to trial?
Impact on social relations	Are the results observable/easily measurable?
Reversibility	Can it be easily discontinued?
Communicability	Understood easily and clearly?
Time required	Adopted with minimal investment of time?
Risk and uncertainty level	Adopted with minimal risk/uncertainty?
Commitment required	Used effectively with modest commitment?
Modifiability	Able to be updated and modified over time?
Concordance with organizational mission	Fits with goals/objectives of agency

Use of the RE-AIM framework in future planning and evaluation

Historically, the choice of intervention strategies has been based upon organizational norms ('do what we always do'); provider convenience, influenced by resource availability; consumer and/or provider needs assessment activities and, more recently, by the evidence from RCTs and systematic reviews. As this report has noted, there is a somewhat limited evidence base to draw upon in the community education area, not least in relation to dementia risk reduction. The RE-AIM framework has been developed to assist in the planning and evaluation of population health programs of this nature (Glasgow et al., 1999). The RE-AIM framework can assist in the interrogation of the literature - and colleagues- about previous programs: this methodological approach was used for this report (Appendix 4). The framework can also assist in the planning and evaluation of future programs. RE-AIM stands for Reach, Efficacy, Adoption, Implementation and Maintenance. The component dimensions and the associated questions are given in Table 4. The aim of the US based RE-AIM group is to enable the measurement of the impact of population health interventions. The RE-AIM website <http://www.re-aim.org> provides a range of resources (see Appendix 5). The framework has been used in a variety of studies and has potential to be used by Alzheimer's Australia in the further development of its community education initiatives.

Table 4: The RE-AIM Framework Dimensions

RE-AIM Dimension	Questions
Reach (Individual Level)	What percent of potentially eligible participants a) were excluded, b) took part and c) how representative were they?
Efficacy or Effectiveness (Individual Level)	What impact did the intervention have on a) all participants who began the program; b) on process intermediate, and primary outcomes; and c) on both positive and negative (unintended), outcomes including quality of life?
Adoption (Setting Level)	What percent of settings and intervention agents within these settings (e.g., schools/educators, medical offices/physicians) a) were excluded, b) participated and c) how representative were they?
Implementation (Setting/agent Level)	To what extent were the various intervention components delivered as intended (in the protocol), especially when conducted by different (non-research) staff members in applied settings?
Maintenance (Individual Level)	What were the long-term effects (minimum of 6-12 months following intervention)? b) What was the attrition rate; were drop-outs representative; and how did attrition impact conclusions about effectiveness?
Maintenance (Setting Level)	a) To what extent were different intervention components continued or institutionalized? b) How was the original program modified?

Recommendation: Alzheimer's Australia should ensure that a robust evaluation of the **Mind your Mind** program occurs. We recommend that Alzheimer's Australia collaborate with relevant stakeholders to incorporate questions into a planned omnibus survey, thereby making cost savings in obtaining relevant data for the planning of future activities.

In summary, the evidence calls for interventions to be implemented at multiple levels, from individual one-on-one activities, through to those directed at whole populations. The report highlights the importance all four stages of health promotion programs: assessment, planning, implementation and evaluation. Mass media are the leading source of health information. The literature reviewed in this report confirms the benefits of using mass media. The process needs to be carefully planned and assessed, to ensure sufficient exposure of the target audience to the health messages. The importance of structural conditions to support and sustain knowledge gains and behaviour change, such as policy change, legislation and environmental incentives cannot be ignored. All organizations seeking to promote the reduction of health risks and healthy behaviour have an advocacy and partnership role to play in promulgating an environment conducive to change.

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Appendices

APPENDIX 1: Project Methodology

The methodology for producing this discussion paper and recommendations was broken into three main components. The first phase comprised the literature review whereby the evidence was reviewed using a selection of approved national guidelines.

Firstly, an extensive and systematic search of the literature was conducted to identify the evidence relating to preventative community education strategies. The following electronic databases, websites and published sources were searched:

- Canadian Health Promotion Development Section
- CINAHL*
- Cochrane Library*
- Current Contents*
- DARE *
- Dissertation Abstracts International*
- Health Evidence*
- Health Evidence Bulletins Wales
- HTA
- MEDLINE*
- National Guidelines Clearinghouse*
- National Research Register
- PsychINFO*
- Sociological Abstracts*

The sources of the evidence actually used in the review were extracted from 10 out of the 14 listed above (items marked with an asterisk indicate where evidence was obtained).

Inclusion criteria

The following inclusion criteria were used:

- English language
- January 1996 to February 2006
- Human studies
- Adult populations
- Community education strategies to prevent dementia, heart disease, diabetes, cancer, asthma, injury and mental ill-health

Search terms

Search strategies previously successful by others and by the research team were used. The search strategy was devised and refined in consultation with the expert advisory group. The following search terms were employed:

- **Health education** AND dementia/ heart disease/ diabetes/ cancer/ asthma/ arthritis/ injury/ mental health
- **Health promotion** AND dementia/ heart disease/ diabetes/ cancer/ asthma/ arthritis/ injury/ mental health
- **Preventive medicine** AND dementia/ heart disease/ diabetes/ cancer/ asthma/ arthritis/ injury/ mental health

- **Public health** AND dementia/ heart disease/ diabetes/ cancer/ asthma/ arthritis/ injury/ mental health
- **Health intervention** AND dementia/ heart disease/ diabetes/ cancer/ asthma/ arthritis/ injury/ mental health

Evaluation strategies

The titles and abstracts of identified references were assessed for relevance, and the full-text articles of those deemed relevant by the primary researcher were obtained. Each article was then independently assessed by two reviewers (both with at least 20 years of research experience) and critically appraised in terms of transparency, systematicity, and relevance. The reviewers initially rated the level of evidence of each article according to the NH&MRC criteria listed below, which is based on the design of the study:

<i>Level I</i>	A systematic review of all relevant Randomised Controlled Trials (RCT)
<i>Level II</i>	At least one properly designed RCT
<i>Level III-1</i>	Well-designed pseudo-RCTs
<i>Level III-2</i>	Comparative studies with concurrent controls and allocation not randomised, case-control studies or interrupted time series with a control group
<i>Level III-3</i>	Comparative studies with historical control, two or more single-arm studies, or interrupted time series without a parallel control group
<i>Level IV</i>	Case series, either post-test or pre-test and post-test

Dependent on the level of evidence of each article, the reviewer then selected one of three sets of criteria to critically appraise the articles. The table below outlines as far as possible which set of criteria was used for each level of evidence: for Level I evidence the National Health and Medical Research Council (NH&MRC) criteria were used (Hoving, Gross et al., 2001); for Level II evidence the Delphi items were used (Verhagen et al, 1998); and for Level III/IV the items used were adapted from the RE-AIM Dimensions and Template Questions for Evaluating Health Education and Health Behavior Research (Glasgow et al., 2004). Due to the diverse nature of the research studies the corresponding criteria were not always adequate to assess the quality of the study, and at this point the reviewer used her discretion as to which criteria was the most appropriate.

Level of Evidence and the associated criteria used to assess the quality

LEVEL OF EVIDENCE	CRITERIA (see appendix for full list of items)
Level I	National Health and Medical Research Council (NH&MRC) criteria used to Assess the Scientific Quality of Selected Review Articles (Hoving, Gross et al., 2001): 9 items
Level II	Delphi items (Verhagen et al, 1998): 9 items
Level III and IV	Criteria adapted from the RE-AIM Dimensions and Template Questions for Evaluating Health Education and Health Behavior Research (Bull et al., in press): 12 items

Each reviewer completed a rating form and a joint decision was made as to which articles were of sufficient quality to be included for review. Disagreements were resolved through discussion or by recourse to a third reviewer. Any conflicting evidence was identified, and reviewers noted any gaps in the evidence base. While this

was primarily a review of meta-analyses and systematic reviews, it was supplemented by lower level evidence from single studies, as required, to describe the current state of this level of evidence and critique its strength.

Exclusion criteria

Articles published in languages other than English were excluded, plus articles based on personal, expert opinion and literature reviews – and also those that predominantly focused on individual factors and behaviour.

APPENDIX 2: NH&MRC Criteria

Rating Scale for Level 1 Studies
MH&MRC
Max Score = 18

Criteria Used to Assess the Scientific Quality of Selected Review Articles (Hoving, Gross et. Al, 2001)

Search methods (maximum score = 4)

1. *Were the search methods used to find evidence (primary studies) on the primary question(s) stated?*

2 points: Yes; includes description of databases searched, search strategy, and years reviewed. Described well enough to duplicate.

1 point: Partially; partial description of methods, but not sufficient to duplicate search

0 points: No; no description or search methods

2. *Was the search for evidence reasonably comprehensive?*

2 points: Yes; must include at least one computerized database search as well as a search of unpublished or nonindexed literature for example: manual searches or letters to primary authors)

1 point: Cannot tell; search strategy partially comprehensive (for example: at least one of the strategies in the foregoing section were performed)

0 points: No; search not comprehensive or not described well enough to make a judgment

Selection methods (maximum score = 4)

3. *Where the criteria used for deciding which studies to include in the review reported?*

2 points: Yes; inclusion and exclusion criteria clearly defined

1 point: Partially; reference to inclusion and exclusion criteria can be found in the paper but not defined clearly enough to duplicate

0 points: No; no criteria defined

4. *Was bias in the selection of articles avoided?*

2 points: Yes; key issues influencing selection bias were covered. Two of three of the following bias avoidance strategies were used: two or more assessors independently judged study relevance and selection using predetermined criteria, reviewers were blinded to identifying features of study (i.e., journal title, author(s), funding source), and assessors were blinded to treatment outcome.

1 point: Cannot tell; if only one of the three strategies above were used

0 points: No; selection bias was not avoided or was not discussed

Validity assessment (maximum score = 4)

5. *Were the criteria used for assessing the validity for the studies that were reviewed reported?*

2 points: Yes; criteria defined explicitly

1 point: Partially; some discussion or reference to criteria but not sufficiently described to duplicate

0 points: No; validity or methodologic quality criteria not used or not described

6 *Was the validity for each study cited assessed using appropriate criteria (either in selecting studies for inclusion or in analyzing the studies that are cited)?*

2 points: Yes; the criteria used address the major factors influencing bias (for example: population, intervention, outcomes, follow-up)

1 point: Partially; some discussion of methodologic review strategy but not clearly described with predetermined criteria

0 points: No; criteria not used or not described

Synthesis (maximum score = 6)

7. Were the methods used to combine the findings for the relevant studies (to reach a conclusion) reported?

2 points: Yes; qualitative or quantitative methods are acceptable

1 point: Partially; partial description of methods to combine and tabulate; not sufficient to duplicate

0 points: Methods of combining studies not stated or described

8. Were findings of the relevant studies combined appropriately relative to the primary question the review addresses?

2 points: Yes; combining of studies appears acceptable

1 point: Cannot tell; should be marked if in doubt

0 points: No; no attempt was made to combine findings, and no statement was made regarding the inappropriateness of combining findings; should be marked if a summary (general) estimate was given anywhere in the abstract, the discussion, or the summary section of the paper, and the method of deriving the estimate was not described, even if there is a statement regarding the limitations of combining the findings of the studies reviewed.

9. Were the conclusions made by author(s) supported by the data or analysis reported in the review?

2 points: Yes; data, not merely citations, were reported that support the main conclusions regarding the primary question(s) that the overview addresses

1 point: Partially

0 points: No; conclusions not supported or unclear

Scoring (maximum score = 18). How would you rate the scientific quality of this review? Add up the scores from questions 1-9 quality score is 18 points

Adapted from Oxman DA, Guyatt GH, Singer J, et al. 44 {Context Link}

APPENDIX 3: Delphi Items

Delphi Items (Verhagen et al 1998)

1. Was a method of randomisation performed?
2. Was the treatment allocation concealed?
3. Were the groups similar at baseline regarding the most important prognostic indicators?
4. Were the eligibility criteria specified?
5. Was the outcome assessment blinded?
6. Was the care provider blinded?
7. Was the patient blinded?
8. Were point estimates and measures of variability presented for the primary outcome measures?
9. Did the analysis include an intention to treat analysis?

APPENDIX 4: RE-AIM Adapted Items

Rating scale for Level 3+ studies

Maximum score=12 (Yes=1; No=0; Don't know=0 - unless otherwise stated)

REACH (Individual level)

1. What percentage of potentially eligible participants took part?
(Give percentage, or NA if not reported)
2. Does the program reach those most in need?
3. Are the participants representative of the targeted population? *(take attrition rate into account)*

Effectiveness (Individual level)

4. Does the program achieve its key targeted outcomes?
5. Does it produce unintended positive outcomes?

Adoption (Setting/Organisational level) i.e. Reach at an org level

6. Is the program run by agencies/organisations that are representative of the community?
7. Do the organisations that run the program reach underserved or high-risk populations?

Implementation (Setting/Organisational level)

8. Can different levels of staff implement the program successfully? (i.e. is program implemented consistently across orgs)
9. Do the organisations achieve the primary aim of the program/community education strategy? (Y=2; some=1; N=0)

Maintenance (Individual and Setting level)

10. Does the program produce lasting effects (i.e. more than 6 months) at the individual level?
11. Can organisations sustain the program over time?
12. Are those persons and settings that show maintenance those most in need?

(Based on Re-AIM questions, retrieved 5 June, 2006, from http://www.re-aim.org/2003/m_1.html)

APPENDIX 5: A RE-AIM Questions for Use in Program Planning & Evaluation

RE-AIM Questions to Ask and Ways to Enhance Overall Impact		
RE-AIM Dimension	Questions to Ask of Potential Programs	Possible Ways to Enhance Dissemination
Reach (Individual Level)	<p>What percent of the target population comes into contact?</p> <p>Does program reach those most in need?</p> <p>Will participants reflect the targeted population?</p>	<p>Formative evaluation with potential users and with those declining</p> <p>Small scale recruitment studies to test methods</p> <p>Identify and reduce barriers</p> <p>Use multiple channels of recruitment</p>
Effectiveness (Individual Level)	<p>Does program achieve key targeted outcomes?</p> <p>Does it produce unintended adverse consequences?</p> <p>How will impact on quality of life (QOL) be assessed?</p>	<p>Incorporate more tailoring to individual</p> <p>Reinforce via repetition, multiple modalities, social support and systems change</p> <p>Use stepped care approach</p> <p>Evaluate adverse outcomes and QOL for program revision and cost-to-benefit analysis</p>
Adoption (Setting/Organizational Level)	<p>What percent of target settings and organizations will use?</p> <p>Will organizations having underserved or high-risk populations use it?</p> <p>Does program help the organization address its primary mission?</p>	<p>Conduct formative evaluation with adoptees and settings that decline</p> <p>Recruit settings that have most contact with target audience</p> <p>Provide different cost options and customization of intervention</p> <p>Develop recruitment materials outlining program benefits and required resources</p>
Implementation (Setting/Organizational Level)	<p>How many staff within a setting will try this?</p> <p>Can different levels of staff implement the program successfully?</p> <p>Are different components delivered as intended?</p>	<p>Provide delivery staff with training and technical assistance</p> <p>Provide clear intervention protocols</p> <p>Consider automating all or part of the program</p> <p>Monitor and provide staff feedback and recognition for implementation</p>
Maintenance (Individual (I) and Setting (S) Levels)	<p>Does the program produce lasting effects at individual level?</p> <p>Can organizations sustain the program over time?</p> <p>Are those persons and settings that show maintenance those most in need?</p>	<p>Reduce level of resources required</p> <p>Incorporate "natural environmental" and community supports</p> <p>Conduct follow-up assessments and interviews to characterize success at both levels</p> <p>Incorporate incentives and policy supports</p>

Source: <http://www.re-aim.org>

APPENDIX 6: Source of Grey Literature

The following organisations (and websites) were targeted for grey literature:

- Cancer Council Australia/Victoria (<http://www.cancer.org.au/>, <http://www.cancervic.org.au/>)
- HTA (The NHS Health Technology Assessment Program, UK) (<http://www.hta.nhsweb.nhs.uk/>)
- King's Fund (UK) (<http://www.kingsfund.org.uk/>)
- Alzheimers Disease International (<http://www.alz.co.uk/>)
- Alzheimers Society (UK/Canada) (<http://www.alzheimers.org.uk/>,
<http://www.alzheimer.ca/english/index.php>)
- Alzheimer Europe (<http://www.alzheimer-europe.org/>)
- Australian Institute of Health and Welfare (AIHW) (www.aihw.gov.au/)
- National Health and Medical Research Council (NHMRC) (<http://www.nhmrc.gov.au/>)
- National Public Health Partnerships (<http://www.nphp.gov.au/>)
- RE-AIM (<http://www.re-aim.org/>)
- National Asthma Council (<http://www.nationalasthma.org.au/html/home/index.asp>)
- The Asthma Foundation (Victoria) (<http://www.asthma.org.au/>)
- Beyond Blue (<http://www.beyondblue.org.au/>)
- Arthritis Australia/Victoria (<http://www.arthritisaustralia.com.au/>, <http://www.arthritisvic.org.au/>)
- National Institute for Health and Clinical Excellence (NICE) (<http://www.nice.org.uk/>)

APPENDIX 7: HON Code Principles

1 Any medical/health advice provided and hosted on the site will only be given by medically or health trained and qualified professionals unless a clear statement is made that a piece of advice offered is from a non- medically/health qualified individual/organisation

2 The information provided on the site is designed to support, not replace, the relationship that exists between a patient/site visitor and his/her existing physician.

3 Confidentiality of data relating to individual patients and visitors to a medical/health Web site, is respected by the Web site. The Web site owners undertake to honour or exceed the legal requirements of medical/health information privacy that apply in the country and state where the Web site and mirror sites are located.

4 Where appropriate, any information contained on the site will be supported by clear references to source data and, where possible, have specific HTML links to that data. The date when a clinical page was last modified will be clearly displayed.

5 Any claims relating to the benefit/performance of a specific treatment, commercial product or service will be supported by appropriate, balanced evidence in the manner outlined above in principle 4.

6 The designers of the Web site will seek to provide information in the clearest possible manner and provide contact addresses for visitors who seek further information or support. The Webmaster will display his/her email address clearly throughout the Web site.

7 Support for the Web site will be clearly identified, including the identities of commercial and non-commercial organisations that have contributed funding, services or material for the site.

8 If advertising is a source of funding it will be clearly stated. A brief description of the advertising policy adopted by the Web site owners will be displayed on the site. Advertising and other promotional material will be presented to viewers in a manner and context that facilitates differentiation between it and the original material created by the institution operating the site.

The HON insignia is available for placement on sites. A site-checker tool can be used to assess whether a site meets the HON Code of Conduct.

References

Kim P, Eng TR, Deering MJ et al. 1999 Published criteria for evaluating health related Websites: review *BMJ* 318: 1280-1283.

Health on the Net Code of Conduct. Retrieved May 30, 2006, from http://www.hon.ch/HONcode/HONcode_check.html